

# Denka

Possibility  
of  
chemistry

Denka Report **2021**

Integrated Report

## Our Corporate Philosophy

Following the celebration of its centennial in 2015, Denka established The Denka Value, a corporate philosophy. The Denka Value consists of the Denka Mission and the Denka Principles, a set of precepts aimed at guiding the actions of all Group employees.

## The Denka Value

**Denka Mission** — Taking on the challenge of expanding the possibilities of chemistry to create new value and contribute to sound social development.

**Denka Principles** — We:

- Boldly confront challenges with determination and sincerity.
- Think and take action today with the future in mind.
- Deliver new values, and inspire customers through innovative *Monozukuri*.\*
- Respect the environment and create a cheerful workplace that prioritizes safety.
- Contribute to a better society, whilst taking pride in being a trusted corporate citizen.

\*Japanese-style craftsmanship



### Greetings from the Chairman

First of all, I would like to extend my deepest gratitude to our stakeholders for their continued support.

As part of efforts to realize its corporate philosophy as defined by The Denka Value, the Denka Group has reshaped its Board of Directors, cutting back on the number of directors from 12 to nine. This move is intended to enhance the effectiveness of the Board's deliberations and boost its capabilities for swift decision making by adjusting its composition in line with the Group's policy of clearly separating the roles of the Board of Directors and the executive team. Also, we increased the proportion of outside directors in the Board's composition to strengthen the advisory and supervisory functions afforded by a "Company with an Audit Committee" system. As we embark on our third year since transitioning to said system, we have thus empowered outside directors to step up their contributions to discussions undertaken by the Board. Businesses today are facing ever stronger social demand regarding robust corporate governance. Accordingly, we will work to secure a more sophisticated corporate governance structure that accurately reflects such demand.

Pushing ahead with across-the-board reforms and intragroup collaboration, we will take on the challenge of resolving various social issues in ways that only Denka is capable of, with the United Nations Sustainable Development Goals (SDGs) as our compass. Through these endeavors, we aim to become a company that is irreplaceable to society and that employees and stakeholders are proud of. We sincerely ask for your ongoing support and encouragement for our endeavors.

### Manabu Yamamoto

Representative Director and Chairman of the Board



Possibility  
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# Denka Report 2021

Integrated Report

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## Editorial Policy

The *Denka Report 2021* printed brochure is aimed at providing our stakeholders, including shareholders and investors, with a robust communication tool that focuses on conveying what we have been doing to create new value over the medium to long term from the viewpoint of addressing environmental, social and governance (ESG) issues.

In addition, we operate an ESG-themed corporate website to ensure the comprehensive and timely disclosure of relevant information.

### ■ Coverage

Fiscal 2020 (April 1 2020 through March 31, 2021) in principle; this report includes additional information on some initiatives undertaken subsequent to the fiscal 2020 year-end while presenting data on numerical targets for and performance statistics from the past several fiscal years.

Date of publication: September 30, 2021

### ■ Scope

In general, this report encompasses topics on the Denka Group's business sites within the scope of consolidation. However, some articles are based on data gleaned outside the scope of consolidation. These articles individually specify the organizations subject to reporting.

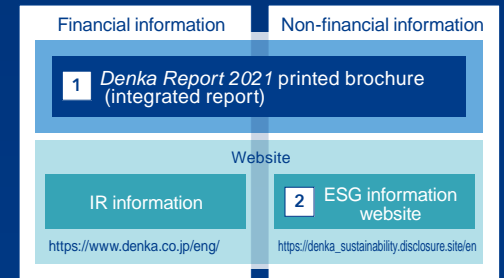
### ■ Guidelines

- The GRI Standards of the Global Reporting Initiative (GRI)
- The Environmental Reporting Guidelines 2018 of Japan's Ministry of the Environment
- The International Integrated Reporting Framework of the International Integrated Reporting Council (IIRC)

### ■ Inquiries

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### ■ Overview of the *Denka Report 2021* and Other Supplementary Reporting Tools



**1** This report is aimed at providing our stakeholders, including shareholders and investors, with a robust communication tool that focuses on conveying what we have been doing to create new value over the medium to long term from the viewpoint of addressing ESG issues.

**2** We maintain the timely and comprehensive disclosure of our ESG-related corporate information via our website, updating reporting on relevant activities and detailed data that has not been included in the aforementioned editions.

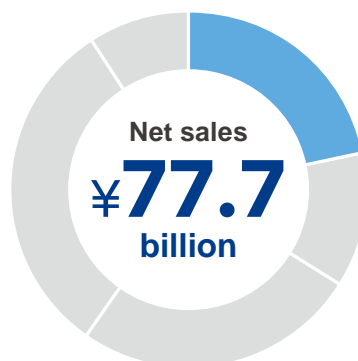
## Business at a Glance

## Electronics &amp; Innovative Products

Contribute to social development

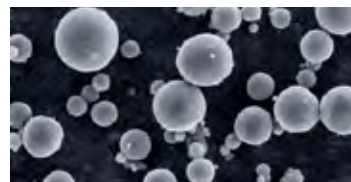
Create a clean and  
safe future society

Striving to help create an abundant society, we provide such cutting-edge materials as conductive agents for lithium ion batteries, thermal materials and substrates as well as functional ceramics, films and tapes, thereby playing an essential role in the advance of 5G communication infrastructure, electric vehicles (EVs) and renewable energy generation.



## Main Products

- Functional ceramics (spherical alumina)
- Conductive agents for lithium ion batteries (acetylene black)
- Embossed carrier tapes for electronic components and semiconductors (carrier tape sheets and cover tapes)

Spherical alumina  
(an image captured using an electron microscope)

Acetylene black

[Overview of Business Division ▶P33–34](#)

## Main Group companies

**Japan**

- Denal Silane Co., Ltd.
- Denka Kojundo Gas Kabushiki Kaisha

**Overseas**

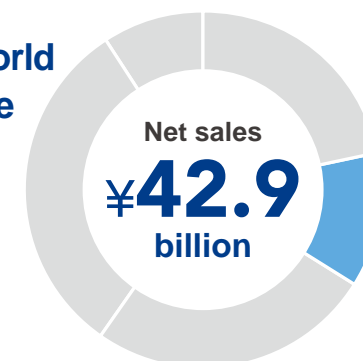
- Denka Taiwan Corporation
- Denka Korea Co., Ltd.
- Denka Advanced Materials (Suzhou) Co., Ltd.
- Denka Electronics Materials Dalian Co., Ltd.
- Denka Chemicals Hong Kong Co., Ltd.
- Denka Advantech Pte. Ltd.
- Denka Advanced Materials Vietnam Co., Ltd.

## Life Innovation

Contribute to social development

Help people around the world  
enhance their quality of life

In the field of illness prevention, diagnosis and treatment, we help people around the world enhance their quality of life by, for example, supplying influenza vaccines, manufacturing rapid diagnostic testing kits for detecting antigens of such infectious diseases as the novel coronavirus and delivering macromolecular sodium hyaluronate preparation.



## Main Products

- Vaccines
- POCT\* diagnostic reagents
- Joint function improvers (macromolecular sodium hyaluronate preparation)

\* Point-of-Care Testing: rapid diagnostic testing kits for detecting antigens



Influenza HA vaccine



QuickNavi-Flu+COVID19 Ag

[Overview of Business Division ▶P35–36](#)

## Main Group companies

**Japan**

- Denka-KEW Genomics LLC
- Denka Cosmetics Limited Company

**Overseas**

- DENKA SEIKEN (SHANGHAI) Co., Ltd.
- DENKA SEIKEN UK Limited
- DENKA SEIKEN USA Incorporated
- Denka Life Innovation Research Pte. Ltd.
- Icon Genetics GmbH

## Business at a Glance

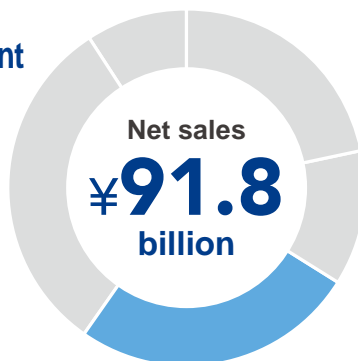
### Elastomers & Infrastructure Solutions

Contribute to social development

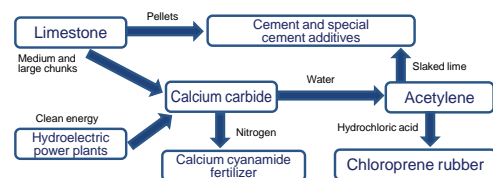


#### Support infrastructure development and improve accessibility

To help ensure people's daily lives are safe and secure, we employ a wealth of technological capabilities in organic and inorganic chemistry to supply a range of offerings from functional elastomers, cement and special cement additives—both of which are essential to strengthening infrastructure—to fertilizers and agricultural corrugated pipes, taking full advantage of the calcium carbide chain that we have maintained since our founding.



#### Calcium carbide chain and main products



DENKA NATMIC, a quick-setting agent for tunnel construction

Overview of Business Division ▶P37–38

#### Main Group companies

##### Japan

- Denka Renotec Co., Ltd.
- Kanazawa Denka Ready-Mixed Concrete Co., Ltd.
- Kanto Acetylene Industry Co., Ltd.
- Kanbara Ready-Mixed Concrete Co., Ltd.
- Kyusyu Plastic Industry Co., Ltd.
- Sanshin Bussan Kabushiki Kaisha
- Denka Azumin Co., Ltd.
- Denka Elastlution Co., Ltd.
- Denka Ready-Mixed Concrete Takayama Co., Ltd.
- Higashi Nihon Koatsu Co., Ltd.
- Hinode Kagaku Kogyo
- Nishi-nihon Koatsu Gas Co., Ltd.

##### Overseas

- Denka Infrastructure Technologies Shanghai Co., Ltd.
- Denka Inorganic Materials (Tianjin) Co., Ltd.
- Denka Construction Solutions Malaysia Sdn Bhd.
- Denka Infrastructure Technologies Pte. Ltd.
- Denka Performance Elastomer LLC
- PT. ESTOP Indonesia

### Polymer Solutions

Contribute to social development

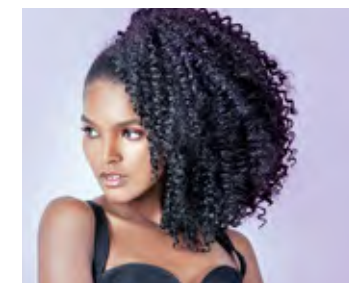
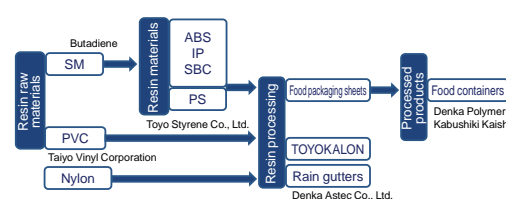


#### Improve the living environment

To help realize a sustainable society, we support people's daily lives in a diverse range of fields, including automobiles, electric and electronic devices, and food, via the provision of styrene-based functional resins, acetyl chemicals and food packaging sheets as well as synthetic fiber for wigs and hairpieces.



#### Styrene chain and polymer processing products



TOYOKALON, a synthetic fiber for wigs and hairpieces used as fashion items

Overview of Business Division ▶P39–40

#### Main Group companies

##### Japan

- Shonan Sekisui Kogyo Kabushiki Kaisha
- Denak Co., Ltd.
- Denka Polymer Kabushiki Kaisha
- Denka Astec Co., Ltd.
- Toyo Styrene Co., Ltd.

##### Overseas

- Denka Chemicals Shanghai Co., Ltd.
- Denka Singapore Pte. Ltd.

#### Main Group companies (other)

##### Japan

- Kurobegawa Electric Power Company
- Juzen Chemical Corporation
- Denka Consultant & Engineering Co., Ltd.
- Akros Trading Co. Ltd.

##### Overseas

- Denka Chemicals Development Suzhou Co., Ltd.
- Denka Chemicals GmbH
- Denka Corporation
- Denka Chemicals Holdings Asia Pacific Pte. Ltd.

Our Value Creation Process

Corporate Philosophy  
**The Denka Value**

Denka Mission  
Denka Principles

The Denka Group's 13 Materiality Issues [https://denka\\_sustainability.disclosure.site/en/themes/729](https://denka_sustainability.disclosure.site/en/themes/729)

[Categories]

- Prioritization of safety
- Products and technologies
- Solid corporate governance/Corporate conduct deserving of stakeholder trust
- Employee happiness
- Environmental preservation
- Dialogue with society/Partnership

**The Denka Value-Up Management Plan (fiscal 2018 – fiscal 2022)**

Primary Social Issues (relevant SDG targets)

Six Types of Capital

Contribute to sound social development

**The environment and energy**

- Ensure universal access to affordable, reliable and modern energy services (7.1)
- Substantially increase the share of renewable energy in the global energy mix (7.2)
- Double the global rate of improvement in energy efficiency (7.3)

**Healthcare**

- End the epidemics of infectious and communicable diseases (3.3)
- Reduce premature mortality from non-communicable diseases (3.4)
- Achieve universal health coverage (3.8)

**High-value-added infrastructure**

- Ensure access for all to adequate, safe and affordable housing and basic services (11.1)
- Provide access to safe, affordable, accessible and sustainable transport systems for all (11.2)
- Enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management (11.3)
- Reduce the adverse environmental impact of cities by paying special attention to air quality and municipal and other waste management (11.6)

**Human**

A corporate culture that sincerely addresses customer needs and seeks to propose solutions through manufacturing

**Intellectual**

- High-temperature calcining technologies developed through our inorganic chemistry-related endeavors
- Organic and inorganic material composite technologies
- Polymer synthesis and resin processing technologies
- Antigen and antibody reaction technologies for advancing infectious disease countermeasures

**Natural**

- Company-owned power generation facilities, including hydroelectric power plants
- Company-owned limestone mines

**Manufacturing**

- Manufacturing facilities boasting superior energy efficiency
- Cement production facilities that contribute to a recycling-oriented society

**Social**

Across-the-board involvement in open innovation that aims to help resolve issues society is confronting via industry-academia-government collaboration

**Financial**

Ability to execute strategic investment and secure robust shareholder returns in a well-balanced manner

**Pursuing Growth Strategies**

- ▶ Business portfolio shift
- ▶ Introduction of innovative processes
- ▶ Three human resource strategies
  - Securing human resources with specialized skills
  - Work style reforms
  - Diversity promotion

**Fulfilling our social responsibilities**

- ▶ Placing the utmost priority on safety
- ▶ Stepping up environmental management
- ▶ Incorporating innovative working styles
- ▶ Contributing to SDGs

**Specialty-Fusion Company**

Become a Specialty-Fusion Company with a Strong Global Presence

**Our Threefold Growth Vision**

**Sustained Growth**

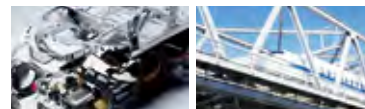
Maintain Sustained Growth by Significantly Enhancing Productivity through Innovative Processes

**Sound Growth**

Secure Sound Growth through Work Style Reforms

**▶ The environment and energy**

We employ such core technologies as cutting-edge inorganic materials in product development with the aim of meeting needs arising from mega trends toward high-speed data communications, the intensive use of car electronics and the introduction of autonomous driving systems.



**▶ Healthcare**

In addition to supporting the prevention and early diagnosis of infectious diseases and lifestyle diseases via the provision of vaccines and diagnostic reagents, we are expanding into such new businesses as cancer-related gene alteration analysis.



**▶ High-value-added infrastructure**

As a provider of cutting-edge materials and solutions, including expansive additives, quick-setting agents and high-strength materials, we support the development of resilient infrastructure while aiding in efforts to repair aged facilities and lengthen building life.



Aim to become a Specialty-Fusion Company that is irreplaceable to society



Create a clean and safe future society



Help protect people's health and prevent infectious disease pandemics







Support infrastructure development and improve accessibility

ESG information site: List of Products to Contribute to SDGs [https://denka\\_sustainability.disclosure.site/en/themes/635](https://denka_sustainability.disclosure.site/en/themes/635)

# Trajectory of Our Operations and Contribution to Social Development

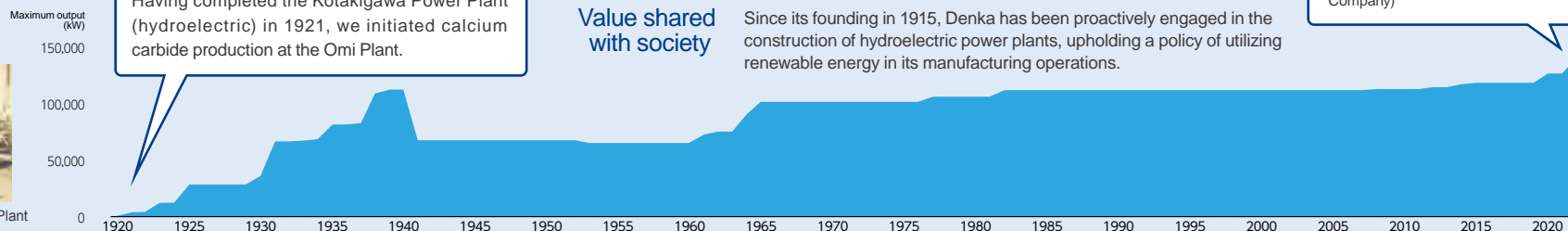
Since its founding in 1915, the Denka Group has moved forward in tandem with its stakeholders while delivering new shared value via the use of its strength in chemistry. The Group's endeavors over the course of a history spanning 106 years have always been undertaken from the perspective of creating value that meets society's needs. Here, we introduce the trajectory of Denka's five periods of value creation.

Founding	Turning Point 1	Turning Point 2	Turning Point 3	Present
<p><b>Initial Period 1915-1944</b></p> <p><b>Helping to resolve food supply problems</b></p> <p>Delivered calcium cyanamide fertilizer to help boost crop production in the wake of a rapid surge in population during the Meiji and Taisho eras</p> <ul style="list-style-type: none"> <li>Upon our founding in 1915, we began manufacturing and marketing calcium carbide and calcium cyanamide fertilizer derived from calcium carbide.</li> </ul>  <p>An early ad for calcium cyanamide fertilizer</p> <p><b>Value shared with society</b></p> <p>We continued to support Japan's agricultural sector via stable calcium cyanamide fertilizer production while overcoming a number of management crises arising in the rapidly evolving times influenced by World War I and II as well as major economic recessions.</p>	<p><b>Period of Expanding Core Businesses 1945-1974</b></p> <p><b>Delivering a variety of chemical products</b></p> <p>Supported Japan's high economic growth by drawing on advancing technologies associated with acetylene chemistry and inorganic chemistry</p> <ul style="list-style-type: none"> <li>In 1962, we became the first in Japan to successfully initiate the production of chloroprene rubber via the use of proprietary technology based on the carbide-acetylene method.</li> <li>We began making cement with raw material sourced from our own limestone mines, from which we also secured a raw material used in calcium carbide production.</li> </ul>  <p>Chloroprene rubber</p> <p><b>Value shared with society</b></p> <p>Over the course of Japan's reconstruction in the aftermath of World War II and the subsequent period of high economic growth, we leveraged acetylene chemistry and inorganic chemistry to supply various products while delivering cement and special cement additives, with the aim of meeting the ever-growing demands of society.</p>	<p><b>Period of Expanding Specialty Businesses 1975-2006</b></p> <p><b>Making entries into petrochemical and healthcare fields</b></p> <p>Began manufacturing styrene-based resin to contribute to higher living standards while making entries into the healthcare field to enhance people's QOL</p> <ul style="list-style-type: none"> <li>In 1965, we launched the production of styrene monomer and polystyrene at the Chiba Plant, developing a variety of synthetic resins based on these materials.</li> <li>In 1979, the precursor to Denka Seiken (founded in 1950) became a part of the Denka Group. In 2000, we initiated the manufacture of macromolecular sodium hyaluronate preparation for use as a joint function improver that is categorized as a prescription drug.</li> </ul>  <p>Polystyrene resin</p> <p><b>Value shared with society</b></p> <p>To live up to ever higher expectations with regard to the functional improvement of plastics, we engaged in product development that rallied the Group's overall technological capabilities ranging from precision material synthesis to resin processing and molding.</p> <p>Moreover, we strove to support the prevention and early diagnosis of a variety of infectious diseases via the supply of vaccines and diagnostic reagents, helping prevent the spread of such diseases.</p>	<p><b>Period of Making Strong Businesses Even Stronger 2007-2017 (Denka100)</b></p> <p><b>Delivering value to society by employing open innovation and optimizing our production network</b></p> <p>Developed a unique product lineup via the integration of organic and inorganic chemistry</p> <ul style="list-style-type: none"> <li>In 2009, we commercialized <math>\beta</math> SiAlON Phosphor for white LED, contributing to reduction in energy used by large liquid crystal display televisions.</li> <li>In 2015, we acquired the chloroprene rubber business from DuPont via joint investment with MITSUI &amp; CO., LTD., establishing Denka Performance Elastomer LLC.</li> </ul>  <p>ALONBRIGHT, a <math>\beta</math> SiAlON phosphor</p> <p><b>Value shared with society</b></p> <p>Our ultra-high-temperature control technologies cultivated in the course of calcium carbide production, an activity that dates back to our founding, have enabled us to create a variety of new materials ranging from acetylene black to inorganic powder. Furthermore, our metal and polymer composite technologies made it possible to contribute to technological innovation in the field of thermal solutions for railcars, automobiles and communications devices.</p>	<p><b>Becoming a Specialty-Fusion Company 2018-2022 (Denka Value-Up)</b></p> <p><b>Contributing to sustainable social development</b></p> <p>Focusing our strength on three priority fields</p> <p><b>Value shared with society</b></p> <ul style="list-style-type: none"> <li><b>The environment and energy</b> With our products used for a broad range of applications, such as automobiles, railcars, displays and mobile devices, we will help customers achieve technological innovation in terms of energy saving, miniaturization, weight reduction and functional upgrading.</li> <li><b>Healthcare</b> We will strive to enhance people's quality of life and, to this end, deliver solutions to counter infectious diseases and lifestyle diseases while providing cancer drugs and cancer remedy information services.</li> <li><b>High-value-added infrastructure</b> In addition to helping reduce environmental burdens, we are taking on infrastructure development in such regions as Asia while supporting the resolution of issues associated with repairing aging concrete structures and increasing building durability in Japan.</li> </ul> <div style="border: 1px solid black; padding: 5px;"> <p><b>New Himekawa Power Plant No. 6 Operational kickoff scheduled for April 2022</b></p> <p>(Run by Kurobegawa Electric Power Company, a joint venture owned by Denka and Hokuriku Electric Power Company)</p> </div>

## Trend in the Maximum Output of Our Hydroelectric Power Generation Plants



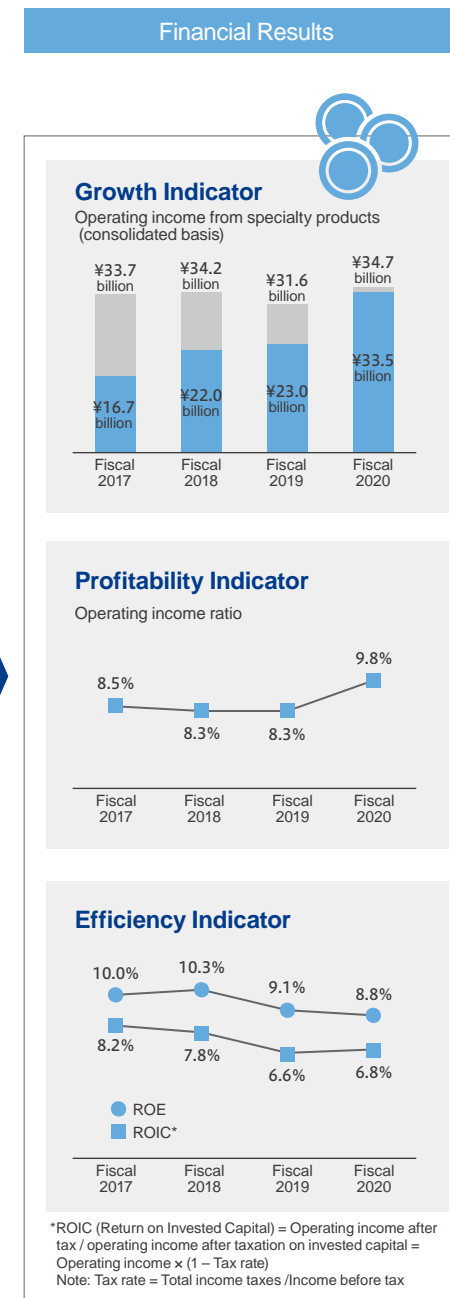
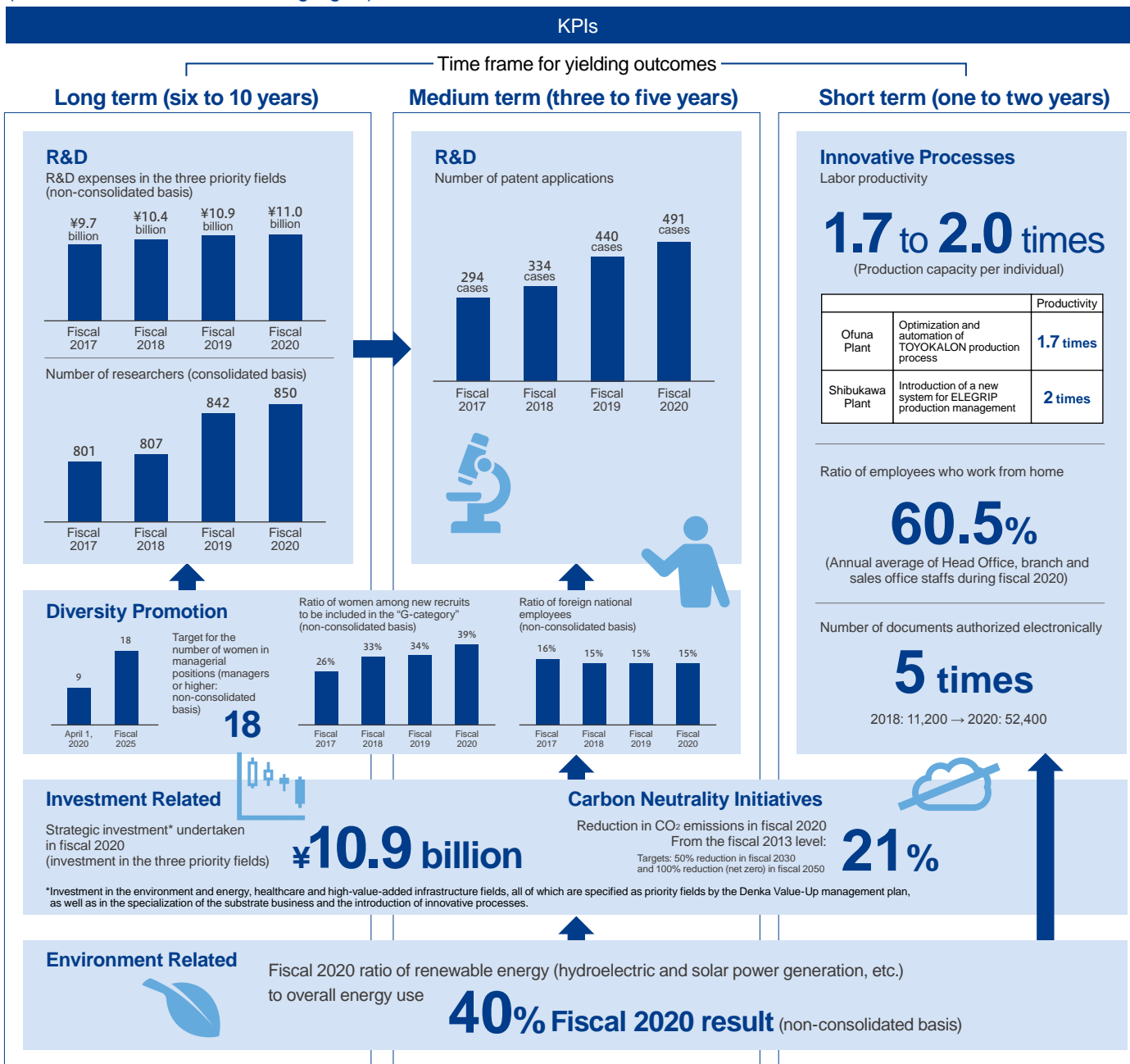
A turbine runner installed in the Kotakigawa Power Plant (photo taken at the completion of the plant)



Note: Including half the capacity of the Kurobegawa Electric Power Company's power plants in the Denka Group's in-house power generation capacity, the overall maximum output of the Group's hydroelectric power generation network stood at 126,000 kW in fiscal 2020. Since 1933, output from such power plants has been calculated in line with the ratio of Denka's equity in this joint venture. In addition, Denka was required to contribute its Oyodogawa Power plants No. 1 and No. 2. to a government-controlled corporation in 1941.

Initiatives to Create Corporate Value (Financial and Non-Financial Highlights)

The following diagram indicates key performance indicators (KPIs) for various business activities aimed at yielding outcomes in different time frames and how they translate into financial results.



Create Corporate Value



## Review of Fiscal 2020 Operating Results

### Non-Financial






#### Overview

- We declared our target of reducing greenhouse gas emissions to net zero and thereby achieving carbon neutrality by the end of 2050.
- With an eye to adapting to the new normal arising from the novel coronavirus pandemic, we have defined the introduction of innovative work styles as an ongoing issue on which the Company's viability depends in the post-pandemic era and, to this end, formulated a Companywide policy for work style reforms.
- Maintaining a tight focus on truly essential operations as a Specialty-Fusion Company, we launched initiatives to improve productivity and enhance the competitiveness of the entire Company by allowing each individual to choose their most efficient work style.
- In response to a government request, we supplied diethyl malonate.

#### Positive factors

- Declared a voluntary target of achieving carbon neutrality by the end of 2050
- Announced our support for the Task Force on Climate-related Financial Disclosures (TCFD)
- Brought the New Omigawa Power Plant (hydroelectric power plant) on line
- Initiated a chemical recycling business
- Practiced remote working
- Issued a Health & Productivity Management Declaration
- Contributed to society via the supply of diethyl malonate

#### Negative factors

- |  |  |  |  |
|--|--|--|--|
| <ul style="list-style-type: none"> <li>● Restrictions on face-to-face customer services</li> <li>● Unable to conduct meetings and training involving in-person contacts</li> </ul>   | <p>Countermeasures</p>   | <ul style="list-style-type: none"> <li>■ Utilized online alternatives (meetings, training, sales and technical services)</li> <li>■ Employed web cameras to direct plant operations and manage construction</li> </ul>   |  |
| <ul style="list-style-type: none"> <li>● Difficulties in carrying out clerical work requiring paper documentation and personal seals</li> </ul>  | <p>Countermeasures</p>  | <ul style="list-style-type: none"> <li>■ Digitized the documentation, authorization and ordering processes</li> </ul>  |  |
| <ul style="list-style-type: none"> <li>● The risk of a novel coronavirus infection cluster emerging among employees</li> <li>● The risk of operational suspension of production facilities due to novel coronavirus infection</li> </ul> | <p>Countermeasures</p>  | <ul style="list-style-type: none"> <li>■ Defined in-house security threat levels based on a three-grade system to prevent infection</li> <li>■ Made it a rule for daytime shift employees to work from home</li> <li>■ Employed web cameras to direct plant operations and manage construction</li> <li>■ Stepped up remote operations and information sharing (Installed additional sensors and electronic white boards)</li> </ul> |  |
| <ul style="list-style-type: none"> <li>● The risk of overall operations being suspended</li> </ul>   | <p>Countermeasures</p>  | <ul style="list-style-type: none"> <li>■ Secured an expanded loan facility and a robust volume of cash at hand</li> <li>■ Carried out periodic supply chain risk assessments</li> </ul>  |  |

### Financial

#### Overview

- Although the first-half demand in fiscal 2020 declined due to the novel coronavirus pandemic, demand recovered thereafter, mainly for automobile- and semiconductor-related products, enabling the Group to solidly secure overall corporate earnings.
- Profit was stable in the environment and energy field, thanks to the performance of offerings associated with 5G communications infrastructure and EVs. Moreover, we were able to quickly and stably meet requests from the public in healthcare, food packaging and other fields where demand often fluctuates dramatically.

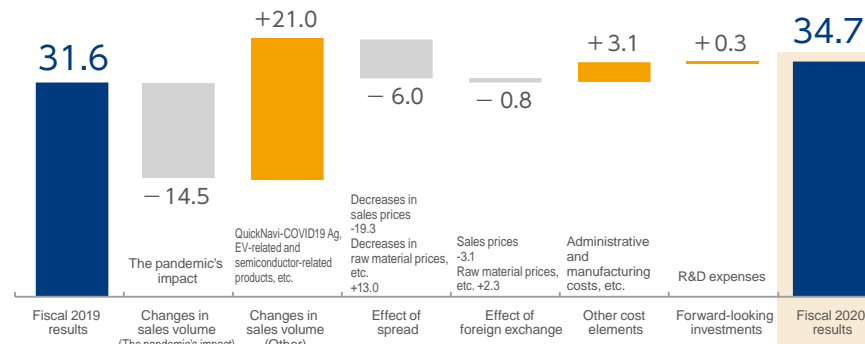
#### Positive factors

- Released QuickNavi-COVID19 Ag, a rapid diagnostic testing kit for detecting novel coronavirus antigen
- Demand grew in the environment and energy field (Accelerated popularization of EVs, 5G devices and a surge in semiconductor demand)
- Streamlined administrative costs incurred by headquarters departments and fixed costs at plants

#### Negative factors

- A temporary downturn in chloroprene rubber sales
- A decline in sales of diagnostic reagents other than QuickNavi-COVID19 Ag

Breakdown of Factors Affecting Operating Income (year-on-year change) (Billions of yen)



In fiscal 2020, we benefited from growth in demand for offerings related to EVs, semiconductors, 5G communications infrastructure and renewable energy in the environment and energy field. In the healthcare field, shipments of QuickNavi-COVID19 Ag, which was released in August 2020, contributed significantly to operating results. As a result, operating income was ¥34.7 billion, up ¥3.1 billion year on year and hitting a record high, thanks to earnings from specialty businesses outweighing the negative impact of the novel coronavirus pandemic.

## A Message from the President

First of all, I would like to extend my deepest condolences to any who have lost loved ones to the novel coronavirus. At the same time, I pray for the earliest possible recovery of people infected with the disease. Also, I would like to express my wholehearted respect and gratitude to the frontline medical practitioners fighting to save lives and other essential workers who, in the face of the pandemic, strive to fulfill their duties to support our daily lives.

On April 1, 2021, I assumed the office of the president of Denka Company Limited. Building on our predecessors' 106 years of hard-won successes, I am determined to help all Group members pull together to achieve the targets of the Denka Value-Up management plan.

Under Denka Value-Up, we are pursuing the specialization of our operations in the three priority fields, namely, the environment and energy, healthcare and high-value-added infrastructure, while pushing ahead with the business portfolio shift.

During the course of these endeavors, we have seen drastic changes in the operating environment. In addition to a global trend toward decarbonization, public awareness of environmental issues, such as marine plastics, is ever higher. Also, the current pace of digital transformation and other technological innovation is far faster than expected.

At the same time, the global community is facing critical situations on multiple fronts, due to such factors as the outbreak of the novel coronavirus and ever more frequent occurrences of natural disasters

of unprecedented magnitude.

Although the business environment remains unclear, I believe that such situations can yield opportunities. As we embark on the last two years of the Denka Value-Up management plan period, we are taking a fresh look into our mode of operations and organizational structure while striving to become a company that values the aspirations of individual employees and helps every one of them achieve personal growth in the course of their duties.

To this end, we will develop a workplace environment in which everyone can work safely while staying mentally and physically healthy. In these ways, Denka aims to become a Specialty-Fusion Company that decisively takes on the challenge of delivering solutions for various social issues and is irreplaceable to society.

We sincerely thank our stakeholders and ask for their ongoing support of the Denka Group.

### Toshio Imai

Representative Director, President & CEO

#### Career Summary

April 1982	Joined the Company
October 2006	General Manager of the Styrene Division
June 2011	General Manager of the Corporate Planning Dept.
April 2013	Executive Officer
June 2019	Director, Managing Executive Officer
April 2020	Director, Senior Managing Executive Officer
April 2021	Representative Director, President & CEO



## An Interview with the President

Q1. Please share your impression on fiscal 2020, which was heavily influenced by the novel coronavirus pandemic.

### A. We made a significant step forward toward becoming a Specialty-Fusion Company.

#### ■ One-Year Endeavor to Focus on and Identify What Is Truly Essential

During fiscal 2020, the pandemic placed heavy restrictions on our business activities, while similar issues affected people all around the world. In this sense, it was an unprecedented period. We believe that, as a result, the pandemic caused the general public to refresh their recognition of the importance of focusing on what is truly essential. To date, Denka has placed a strong emphasis on face-to-face business interactions as it values interpersonal communications in line with a sincerity-based corporate culture. However, after being prompted by the pandemic to introduce remote meeting systems, we found ourselves to be able to secure robust communications online. This suggests that effective communication does not necessarily depend on particular methods. Rather, the content is of importance. Accordingly, we have become more open than ever to adopt alternative methods as long as they are efficient.

Q2. What does “Specialty” actually mean for Denka?

### A. “Specialty” means operations in areas where Denka is unsurpassed and through which it can contribute to society.

Denka Value-Up’s fundamental concept is to focus on developing specialty businesses to transform our portfolio. Then, what are specialty businesses? These can also be described as “endeavors we are better at doing than anyone else.” We aim to become a company that, through such endeavors, decisively takes on the challenge of delivering solutions for issues society is now confronting. This is our ideal with regard to what Denka should look like upon the accomplishment of Denka Value-Up.

Now, I will showcase types of endeavors Denka is better at doing than any other company. For example, we employ unique high-temperature calcining technologies to produce functional fillers, which are an essential ingredient of fast-advancing electronic materials used in semiconductors, lithium ion secondary batteries and other products. Also, we help prevent the



#### ■ Combating Fallout from the Pandemic with All Employees Working as One

Over the course of one year, our business activities were thus confronted by difficulties due to unfamiliar circumstances like those I have just described. Nevertheless, the outcomes of our ongoing initiatives under Denka Value-Up yielded an operating income of ¥34.7 billion, albeit lower than the target level set forth by the management plan, hitting a record high. This is a testament to steady progress we have made thus far in executing Denka Value-Up growth strategies.

The aforementioned outcomes also included some accomplishments only Denka is capable of making. For example, as part of our efforts to help combat the pandemic, we resumed the manufacture of diethyl malonate, upon government request and raised our capacity for antigen rapid testing kit production. To achieve this, our employees worked hard as one to fulfill their missions, together making a significant step forward in fiscal 2020 toward our goal of becoming a Specialty-Fusion Company.

emergence of a new infectious disease pandemic and its resurgence via the supply of antigen rapid testing kits that take full advantage of a solid technological foundation we earned in the course of developing the immunochromato-method and other cutting-edge testing technologies over many decades. Furthermore, we possess a number of proprietary technologies that lend us distinctive strengths in such areas as precision polymerization, which improves functionalities of elastomers and plastics, and special cement additives, which increase concrete’s added value via the enhancement of its functions and environmental friendliness.

Strengthening our focus on these operations, which allow us to gain significant presence amidst the megatrends, we will transform our portfolio and thereby become a Specialty-Fusion Company consisting of specialty businesses.

## An Interview with the President

## Q3. Embarking on the last two years of the Denka Value-Up management plan period, what future outlook do you currently have?

## A. We will strive for even higher targets with an eye to the period following the conclusion of Denka Value-Up.

Having launched Denka Value-Up in April 2018, we completed the first three years of the plan and entered its finishing phase. In the course of reviewing the last three years and addressing newly discovered challenges, we have determined that our focus must be placed on the three “Value-Up” initiatives: Business Value-up; Environmental Value-Up; and HR Value-Up. In line with this focus, we have established a policy for the plan’s remaining two years, defining this period as a preparatory period in which we accumulate capabilities to achieve even higher targets to be set forth thereafter in the next management plan. At the same time, for fiscal 2022 we will aim for an operating income of ¥50.0 billion as initially planned.

### ■ The Three Value-Up Initiatives

Under the banner of three Value-Up initiatives, we will address issues described as follows.

#### 1. Business Value-Up

We will push ahead further with specialization. To this end, we will proactively introduce technologies for digital transformation (DX). Not only do we digitize our existing operations, we will take on the challenge of transforming our mode of doing our work. We will also consider entrusting external companies with types of operations they are better at doing than ourselves. Thus, we will fix our focus on what we are better at doing than anyone else. By the end of fiscal 2022, we intend to announce a clearly defined roadmap for the business portfolio shift through these endeavors.

#### 2. Environmental Value-Up

Recently, we announced an ambitious target of achieving carbon neutrality by the end of 2050 in an effort to step up environmental management. When it comes to achieving carbon neutrality, conventional modes of emission control, such as energy saving, will not suffice. We need technological innovation. Accordingly, we will act in proactive collaboration with external research organizations and business corporations to take on this major challenge. Currently, the annual volume of CO<sub>2</sub> emissions from the entire Denka Group amounts to around 2 million tons. We also engage in the production of plastics, with their forms ranging from raw materials to processed products. Strongly conscious of our social responsibilities to promote

countermeasures to problems caused by climate change and plastic waste, we will decisively work to resolve them.

#### 3. HR Value-Up

We believe that an improvement in our corporate value and our success in specialization largely hinge on our efforts to help each employee raise their value creation capabilities. That is why we named HR Value-Up as a third, extremely important, Value-Up initiative. Through this initiative, we hope to create a company in which employees can find themselves achieving tangible personal growth through their professional duties. Going forward, Denka is expected to enter an unprecedented phase in the Company’s history. As we do so, everyone at Denka, whether they are employees or officers, must strive for Value-Up for themselves.

### Business Value-Up



Transform our portfolio by focusing on operations in areas where Denka is unsurpassed



### Environmental Value-Up



The volume of GHG emissions (compared with the fiscal 2013 level): Aim for a 50% reduction by the end of fiscal 2030 and net zero in fiscal 2050



### HR Value-Up



Create a company in which employees find their jobs rewarding and feel that they are attaining tangible personal growth



## An Interview with the President

### ■ Challenges to Be Addressed in the Next Two Years

In the next two years, we also intend to take on a major challenge of envisioning what Denka should aim to be after the conclusion of Denka Value-Up. Moreover, we must determine quantitative indicators enabling us to objectively evaluate progress in our initiatives to this end. It should not be mere a fancy dream. Rather, we must take a down-to-earth approach to formulate a path toward our future ahead. This will, we believe, become the foremost challenge Denka will have to take on.



### Q4. What does ESG-oriented business management mean to Denka?

#### A. By addressing ESG issues, we aim to become a company genuinely needed by society.

##### ■ Setting Our Sights Higher Is of the Utmost Importance

With United Nations Sustainable Development Goals (SDGs) as its compass, Denka is striving to become a company that is genuinely needed by society through a variety of initiatives intended to contribute to the realization of a sustainable society.

To this end, we consider it essential to help each employee discover how relevant their everyday duties are to social contribution. Also, we need to encourage them to set their sights high in this regard. I believe that pointing employees in this direction is of the utmost importance. We will thus deliver solutions to issues society is confronting through types of operations we are better at doing than anyone else. This is exactly what Denka should aim to be upon the accomplishment of Denka Value-Up.

##### ■ To Our Stakeholders

So far, we have been able to make steady progress in Denka Value-Up and concluded that our fiscal 2022 operating income target of ¥50.0 billion is feasible as initially planned. This is also indicative of assiduous efforts undertaken by each employee. Over the course of the next two years, we will undertake strategic investment to achieve sustainable growth while maintaining our stance toward robust shareholder returns in line with a basic policy of aiming for a total shareholder return ratio of 50%. We hope to ensure that all of our shareholders are proud of investing in Denka. Looking ahead, we ask for your continued support for our endeavors.

## Management Plan

# Denka Value-Up

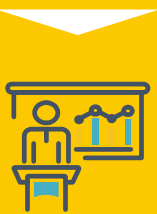
Fiscal 2018- Fiscal 2022

## Three Value-Up Initiatives

## Our Ideal with Regard to What Denka Must Look Like

A company that is genuinely  
needed by society and  
irreplaceable to the world  
and that employees and  
stakeholders are proud of

### Business Value-Up



Transform our portfolio by  
focusing on operations in  
areas where Denka is  
unsurpassed

### Environmental Value-Up



The volume of GHG  
emissions (compared  
with the fiscal 2013 level):  
Aim for a 50% reduction  
by the end of fiscal 2030  
and net zero in fiscal 2050

### HR Value-Up



Create a company in which  
employees find their jobs  
rewarding and feel that  
they are attaining tangible  
personal growth



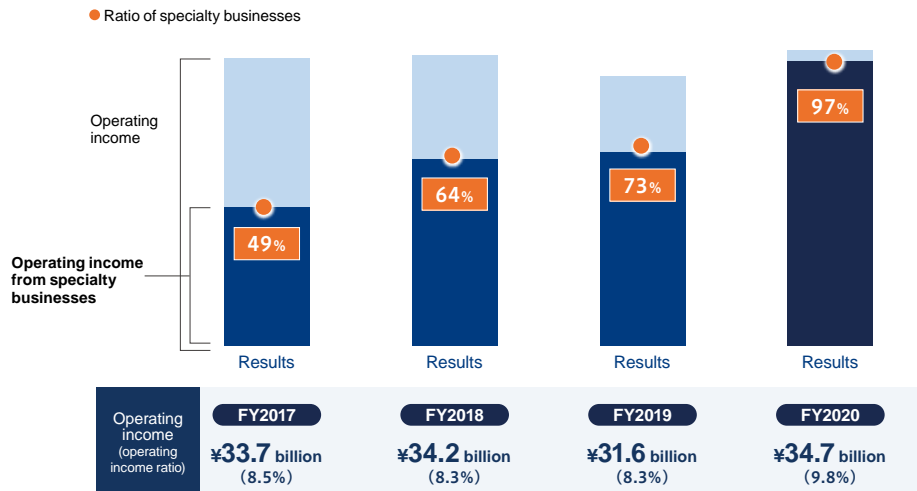
## 1. Progress of the Denka Value-Up Management Plan

In fiscal 2020, the third year of Denka Value-Up, growth strategies centered on the environment and energy and healthcare fields yielded steady results despite lingering uncertainties attributable to the pandemic's impact on the market environment. Moreover, the shift from existing core businesses to specialty businesses in such fields as functional resins continued to advance.

### Numerical Targets

From fiscal 2020 onward, the economic environment remained extremely harsh due to the enforcement in countries around the world of significant restrictions aimed at limiting economic activities in order to prevent the spread of the novel coronavirus.

Against this backdrop, we were able to steadily progress along the path toward our goal of becoming a Specialty-Fusion Company as defined under the Denka Value-Up management plan. As a result, fiscal 2020 operating income stood at ¥34.7 billion, with an operating income ratio of 9.8%. The ratio accounted for by specialty businesses on an operating income ratio basis was 97%, due in part to decreased earnings from core businesses.



Note: Denka defines a specialty business as one that meets or has the potential to meet the following conditions in the near future: 1) being consistent with the Company's commitment to addressing ESG issues; 2) boasting distinctive strengths and product value; 3) possessing resilience to changes in external factors; and 4) commanding an industry-leading market share.

### Financial Strategies

While continuing initiatives aimed at maintaining the soundness of our financial base, we intend to execute strategic investment centered on specialty businesses to secure "Sustained Growth" and "Sound Growth." With regard to shareholder returns, we remain committed to a targeted total shareholder return ratio of 50% in line with the shareholder return policy we established in November 2014. In addition to prioritizing dividends, we will flexibly execute share repurchases by giving due consideration to funding demand and trends in stock prices.

#### Investment and Financing Plan

Estimated total for the five-year period:

**¥210.0 billion**

Expected to surpass the initial plan reflecting the proactive execution of strategic investment in specialty businesses and process reforms

Breakdown

- Strategic investment: ¥85 billion (Planned: ¥75.0 billion)
- Regular investment: ¥125 billion (Planned: ¥75.0 billion)

Note: Denka has adopted the weighted average cost of capital (WACC) as a criterion for its judgment of strategic investment.

#### Shareholder Returns

We remain committed to a targeted total shareholder return ratio of 50%.

Total shareholder return ratio = (Dividends paid + treasury stock purchased) / consolidated net income

**Fiscal 2020 Achievements**

In fiscal 2020, we paid an interim dividend of ¥60 per share and a year-end dividend of ¥65 per share. With full-year dividends totaling ¥125 per share, the dividend payout ratio stood at 47%.

		FY2018 results	FY2019 results	FY2020 results	FY2021 forecasts
Net income	(billion yen)	25.0	22.7	22.8	29.0
Dividends per share	(yen/share)	120.0	125.0	125.0	135.0
Total dividends	(billion yen)	10.5	10.8	10.8	11.6
Dividend payout ratio		42%	48%	47%	40%
Shares repurchased	(billion yen)	2.1	-	-	
Total shareholder returns	(billion yen)	12.6	10.8	10.8	
Total shareholder return ratio		50%	48%	47%	
Depreciation and amortization	(billion yen)	22.9	22.5	22.9	23.5
Capex, investment and financing	(billion yen)	32.8	34.2	42.3	43.0
ROE		10.3%	9.1%	8.8%	(10.5%)

## 2. Denka Value-Up Achievements and Issues to Be Addressed

Although we have made steady progress thus far in production, R&D and operational process reforms, we are only halfway to achieving our goals regarding the DX-driven business model and organizational reforms, including the recruiting and development of digital specialists to support such reforms. Moreover, as part of human resource (HR) strategies, we need to continue to develop platforms, systems and training programs and otherwise introduce tangible measures aimed at effectively nurturing individuals with specialized skills. Furthermore, we consider it essential to accelerate the business portfolio shift over the course of the remaining two years of the Denka Value-Up period in order to achieve the goals of this management plan.

### Introduction of Innovative Processes

#### 1. Achievements



Production process reforms

- Advanced the digitization and automation of production processes



R&D process reforms

- Developed an R&D assistance system while strategically nurturing researchers



Operational process reforms and work style reforms

- Promoted a switchover to e-authorization system and a shift to online as well as shorter meetings

#### 2. Issues to Be Addressed Going Forward

##### 1. DX

- Promote the DX-driven business model and organizational reforms
- Secure digital specialists



##### 2. HR Strategies

- Enhance operational productivity via the incorporation of flexible work styles
- Hire excellent human resources regardless of gender, native language or age



### Business Portfolio Shift

In the environment and energy field, in which we promote our specialty businesses, we boosted our production capacity for spherical alumina, silicon nitride powder and other offerings while releasing spherical magnesium oxide, a cutting-edge functional ceramic material. In this field, it is hard to forecast demand over the medium to long term and judge the size and timing of capital expenditure. In the healthcare field, we developed a rapid diagnostic testing kit for detecting novel coronavirus antigen and resumed the production of diethyl malonate. On the other hand, we are confronting issues associated with delays in our initiatives to get new businesses on a profitable track and expand our overseas operations.

Also, in terms of specializing our key operations and redefining the positioning of the commodity businesses, we need to promote the development of “specialty grade” products while accelerating the thoroughgoing implementation of countermeasures to improve low-profitability businesses.

#### 1. Accelerate the Growth of Specialty Businesses

	Achievements	Issues
The environment and energy	<ul style="list-style-type: none"> <li>Boosted production capacity for electronic materials for use in EVs and 5G devices</li> </ul>	<ul style="list-style-type: none"> <li>The need to accurately and swiftly respond to a fast-evolving market environment</li> </ul>
Healthcare	<ul style="list-style-type: none"> <li>Released a rapid diagnostic testing kit for detecting novel coronavirus antigen</li> <li>Decided to increase influenza vaccine production capacity</li> </ul>	<ul style="list-style-type: none"> <li>Delays in achieving profitability for new businesses and expanding our overseas operations</li> <li>Dependence on demand arising from the spread of influenza virus</li> </ul>
High-value-added infrastructure		<ul style="list-style-type: none"> <li>Stagnant growth due to delays in overseas expansion</li> </ul>

#### 2. Specialize Our Key Operations

- Shifted polystyrene production lines in Singapore to MS (SMMA) resin production
- Made entries into the biostimulant market
- (Issue) Delays in the development of specialty grade products

#### 3. Redefine the Positioning of the Commodity Businesses

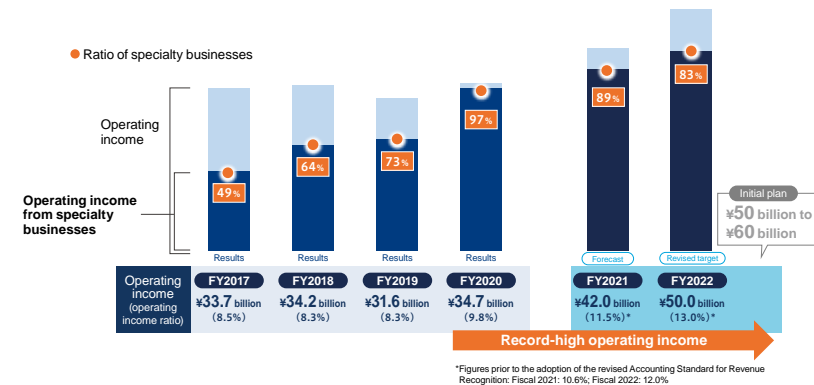
- Terminated calcium carbide production at the Omuta Plant
- (Issue) Accelerated the thoroughgoing implementation of countermeasures to improve low-profitability businesses



### 3. To Become a Specialty-Fusion Company

In May 2021, we announced numerical targets for the two fiscal years leading up to fiscal 2022, the final year of the Denka Value-Up management plan, as part of the interim review of such plan. Although the market environment still remains unclear due to fallout from the novel coronavirus pandemic, we expect profit from Electronics & Innovative Products to expand on the back of such megatrends as the popularization of EVs and 5G devices while forecasting solid growth in earnings from healthcare-related operations. Moreover, we anticipate the accelerated specialization of key operations and recovery in chloroprene rubber demand to have positive effects. Taking these factors into account, we aim to achieve operating income of ¥42.0 billion in fiscal 2021 and ¥50.0 billion in fiscal 2022.

#### Revision of Numerical Targets



#### Initiatives for the Next Two Years

Here, we elaborate on the three Value-Up initiatives aimed at achieving the numerical targets discussed above and thereby securing our standing as a Specialty-Fusion Company that is irreplaceable to society.




### Three Value-Up Initiatives






## Business Value-Up

Transform our portfolio by focusing on operations in areas where Denka is unsurpassed

#### Accelerate growth of specialty businesses


The environment and energy	<ul style="list-style-type: none"> <li>Pursue sales expansion in EV-, 5G-, semiconductor- and renewable energy-related markets</li> <li>Focus on developing leading-edge products</li> </ul> 
Healthcare	<ul style="list-style-type: none"> <li>Proactively contribute to countermeasures against a new infectious disease pandemic and its resurgence</li> <li>Deliver solutions supporting genome-based diagnosis and digitized medical practices</li> </ul> 
High-value-added infrastructure	<ul style="list-style-type: none"> <li>Promote overseas expansion and new product development while thoroughly revamping low-profitability products</li> <li>Refresh the growth track for our infrastructure business in line with its ongoing positioning as a priority field</li> </ul> 

#### Achieve business model and organizational reforms via the DX-driven integration of each process

Production process reforms	<ul style="list-style-type: none"> <li>Focus on the automation of visual inspections, the introduction of robots and the enhancement of sensors</li> </ul> 
R&D process reforms	<ul style="list-style-type: none"> <li>Initiate the full-scale utilization of the R&amp;D assistance system and material informatics</li> </ul> 
Operational process reforms and work style reforms	<ul style="list-style-type: none"> <li>Shift to online meetings while digitizing documentation and authorization process</li> <li>Eliminate dirty, dangerous and physically demanding aspects of workplaces</li> </ul> 

#### Specialize our key operations and redefine the positioning of the commodity businesses

- Establish milestones for the portfolio shift in the next two years regarding businesses in need of restructuring



## Environmental Value-Up

The volume of GHG emissions (compared with the fiscal 2013 level): Aim for a 50% reduction by the end of fiscal 2030 and net zero in fiscal 2050

#### ▶P.23 Initiatives to Achieve Carbon Neutrality



## HR Value-Up

Create a company in which employees find their jobs rewarding and feel that they are attaining tangible personal growth

#### ▶P.29-30 Employee Happiness

- Define KPIs with regard to our efforts to secure human resources with specialized skills, promote diversity and execute work style reforms
- Reform HR systems associated with evaluation, hiring and training, and innovate our working environment
- Conduct HR training for the early development of senior management candidates while decisively refreshing organizational and staff composition
- Promote health & productivity management by, for example, developing an environment that empowers employees to realize their full potential

Management plan "Denka Value-Up" <https://www.denka.co.jp/eng/ir/plan/>

## The Denka Group's Priority Management Materiality Issues

In line with the corporate philosophy enshrined in The Denka Value, the Denka Group identified priority CSR materiality issues that, on April 24, 2017, its Management Committee approved.

To clearly define the relationship between Denka's materiality issues and the Denka Value-Up management plan, at the beginning of fiscal 2020 we changed the terminology used to refer to our materiality issues, switching from "priority CSR materiality issues" to "priority management materiality issues."

These materiality issues consist of 13 items, each of which is a matter of critical importance for a chemical manufacturer committed to fulfilling its social responsibilities. In line with these 13 items, the chart shown below specifies areas in which we commit ourselves to supporting sustainable social development via the fulfillment of our responsibilities as a manufacturer and the provision of solutions. The chart also indicates how our pursuit of these materiality issues relates to the United Nations Sustainable Development Goals (SDGs).

In particular, we expect our product technologies in the environment and energy, healthcare, and high-value-added infrastructure—fields in which the Denka Group boasts strengths—to greatly contribute to the realization of the SDGs.

With the formulation of our next management plan currently under way, we are engaged in discussion regarding the identification of numerical targets for these materiality issues as part of said plan, with SDGs as our compass. Looking ahead, the Denka Group will push ahead with ESG-oriented management via the pursuit of materiality issues.

### Denka's Materiality Issues Aimed at Realizing SDGs

Category	13 materiality issues	Relevant SDGs	
		Fulfill manufacturers' responsibilities	Provide solutions
Prioritization of safety	Reinforce security and disaster prevention measures		
	Maintain occupational safety and health while creating a vibrant and comfortable workplace environment		
Products and technologies	Create new products and technologies that contribute to sound social development		
	Ensure product safety		
Solid corporate governance / Corporate conduct deserving of stakeholder trust	Ensure that our corporate philosophy is embraced by every employee and transform our corporate culture		
	Improve corporate governance		
	Maintain strict compliance with laws, regulations and corporate ethics		
Employee happiness	Nurture human resources and pass down our technological heritage to future generations		
	Embrace diversity and offer equal opportunities		
	Help employees strike a work-life balance and promote employee health		
Environmental preservation	Prevent air, water, soil and other environmental pollution		
	Promote climate change countermeasures (curb global warming, reduce GHG emissions and adapt to climate changes)		
Dialogue with society / Partnership	Maintain appropriate and timely disclosure of corporate information and establish bidirectional communications		

## Responsible Dialogue with Stakeholders

The Denka Group considers maintaining responsible dialogue with stakeholders an integral part of the process of assessing the social responsibilities it is called upon to bear, the degree of its social contributions and stakeholder expectations with regard to improvement of its corporate value.

The diagram below illustrates our approach to dialogue with each stakeholder group as well as value created via such dialogue and its significance.

Note: Descriptions contained in the diagram are organized in line with the Denka Group CSR Basic Policies. For more details, please also visit our ESG information website and see the section titled "Denka's CSR Management."

ESG information site: Denka's CSR Management [https://denka\\_sustainability.disclosure.site/en/themes/739](https://denka_sustainability.disclosure.site/en/themes/739)



ESG information site: Social Dialogue and Partnership [https://denka\\_sustainability.disclosure.site/en/themes/661](https://denka_sustainability.disclosure.site/en/themes/661)

Special  
Feature

## Our Healthcare-Related Operations—Taking on the Challenge of Blazing a New Path toward the Future

Denka's healthcare-related operations encompass the fields of disease prevention, diagnosis and treatment. Having completed the business integration with the former Denka Seiken, our Life Innovation Division made a fresh start in 2020 under a new business structure. In line with a philosophy of "respecting the dignity of life and protecting people's health," we are taking on the ongoing challenge of expanding into new business fields and blazing a path toward the future.

## Current Technology



Stably provide influenza vaccines

Prevention

### Influenza HA vaccines

- Since 1972, we have engaged in the manufacture and sale of influenza HA vaccines, playing our part in the stable provision of vaccines.
- In November 2020, we completed the construction of a new liquid vaccine production facility in which we have invested approximately ¥16.0 billion, with the aim of augmenting our supply capacity in response to growing social needs for vaccination. Operational kickoff is scheduled for the 2022 flu season after the verification of facilities and other preparatory processes.



Swiftly counter an infectious disease pandemic

Diagnosis

### QuickNavi-COVID19 Ag, a rapid diagnostic testing kit for detecting novel coronavirus antigen

- Since its founding in 1950, the former Denka Seiken had been a developer and supplier of a variety of infectious disease diagnostic reagents. Although the development of such reagents usually requires at least two or three years, QuickNavi-COVID19 Ag was deemed eligible for special regulatory approval. Thanks also to the cooperation of the National Institute of Infectious Diseases, the Japan Agency for Medical Research and Development (AMED) and other external partners, we succeeded in commercializing this product in only approximately six months and thus launched its supply in August 2020.
- What distinguishes QuickNavi-COVID19 Ag from PCR testing is the benefit it offers as a rapid diagnostic testing kit. Without the need for any diagnostic equipment, this product enables frontline medical practitioners to visually confirm test results, with the time required for testing as short as approximately 15 minutes. Denka is currently engaged in the development of supply of QuickNavi series rapid diagnostic testing kits encompassing a diverse range of infectious diseases via the use of its proprietary technology. Through these efforts, we are assisting medical practitioners in their battle against infectious diseases and, by doing so, helping to relieve them of the burden of disease diagnosis.



Contribute to the maintenance and enhancement of quality of life (QOL) in an aging society

Treatment

### Macromolecular sodium hyaluronate preparation and joint function improvers

- We manufacture SUVENYL joint function improver,\* and to this end, take advantage of our unique fermentation method to produce raw material macromolecular sodium hyaluronate.
- The rapid aging of society entails an increase in the number of people who suffer from knee osteoarthritis and other symptoms causing knee joint pain. Our offerings help maintain and enhance QOL for such people so that they can lead energetic lives.

\* Manufactured by Denka, SUVENYL is marketed by Chugai Pharmaceutical Co., Ltd. as a distributor.



Special  
Feature

Denka will continue to develop and manufacture unique products while remaining true to a fundamental business approach guided by a respect for the dignity of life.

Philosophy

Respecting the dignity of life and protecting people's health



Protect people around the world from a new infectious disease pandemic and its resurgence  
Help people around the world improve their QOL by delivering products designed to meet the needs of frontline medical practitioners

## Future Technology



A technological platform for developing next-generation vaccines and diagnostic reagents

Prevention

### Development of norovirus vaccines via the use of magnICON

- We are currently developing a norovirus vaccine and a new diagnostic reagent via the use of the magnICON technological platform, which is capable of efficiently manufacturing proteins using genetically modified tobacco plants.
- This technological platform boasts such features as superior cost effectiveness and safety as well as a versatility that enables flexible production.
- Icon Genetics GmbH, a Germany-based Group subsidiary, is engaged in the clinical trial of norovirus vaccine in Europe. It also acquired land for new facility construction in anticipation of future business expansion.



A new diagnostic testing technology for diagnosing septicemia

Diagnosis

### Simultaneous multiplex assays backed by innovative genome detection technology

- Septicemia refers to a serious condition involving organ damage caused by the proliferation of bacterial and other pathogens in the body. The conventional method for diagnosing this disease is dependent on a microbial culture using patient blood and therefore requires two days or more until the causative organism is determined. The earlier detection of the root causes of symptoms will help mitigate fatality risk while enabling physicians to select optimal antimicrobial drugs and, therefore, better positioning them to counter the emergence of drug resistant bacteria.
- IntelliPlex is a highly sensitive simultaneous multiplex assay technology developed by the Taiwan-based PlexBio, our strategic partner. Taking advantage of this technology, we are currently developing a diagnostic reagent and equipment with the aim of reducing the time span required for the diagnosis of septicemia to one day or less.

#### Processes for septicemia diagnosis

Collect blood

Microbial culture  
using bloodMost time-consuming  
process requiring human  
operationsIdentification  
testingIdentifying the  
hazardousness  
of pathological  
microorganisms and  
determining the  
bacterial types  
is also time consumingDrug sensitivity  
testingTesting must be  
performed to  
confirm whether  
each causative  
bacterium can be  
subdued by  
antibacterial drugs

An innovative cure for battling cancer

Treatment

### Development of technologies for manufacturing the G47Δ oncolytic virus

- G47Δ is an oncolytic virus developed by Dr. Tomoki Todo (a Professor at the Institute of Medical Science, University of Tokyo) using a herpes simplex virus type-1 (HSV-1), a genetically modified virus designed to selectively proliferate in and destroy cancer cells. Currently, G47Δ is attracting significant attention as an epoch-making cancer drug that is totally different from existing anticancer drugs or radiation therapy.
- Since the formulation of G47Δ is the virus itself, its manufacture requires special techniques. Drawing on its technological strengths and experience in the manufacture of vaccines and virological diagnostic reagents, Denka has been developing a technology for manufacturing the G47Δ upon the request of Dr. Todo. In June 2021, Daiichi Sankyo Company, Limited, which is expected to manufacture and market G47Δ obtained ministerial approval for its manufacture and sale in Japan. This approval is classified as a conditional and time-limited approval given to regenerative medicine products aimed at treating malignant gliomas. Going forward, Denka will be commissioned by Daiichi Sankyo to manufacture this oncolytic virus.

## Our Vision for 2030

# The Denka Group's Social Responsibilities and Contributions

As a producer of chemical and pharmaceutical products, the Denka Group bears various responsibilities attendant to its value chain for delivering goods and solutions to society.

Meanwhile, the twelfth of the United Nations Sustainable Development Goals (SDGs), a set of international goals to be achieved by 2030, calls for public awareness of "Responsible consumption and production," while the seventeenth of the SDGs aims to facilitate "Partnerships for the goals." Based on the concept of a circular economy, we have identified issues the Denka Group must address and responsibilities it must assume in support of these goals and, to this end, are focused on applying the unique strengths of the Denka Group and the areas in which it is best positioned to contribute to society.

- : Social responsibilities to be fulfilled via manufacturing
- : Responsibilities to the environment, resource preservation and safety
- : Business strategies

## RECYCLING

Working in tandem with other members of society, we will create manufacturing processes and ecosystems designed to deliver products that are long-lived or easy to recycle while minimizing their footprints on the natural environment, including on marine, land and other living organisms. For example, we will recycle waste plastics into raw material monomer for use in the manufacture of new products. We will also produce recycling-oriented materials that smooth the separation of parts and/or cleansing, while developing highly durable products that are inherently capable of self-restoration if cut or cracked as well as those that naturally repel stains. Furthermore, we will incorporate CO<sub>2</sub> as a plastic ingredient. In all these pursuits, we remain strongly committed to lengthening product life and promoting recycling.



### Social issues (risks)

- Increasingly serious consequences of climate change attributable to global warming
- Problems arising from marine plastic pollution
- Aging of concrete and other buildings and civil infrastructure

### Promote a circular economy

- Establish a plastic recycling ecosystem
- Develop CO<sub>2</sub> and carbon circulation technologies

→ Page 23 Initiatives to Achieve Carbon Neutrality

→ Page 26 Initiatives to Reduce Environmental Burden

### Enhance infrastructure resilience by delivering technologies to lengthen the durability of and restore concrete and other structures

- Contribute to the advancement of concrete and special cement additive technologies

→ Page 37 Elastomers & Infrastructure Solutions

## USING

Targeting "Generation Z,"\* which prizes empathy, sharing economies and respecting the unique attributes of individuals, as well as people who are highly concerned about ethical consumption, we will deliver manufacturing proposals for products and solutions that resonate with these sensibilities and help consumers discover new value while focusing on ensuring functionalities and eco-friendliness of our offerings. We will also incorporate findings from biomimetics to advance our R&D aimed at creating eco-friendly products that generate minimal waste. Moreover, we will uphold our commitment to ensuring the health of product users. In line with these pursuits, we will be deeply involved in the provision of products and services aimed at assisting health maintenance and disease prevention as well as those addressing pre-symptomatic conditions. Furthermore, we will help reduce the volume of food waste associated with processes ranging from harvesting through transport, processing and sale. In addition, as part of efforts to ensure food safety, we will contribute to logistics efficiency and help consumers smoothly receive fresh food.



### Social issues (risks)

- Food shortages arising from growth in global population
- Global warming attributable to greenhouse gas emissions
- Increasing magnitude of damage caused by natural disasters due to climate change
- Outbreak of a new infectious disease pandemic and its resurgence
- Aging of population and the resulting diversification of diseases among the general public

\* From 2030 onward, Generation Z are expected to be in their early 30s and become leaders of society around the world.

### Protect people's lives and well-being

- Advance disease prevention, diagnosis and treatment technologies while helping improve pre-symptomatic conditions
- Contribute to the establishment of technologies to prevent, diagnose and treat diseases arising from the novel coronavirus

→ Page 19 Special Feature: Our Healthcare-Related Operations

→ Page 35 Life Innovation

### Support the development and maintenance of resilient infrastructure and safe transportation methods

- Provide chemical and electronic materials for automotive parts and rolling stock
- Provide special cement additives for road and tunnel construction

→ Page 33 Electronics & Innovative Products

→ Page 37 Elastomers & Infrastructure Solutions

### Pursue innovation in electric vehicle technologies

- Battery material and high-temperature control technologies

→ Page 33 Electronics & Innovative Products

### Contribute to food safety and the resolution of food problems

- Help providers adapt to "new norms" in lifestyles, such as the growing trend toward solitary dining, by delivering food packaging materials that help preserve freshness and otherwise supporting stable food supply

→ Page 37 Elastomers & Infrastructure Solutions

→ Page 39 Polymer Solutions

### Contribute to the popularization of autonomous driving systems and drones

- Contribute to 5G and other communication technologies via the supply of chemical and electronic materials

→ Page 33 Electronics & Innovative Products

### Develop materials free of fossil resources

- Employ naturally derived ingredients from plant-based and other sources as well as microorganism cultivation

→ Page 19 Special Feature: Our Healthcare-Related Operations

→ Page 39 Polymer Solutions



**Young Employees' Vision of Denka in the Future**

I would like to help Denka become capable of leveraging its second-to-none technological capabilities to develop new markets, tapping into such fields as aerospace and deep-sea development. Also, I want Denka to pursue sustainable manufacturing, to this end achieving technological innovation in resource recycling and manufacturing process.



**Hirofumi Hara**  
Denka Chemicals Development Suzhou Co., Ltd.

I hope for Denka to become an even better workplace supported by automated manufacturing process as well as digitized documentation and record-keeping functions, which provide human operators with more robust safety assurance and fail-proof assistance. Personally, I would like to contribute to the well-being of people around the world by delivering Denka's diagnostic reagents globally.



**Yumiko Ito**  
Chemical Luminescence Reagent Dept., Kagamida Plant, Gosen Plant

I would like to help Denka become capable of constantly delivering the value needed by society while creating new value and technologies. I also hope that Denka will become a place that offers an innovative working environment suited to all employees regardless of age, gender or nationality and that helps them achieve ongoing personal growth through their duties.



**Ro Yobai**  
Advanced Specialty Materials Dept., Electronics & Innovative Products

**MANUFACTURING**

Our factories will be even more worker- and eco-friendly and coexist harmoniously with the people, flora and fauna of their neighboring communities in addition to consuming less fossil fuel and minimizing the use of fossil-based resources as raw materials. Advances in IoT, robotics, VR/AR and other technologies will help establish labor-saving "smart" manufacturing processes, resulting in a lean production system capable of handling the small-lot production of multiple items while ensuring high quality. Simultaneously, we will realize a safer labor environment in which everyone can work with confidence. Thanks to the popularization of AI-based development activities and the use of a "smart" office/factory, our employees will be empowered to concentrate on tasks only humans can handle, shifting their focus from simple manufacturing to value creation.



**Social issues (risks)**

- Global warming attributable to greenhouse gas emissions
- Environmental destruction due to the emission of hazardous substances
- Aging population with a low birth rate, human resource shortages and the pressing need to cut excessive working hours

**Achieve carbon-neutrality and reduce the environmental burden to zero**

- Develop CO<sub>2</sub> and carbon circulation technologies while incorporating hydrogen-fired energy
- Promote the use of renewable energy

→ Page 23 Initiatives to Achieve Carbon Neutrality  
→ Page 26 Initiatives to Reduce Environmental Burden

**Ensure occupational safety and health while creating a lively and sound workplace environment**

- Reduce intrinsic dangers associated with our operations and improve the workplace environment

→ Page 32 Placing the Utmost Priority on Safety

**Push ahead with energy-saving measures while promoting the use of renewable energy**

- Enhance energy efficiency while expanding our hydroelectric power generation capacities
- Strive to achieve carbon neutrality

→ Page 25 Initiatives to Promote the Use of Renewable Energy  
→ Page 27 Our Support for the Task Force on Climate-Related Financial Disclosures (TCFD) Recommendations  
→ Page 7 Financial and Non-Financial Highlights

**Promote R&D focused on utilizing materials free of fossil resources**

- Develop food packaging materials made using biomass ingredients

→ Page 26 Initiatives to Counter the Plastic Waste Issue

**Embrace innovative working styles and promote work style reforms**

- Employ a "smart" office/factory while nurturing human resources with specialized skills

→ Page 13 The Denka Value-Up Management Plan  
→ Page 29 Employee Happiness  
→ Page 32 Placing the Utmost Priority on Safety

**Launch the full-scale utilization of material informatics**

- Utilize a data lake, AI and text mining technologies

→ Page 13 The Denka Value-Up Management Plan

**Drastically improve labor productivity**

- Introduce robotics, IoT and AI technologies to improve productivity while securing the ability to handle small lots of multiple production items

→ Page 13 The Denka Value-Up Management Plan

**TRANSPORTING**

High-speed circulation of digital data encompassing every corner of society will help realize a "smart" factory and reduce the volume of products that need to be transported or stored. Moreover, the popularization of working remotely will result in a decrease in traffic and contribute to a reduction in the environmental burden. The Denka Group will supply cutting-edge materials and electronic components for use in high-speed data communication infrastructure, electric vehicles equipped with autonomous driving systems, automotive fuel cells, drones and other machines.



**Social issues (risks)**

- Environmental burden arising from production and logistics activities
- Deterioration in the working environment and resulting shortage of human resources

**Create new value through innovation in logistics and sales processes**

- Help resolve issues confronting society by stepping up collaboration with supply chains
- Leverage advanced information networks and create an innovative business model

→ Page 18 Responsible Dialogue with Stakeholders  
→ Page 46 Strengthening Groupwide ICT Governance

**Ensure sustainable and stable logistics operations**

- Pursue the improvement of our working environment and the enhancement of labor efficiency and productivity by advocating for the "white logistics movement"
- Ceaselessly work to reduce environmental burden via partnership with supply chains

\* An initiative promoted by the Japanese government since 2018 with the aim of achieving a highly productive and efficient logistics process while ensuring better working environments for operators

→ Page 32 Placing the Utmost Priority on Safety



**17 PARTNERSHIPS FOR THE GOALS**

Environmental Management Aimed at Achieving Carbon Neutrality

# Aiming to Achieve “Net Zero” in Terms of CO<sub>2</sub> Emissions by Fiscal 2050 While Striving to Reduce Emissions by 50% by Fiscal 2030 from the Fiscal 2013 Level

The Denka Group strives to achieve carbon neutrality, that is, “net zero” in terms of greenhouse gas (GHG) emissions, by the end of fiscal 2050, with the aim of contributing to the realization of goals of the Paris Agreement, an international framework agreed upon by major countries to preserve the natural environment so that human society and natural ecosystems can remain viable into the future. To this end, we will strive to push ahead with energy saving while promoting the use of renewable energy, such as hydroelectric power generation. In addition, we will take on the challenge of technological innovation in Carbon dioxide Capture, Utilization and Storage (CCUS), which is the separation and collection of CO<sub>2</sub> emitted by plant facilities, as well as in hydrogen-fired power generation and other clean energy technologies. Furthermore, with the aim of curbing the volume of GHG emissions from our business bases and contributing to decarbonization throughout society, we will promote the development and provision of eco-friendly products and technologies designed to reduce environmental burden while stepping up resource recycling via the introduction of a novel method for plastic recycling.

## Message



In line with the Denka Value-Up management plan, we have positioned our operations in the environment and energy field as a strategic pillar helping “create a clean and safe future society.” In line with this positioning, we are pursuing social contribution via the provision of specialty products in an even broader range of fields. At the same time, we intend to assiduously push ahead with the reduction of GHG emissions attributable to our corporate activities. As a milestone toward the achievement of carbon neutrality by fiscal 2050, we have identified the interim target of reducing our CO<sub>2</sub> emissions by 50% by fiscal 2030. Although achieving these targets may not be easy, we are steadfastly determined to promote the reduction of CO<sub>2</sub> emissions as one of the important initiatives supporting our environmental management, which is essential to protecting the global environment.

**Shojiro Watanabe**  
 Managing Executive Officer,  
 Supervisor of Environmental Measures Promotion

A Roadmap toward Achieving Carbon Neutrality		Fiscal 2030	Fiscal 2050
Reduce CO <sub>2</sub> emissions from our own business bases	Pursue energy saving while promoting the use of renewable energy	Thoroughly pursue energy saving while promoting the use of renewable energy	
	Develop and utilize CCUS	Separate and recover	Ensure preparations for facility installation → Introduce and utilize cutting-edge technologies
		Utilize	Synthesis of chemicals using CO <sub>2</sub>
	Shift to hydrogen-fired power generation	Ensure preparations for facility installation → Shift to hydrogen fuel	
Contribute to a reduction in CO <sub>2</sub> emissions across value chains	Develop and provide eco-friendly products and technologies designed to reduce environmental burden	Develop and popularize EV-related products, eco-friendly concrete and other offerings	
	Recycle and reuse plastics	Promote plastic recycling via the introduction of chemical recycling technology	
Review our business management structure		Business portfolio shift	

**Achieve carbon neutrality**



## Specific Initiatives Aimed at Achieving Carbon Neutrality

### 1. Reduction in CO<sub>2</sub> emissions from our own business bases

#### 1. Thoroughly pursue energy saving while promoting the use of renewable energy

- High-efficiency gas turbine generators were installed and brought on line at the Omi Plant in October 2020, and construction on similar generators is under way at the Chiba Plant. We will continue to take a thoroughgoing approach to stepping up energy-saving measures at each business base.
- Currently, our hydroelectric power generation facility network consists of 16 power plants supplying approximately 40% of energy consumed via Denka's overall operations in the form of renewable energy. Moreover, the construction of a new hydroelectric power plant is now under way (New Himekawa Power Plant No. 6). Moving forward, we will promote the use of renewable energy on an ongoing basis via, for example, the construction of a new hydroelectric power plant or the expansion of existing hydroelectric power generation facilities.

#### 2. Develop and utilize an innovative CCUS technology for CO<sub>2</sub> capture, utilization and storage

CCUS technologies are designed to collect CO<sub>2</sub> from exhaust gas emitted by plant facilities and separate it from other exhaust gas content to prevent its release into the atmosphere. Technological development is currently under way to sequester collected CO<sub>2</sub> in underground or seabed storage, utilize it to harden concrete via carbonization, or reuse it as a raw material in chemical or fuel production.

With the goal of commercializing our CCUS technology by the end of fiscal 2030, we are engaged in joint development with the National Institute of Advanced Industrial Science and Technology.

#### 3. Shift to hydrogen-fired power generation

We will strive to promote a switchover in the fuel we use in our own thermal power generation plants from natural gas, which is a fossil fuel, to hydrogen fuel, which produces clean energy.

### 2. Contribute to Reduction in CO<sub>2</sub> Emissions across Value Chains

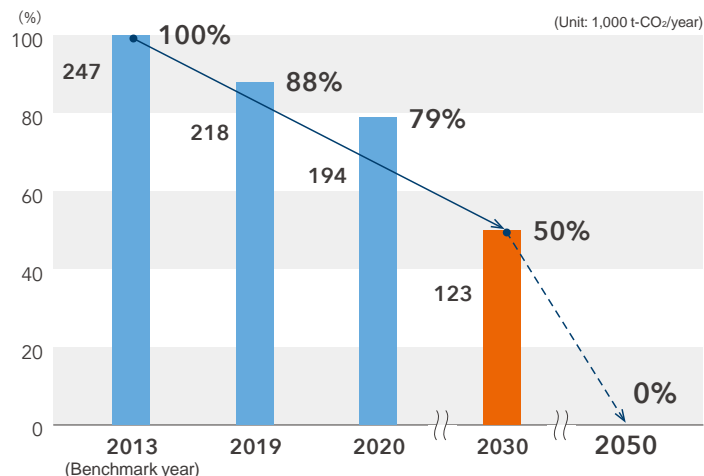
#### 4. Develop and provide eco-friendly products and technologies designed to reduce environmental burden

- Help popularize EV-related products (e.g. thermal and electro-conductive materials) and eco-friendly concrete

#### 5. Introduce and utilize chemical recycling technology to recycle and reuse plastics

- Commercialize the chemical recycling of polystyrene resin

Medium- to Long-Term Reduction Targets for GHG Emissions (Scope 1 & 2)



Note: Figures presented above are on a consolidated basis. From the Denka Report 2021 onward, Denka intends to disclose the total volume of emissions from all entities within the scope of consolidation, instead of releasing only non-consolidated figures.

### 3. Review our Business Management Structure

#### 6. Business portfolio shift

Looking to step up the reduction of CO<sub>2</sub> emissions and otherwise strengthen environmental management, we aim to complete the business portfolio shift by the end of the current management plan period and, to this end, will utilize our management resources to the maximum. Moreover, we will identify our targets for product technologies designed to meet needs for solutions for social issues and concentrate our management resources on such technologies as part of initiatives under the upcoming management plan.

### 4. Initiatives Related to Eco-Friendly Products

#### Carbonization agent "LEAF"

Taking advantage of special cement additive technologies we have nurtured over many years, we have developed "LEAF," a carbonization agent made using ingredients derived from industrial waste. "LEAF" vigorously converts CO<sub>2</sub> into chemically stable calcium carbonate. When "LEAF" is mixed into CO<sub>2</sub>-SUICOM, an eco-friendly concrete co-developed by Denka, the Chugoku Electric Power Co., Inc., Kajima Corporation and LANDES Co., Ltd., the resulting concrete absorbs CO<sub>2</sub> via carbonization as it hardens. Employing a combination of these products, we will help reduce net CO<sub>2</sub> emissions attributable to cement manufacturing.



Road boundary block



Foundational block for erecting a fence

#### Electronic circuit substrate "SN Plate"

Denka's "SN Plate" is a ceramic substrate boasting superiority in terms of heat conductivity and toughness. With a heat conductivity approximately four times of that of alumina, SN Plate is based on Si<sub>3</sub>N<sub>4</sub>, a silicon nitride characterized by superior resilience and mechanical properties. Thanks to improved heat conductivity in addition to its mechanical properties, SN Plate is used as substrate for lightweight power modules used for EV, railcar and other applications requiring high reliability. In anticipation of the accelerated popularization of EVs in the automotive industry, we will contribute our material technologies to support this trend and thereby help reduce CO<sub>2</sub> emissions attributable to this industry.



DENKA SN Plate

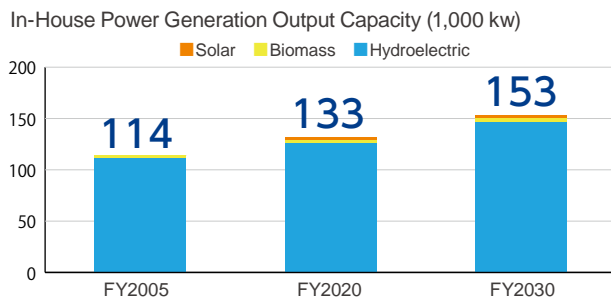
## Ongoing Initiatives to Counter Climate Change

### Initiatives to Promote the Use of Renewable Energy

For more than 100 years, Denka has been promoting the use of renewable energy. Specifically, we have engaged in technological pursuits on two fronts, namely, (1) leveraging hydroelectric power generation and other technologies to create renewable energy while (2) fully taking advantage of this energy in chemical manufacturing and utilizing it as a valuable energy source. Toward the realization of a low-carbon society, we are increasing our focus on renewable energy-related initiatives, one of our areas of strength.

#### Future Outlook for Our Renewable Energy Generation Capacity

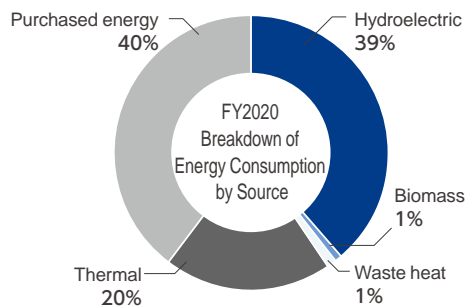
Building on a solid track record in hydroelectric power generation spanning the 100 year plus period since our founding, we will strive to pass down this business asset to future generation over the next century. To this end, we will promote a variety of initiatives, including the construction of a new power plant, thereby contributing to the creation of a sustainable society.



Note: The above figures include 50% of the output of power plants run by Kurobegawa Electric Power Company (a joint venture co-owned by Denka and Hokuriku Electric Power Company).

#### Breakdown of Energy Consumption by Source (non-consolidated)

The Omi Plant, our flagship plant, employs biomass boilers and waste-heat power generation methods to feed its cement production process in addition to utilizing hydroelectric power generation facilities. Renewable energy, including energy generated by co-owned power plants, accounts for approximately 40% of the energy consumed by Denka's operations (non-consolidated basis).



#### Denka's Hydroelectric Power Plants

The Omi Plant is geographically situated amid a web of 16 hydroelectric power plants, including those under co-ownership. These power plants boast a combined maximum output of approximately 126,000 kW, making this the largest private-owned power generation network of its kind in Japan. All of these facilities employ a natural inflow type hydroelectric power generation system that ushers river water into turbine runners and returns it to the river as soon as it leaves the generator. Thanks to these features, this type of hydroelectric power plant places a relatively smaller burden on the natural environment.

Moreover, hydroelectric power plants generate virtually no greenhouse gases while serving as a renewable energy source with superior energy efficiency. Thus, these power plants are capable of harmoniously coexisting with the natural environment while generating electricity in a sustainable manner.

#### Hydroelectric power plants

**16 plants in Japan**

(Including facilities owned by a joint venture)

#### Maximum output

**126,340 kW\***

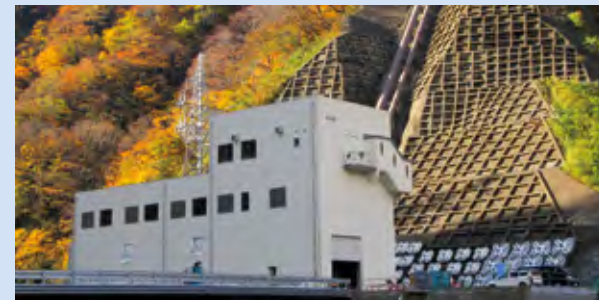
\* As of April 2021; including Denka's ownership of output from power plants owned by a joint venture

## COLUMN

### Construction of a New Hydroelectric Power Plant

Denka's New Omi-gawa Power Plant commenced operations in January 2021. This power plant is equipped with cutting-edge functions enabling remote operations with the aim of securing the ability to maintain stable operations over the long term and making it resilient against typhoons, concentrated heavy rains and other natural disasters. We have also striven to ensure that the plant is structurally robust. Thanks to the cooperation and support of relevant government agencies and representatives of local communities, the power plant was completed in approximately six years.

Output from this power plant will be sold to external power companies for 20 years in accordance with the Feed-in-Tariff scheme. Thereafter, we will utilize energy generated by it to feed our own operations. In addition, the launch of this power plant is expected to result in an annual reduction of approximately 13,000 tons in CO<sub>2</sub> emissions. Moreover, the construction is now under way on the New Himekawa Power Plant No. 6, which will have an estimated maximum output totaling 28,000 kW and be run by Kurobegawa Electric Power Company. It is scheduled to commence operations in April 2022.



Denka's New Omi-gawa Power Plant, which was launched in January 2021

### Initiatives Related to Solar Power Generation

In 2013, Denka installed solar power generation facilities on the premises of its Shibukawa and Isesaki plants. The combined maximum output of these facilities totals approximately 3,000 kWh and we sell approximately 4 million kW to external power companies. With an eye to achieving carbon neutrality by fiscal 2050, we will continue to consider the additional introduction of solar power generation facilities.



DENKA Solar Power Shibukawa

ESG information site: Environmental Preservation [https://denka\\_sustainability.disclosure.site/en/themes/660](https://denka_sustainability.disclosure.site/en/themes/660)

## Initiatives to Reduce Environmental Burden

To fulfill its social responsibilities as a chemical manufacturer, the Denka Group is striving to reduce the environmental burden attributable to its own operations while helping to resolve such environmental concerns as plastic waste through the provision of products and technologies.

### Initiatives to Counter the Plastic Waste Issue

The Denka Group is proactively developing and providing innovative solutions designed to help reduce the many negative impacts of plastic waste on the global environment and the efficient utilization of such waste. To this end, we take full advantage of our strengths backed by an integrated manufacturing system that encompasses processes ranging from the production of synthetic resins and polymer processing to molding as well as our product development capabilities. In addition, as a participant in the Clean Ocean Material Alliance (CLOMA),\* we collaborate in activities across the industrial sector.

\* An alliance founded in 2019 to accelerate innovation through collaboration among a variety of corporations with the aim of preventing marine pollution attributable to the emission of plastic waste

#### Chemical Recycling

Toyo Styrene Co., Ltd., an equity method affiliate, has launched initiatives to commercialize the chemical recycling of polystyrene resins. The affiliate is currently planning the construction of a verification testing facility for chemical recycling technologies—the first facility of this kind in Japan—within the premises of Denka's Chiba Plant that will use such technologies licensed from U.S.-based Agilyx Corporation. The chemical recycling process Toyo Styrene is currently studying is expected to remove restrictions on the usage of recycled plastics and thus serve as an epoch-making alternative to conventional material recycling process. Moreover, the volume of CO<sub>2</sub> deriving from the chemical recycling of polystyrene is around half that of regular production.

#### Eco-Friendly Food Containers

Denka Polymer Kabushiki Kaisha, a subsidiary specializing in the manufacture and sale of plastic-based food containers, is promoting the development of eco-friendly containers. These include PLAPS, a food container material comprising a combination of polylactic acid (PLA)—a plastic material derived from starch and other plant products—and polystyrene, as well as CLEALEAD, a new BOPS sheet that is 35% lighter than the usual one made with amorphous polyethylene terephthalate (A-PET).

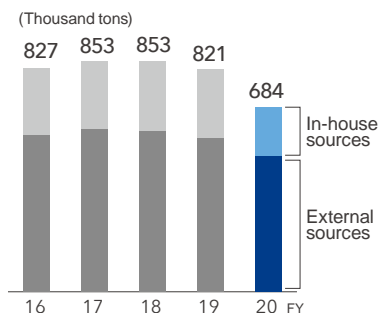
## Resource Recycling in Cement Production

The Omi Plant is promoting the recycling of resources by switching out a portion of the natural mineral raw materials and conventionally sourced heat energy used in cement production for waste and industrial byproducts.

Also, the plant is striving to accept waste and byproducts generated by Denka's production sites across Japan as raw materials, with the aim of minimizing the volume of these items being externally disposed of. This is one way we are working to maintain an ongoing "zero-emission" status.

Looking ahead, we will proactively introduce and utilize a variety of technological elements supporting our endeavors to raise the volume and expand the scope of waste and byproducts accepted by our facilities. We will thereby facilitate resource recycling and contribute to the creation of a recycling-oriented society.

Volume of Waste and Byproducts Accepted and Recycled in Cement Production



## Policy on the Prevention of Environmental Pollution

### Our Policies on the Prevention of Environmental Pollution

Denka strives to properly manage the volume of environmental load substances emitted from production facilities and R&D bases run by its Group companies while continuously working to reduce the emission of such substances. In addition to managing GHG emissions, the Group is striving to control emissions of sulfur oxide (SO<sub>x</sub>) and nitrogen oxide (NO<sub>x</sub>) from boilers and heating furnaces; substances emitted from production lines, including soot and dust; substances that affect biochemical oxygen demand (BOD) and chemical oxygen demand (COD); and substances regulated under the Pollutant Release and Transfer Register (PRTR) laws.

We strive to comply with relevant laws and national and municipal regulations as well as to uphold pollution control agreements with local authorities. Having installed wastewater treatment facilities, bag filters and other equipment to remove harmful substances, we are enforcing voluntary emission standards that are even more stringent than those mentioned above in the course of facility operation and maintenance.

## Initiatives to Reduce the Emission of Fluorocarbons

Denka is striving to reduce its environmental burden on various fronts, to this end preventing air and water pollution while curbing the volume of waste emissions. Among these endeavors, Denka is systematically engaging in the reduction of fluorocarbons, which facilitate ozone depletion and global warming, as outlined below. Going forward, we will steadily implement proper inspections and measures aimed at ensuring the early prevention of leakage.

1. By April 1, 2020, all equipment containing fluorocarbons had been registered with the Refrigerant Management System (RaMS) developed by the Japan Refrigerants and Environment Conservation Organization (JRECO) and, since then, has been under proper management.
2. With the cooperation of JRECO, since 2019 we have held training for employees in charge of the management of the above equipment and otherwise provide briefings on the application of RaMS and the Act on Rational Use and Proper Management of Fluorocarbons.
3. In the course of renewing aged air conditioners and freezers, we promote the switchover to refrigerants with less global warming potential.

Volume of Fluorocarbons Leaked in the Course of Denka's Operations (non-consolidated basis; seven business bases and one R&D base)

Fiscal year	2016	2017	2018	2019	2020
Estimated volume of leakage (t-CO <sub>2</sub> )*	448	440	414	635	572

\* Estimated volume of leakage: CO<sub>2</sub> equivalent

## Our Support of the Task Force on Climate-Related Financial Disclosures (TCFD)



### TOPIC

#### ESG Financing Extended by Mizuho Bank

Denka signed a loan agreement with Mizuho Bank, Ltd. for a loan product titled “Mizuho Environmentally Conscious Finance,” or simply “Mizuho Eco Finance.” This loan product was developed by Mizuho Bank to encourage borrower companies to strive for decarbonization across society and, to this end, takes into account their status vis-à-vis environment-related certification and external ratings that are deemed highly trustworthy by the global business community.

Prior to obtaining this loan product, applicants are scored based on an evaluation model developed by Mizuho Research & Technologies, Ltd. on the basis of the environmental initiatives they undertake and the metrics they have achieved. They are then given a rating of “AA,” “A,” “B,” “C” or “D” in line with a five-grade rating system, with only those rated “AA” or “A” being eligible for loans. Denka was awarded the highest “AA” rating and was able to sign a loan agreement with Mizuho Bank.

In September 2020, Denka announced its support of the TCFD and began participating in the TCFD consortium.

Going forward, we will carry out ongoing assessments focused on risk and opportunities arising from climate change and other relevant factors, including changes in government policies, regulations and market conditions as well as technological breakthroughs in the course of across-the-board initiatives aimed at realizing the low-carbon society and decarbonized economy envisioned by the Paris Agreement. In line with the following process flow suggested by the TCFD recommendations, we will identify the impact our businesses may face going forward.



### Governance and Risk Management

With regard to Denka’s response to medium- to long-term concerns arising from climate change, the Board of Directors determines important policies and supervises the implementation status of these policies. Meanwhile, the Sustainability Promotion Department, which consists only of dedicated staff, is charged with overseeing Companywide initiatives to counter climate change under the instruction of the executive officer in charge of supervising the promotion of environmental countermeasures.

Related matters deemed particularly important, including the formulation of medium- to long-term Companywide targets, the revision of basic policies and priority measures, the determination of management indicators and the evaluation of such indicators, are discussed by the Board of Directors and other bodies attended by top management members, with the representative director making final decisions.

### Metrics and Targets

Denka has positioned reducing the volume of CO<sub>2</sub> emissions from its operations as a matter of utmost importance in terms of environmental management. Accordingly, we are engaged in Groupwide efforts to cut back on CO<sub>2</sub> emissions from all business bases, including those located overseas. In line with these efforts, we aim to reduce the volume of CO<sub>2</sub> emissions to 50% of the fiscal 2013 level by the end of fiscal 2030 and, further, to achieve carbon neutrality by the end of fiscal 2050.

Moreover, we will push ahead with efforts to reduce the environmental burden attributable to our entire value chain by expanding the scope of our initiatives to address issues associated with the total life cycles of our products.

## Our Response to Climate Change-Related Risks and Opportunities

To assess risks and opportunities arising from climate change, we have conducted scenario analyses using the “below 2°C scenario,” which is formulated on the basis that the global temperature rise in this century will be kept at less than 2°C above pre-industrial levels in line with the goals of the Paris Agreement, and the “4°C scenario,” which assumes that global temperatures will continue to rise at their current pace. By doing so, we have verified the magnitude of climate change-related impact we can expect to face in 2030 and the countermeasures we must implement. The scenario analyses revealed that, in the areas of government policy and legal regulation, we will be confronted by risks arising from the introduction of carbon taxation, carbon pricing and carbon-emission trading systems. On the other hand, it is expected that Denka will meet growing sales opportunities for its LEAF carbon agent, electronic materials for use in EVs and other products, reflecting its diverse product and business portfolio.

We will continue to strive to quantitatively assess the business risks and opportunities lying ahead and reflect the results of such assessment in our management planning and business strategies. Through these and other initiatives, we will properly take action to counter climate change.

### Identification of Risk and Opportunities Based on Analyses of Climate Change Scenarios

■ Risks ■ Opportunities

Scenario	Category	Item	Business field	Impact on the business field	Countermeasures
Below 2°C	Government policies and legal regulations	Tightening of carbon taxation	All divisions	Growing costs associated with the overall volume of CO <sub>2</sub> emissions	Progress in energy-saving measures aimed at reducing CO <sub>2</sub> emissions and the introduction of CCUS technologies
		Introduction of emission-trading systems	All divisions	Growing costs associated with the volume of CO <sub>2</sub> emissions in excess of upper limits set by emission quotas	
		Enforcement of regulations on the ratio of biomass raw materials used in products	Polymer Solutions and Electronics & Innovative Products Elastomers & Infrastructure Solutions	Deterioration in product properties and growth in manufacturing costs due to the mandatory incorporation of biomass raw materials	Improvement in product properties and a decrease in manufacturing costs
	Market	Growing public calls for plastic resource recycling and waste reduction	Polymer Solutions	Switchover of materials for single-use products from resin to alternatives	Promotion of resource recycling involving styrene-based resin thanks to the introduction of chemical recycling technologies and a switchover to plastic products incorporating bio-polymers
	Reputation	Growing public call for countermeasures against emission-intensive businesses	Elastomers & Infrastructure Solutions (cement, calcium carbide and chloroprene rubber)	A trend toward reduction in or divestment of investors' holdings of Denka shares	Development and introduction of CCUS technologies and the construction of plants employing such technologies
	Resource efficiency	Development of products incorporating CO <sub>2</sub> as a raw material	All divisions	Establishment of a carbon recycling system	Popularization of CO <sub>2</sub> -SUICOM eco-friendly concrete and the promotion of R&D associated with chemical synthesis technologies under industry-academia-government collaboration
		Emergence of new technologies with advantages in terms of LCA	Electronics & Innovative Products (thermal materials, etc.)	Growing demand for products designed to contribute to reduction in CO <sub>2</sub> emissions throughout the course of their life cycles	Expansion of production capacities in line with growing demand
	Energy sources	Progress in transition to clean energy	All divisions	Growing use of renewable energy and hydrogen-fired energy	Expansion of hydroelectric power generation capacities, the utilization of hydrogen-fired energy and the planning of a hydrogen production process (electrolysis of water) fed by hydroelectric power generation
	Products / services	Widespread use of EVs	Electronics & Innovative Products (thermal materials, acetylene black, etc.)	Growth in product demand for EV-related components	Expansion of production capacities in line with growing demand, the development of new products with even more superior functions and entries into downstream markets
		Growing number of offshore wind farms	Electronics & Innovative Products (silicon nitride, etc.)	Growth in demand for components for use in wind power generation facilities	Expansion of production capacities in line with growing demand and the development of new products with even more superior functions
Development of renewable energy supply systems		Electronics & Innovative Products (acetylene black, etc.)	Growth in demand for components for use in energy storage and the development of transmission networks	Expansion of production capacities in line with growing demand and the development of new products with even more superior functions	
4°C	Physical risks	Increasing magnitude of damage arising from typhoons, heavy rains and flooding	All divisions	Loss of profit opportunities due to the suspension of production activities and the emergence of costs associated with the restoration of production facilities	Strengthening of facility maintenance measures due to the revision of the expected level of disaster damage and an assumption of a disaster of greater magnitude
			All divisions	Stagnation in our production and sales activities due to facility damage incurred by raw material suppliers and product consumers	Diversification of supply chains
		Increasing frequency of droughts and heavy rains due to changes in precipitation patterns	All divisions	Growing costs attributable to an increase in energy purchasing accompanying a decline in output from our hydroelectric power plants	Promotion of energy-saving measures and the diversification of energy sources
	Products / services	Growing number of infectious diseases due to rising temperatures	Life Innovation	Growth in demand for diagnostic reagents and vaccines, including those for novel infectious diseases	Development of new diagnostic reagents and vaccines
		Growing number of heat stroke cases due to rising temperatures	Polymer Solutions	Growth in demand for materials, films and processing products boasting heat barrier and insulation properties	Development of new products and the execution of capital expenditure
		Changes in influenza epidemic cycles due to rising temperatures	Life Innovation	Growing public calls for the development of a stable vaccine supply structure capable of responding to fluctuations in epidemic cycles	Development of influenza vaccine manufacturing methods and relevant production systems
		Growing demand for infrastructure development in step with the increasing magnitude of natural disaster damage	Elastomers & Infrastructure Solutions	Growth in demand for infrastructure-related products (special cement additives, etc.) and services aimed at promoting disaster prevention measures and enhancing disaster resilience	Expansion of production capacities in line with growing demand and the development of new products with even more superior functions

## Human Resource-Related Initiatives

### Creating a company in which employees find their jobs rewarding and feel that they are attaining tangible personal growth

Denka aims to become a company in which all employees find their jobs rewarding and feel that they are attaining tangible personal growth. To this end, we promote work style reforms and employee diversity while implementing training programs designed to nurture human resources with specialized skills. Other human resource-related initiatives include health & productivity management. In April 2020, we conducted an employee awareness survey to analyze workplace environment-related issues and problems. Drawing on findings from this analysis, systematic efforts are currently under way to upgrade our personnel system and human resource management platforms and thereby better position employees to pursue career success while improving productivity.

### 1. Achievements Made During the Period Leading up to the End of the Fiscal 2020

#### Establishment of a New Evaluation System

We have thoroughly revised our evaluation system, which constitutes the foundation of our personnel systems, improving it from the perspectives of transparency, fairness and persuasiveness. Placing emphasis on providing staff with objective insight in the form of feedback from supervisors in order to secure motivation, the revised evaluation system is designed to ensure that each employee clearly understands what is expected of them and thereby contribute to human resource development. Furthermore, we have instituted an incentive system that rewards each manager according to their results and accomplishments vis-à-vis the annual targets they themselves formulate at the beginning of fiscal year.

#### Reforms of Job Categories and Manager Systems

In fiscal 2019, we revised our conventional job categories, reclassifying specialists as "G-category" employees and establishing the "M-category," which collectively encompasses engineers and general staff. We have also clarified the job roles employees in each category are expected to fulfill while expanding the scope of tasks to be performed by "M-category" employees and thereby securing career paths for them to pursue managerial positions.

In fiscal 2020, we revised our personnel system for managers, who are expected to take lead in the Company's business endeavors, to create an environment that allows them to realize their full potential. In line with this revision, we abolished conventional manager classifications based on in-house certification, stipulating that each manager is subject solely to duty-based classifications. We also introduced a position-based allowance.

### 2. Diversity Promotion Plan

#### Promoting Diversity

Under the slogan "Your value is Denka's value," we are pursuing our mission of helping diverse employees realize their full potential. By doing so, we aim to create new value for our organization and contribute to sound and sustainable corporate growth.

#### Targets for diversity promotion

**Targets** Double the ratio of female managers in four years  
[ Nine female managers (1.6%) as of April 2020; Fiscal 2024 target: 18 (3%) ]

**Issue** Current ratio of female managers falls significantly short of the average ratio for the chemical manufacturing industry (8.1%: as of April 2020)

**Initiative** Maintain the ratio of women among new recruits to be included in the "G-category" at 30% or higher to increase the size of the pool of managerial candidates

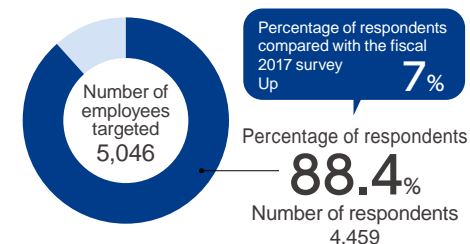
#### Diversity-Related Indicators

	(Fiscal years)					
	2015	2016	2017	2018	2019	2020
<b>Non-consolidated basis</b>						
● Ratio of women among new recruits to be included in the "G-category"	17%	18%	26%	33%	34%	39%
● Number of women in managerial positions (managers or higher)	2	2	2	5	6	8
● Ratio of individuals rehired after reaching retirement age	93%	93%	95%	94%	87%	86%
● Ratio of people with disabilities among employees	2.06%	2.06%	2.17%	2.29%	2.24%	2.19%
<b>Consolidated basis</b>						
● Ratio of foreign national employees	14%	16%	16%	15%	15%	15%
● Number of foreign nationals in managerial positions (managers or higher)	—	—	—	169	151	146

Note: These indicators have been compiled from fiscal 2018 onward.

### 3. An Employee Awareness Survey

In April 2020, we conducted an employee awareness survey targeting the entire workforce. Following the previous survey conducted in fiscal 2017, we strove to improve our workplace environment for employees by reflecting findings from that survey in the reform of various personnel systems. We will similarly strive to carry out systematic measures aimed at creating an environment that empowers employees to achieve success by leveraging the results of the latest survey, including the effect of initiatives undertaken based on findings from the previous survey, to assess the current status of the Company and issues to be addressed going forward.

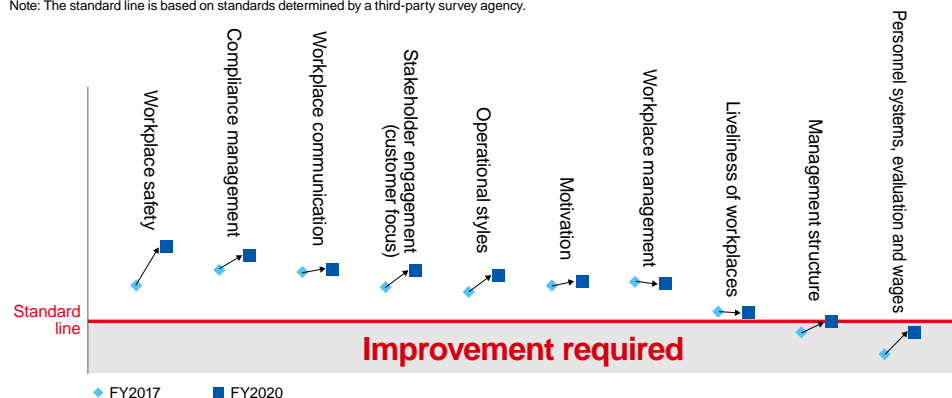


## 4. Issues Identified via the Employee Awareness Survey

### Comparison of Survey Results (fiscal 2020 / fiscal 2017)

Compared with the previous survey, employees' overall ratings of the Company's initiatives have been improving thanks to the thorough revision of the personnel system and the launch of various measures.

Note: The standard line is based on standards determined by a third-party survey agency.



Category	Employee feedback on representative questions	
	Positive feedback	Requests for improvement
Workplace safety	Current status of workplace safety and hygiene and the Company's policies	
Compliance management	High awareness of compliance at workplaces	
Workplace communication	Human relationships at workplaces	Cross-departmental collaboration
Stakeholder engagement (customer focus)	Relationships of trust with business partners and shared commitment toward social contributions	
Operational styles	Efficiency and productivity	Seasonal fluctuations in workload and supervisors' understanding of diverse work styles
Motivation	Awareness of targets	Opportunities for tangible personal growth
Workplace management	Leadership, support, equal opportunities and fair evaluation	
Livelihood of workplaces	An atmosphere allowing the frank exchange of opinions and enhancing the unifying power of the organization	Creation of an open-minded workplace that rewards those who take on challenges / A culture of tolerance toward new endeavors that defy conventional norms or past experience
Management structure	Dialogue with top management, its understanding of the status of frontline employees and feedback from them and encouragement for those who take on challenges	Delegation of authority and speed of decision making
Personnel systems, evaluation and wages	Persuasiveness of wages and promotion	Fairness of evaluation, human resource development and wages in comparison with industry peers

### Issues Revealed via the Survey and Measures to Be Undertaken

Results of the fiscal 2020 survey revealed overall improvement in employee ratings of the Company's initiatives from results of the fiscal 2017 survey.

Primary items indicating significant improvement included "workplace safety," "stakeholder engagement" (customer focus) and "operational styles." We consider these results to be indicative of the positive effect of communicating strong messages from top management to help employees raise their safety awareness as well as business execution conscious of addressing ESG issues and SDGs. On the other hand, employee ratings for the "livelihood of workplaces," "management structure," and "personnel systems, evaluation and wages" were near the standard line. These three items were also identified as matters requiring improvement in the course of the fiscal 2017 survey, and human resource strategies were formulated to address relevant issues. (See page 29 and the right side of page 30.) Going forward, we will promote various initiatives to provide fundamental solutions to these issues while considering the formulation of numerical targets (KPIs) to enhance the effectiveness of such initiatives. In addition, we intend to periodically carry out employee awareness surveys.

## 5. Human Resource-Related TOPICS

Denka is pushing ahead with a variety of initiatives aimed at creating an attractive workplace for employees. These initiatives include setting aside an investment budget for improving the workplace environment and publicizing our Declaration of Health and Productivity Management. In these ways, we strive to improve corporate value.

### 1. Specialty Human Resource Development Program

#### Objective

We have formulated the Specialty Human Resource Development Program, with the aim of nurturing human resources capable of contributing to the realization of The Denka Value, our corporate philosophy. Based on this program, we create educational systems in line with the new evaluation system as well as the redefined job categories and revised manager systems introduced in the course of the Denka Value-Up management plan. We thereby offer educational programs designed to help each individual develop robust professional careers while continuing the provision of practical employee training at manufacturing sites and other workplaces.

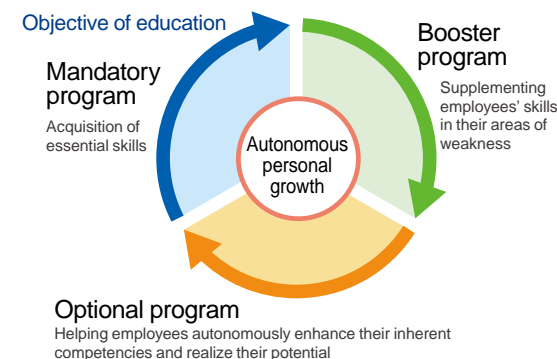
#### Denka's definition of human resources with specialized skills

Human resources who pursue success on the global stage in their areas of specialty and strive to gain a significant presence by taking full advantage of their innate competencies (mindset, skills, expertise, professional literacy and personality) while acquiring unique skills.

#### Job Level-Based Training Programs

In fiscal 2021, we renovated our job level-based training programs.

The renovated programs consist of three components: a "Mandatory program" designed to enable employees to acquire essential skills that serve as a foundation for the types of human resources defined above; a "Booster program" that supplements employees' skills in their areas of weakness; and an "Optional program" aimed at empowering each individual to autonomously enhance their inherent competencies and realize their potential.



### 2. Investment for Improving the Workplace Environment

To promote work style reforms, in fiscal 2021 we have decided to set aside a portion of our capital expenditure budget to periodically execute investment for improving the workplace environment. This move is intended to facilitate the development of an inclusive workplace environment at each business base in line with the Companywide policy for work style reforms, which was formulated in July 2020, with the aim of enhancing employee motivation and improving productivity.

As a result, approximately ¥1.3 billion is earmarked for investment for this purpose in fiscal 2021.

### 3. Declaration of Health and Productivity Management

In April 2021, we publicized our Declaration of Health and Productivity Management, clarifying our intention to step up our ongoing initiatives to assist employees and their families in their pursuit of health maintenance and improvement. Our plans call for disclosing numerical targets for these initiatives going forward.

ESG information site: Employee Happiness [https://denka\\_sustainability.disclosure.site/en/themes/659](https://denka_sustainability.disclosure.site/en/themes/659)

## Quality Assurance Management

### Basic Policy

The Denka Group handles a broad range of operations with an extensive product lineup ranging from various organic and inorganic materials to electronic materials and pharmaceuticals. Reflecting a quality policy that aligns with the Denka Value-Up management plan, we are engaging in quality assurance activities encompassing this diversity, striving to satisfy quality requirements in the business fields relevant to our products and services and to meet customer needs in light of the latest social expectations.

### Our Fiscal 2021 Quality Policy

To achieve the goals of the Denka Value-Up management plan, all employees must maintain acute quality awareness and strictly comply with legal regulations and product safety standards while engaging in ongoing quality improvement activities with the aim of delivering products and services that live up to the trust placed in them by users and society as a whole.

### Regulatory Standards and Certification

#### Revised Food Sanitation Act

The Denka Group maintains a hygiene control system for food additives, food packaging materials and other food-related products that conforms with the mandatory Hazard Analysis and Critical Control Point (HACCP)\* food hygiene control method stipulated by the 2018 partial revision of the Food Sanitation Act.

\* A food hygiene control method involving the analysis of hazard factors associated with all processes from the acquisition of raw materials to the shipment of finished products. With the goal of eliminating or minimizing said factors, HACCP is used to manage crucially important processes. HACCP also mandates that food business operators perform hazard analysis and management themselves to ensure product safety.

#### Acquiring IATF 16949 Standard Certification

IATF 16949, the international quality management standard for automotive quality systems, includes certification for vehicle-mounted products. Due to advances in EV-related technologies and autonomous driving systems, market requirements for high-quality products are growing ever more stringent at an ever faster pace. Accordingly, the Denka Group is engaged in ongoing efforts to meet standards for certification under IATF 16949 and thus satisfy customer requests for product safety and quality.

### Compliance—Responding to Legal and Regulatory Revisions

#### Chemical Substances

The Denka Group constantly monitors and collects information regarding the status of legal revisions at home and abroad to ensure it is positioned to swiftly respond appropriately to the latest laws and regulations governing chemical substances. Whenever a new chemical substance-related regulation comes into effect, we ensure that all the relevant business units are informed about it and weigh our options regarding the adoption of safer alternatives or otherwise implementing the measures necessary to maintain regulatory compliance.

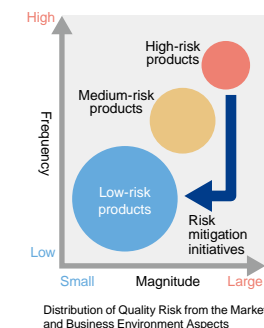
### Developing IT-Based Quality Management System Infrastructure

To enhance customer satisfaction, we are developing an IT-based infrastructure that supports our quality management. Encompassing an upgrade of the existing customer complaint management system, the infrastructure is expected to enhance our ability to address customer grievances and complaints. Moreover, it will help increase the sophistication of design review undertaken at the research, design and development stages to ensure that customer needs are promptly and accurately met while updating our system for managing the functional and quality specification documents furnished to customers at the time of product delivery. In these ways, we strive to enhance the reliability and efficiency of our operations and facilitate the effective utilization of accumulated data.

### Assessing Risk Issues and Implementing Risk Mitigation

The Denka Group handles diverse goods ranging from commodities to specialty products and is positioned to handle a similar level of diversity in the risk arising from each product. Moreover, as the Group is also affected by changes in social needs, such as the growing public call for businesses to contribute to the United Nations Sustainable Development Goals even as they strive to meet customer requests for even higher product quality. Due to these circumstances, the Group needs to manage the evolving risk associated with each product.

With this in mind, we annually refresh results of the quality risk assessments we have been undertaking since fiscal 2019 for all products from both the market environment and the business environment aspects. We also implement systematic initiatives to mitigate various quality risks based on assessments of their characteristics and magnitude.



### Enhancing Customer Communications via Customer Satisfaction Surveys

Data deriving from customer satisfaction surveys, the analysis of customer complaints and requests, quality audits performed by customers, score cards and other sources is shared among relevant departments to enhance the effectiveness of their quality improvement activities. We are thus taking a comprehensive and constant approach to enhancing and promoting quality-related customer communications.





## Placing the Utmost Priority on Safety

Employees undergoing safety education at the Omi Plant's Safety Education Center

# We put the utmost priority on worksite safety and health, facility security and disaster prevention in all aspects of our business activities

### Fiscal 2020 Initiatives

#### Companywide Targets

1. Reduce the number of major accidents and disasters to zero
2. Continually improve the occupational safety record

#### Priority Initiatives

Facilitate communication to create a lively and sound workplace while promoting safety assurance activities in which each worker is able to grasp the worth of their efforts

#### 1. Initiatives to reduce the number of major accidents and disasters to zero

- Develop a system for identifying any sign of serious risk and mitigate intrinsic dangers associated with our operations
- Thoroughly control residual risks after the implementation of countermeasures as well as newly emerging risks with the aim of preventing disasters

#### 2. Initiatives to continually improve the occupational safety record

- Inspect existing and new facilities for conformity with our safety design guidelines and, if necessary, make improvements
- Strictly comply with rules for facility operations and construction

#### 3. Initiatives to ensure safety for everyone working at Denka business sites

- Promote worker education utilizing e-learning
- Thoroughly practice the exchange of courtesies, pointing and calling out names and the 3Ss—*Seiri* (sort), *Seiton* (set in order) and *Seiso* (shine)—while avoiding unsafe behavior

### Safety Management Structure



## TOPICS

### 1. Stepping up Initiatives to Mitigate Intrinsic Danger

To eliminate workplace accidents and disasters, ongoing efforts are under way to identify potential worksite dangers along with the systematic implementation of facility improvement projects related to safety countermeasures. As we aim to counter an increase in instances of accidents attributable to operator action, we provide employees with appropriate training and otherwise strive to guide them away from unsafe behavior in addition to executing the facility improvements described above. In these ways, we aim to create a workplace environment in which everyone can operate safely.

### 2. Improving the Facility Security of Our Plants

Each division holds safety management conferences to address relevant issues by product category, with the aim of maintaining and improving the facility security of each plant. Looking ahead, we intend to begin holding facility security conferences focused on addressing common operational issues relevant to all divisions (e.g. firing), with the aim of achieving further improvement in facility safety.

### 3. Response to the Novel Coronavirus Pandemic

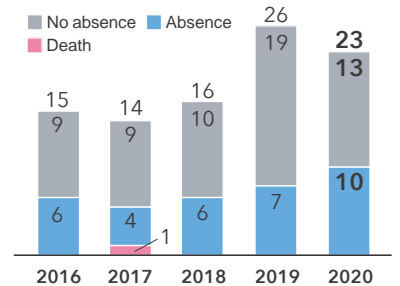
To ensure occupational safety and hygiene for employees, we have established Companywide action guidelines while thoroughly implementing countermeasures to prevent the risk of novel coronavirus infection. Furthermore, to minimize the possible impact on our business operations of a case of infection, we revised our business continuity plans (BCPs) to ensure preparedness. Going forward, we will take a flexible approach to aligning our alert level with the status of infection cases in Japan and update our countermeasures.

### Occupational Accidents and Production Process-Related Incidents

Although the number of incidents decreased by three compared with fiscal 2019, we have seen a higher number of incidents involving absence from work due to a lack of correct understanding of procedures or the operator's careless behavior.

Incidents related to our production process included four incidents related to a leak or electrical system failure. In response to these incidents, we have properly updated relevant equipment while reviewing operational procedures. We will also strive to enhance the resilience of utilities to secure our preparedness to natural disasters.

Trend in the Number of Occupational Accidents



### Securing Transportation Safety

In fiscal 2020, we held web-based reporting meetings attended by all logistics departments to discuss their safety initiatives. We also invited our transportation subcontractors to take part in periodic drills in which they practiced emergency responses, employing the information on "yellow cards" to deal with logistics accidents. Moreover, we thoroughly implemented safety rule education for truck drivers operating on plant premises for the first time. These initiatives helped raise employee safety awareness and provided an opportunity to exchange opinions on logistics safety.

For fiscal 2021, we will continue with various activities to ensure logistics safety along with our involvement in the "white logistics movement," as we strive to regularly review and improve our logistics operations and thereby prevent the occurrence of logistics accidents.



A periodic drill employing the "yellow cards"

## Electronics & Innovative Products



### Ikuo Ishida

Executive Officer, Electronics & Innovative Products

Taking full advantage of Denka's proprietary essential technologies, the Electronics & Innovative Products Division offers a robust lineup ranging from functional fillers, thermal solution components, electronic packaging materials and electro-conductive materials to functional tapes. In short, the division delivers products and components that are essential to electronic devices and other cutting-edge fields. Currently, markets for communications devices are expected to grow as manufacturers pursue higher performance and larger capacities. Simultaneously, demand for EVs and renewable energy generation facilities is expanding in step with a growing public call for environmental conservation. With this in mind, we will fully leverage Denka technologies to deliver optimal materials for various components for use in these fields, with the aim of contributing to society.

Striving to help create an abundant society, we provide such cutting-edge materials as conductive agents for lithium ion batteries (LiBs), thermal materials and substrates as well as functional ceramics, films and tapes, thereby playing an essential role in the advance of 5G communications infrastructure, electric vehicles (EVs) and renewable energy generation.

### SWOT Analysis\*

- A diverse product lineup capable of meeting a broad range of customer needs
- Intelligence capabilities thanks to outstanding market share commanded by our products
- A broad range of essential technologies, including high-temperature control, nitriding, spherical shaping and calcining technologies

Strengths **S**

- Growing importance of communications devices on the back of the popularization of IoT and autonomous driving systems and resulting advances in high-speed transmission technologies
- New business opportunities arising from government policies supporting a shift to EVs and otherwise addressing environmental concerns

**O** Opportunities

Weakness **W**

- Growing financial burden attributable to capital expenditure due to rapid market expansion

**T** Threats

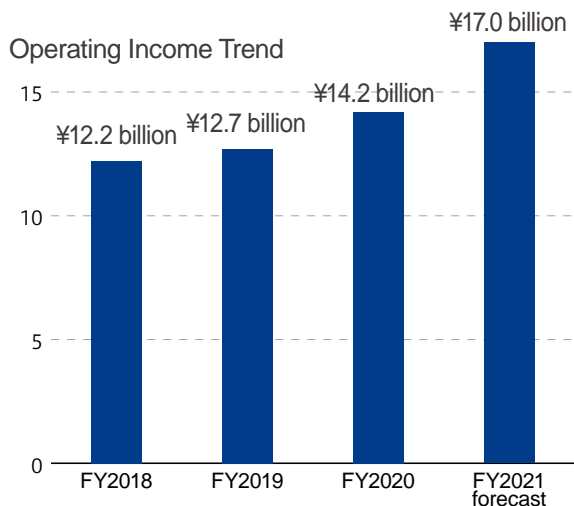
- Possible emergence of a novel material serving as a game changer
- A major shift in technological development trends due to such factors as the growing need for environmental solutions
- An increase in the number of competitors due to, for example, the entry of newcomers from emerging nations

### Business Strategies

- **Establish an unparalleled presence in fields associated with megatrends (EVs, 5G communications, semiconductors and renewable energy)**  
Contribute to society by delivering products designed to meet market requirements
- **Create next-generation products**  
Develop specialty products employing unique technologies

\* SWOT (strengths, weaknesses, opportunities, and threats) analysis is a method for identifying strengths and weakness based on such internal conditions as owned technologies, pricing and quality, as well as opportunities and threats arising from external conditions, such as competitors and market trends.

## Electronics & Innovative Products



In fiscal 2020, operating income grew year on year. This was attributable to a rise from the previous fiscal year in sales of highly functional films for use as embossed carrier tapes for electronic components and semiconductors, sales of which themselves were buoyed by solid demand associated with the global introduction of 5G infrastructure and an increase in data center-related product needs worldwide. Another contributor to income was annual growth in sales of fused silica fillers for use as semiconductor encapsulant fillers and in sales of spherical alumina and ultra-high purity electro-conductive carbon black for use in EV-related applications.

For fiscal 2021, we anticipate further growth in demand for products for use in the environment and energy field, including EVs, semiconductors, 5G communications and renewable energy generation.

## R&D Activities

Fiscal 2020 R&D expenses: **¥4.1 billion**

- Developed a thermal conductive substrate that can be adhered to different metals for use in EVs
- Developed “Denka Spherical Magnesium Oxide,” a cutting-edge functional ceramic for use in 5G communications devices and EVs

## Capital Expenditure

Fiscal 2020 capital expenditure: **¥12.9 billion**

- Significantly augmented silicon nitride production capacity (by approximately 30%)
- Executed facility construction aimed at expanding the spherical alumina production capacity of a subsidiary in Singapore

## Contribution to the SDGs through Business Operations

### DENKA BLACK (acetylene black)

DENKA BLACK is used in the high-voltage transmission cables that efficiently transmit clean energy generated by offshore wind farms to energy consumers in a broad range of regions. Part of the output from such facilities could be used to charge EVs equipped with LiBs, which similarly incorporate DENKA BLACK, an essential raw material contributing to improvement in the performance and safety of these batteries. As such, DENKA BLACK helps reduce CO<sub>2</sub> emissions on various fronts, exemplifying Denka’s technological contribution to environmental conservation.



High-voltage transmission cables



DENKA BLACK

### Social issues

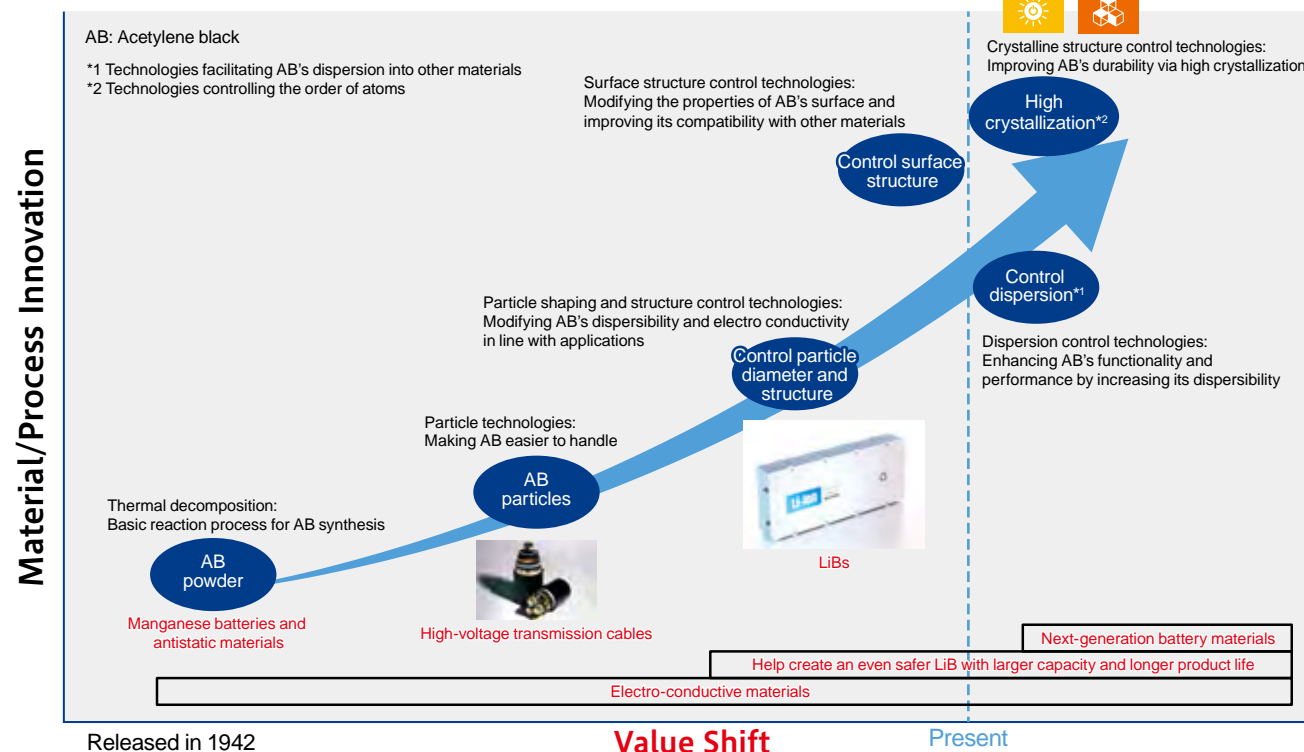
- Need for products that help enhance LiB safety and reliability
- Need for products that support a stable power supply and facilitate the popularization of clean energy



### Source of value

- Ultra-high purity
- Excellent electro conductivity
- Contributes to improvement in charging and discharging performance

## Development of DENKA BLACK (acetylene black)



## Life Innovation



**Hideki Takahashi**

Executive Officer, Life Innovation Division

Since the outbreak of the novel coronavirus, a disease to which humans have no prior immunity, the Life Innovation Division has striven to make every effort to counter its spread while applying Denka technologies in the unrelenting pursuit of the best possible solution it can offer in its business fields. At the same time, we intend to draw on takeaways from this crisis so that we are fully prepared to join and play our part in humanity's future battle against any other unknown infectious disease that may emerge at any time.

The Life Innovation Division is thus determined to do its utmost to protect the well-being of people around the world.

In the field of illness prevention, diagnosis and treatment, we help people around the world enhance their quality of life by, for example, supplying influenza vaccines, manufacturing rapid diagnostic testing kits for detecting antigens of such infectious diseases as the novel coronavirus and delivering macromolecular sodium hyaluronate preparation.

### SWOT Analysis

- A lineup of various diagnostic reagents developed in-house employing Denka's proprietary technologies
- Superior technological capabilities and robust production capacities backed by cutting-edge vaccine manufacturing facilities
- A robust network supporting industry-academia-government collaboration with a diverse range of partners and thereby enhancing Denka's own R&D capabilities
- Innovation arising from the integration of know-how in chemistry and healthcare, two very different fields, and marketing capabilities deriving from a combination of customer bases in both fields

Strengths **S**

- Growing need for solutions supporting the prevention and early diagnosis of disease in countries around the globe
- Growing demand for rapid diagnostic testing kits in the face of the novel coronavirus pandemic
- Growing needs for medical services tailored to the conditions of individual patients
- Widespread use of IoT and AI
- Possible emergence of novel types of business supported by government-led growth strategies (legal revisions and regulatory relaxation)

Opportunities **O**

Weakness **W**

- Susceptibility of infectious disease-related products to demand fluctuations attributable to changes in the magnitude of epidemics and types of disease

Threats **T**

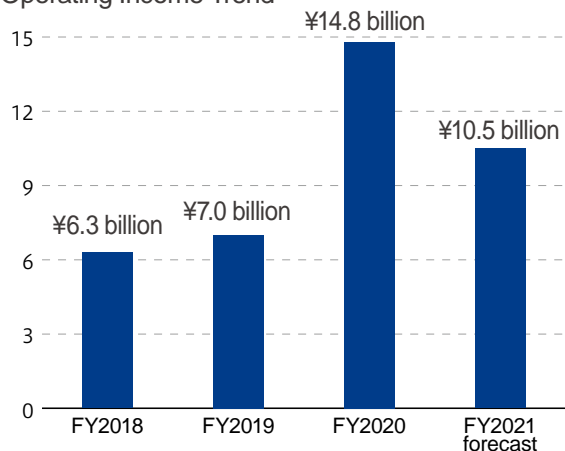
- Acceleration of competitor technologies for vaccine and diagnostic reagents on the back of global efforts to counter the novel coronavirus pandemic

### Business Strategies

- Strengthen and expand existing operations, including influenza vaccines, diagnostic reagents and macromolecular sodium hyaluronate preparation
- Swiftly launch such new businesses as oncolytic virus and simultaneous multiplex assay systems
- Push ahead with further open innovation while consolidating the Denka Group's expertise to create new business to secure future earnings pillars
- Create new products and businesses aligned with changes in the market environment in light of the ongoing fallout from the novel coronavirus pandemic and in anticipation of the post-pandemic period

## Life Innovation

### Operating Income Trend



In fiscal 2020, the volume of influenza virus rapid diagnostic testing kits shipped was down from the previous fiscal year. On the other hand, the influenza vaccine shipping volume increased year on year as medical specialists and authorities issued earlier-than-usual recommendations regarding vaccination. Moreover, the August 2020 release of QuickNavi-COVID19 Ag, a rapid diagnostic testing kit for detecting novel coronavirus antigen, contributed to segment results. Consequently, operating income rose significantly from the previous fiscal year.

For fiscal 2021, plans call for releasing a new rapid diagnostic testing kit capable of simultaneously detecting novel coronavirus and influenza virus antigens, while demand for various diagnostic reagents other than those for diagnosing novel coronavirus infection is expected to recover. In addition, the influenza vaccine shipment volume is likely to remain unchanged from fiscal 2020.

## R&D Activities

Fiscal 2020 R&D expenses: **¥5.4 billion**

- Developed QuickNavi-COVID19 Ag
- Promoted R&D of G47Δ oncolytic virus

## Capital Expenditure

Fiscal 2020 capital expenditure: **¥6.5 billion**

- Augmented influenza vaccine production capacity
- Acquired land for the construction of a norovirus vaccine R&D facility

## Contribution to the SDGs through Business Operations

### QuickNavi-Flu / QuickNavi-COVID19 Ag (rapid diagnostic testing kits for detecting antigens)

These testing kits enable medical practitioners operating on the clinical frontlines to visually determine test results in 10 minutes without using specialized testing equipment.

Employing its proprietary technologies, Denka has developed and supplied the QuickNavi series, which comprises rapid diagnostic testing kits for detecting the antigens of a variety of infectious diseases. Through these efforts, we are assisting medical practitioners in their battle against infectious diseases and, by doing so, helping to relieve them of the burden of disease diagnosis.



### Social issues

The emergence of a new infectious disease pandemic and its resurgence

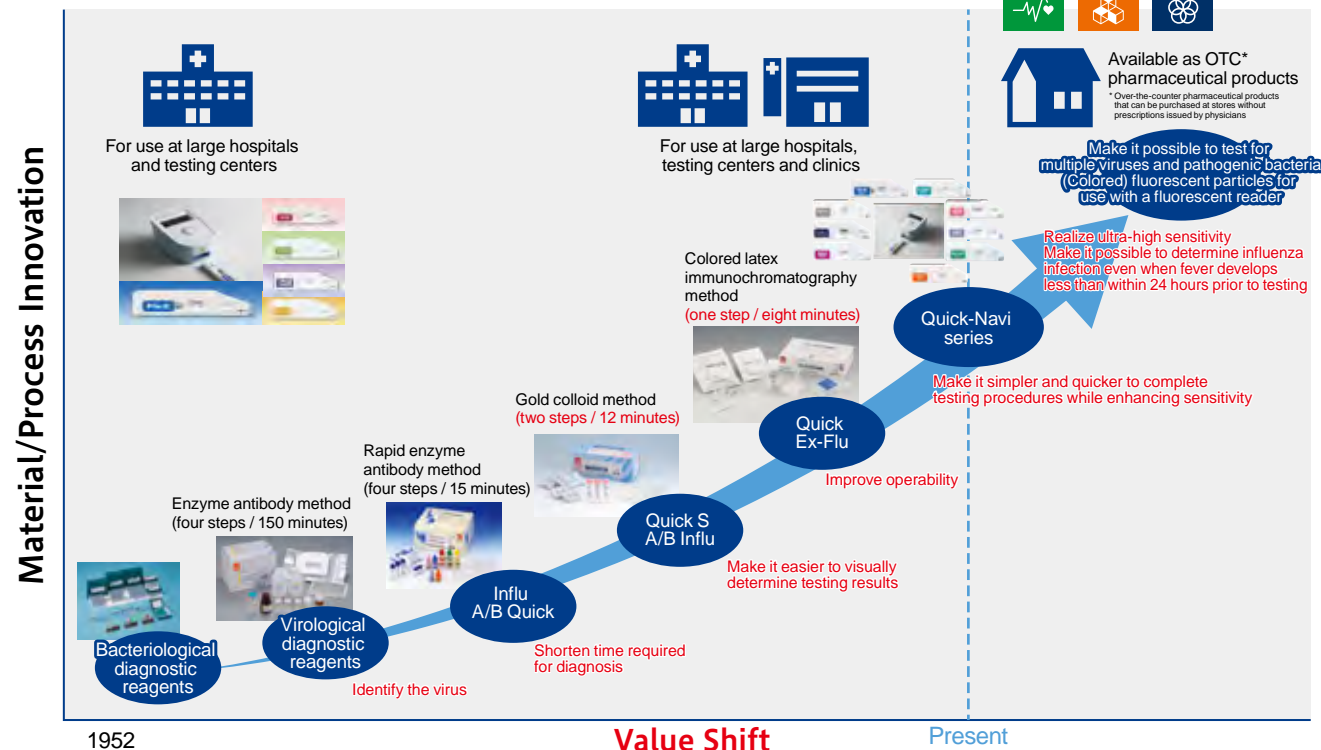
### Source of value

Applied technologies that have long been cultivated through involvement in the diagnostic reagent business



Business Categories: Life Innovation <https://www.denka.co.jp/eng/medical/>

## Development of POCT Products



## Elastomers & Infrastructure Solutions



### Koki Tabuchi

Managing Executive Officer, Elastomers & Infrastructure Solutions

The Omi Plant, which serves as the mainstay plant for the Elastomers & Infrastructure Solutions Division, has taken full advantage of its limestone resources to develop a robust calcium carbide chain—a business asset enabling Denka to secure a position as a chloroprene rubber producer boasting the world's top market share. This asset has also supported Denka's fertilizer production, which spans 106 years, while empowering the Company to maintain its strength as a cement manufacturer with significant presence in a broad swathe of regions along the Sea of Japan side of the country. Based on technologies nurtured over the course of many decades, we aim to contribute to the development of infrastructure around the globe and advances in mobility businesses to help people enjoy safe, secure and comfortable lives. Moreover, we proactively strive for carbon neutrality to reduce environmental burden.

To help ensure people's daily lives are safe and secure, we employ a wealth of technological capabilities in organic and inorganic chemistry to supply a range of offerings from functional elastomers, cement and special cement additives—both of which are essential to strengthening infrastructure—to fertilizers and agricultural corrugated pipes, taking full advantage of the calcium carbide chain that we have maintained since our founding.

### SWOT Analysis

- A robust calcium carbide chain created via the use of limestone from nearby limestone mines and powered by Denka's own hydroelectric power plant network
- A resource recycling system that accepts urban waste, waste plastics and other waste as raw materials and fuel for cement production
- A two-location production system supporting the chloroprene rubber business, with plants in Japan and the United States employing different manufacturing methods and facilities

#### Strengths S

- Growing demand associated with enhancing the resilience of buildings and civil infrastructure to mitigate natural disaster damage
- Growing demand associated with the maintenance and renewal of domestic infrastructure, which had been intensively developed in the period of high economic growth and is currently undergoing simultaneous deterioration due to age
- Growth in the biostimulant market due to growing food demand in step with expansion in the global population

#### O Opportunities

#### Weakness W

- Difficulties in securing robust brand recognition in markets overseas (the special cement additive business)

#### T Threats

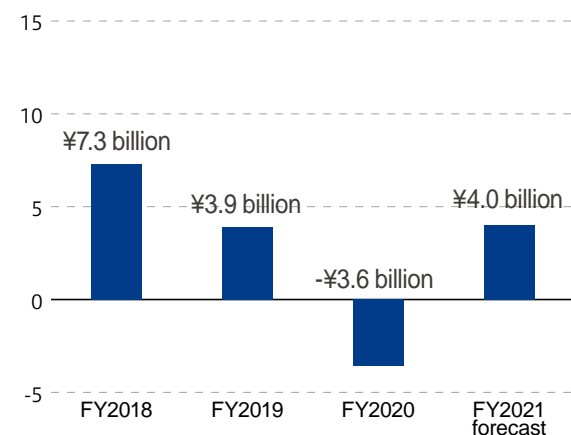
- Expansion in the scope of various environment-related regulations influenced by a growing trend toward carbon neutrality
- Shrinkage in the construction- and agriculture-related markets due to a decline in domestic population

### Business Strategies

- Establish a stable business foundation that is resilient against changes in trade conditions while stepping up the development of highly functional products
- Deliver cutting-edge infrastructure-related technologies designed to contribute to climate change countermeasures and energy saving
- Secure even more robust foundations for our special cement additive business bases in Asia
- Strengthen and expand resource recycling operations that utilize waste as raw materials and fuel for cement production

## Elastomers & Infrastructure Solutions

### Operating Income Trend



In fiscal 2020, operating income decreased despite the positive effects of the Group's efforts to maintain product prices after recent upward revisions. This was mainly attributable to declines from the previous fiscal year in sales of chloroprene rubber, cement, special cement additives, fertilizers, fire-resistant materials and steelmaking materials due to fallout from the novel coronavirus pandemic and the influence of unfavorable weather.

For fiscal 2021, demand for chloroprene rubber, special cement additives and other inorganic materials is expected to recover from significant stagnation in the previous fiscal year because of the novel coronavirus pandemic.

### R&D Activities

Fiscal 2020 R&D expenses: **¥2.9 billion**

● Developed board and molded products that boast superior heat insulation properties and are thus capable of contributing to reduction in CO<sub>2</sub> emissions

### Capital Expenditure

Fiscal 2020 capital expenditure: **¥17.8 billion**

## Contribution to the SDGs through Business Operations

### “PRULA” Biostimulant

Biostimulants are a new technology that aims to enhance the resilience of plants against abiotic stress attributable to various external conditions and thereby help realize the full potential of cultivation in terms of crop yields. Thanks to these positive effects, biostimulants are expected to serve as technological solutions for a food crisis arising from global population growth, global warming and other factors.



#### Social issues

Food shortages attributable to global population growth and global warming

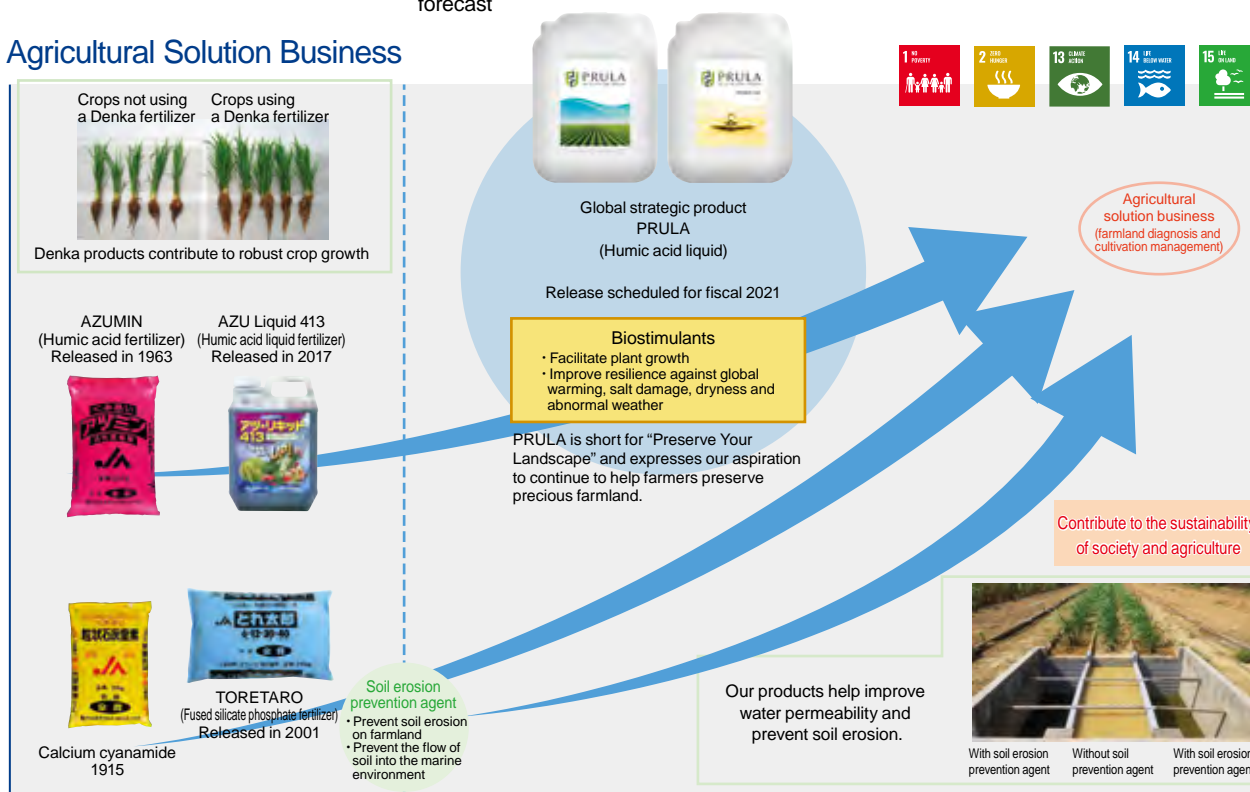


#### Source of value

Technologies nurtured over the course of our 106-year history of functional fertilizer production

## Agricultural Solution Business

Material/Process Innovation



Present

Value Shift

## Polymer Solutions



**Kenjiro Ishizuka**

Executive Officer, Polymer Solutions

The Polymer Solutions Division was established via the 2021 reorganization and is tasked with handling operations related to styrene-based functional resins and processed products using such resins (e.g. polyvinyl chloride) as well as Poval and other chemical products, then delivering these offerings to markets around the globe. In Japan, we maintain a comprehensive styrene chain encompassing products ranging from styrene monomer and polymer products to processed products. Overseas, we operate manufacturing bases in Singapore that produce functional resins and polyvinyl chloride-based processed products for overseas customers. As a new division, we will strive to effect synergies between materials and processed products in our efforts to develop and market eco-friendly solutions, such as those supporting resource recycling, designed to meet market needs while pursuing our Companywide target of achieving carbon neutrality by the end of fiscal 2050.

To help realize a sustainable society, we support people's daily lives in a diverse range of fields, including automobiles, electric and electronic devices, and food, via the provision of styrene-based functional resins, food packaging sheets and synthetic fiber for wigs and hairpieces as well as Poval and other chemical products.

### SWOT Analysis

- An integrated manufacturing and marketing system in Japan that encompasses a range of styrene-based operations from the production of raw materials to the manufacture of processed products
- Global business capabilities backed by a two-location production system comprising bases in Japan and Singapore
- A diverse range of resin processing technologies, including those associated with polymer structure design and control and the production of sheets, films and synthetic fiber
- Synergies arising from the combination of materials and processed products as well as solution proposal and development capabilities supported by such synergies
- Digital transformation currently under way via the use of an integrated business planning tool, which our bases in Singapore began introducing in advance of other facilities

#### Strengths S

- Development of plastic resins and their processed products in a way that accommodates growing needs for eco-friendly solutions
- Establishment of a comprehensive recycling system that takes full advantage of the strengths afforded by our integrated production system, which extends from raw materials to processed products, and thereby meets demand arising from the growing trend toward resource recycling

#### O Opportunities

#### Weakness W

- A time lag between fluctuations in the prices of raw materials (e.g. naphtha and benzene) and product price revisions reflecting these external conditions
- Foreign exchange risks associated with products mainly exported to customers overseas

#### T Threats

- A decline in plastic demand due to environmental problems induced by waste plastics (especially, single-use packaging containers)
- Intensification of price competition in step with improvement in the quality of products manufactured by overseas competitors
- Destabilization of the procurement of various raw materials (due to rises in costs, the abolishment of certain materials, etc.)

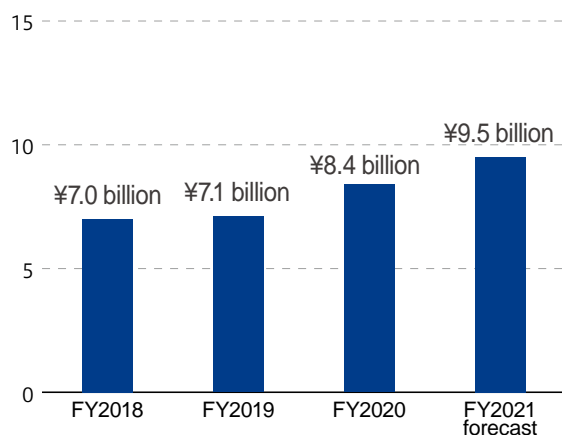
### Business Strategies

- Achieve specialization in each operational area by enhancing the added value of existing products and developing highly functional product grades in a way that accommodates demand arising from mega trends and the latest market needs
- Build a business portfolio that is capable of securing stable profit and resilient against changes in external conditions, such as exchange rates and raw material prices
- Develop and propose solutions for environmental issues
  1. Promote the R&D of resins with low specific gravity and materials incorporating biomass ingredients with smaller environmental footprints
  2. Realize a chemical recycling process for polystyrene resin



## Polymer Solutions

### Operating Income Trend



In fiscal 2020, sales were generally robust for styrene monomer, ABS resin, polystyrene resin (produced by Denka Singapore Pte. Ltd.) and MS resin for use in light guiding substrates for television and monitors. On the other hand, demand for plastic rain gutters and TOYOKALON synthetic wig fibers declined due to fallout from the novel coronavirus pandemic. Although demand for these offerings subsequently returned to a recovery track, their sales volumes were still down from the previous fiscal year. However, thanks to growing demand for takeaway food services, overall sales of food packaging sheets and processed products using such sheets largely remained firm.

For fiscal 2021, the volume of shipments of MS resin is likely to remain robust, while the expanded production facilities in Singapore are expected to contribute to operating results. Moreover, demand for TOYOKALON is expected to recover.

### R&D Activities

Fiscal 2020 R&D expenses: **¥2.1 billion**

### Capital Expenditure

Fiscal 2020 capital expenditure: **¥5.0 billion**

## Contribution to the SDGs through Business Operations

### Pursuit of Eco-Friendly Food Containers

In recent years, demand for food containers made using BOPS sheets has been expanding in such fields as takeaway and delivery food services. Among these sheets, Eco Clear boasts higher strength and is even thinner than its predecessors. Having realized these features to counter plastic-related environmental issues, which have recently become the focus of public concerns, we are thus contributing to the creation of lightweight food containers and a reduction in the volume of plastics used.



Biaxially oriented polystyrene (BOPS) sheets

#### Social issues

Environmental issues attributable to waste plastics

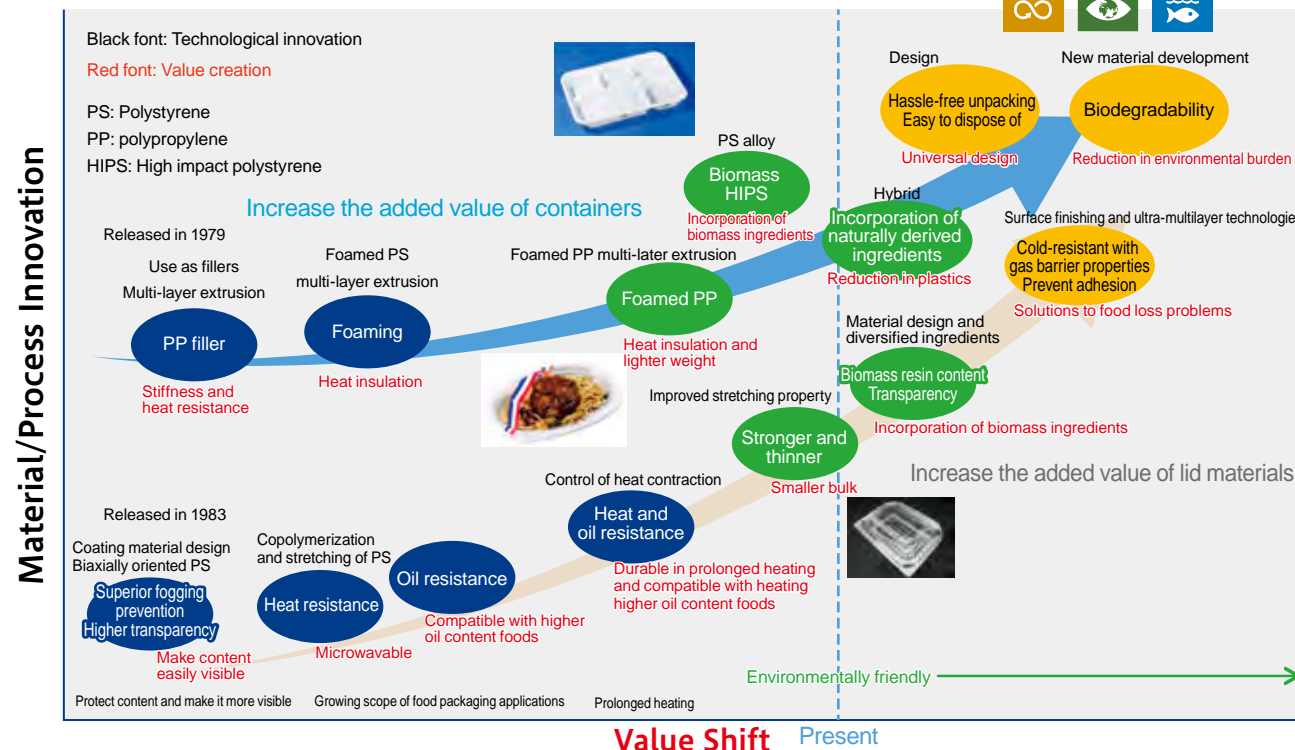


#### Source of value

Technological development capabilities backed by a styrene chain encompassing operations that range from raw materials to processed products

Business Categories: Polymer Solutions <https://www.denka.co.jp/eng/polymer/>

## Development of Microwavable Food Containers and Lids



## An Interview with Outside Directors

We spoke with Mr. Toshio Kinoshita and Mr. Akio Yamamoto, both of whom serve the Company as outside directors, to hear their views on Denka's Board of Directors, their opinions on the role of an outside director and their expectations for Denka's future endeavors under the new management team led by Mr. Toshio Imai, the Company's new president.



### Toshio Kinoshita

Outside Director, Audit Committee Member

#### Profile

A certified public accountant in Japan and the United States, Mr. Kinoshita has enjoyed a long successful career in his field. He was appointed as an outside member to the Company's Audit & Supervisory Board in 2015, and took office as an outside director and Audit Committee member in 2019.

### Akio Yamamoto

Outside Director, Audit Committee Member

#### Profile

Mr. Yamamoto contributes his insights into general management matters by taking advantage of his broad knowledge backed by long experience as a successful corporate manager overseeing businesses in Japan and abroad. He was appointed as an outside member of the Company's Audit & Supervisory Board in 2015, and took office as an outside director and Audit Committee member in 2021.

## The Role of an Outside Director

**Tanaka:** In June 2019, Denka transitioned to a Company with an Audit Committee and, having secured the approval of its General Meeting of Shareholders, reshaped the composition of the Board of Directors in June 2021. Today's businesses are being called to live up to increasing public expectations regarding robust corporate governance, as reflected in the recent updating of Japan's Corporate Governance Code. Given these circumstances, could you share your thoughts on the role an outside director should take?

**Kinoshita:** Although the Corporate Governance Code requires the appointment of outside directors, we are not here merely so Denka can satisfy a mandate. As a certified public accountant, I am expected to contribute my specialist expertise in accounting and finance to support Denka's management and help it determine the direction of the Company's business by offering my opinions from a multilateral perspective.

Also, the general inclination among executives is to focus on sales and operating profit. However, if this focus becomes excessive, the fundamental purposes of business operations and corporate management can be overlooked. It's easy to see why individuals who are busy with business execution tend to narrow their focus, and I believe that outside directors play an essential role in providing intervention when fundamental issues seem to be being ignored.

**Yamamoto:** Today, our society is facing a really difficult time. In addition to confronting such major issues as global warming, widening social divides and the pressing need to uphold respect for human rights, fresh problems arising from the novel coronavirus pandemic are prompting society to revisit conventional modes of operation. As an outside director, I consider it critically important to accurately recognize the challenges of the present, approach issues from a broad perspective and continually strive to enhance my knowledge and ability to address changes in the environment surrounding our business operations by applying a robust set of objective indicators. Our role is therefore to employ a medium- to long-term perspective and contribute to Denka's efforts to remain a sound and profitable business and increase its overall corporate value.



#### Facilitator

### Mr. Nobuyasu Tanaka

Senior Managing Executive Officer,  
Sun Messe Co., Ltd., Representative Director,  
Sun Messe Innovative Network Center (Sinc)

## An Interview with Outside Directors

### ■ Our Views Regarding the Role of the Board of Directors

**Tanaka:** Denka has placed a strong focus on improving corporate governance. In this light, what are your thoughts as outside directors on the role of the Board of Directors?

**Yamamoto:** Anticipating the enforcement and revision of Japan's Corporate Governance Code, Denka has taken forward-looking measures to improve and strengthen its governance structure, working assiduously to enhance its effectiveness. In addition, the Company's outside directors are given briefings on long-term strategies undertaken by each division and detailed information regarding agenda items to be submitted to the Board. These practices, I believe, help invigorate the Board's discussions and enhance its effectiveness.

**Kinoshita:** In my experience, discussions at Denka's Board of Directors are more vigorous than at the boards of many other companies. However, I have to point out that the proper focus of the Board of Directors is monitoring and supervision rather than business execution. I believe all members must have the same awareness about the basic duties of the Board of Directors. Of course, by monitoring and supervision I don't mean that we must stand by at the president's office and monitor his every move!

I believe the Board's principal functions have two aspects. The first is thorough deliberation centered on the Company's business planning in the medium to long term. The second is accurately ascertaining and monitoring business risks. In these ways, the Board should assess what part of the Company's existing operations should be kept or discarded going forward while determining the ideals that constitute its business model. These are, I think, matters truly worthy of intensive discussion in the Board room. I feel that focusing on discussion of this kind will be one way we can help Denka become an even better company.

### ■ The Pandemic Has Prompted a Growing Call for Businesses to Enhance Their Societal Value

**Tanaka:** Fallout from the novel coronavirus pandemic is having a significant effect on mindsets and business activities. What changes did you notice in terms of what defines businesses' societal value and their reason for being?

**Kinoshita:** First off, we need to closely analyze what we have learned and what we have lost due to the pandemic. This phenomenon has caused many businesses to realize that there is no way that simply extending their existing mode of operation will ensure their continued viability. Based on this realization, I believe that we, too, must shift our focus to identifying and putting into practice the best thing we can do next.

**Yamamoto:** I agree with Mr. Kinoshita. Considering the social significance of Denka's operations in the post-pandemic era, I think that the Company will be positioned to discover new opportunities. Moreover, underpinning Denka's social significance are advantages afforded by prevailing practices in Japan's chemical industry. For example, the industry's researchers are tireless in addressing research themes involving numerous rounds of experiments. The majority of its workers in other areas are also good at doing tasks that require a painstaking approach. It sometimes seems that they do not mind doing redundant work. These qualities, largely attributable to the nature of Japanese workers, support

and strengthen domestic chemical manufacturers. If Denka were to draw on this advantage to enhance its technological capabilities, it would be able to establish its vision regarding a successful future business model for 2030. Currently, several Denka products command top global shares, and it is important for the Company to enhance these products and increase its market presence. Chemistry is relevant to an extensive range of fields, including life science, automobiles, electronics, food packaging and housing materials. Because of this, I would say that it is the kind of industry that constitutes the bedrock for the development of global society. And, this will be a quite fascinating mission to fulfill.

**Kinoshita:** As I have stated at Board of Directors meetings on several occasions, establishing a vision for 2030 is of critical importance to any corporation. What will Denka look like in 2030? What products will the Company be offering to society? What social contributions will it be aiming to make, and will these be accepted or not? Unless the Company has a clear vision of what it aims to be in the future, it will end up being constantly forced by circumstances to address one business management issue after another.

### ■ What Is Expected of Denka's New Management Team and President Imai

**Tanaka:** Lastly, please share your thoughts on what you expect from Denka under the new management team led by President Imai.

**Yamamoto:** I expect two things. First, I would like to see the new management team discuss a broad range of the Company's business strategies from a medium- to long-term perspective, with the aim of identifying those strategies' future direction. Second, I hope this team will place stronger emphasis on addressing environmental issues among the various issues to be addressed via an ESG-oriented management approach. Of course, robust governance is fundamental to resolving all kinds of management issues, including those associated with business strategies. Accordingly, I expect more efforts to be undertaken to constantly improve Denka's governance structure and enhance its effectiveness. Other individual issues that must be tackled include how to develop human resources and promote diversity. In particular, accelerating diversity, namely, promoting women, foreign nationals and other diverse human resources to senior management positions, will lend us a significant driving force and help us forge ahead toward the future.

**Kinoshita:** As Mr. Imai has long been steadily spearheading Denka's business operations, my expectations are high for his leadership. On the other hand, I believe that Denka should increase diversity among its officers and managers, in terms of gender and nationality, at an even faster pace. Also, digital transformation (DX) is a matter of pressing importance. Denka therefore needs to secure specialists in the fields of AI and IoT. I hope that the Company employs a broader perspective in its effort to enrich its human resource pool in terms of diversity. Breaking free of a conventional organizational culture, the Company should and can engage in speed-oriented decision making based on its Denka Value-Up business strategies. This is an area in which I have strong expectations. To support this wonderful company, I will do my best and work hand in hand with my fellow Board members along with the new management team.



## Directors



Photo taken on June 22, 2021 at Denka's Head Office

**Masaharu Suzuki**  
Director  
(Full-time Audit Committee Member)

**Miyuki Matoba**  
Outside Director  
(Audit Committee Member)

**Akio Yamamoto**  
Outside Director  
(Audit Committee Member)

**Toshio Kinoshita**  
Outside Director  
(Audit Committee Member)

**Manabu Yamamoto**  
Representative Director and  
Chairman of the Board

**Toshio Imai**  
Representative Director,  
President & CEO

**Yoshiyuki Fukuda**  
Outside Director

**Tetsuya Shinmura**  
Director

**Kazuo Takahashi**  
Director

## Messages to Our Stakeholders

### Manabu Yamamoto Representative Director and Chairman

(Born March 31, 1956)

In addition to striving for more sophisticated corporate governance that accurately reflects society's expectations, I will endeavor to enhance the effectiveness of our Company with an Audit Committee system, currently in its third year, and promote a stronger management advisory and supervisory function and even swifter decision-making, in order to achieve "Denka Value-Up."

### Toshio Imai Representative Director, President & CEO

(Born January 25, 1959)

I will promote the "Denka Value-Up" plan, and realize "sustainable and sound growth" as a "company that contributes to sound social development through new value creation."

### Tetsuya Shinmura Director

(Born January 28, 1958)

I will endeavor to enhance corporate value by developing technologies to challenge the possibilities of chemistry and contributing to the resolution of global issues, to make this a company genuinely needed by society.

### Kazuo Takahashi Director

(Born March 30, 1960)

The new normal and paradigm shift have arisen over an extremely short period of time. Apprehending these dramatic changes in the world as an opportunity to soar, I will endeavor to leverage the Company's comprehensive capabilities to enhance corporate value and achieve sound growth.

### Yoshiyuki Fukuda Outside Director

(Born September 8, 1956)

I will focus on creating an open and transparent organizational culture, and hope to contribute to building an organization with a high level of risk management.

### Masaharu Suzuki Director (Full-time Audit Committee Member)

(Born December 11, 1955)

I intend to engage in audit activities focused on the implementation of growth strategy and response to internal and external risk, to sustainably boost the corporate value of the Company.

### Toshio Kinoshita Outside Director (Audit Committee Member)

(Born April 12, 1949)

I will contribute to enhancing corporate governance, aimed at Denka's sustainable growth as a global company and the medium- and long-term enhancement of corporate value.

### Akio Yamamoto Outside Director (Audit Committee Member)

(Born December 2, 1951)

We are entering an era of significant change in the environment and value perceptions that surround companies. I intend to firmly maintain a medium- to long-term perspective and a sincere, fair and upright attitude, and endeavor to further strengthening corporate governance, to contribute to the Company's sound growth and the enhancement of its corporate value.

### Miyuki Matoba Outside Director (Audit Committee Member)

(Born August 15, 1973)

I will contribute to enhancing corporate value by focusing on the further strengthening of corporate governance and thorough compliance.

## Corporate Governance

### Basic Approach to Corporate Governance

Based on "The Denka Value" (corporate philosophy), the cornerstone for all the corporate activities undertaken by the Denka Group, the Company is striving to fulfill the expectations and earn the trust of its many stakeholders, including shareholders, customers, local communities and employees. To this end, the Company is strengthening its business foundation by working to enhance its earnings power and expand its scope of operations. At the same time, it is making every effort to continue being a company that can win the trust and support of society and thereby improve corporate value.

The Company considers corporate governance to be the bedrock on which the above rests, and so we have striven to strengthen governance, in order to fulfill the responsibilities we owe to all our stakeholders and ensure the transparency and soundness of our management.

### Concepts on the Appointment of Directors

With the aim of embodying The Denka Value, our corporate philosophy, we are promoting the Denka Value-Up management plan, to this end strengthening our management structure supported by directors and executive officers while upgrading our governance systems and supervisory functions.

Director candidates are nominated from among individuals who have abundant experience and a strong track record in Denka's business divisions and are equipped with sufficient knowledge and specialist expertise for the position. Outside director candidates are nominated from among those who boast extensive knowledge backed by abundant business experience as well as distinctive strengths in their areas of specialty so that they can bring their insights on how to achieve sustainable growth and enhance corporate value. With regard to the overall composition of board members, we focus on maintaining a diverse and well-balanced composition in terms of expertise, experience, competency, gender and nationality. We also aim to maintain a sufficient number of independent outside directors to ensure that they account for at least one third of director membership. Currently, the proportion of such directors is in excess of the targeted composition.

### Director Remuneration

We have set remuneration for each director based on their roles and responsibilities within the limit of the total amount approved by the General Meeting of Shareholders. The Board of Directors decides on the content of remuneration after receiving advice and recommendations from the Nomination and Remuneration Advisory Committee.

Remuneration for directors consists of monthly basic compensation set at a fixed amount (paid to all directors) as well as performance-based compensation and share-based compensation (neither of which are paid to outside directors or in-house directors with concurrent membership in the Audit Committee).

The value of the performance-based compensation is determined in step with consolidated operating income for each fiscal year. However, this portion may be decreased or fully withheld in cases where consolidated operating income did not reach a certain amount or the Company was found to be involved in compliance violations and other significant misconduct.

Share-based compensation is intended to ensure that directors share shareholders' interests and risks regarding stock price fluctuations. By doing so, we aim to instill a strong sense of purposefulness toward achieving medium- to long-term growth in corporate performance and corporate value in our directors.

In addition, remuneration paid to directors with concurrent membership in the Audit Committee consists only of monthly basic compensation in a fixed amount. Total remuneration paid to such directors is determined within the upper limit approved by the General Meeting of Shareholders.

### Fiscal 2020 Director Remuneration

#### Directors

(excluding those who have concurrent membership in the Audit Committee)

Basic compensation: ¥285 million for seven recipients (¥24 million for two outside directors)  
 Variable compensation (in-house directors only)  
 Performance-based compensation: ¥42 million for five recipients  
 Share-based compensation: ¥21 million for five recipients

#### Directors

(those who have concurrent membership in the Audit Committee)

Basic compensation: ¥91 million for five recipients (¥36 million for three outside directors)  
 Fixed compensation  
 Variable compensation

### Evaluation of the Effectiveness of the Board of Directors

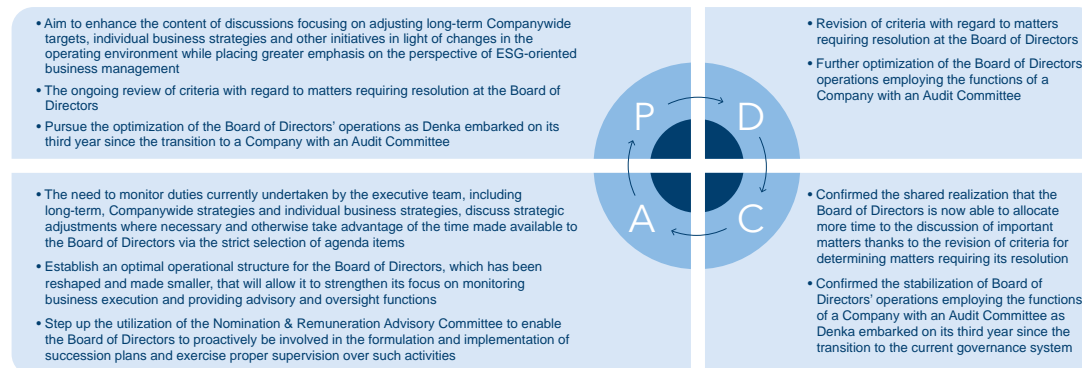
#### Method of Evaluation

As it did in the previous fiscal year, the Company analyzed and evaluated the effectiveness of the Board of Directors by having individual directors complete the "Self Evaluation Questionnaire," which covers items related to the effectiveness of the Board of Directors, such as scale, composition, operation and 20 other items, and discussing the questionnaire results at Board of Directors meetings.

#### Summary of Evaluation Results and Future Efforts

The Company confirmed the appropriateness of meeting frequency and duration as well as methods used for holding meetings in light of the risk of COVID-19 infection. It was also concluded that the Board of Directors made progress in the optimization of its composition (in terms of getting the right balance of expertise, experience, competency and diversity). Moreover, the Company determined that its Board of Directors, which includes independent outside directors who account for 42% of its membership, is capable of the proper monitoring and supervision of management.

In addition, the Board of Directors evaluated initiatives being undertaken to address issues identified via the previous fiscal year's evaluation by employing a PDCA cycle as depicted below. It also ensured that all directors share a common understanding of initiatives to be executed going forward.



## Acceleration of Development of Groupwide Internal Control System

The Denka Group's internal control had been largely dependent on each business division's autonomous efforts to develop and maintain internal control systems, with the Internal Auditing Department tasked with assessing the status of these activities, reporting issues, if any, to the Board of Directors and providing instructions and advice to audited business units to help them effectively implement improvements. However, some of our Group companies and organizations had faced difficulties in promoting improvement measures due to the lack of specialist expertise and human resources.

In fiscal 2020, we established a dedicated team charged with supporting and spearheading the development of internal control systems for these organizations. The new team was placed under the Internal Auditing Department and began providing assistance to overseas subsidiaries and newly established subsidiaries, contributing to the strengthening of preemptive internal control measures. In April 2021, we upgraded this team into the Internal Control Department and established an Internal Control Office under it. Looking ahead, we will endeavor to strengthen internal control for the entire Group, with both Internal Audit and Internal Control departments exercising their functions.



## Strengthening Groupwide ICT Governance

In line with the Denka Value-Up management plan launched in April 2018, we have been promoting operational process reforms encompassing all aspects of our corporate activities ranging from R&D and manufacturing to sales and administration, with the aim of enhancing both operational efficiency and corporate governance. These initiatives involve the utilization and upgrading of information & communication technology (ICT) on a Groupwide basis.

At the same time, we have striven to protect the Denka Group's informational assets from incidents arising from the use of ICT, including data leakage and falsification, and to safeguard such assets from cyberattacks, which have become increasingly sophisticated in recent years. To this end, we pursue the development of security infrastructure for the entire Group while conducting risk management-based enhancement of our preventive maintenance regimen. The above activities are guided by a robust set of in-house rules regarding information security.

Going forward, we will help all Group companies at home and abroad strengthen ICT governance supporting their internal control systems as we endeavor to avoid loss and improve our corporate value.



## Denka Performance Elastomer's Environmental Management

Denka Performance Elastomer LLC (DPE), a Denka Group company based in Louisiana, the United States, manufactures chloroprene rubber (CR).

In 2015, DPE initiated operations upon the acquisition of CR production facilities established by the U.S.-based DuPont in 1969. Since then, DPE has been engaged in the provision of CR to customers around the world.

Currently, DPE is confronting multiple lawsuits along with DuPont and its affiliates. These lawsuits were filed by residents of communities around DPE's Pontchartrain Plant and demand compensation on the grounds that said residents have sustained physical, financial and emotional damage arising from chloroprene monomer emitted from the plant.

However, the December 2020 updates of an epidemiologic study conducted by researchers at University of Pittsburgh under the auspices of the International Institute of Synthetic Rubber Producers has confirmed that no correlation between chloroprene monomer exposure and the fatality rate arising from lung and liver cancer can be found. This study involved follow-up surveys targeting approximately 7,000 people who are ex- or active employees of U.S.-based facilities handling chloroprene monomer over the course of nearly 70 years. (The follow-up surveys were intended to confirm a similar conclusion reached in 2007 based on data regarding the health conditions of these people by the end of 2020. The updates of the study resulted in the collection of additional data encompassing the 17-year period leading up to 2017.)

Furthermore, according to data publicized by the Louisiana Tumor Registry, region-specific carcinogenic risk in the location of the plant is not significantly different from the average risk for the entire state.

In line with the Denka Group's policies on the reduction of environmental burdens, DPE is constantly striving to maintain strict compliance with chloroprene monomer emission standards stipulated by environment-related laws and regulations and minimize emissions of substances and waste from its facilities. Accordingly, DPE introduced new facilities intended to reduce emissions of chloroprene monomer even further, to this end executing a massive investment totaling more than US\$35 million (approximately ¥4 billion). This investment resulted in an 86% reduction in the volume of chloroprene monomer emissions (fiscal 2020 results; based on a comparison with the fiscal 2014 level).

In addition, as of June 2, 2021, DPE is planning to file an official request to the U.S. Environmental Protection Agency (EPA) for the review of its chloroprene monomer toxicity assessment. Through this request, DPE intends to ask for the incorporation of a physiologically based pharmacokinetic (PBPK) model, a cutting-edge method used in the research of chloroprene monomer's impact on human health.

Looking ahead, Denka will continue to assist DPE in its efforts to remain a good neighbor for people living in communities in which it operates by protecting the environment, ensuring their well-being and working to reduce their anxieties.

For more details, please refer to news releases\* posted on Denka's corporate website.

\*News releases dated June 19, 2019, February 14, 2020, June 8, 2020, June 19, 2020, August 7, 2020, December 17, 2020, March 2, 2021 and June 22, 2021 address related topics.

# Management Risk Analysis and Response

## Basic Approach to Risk Management

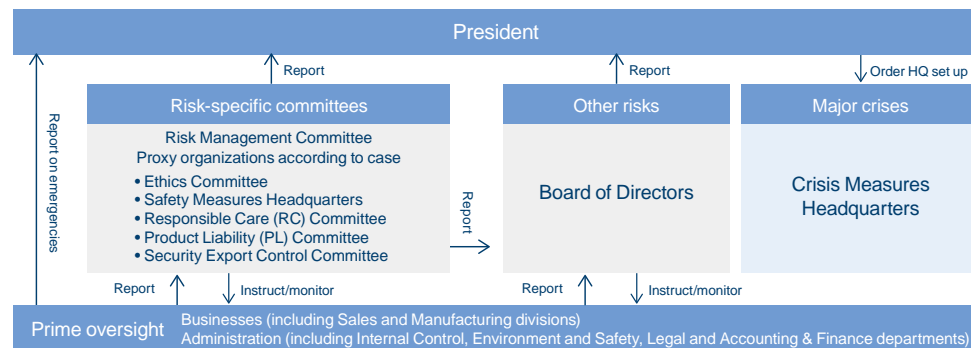
To achieve the goals of the Denka Value-Up management plan, the Denka Group aims to strengthen corporate governance and, to this end, strives to accurately assess the diverse and numerous risks arising from its corporate activities, believing that minimizing damage arising from these risks is a matter of extreme importance. Accordingly, we continuously work to enhance our risk management structure.

### Risk Management Structure

The Denka Group Ethics Policy codifies Groupwide standards of conduct. To ensure that this policy guides the actions of all, the Ethics Committee chaired by the President oversees the overall compliance structure and reports to management on compliance matters. Moreover, under the initiative of the Ethics Committee, such key business units as the Legal, Internal Auditing, HR Strategy, Intellectual Property, Environment and Safety, and Quality Assurance departments ensure thorough legal compliance in their respective areas of specialty.

We also strive to ensure that all Group officers and employees embrace the Standards of Business Conduct, which provide clear and detailed guidelines on the actions they are expected to take in accordance with the provisions of the Denka Group Ethics Policy.

Furthermore, we employ a "legal hazard map" to analyze the significance of compliance-related risks that may affect each Group company with the aim of efficiently developing and operating effective compliance structures.



### Utilization of the Legal Hazard Map for the Strengthening of Compliance Structure

Having identified more than dozen legal fields closely associated with the Group business operations, Denka utilizes a legal hazard map designed to assess the magnitude of compliance risks affecting the Group. Employing this map, we formulate the Denka Global Compliance Program, a Groupwide plan for providing compliance education in an effective manner. Moreover, we continuously work to enhance our compliance structures via, for example, the development and review of Group Policies and other in-house rules applicable to all Group members as well as Denka's Companywide rules.

### Legal Fields in Which Denka Group Companies Must Maintain Acute Compliance Awareness and Examples of Typical Compliance-Related Misconduct Associated with These Fields

Labor laws (e.g. Labor Standards Act)	Unfair Competition Prevention Act	Foreign Exchange and Foreign Trade Act
<ul style="list-style-type: none"> <li>Excessive overtime without supervisor approval</li> <li>Power harassment</li> <li>The lack of a safe and hygienic working environment</li> </ul>	<ul style="list-style-type: none"> <li>Illicit acquisition and use of another company's trade secret</li> <li>Leakage of a Denka trade secret for illicit use by another company</li> </ul>	<ul style="list-style-type: none"> <li>Unlicensed export of goods named in the list of regulated items</li> <li>The provision to non-residents of technologies named in the list of regulated technologies</li> </ul>

### List of Risks and Locations of Articles Describing Our Response

Category	Detail of risks	Page number of articles
Business management	Risks associated with the execution of the management plan and financial strategies	pp. 13-16 Interim Review of the Management Plan pp. 41-48 Corporate Governance
Crisis management	The novel coronavirus pandemic	p. 8 Review of Fiscal 2020 Operating Results
Environmental management	Climate change, abnormal weather, marine plastics and other pressing issues calling for environmental pollution countermeasures	pp. 23-28 Promotion of Environmental Management, Our Policies on the Prevention of Environmental Pollution, Our Carbon Neutrality Target and Response to the TCFD Recommendations
HR strategy	Risks associated with securing and nurturing human resources, health & productivity management, labor management, workplace harassment and other human rights-related issues	pp. 29-30 Human Resource-Related Initiatives
Accidents and disasters	Risks associated with security and disaster prevention as well as occupational safety and health	p. 32 Placing the Utmost Priority on Safety
Quality and product liability	Risks associated with product safety and quality management	p. 31 Safety Assurance Management
Legal violation and compliance	Risks associated with Group governance	p. 47 Management Risk Analysis and Response
Information systems and security	Risks associated with system security and the promotion of DX	p. 46 Strengthening Groupwide ICT Governance
Intellectual property (IP) protection and privacy information	Risks associated with the protection of IP and privacy information	Denka's corporate website: Privacy Policy ESG information website: Protection of Intellectual Property Rights
Export control	Risks associated with security trade and export control	ESG information website: Security Export Control
Individual businesses	Fluctuations in raw material market prices and exchange rates, supply chain disruption, the growing need to adapt to changes in the business environment, delays in R&D activities and a failure to maintain pace with technological innovation	pp. 33-40 Business Strategies / SWOT Analysis



## Initiatives Being Undertaken Thus Far to Improve Corporate Governance

The Denka Group considers robust corporate governance to be fundamental to earning the trust and support of stakeholders and improving its corporate value. Accordingly, we strive to secure management transparency and soundness and thereby enhance corporate governance.

	Purposes	Initiatives
2007	Speed up decision making	Halved the number of directors while introducing an executive officer system
2008	Ensure that all directors who supervise and monitor business execution engage with their peers on equal footing at Board of Directors meetings	Abolished senior managing and managing director positions
	Secure clear functional separation between those charged with business execution and those charged with monitoring and supervision	Delegated executive authorities and positions from directors to executive officers
	Flexibly assess the adequacy of each director	Shortened the term of office for directors to one year
	Ensure stringent supervision of the Company's operations by incorporating external perspectives	Appointed two outside directors, securing a total of four external individuals, including the mandatory two outside Audit & Supervisory Board members, for overseeing Denka's management
	Provide robust opportunities to interact with each other outside Board of Directors meetings to develop a structure enabling directors to contribute meaningful insights	Made it a rule to hold periodic meetings in which outside directors exchange opinions with top management
2015	Improve authorization process to realize faster decision making by facilitating in-depth discussion focused on important management matters	Established the Management Committee, consisting of in-house directors and in-house members of the Audit & Supervisory Board as well as some executive officers
	Enhance the governance structure to improve management transparency and soundness	Increased the number of outside directors from two to three while decreasing the prescribed number of overall directors by two
	Create opportunities for in-house and outside directors and in-house and outside members of the Audit & Supervisory Board to engage in constructive discussion, help them freely exchange frank opinions and facilitate information sharing and closer collaboration	Decided to hold monthly exchange meetings for all directors and Audit & Supervisory Board members, stepping up the previous practice of holding biannual exchange meetings for these individuals
	Optimize corporate governance aimed at securing sustainable growth and a medium- to long-term improvement in corporate value	Established the Denka Corporate Governance Guidelines
	Facilitate the understanding of Denka's operations and invigorate discussion at Board of Directors meetings	Enhanced the content of prior briefings on individual agenda items requiring closer explanation for outside directors and outside Audit & Supervisory Board members
2016	Help outside directors and outside Audit & Supervisory Board members exchange their insights and share their understanding of the status of Denka's operations	Decided to hold the Outside Director Liaison Meetings on a quarterly basis
	Facilitate the understanding of Denka's short-, medium- and long-term policies on business operations and R&D	Decided to hold the biannual Strategy and R&D Policy Presentation Meetings (now the Policy Presentation Meetings) for outside directors and outside Audit & Supervisory Board members
	Help the Board of Directors ensure robust auditing of and supervision over business operations being executed by executive officers	Clarified the content of meeting handouts on agenda items and reporting materials distributed at Board of Directors meetings
2017	Enhance the effectiveness of the Board of Directors	Instituted the annual evaluation of the Board of Directors' operations to assess their effectiveness with the involvement of all directors and all Audit & Supervisory Board members while making it a rule to disclose its findings via the Corporate Governance Report
	Ensure that outside directors and outside Audit & Supervisory Board members contribute diverse opinions and advice to the Board of Directors with regard to such governance issues as director nomination and remuneration as well as other important management matters, with the aim of securing the fairness and objectivity of management judgment	Established the Management Advisory Committee attended by all outside directors, all outside Audit & Supervisory Board members, the Chairman and the President & CEO  Monthly exchange meetings for all directors and Audit & Supervisory Board members were formally named the D&A Round Table meetings
2019	Appoint directors with concurrent membership in the Audit Committee to speed up decision making while strengthening the Board of Directors' supervisory functions, with the aim of improving corporate governance and achieving growth in corporate value	Transitioned from a Company with an Audit & Supervisory Board to a Company with an Audit Committee
		The Management Advisory Committee was renamed the Nomination and Remuneration Advisory Committee
2021	Revise conventional in-house rules allowing former Chairmen and Presidents to serve as advisors after retirement	Abolished advisor positions
	Clarify roles fulfilled by the Board of Directors and the executive team while further enhancing the effectiveness of the former's discussion and its capabilities for speedy decision making	Decreased the number of directors from 12 to nine while increasing outside directors so that they make up more than 44% of the Board membership

ESG information site: Corporate Governance [https://denka\\_sustainability.disclosure.site/en/themes/658](https://denka_sustainability.disclosure.site/en/themes/658) General Meeting of Shareholders: [https://www.denka.co.jp/ir/fact\\_04/](https://www.denka.co.jp/ir/fact_04/) (Japanese only)

The Denka Group aims to become a company that is genuinely needed by society and, to this end, proactively works hand in hand with other members of society in various ways to contribute to sound and sustainable social development.

### Contribution to Local Communities

## Initiatives to Support the Restoration and Reconstruction of Communities Hit by the Great East Japan Earthquake

Denka's Disaster Reconstruction Support Division is engaged in projects aimed at facilitating reconstruction efforts under way in regions affected by the Great East Japan Earthquake. Specifically, the division provides products and solutions to assist in such endeavors as the resumption of farm operations, the strengthening of expressway infrastructure and the construction of cutting-edge research facilities.

#### Main Initiatives

- Restoration and reconstruction of roads, tunnels and buildings (via the provision of special cement additives) as well as farmland (via the provision of soil improvers, fertilizers and underground drainpipes)
- Recycling of sludge from municipal water supply and sewage treatment facilities as raw materials and fuel for use in cement production
- Dispatching a cumulative total of 900 volunteer employees, for a total of 82 rounds of relief activities carried out in disaster-hit communities

#### Accomplishments and Spillover Effects

- Contribution to the restoration, reconstruction and revitalization plans led by Japan's Reconstruction Agency via the provision of Denka Group products
- Creation of the *tsumugu* rice wine brand using rice produced in Minami Sanriku-cho through interaction with local farmers



An elevated bridge made using Denka's special cement additives supports the Tohoku Bullet Train Line (Fukushima Prefecture)

### Fulfilling Our Responsibilities as a Corporate Citizen

## Resumption of Diethyl Malonate Production

Upon the request of the Japanese government, we revived our production lines for diethyl malonate, which had lain dormant for three years, to provide one of the raw materials for an anti-influenza virus drug expected to help treat novel coronavirus infection. As a result, we supplied the diethyl malonate needed to increase the stockpile of the medicine by an amount equivalent to dosages for approximately 2 million patients.

#### Accomplishments and Spillover Effects

- Completed the mission by rallying a cumulative total of 200 in-house project members with the full cooperation of our suppliers and other external business partners
- All those involved in the project, acting upon a shared sense of mission, learned the significance of social contribution that can be made via the power of chemistry



The first shipment of diethyl malonate after production resumed (the Omi Plant)

## Denka's 11 Year-Financial Summary

	Fiscal 2010	Fiscal 2011	Fiscal 2012	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017	Fiscal 2018	Fiscal 2019	Fiscal 2020
<b>Summary Statement of Income</b> (Millions of yen)											
Net sales	357,893	364,712	341,645	376,809	383,978	369,853	362,647	395,629	413,128	380,803	354,391
Operating income	24,618	20,713	18,817	21,230	24,047	30,634	25,844	33,652	34,228	31,587	34,729
Ordinary profit	23,052	18,996	17,824	20,604	24,287	27,022	23,158	31,499	32,811	30,034	32,143
Profit attributable to owners of parent	14,355	11,330	11,255	13,573	19,021	19,472	18,145	23,035	25,046	22,703	22,785
Equity in earnings (losses) of affiliates	1,189	966	530	550	950	1,097	568	1,105	1,384	1,170	933
<b>Financial Position</b> (Millions of yen)											
Current assets	143,352	153,637	158,595	164,747	170,497	161,876	168,902	184,129	190,730	198,452	200,726
Total assets	402,046	402,552	415,356	431,347	445,569	443,864	454,944	473,799	483,827	501,448	526,035
Current liabilities	153,410	160,676	170,752	163,645	160,101	147,537	144,190	158,043	154,047	160,807	155,062
Net assets	168,182	172,737	180,709	189,516	210,798	216,071	227,487	242,780	250,481	254,014	270,036
Interest-bearing debt	114,562	118,049	114,241	120,669	122,536	124,596	113,748	108,269	112,134	134,340	138,191
<b>Cash Flows</b> (Millions of yen)											
Cash flows from operating activities	33,780	28,521	40,215	27,245	35,557	44,014	39,557	48,776	32,660	41,954	40,610
Cash flows from investing activities	(23,763)	(22,363)	(25,864)	(26,693)	(27,449)	(34,979)	(22,258)	(29,298)	(26,176)	(36,303)	(36,976)
Cash flows from financing activities	(10,554)	(4,050)	(12,784)	(3,327)	(7,437)	(7,348)	(19,319)	(15,858)	(8,408)	9,544	(6,706)
Cash and cash equivalents at end of year	6,160	8,207	10,680	8,244	9,157	11,813	10,174	14,101	13,889	29,170	25,909
<b>Per share information</b> (Yen)											
Dividends per share*	50.0	50.0	50.0	50.0	62.5	65.0	70.0	105.0	120.0	125.0	125.0
Profit per share	146.20	116.11	118.13	145.16	207.40	214.71	205.05	261.80	286.18	262.62	264.24
Net assets per share	1,686.73	1,768.20	1,884.96	2,013.84	2,279.70	2,366.74	2,526.42	2,727.94	2,839.16	2,906.95	3,101.92
<b>Financial Indices</b> (%)											
Operating income ratio	6.9	5.7	5.5	5.6	6.3	8.3	7.1	8.5	8.3	8.3	9.8
ROE	8.9	6.7	6.4	7.4	9.6	9.3	8.3	10.0	10.3	9.1	8.8
ROA	5.8	4.7	4.4	4.9	5.5	6.1	5.2	6.8	6.9	6.1	6.3
Shareholders' equity ratio	41.2	42.3	43.1	43.5	46.9	47.7	49.1	50.5	51.0	50.0	50.8
<b>Other</b>											
Capital investment (millions of yen)	21,325	22,878	26,964	25,735	21,300	21,196	25,731	22,710	32,745	34,205	42,323
Depreciation and amortization (millions of yen)	22,292	23,192	21,585	22,254	23,032	23,242	24,359	24,599	22,946	22,482	22,911
R&D expenses (millions of yen)	9,819	10,639	10,605	10,828	11,127	11,787	13,026	13,868	14,562	15,031	14,736
Number of employees at end of year	4,768	4,921	5,206	5,249	5,309	5,788	5,816	5,944	6,133	6,316	6,351

## Management Plans

**DENKA 100** (fiscal 2007 – fiscal 2012)**Resumption of DENKA 100** (fiscal 2013 – fiscal 2017)**Denka Value-Up**

## ▶ Denka's main achievements

- Established the Shanghai Representative Office

- Completed the Denka Innovation Center main building
- Celebrated the centennial of the Company's founding
- Changed company name
- Established Denka Performance Elastomer LLC

- Hit a record high in profit
- Achieved record-high profit for a second consecutive year

## ▶ Environmental developments

- European debt crisis
- Great East Japan Earthquake

- Consumption tax hike (to 8%)
- Signing of the Paris Agreement
- Inauguration of U.S. Trump administration

- Consumption tax hike (to 10%)
- U.S.-China trade tension
- Novel coronavirus pandemic
- Inauguration of U.S. Biden administration

Note: Figures for fiscal 2017 and later are modified in accordance with the Partial Amendments to Accounting Standard for Tax Effect Accounting (Accounting Standards Board of Japan (ASBJ) Statement No. 28 issued in February 2018).

\* The Company executed a reverse share split that merged five shares into one share as of October 1, 2017. As we aim to support easy-to-understand comparisons between performances in each fiscal year, the value of dividends per share for preceding fiscal years has been retrospectively converted to reflect the value of dividends had the reverse share split already been in effect. In addition, dividends per share for fiscal 2014 comprise: (1) full-year dividends per share of ¥52.5 (¥10.5 per share prior to conversion); and (2) commemorative dividends per share of ¥10.0 per share (¥2.0 per share prior to conversion).

IR Information <https://www.denka.co.jp/eng/ir>

# Denka

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