



# DIC REPORT 2019

The DIC Group Integrated Report

## Color & Comfort

Complete Version

**DIC Corporation**

# The DIC WAY

- **Mission**

Through constant innovation, the DIC Group strives to create enhanced value and to contribute to sustainable development for its customers and society.

- **Vision**

Color & Comfort by Chemistry

- **Spirit**

Drive, Integrity, Dedication, Collaboration, Harmony



## Color & Comfort

### Making it Colorful

DIC helps make life colorful



### Innovation through Compounding

DIC brings innovation to society through its core compounding technologies

### Specialty Solutions

DIC draws on its expertise and comprehensive strengths to offer solutions



# Contents

## Connecting the DIC Group and its Stakeholders

### DIC Group Communications Tools

The DIC Group uses a variety of tools to promote communication with its many stakeholders to encourage greater awareness of the Group's activities. More detailed sustainability-related information and data can be found on the DIC website.

#### Printed/PDF-Form Publications

##### Reports on activities

**DIC Report**  
(summary version)



Summary integrated report (published annually) (printed publication)

**DIC Report**  
(complete version)



Complete report (published annually) (PDF-form publication)

**DIC Report**  
Financial Section



Report on results of operations and financial condition (published annually) (PDF-form publication)

#### DIC Global Website

##### Real-time information

**WEB** <http://www.dic-global.com/en/>

Umbrella website providing information to the global public about the DIC Group and reports on its various activities; updated as necessary



## About this Report

In previous years, the DIC Group published a combined corporate profile and sustainability report with the aim of presenting a clear, easy-to-understand picture of the Group and its sustainability initiatives. Since 2018, the Group has published the DIC Report as an integrated report, which combines financial information, encompassing consolidated operating results and corporate strategies, and nonfinancial (sustainability) information. The Group has published a simplified summary version of the report (printed), which focuses on key highlights, and a more detailed complete version (PDF), which contains extensive quantitative data.

**DIC Report (Complete version) (PDF-form publication)**

**WEB** <http://www.dic-global.com/en/csr/annual/>

Note : As used herein, the term Asia-Pacific region → a geographic designat on that, like Europe and the Americas and Greater China, represents a grouping of companies overseen by a regional headquarters—refers to Asia (excluding Japan and Greater China) and Oceania. The term Asia and Oceania refers to Asia (excluding Japan) and Oceania.

## Link with the DIC Website

The **(WEB)** mark indicates that more detailed information and/or data can be found on the indicated page of the DIC global website.

DIC global website **WEB** <http://www.dic-global.com/en/>

### Scope of Reporting

In principle, this report provides information on DIC Corporation and consolidated DIC Group companies worldwide. For information on the scope of reporting for ESH-related initiatives, please visit the pertinent page of the DIC website.

**WEB** [http://www.dic-global.com/en/csr/pdf/dic\\_report\\_scope\\_en\\_2019.pdf](http://www.dic-global.com/en/csr/pdf/dic_report_scope_en_2019.pdf)

### Reporting Period

Fiscal year 2018 (January 1–December 31, 2018)

### Date of Publication

June 2019 (The next report is scheduled for publication in June 2020.)

### Guidelines Referenced

Guidelines referenced in the preparation of this report were ISO 26000, the International Organization for Standardization's standard for social responsibility, released in 2010; Japan's Responsible Care Code; and the Global Reporting Initiative (GRI)'s GRI Standards.

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## Cover Design

The cover of this year's DIC Report derives its inspiration from the DIC Group's "Color & Comfort" brand slogan, employing bright colors that evoke the efforts of the Group, a global powerhouse, to enrich and add vibrancy to society and the lives of people everywhere.

# The DIC Group: A Global Powerhouse

## Corporate Data

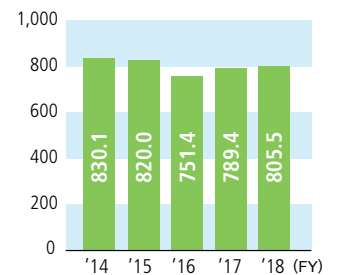
Registered name: **DIC Corporation**  
 Corporate headquarters: DIC Building, 7-20, Nihonbashi 3-chome, Chuo-ku, Tokyo 103-8233, Japan  
 Date of foundation: February 15, 1908  
 Date of incorporation: March 15, 1937  
 Paid-in capital: ¥96.6 billion  
 Number of employees: 20,620 (Nonconsolidated: 3,290)  
 Number of subsidiaries and affiliates: 174 (Domestic: 32, Overseas: 142)



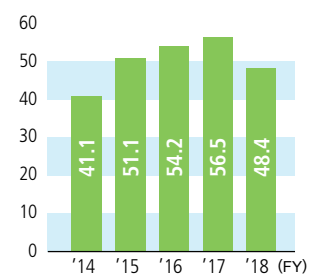
Corporate headquarters (Tokyo)

Note: Corporate data is as of December 31, 2018. Net sales and operating income are for fiscal year 2018.

## Net Sales (Billions of yen)



## Operating Income (Billions of yen)

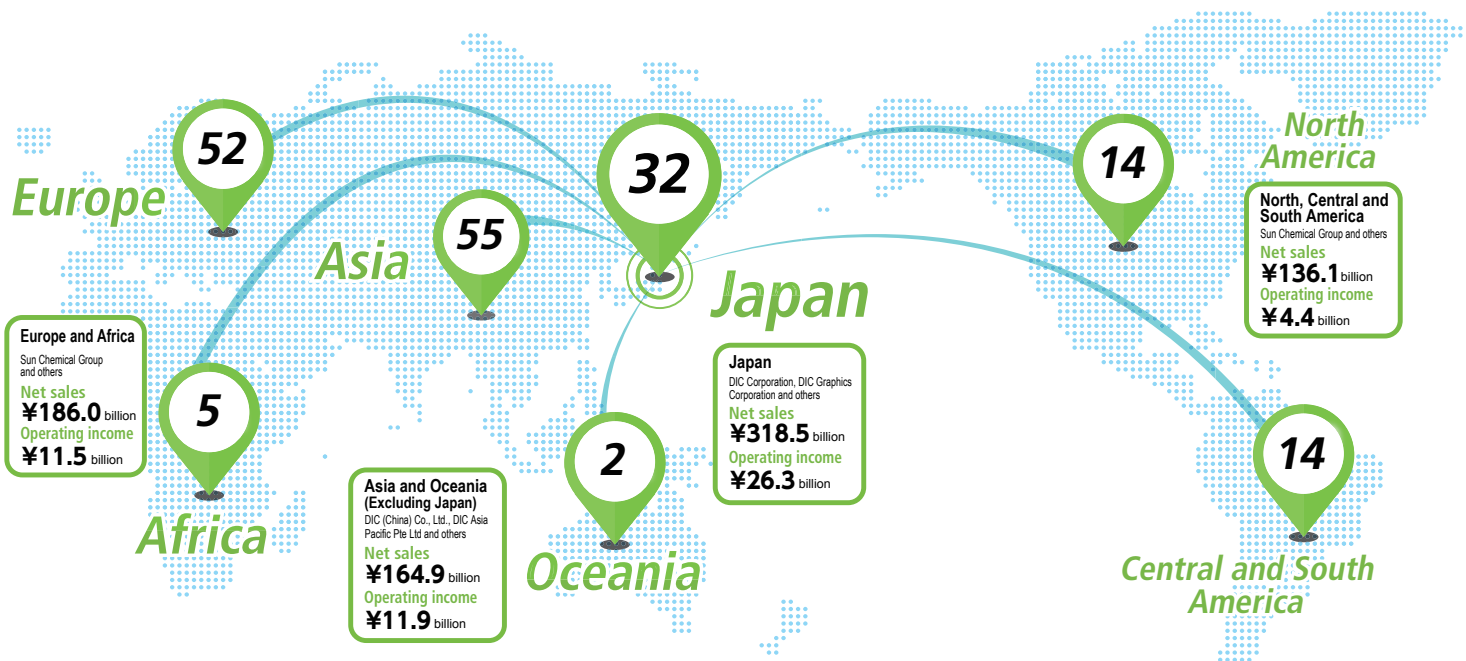


## Global Network

DIC has 174 companies in 64 countries and territories around the world.



Sun Chemical Corporation headquarters (United States)

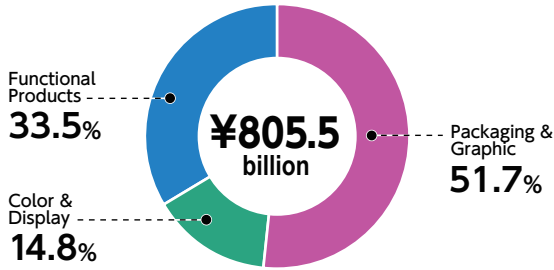


DIC (China) Co., Ltd. (PRC)

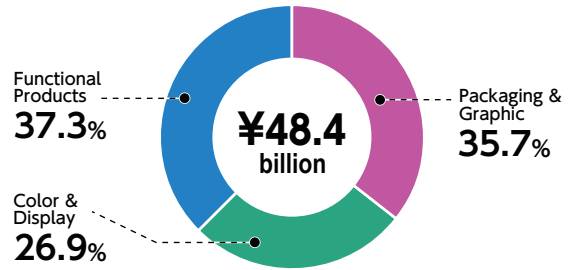


DIC Asia Pacific Pte Ltd (Singapore)

### Breakdown of Fiscal Year 2018 Net Sales by Segment

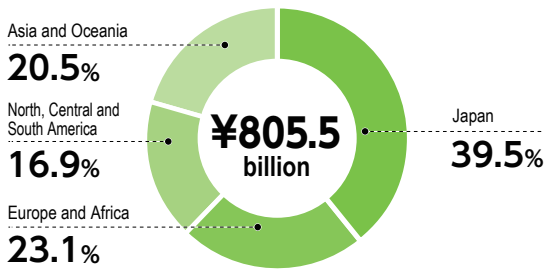


### Breakdown of Fiscal Year 2018 Operating Income by Segment

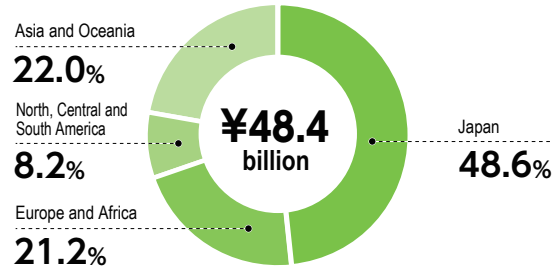


Note: Fiscal year 2018 net sales and operating income as used here include intersegment transactions. For this reason, and because of the existence of transactions classified as "others," which are not attributable to reportable segments, these figures differ from reported net sales and operating income.

### Breakdown of Fiscal Year 2018 Net Sales by Region



### Breakdown of Fiscal Year 2018 Operating Income by Region



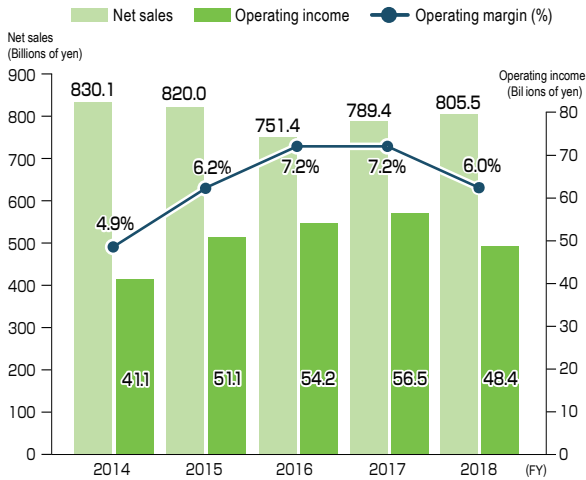
Note: Operating income as used here includes eliminations (approximately ¥5.8 billion). Accordingly, these percentages do not represent shares of reported operating income.

## Principal Global R&D Sites

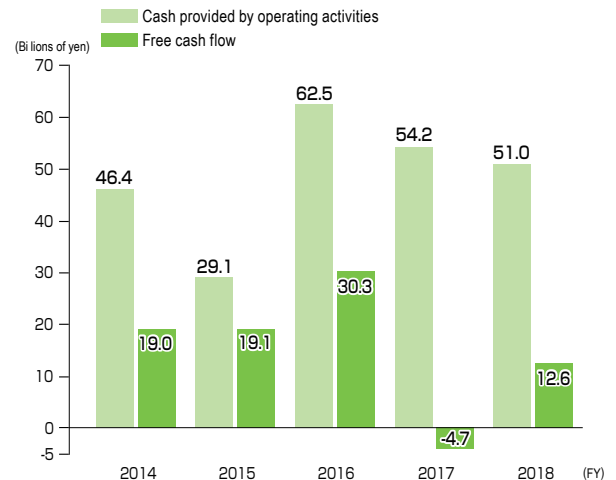


# Financial Information

## Net Sales, Operating Income and Operating Margin

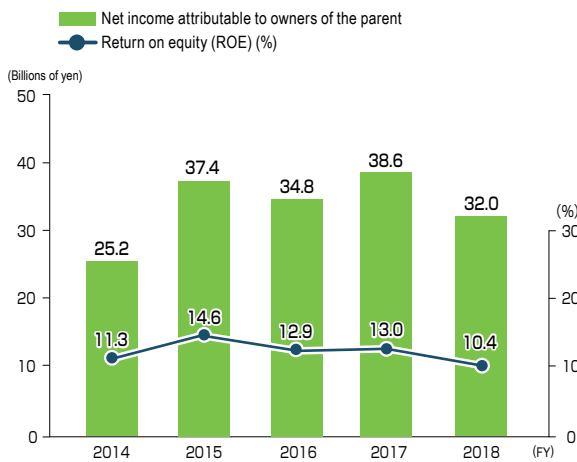


## Cash Provided by Operating Activities and Free Cash Flow

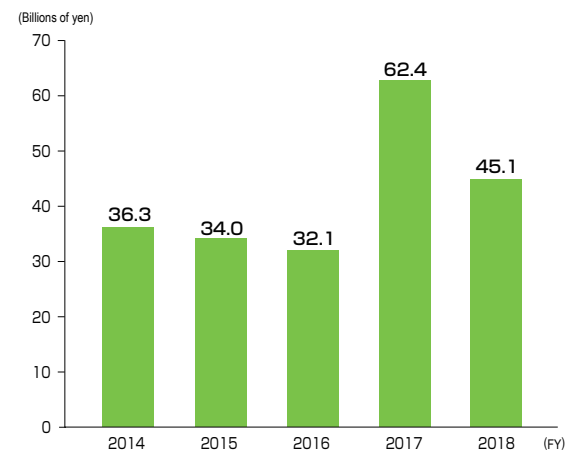


\* Owing to an investment of ¥24.9 billion in Taiyo Holdings Co., Ltd., cash used in investing activities increased in fiscal year 2017.

## Net Income Attributable to Owners of the Parent and ROE

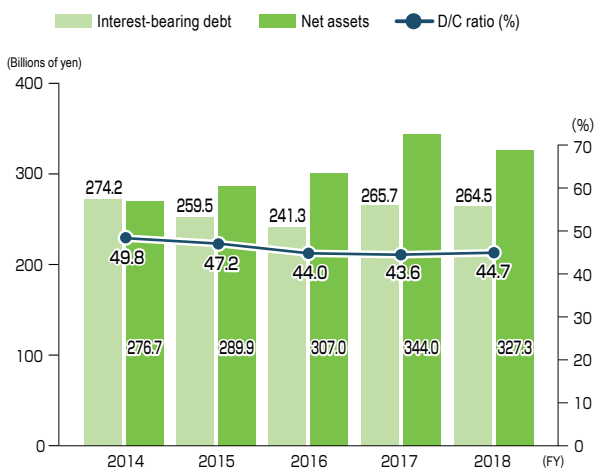


## Capital Expenditure and Investment



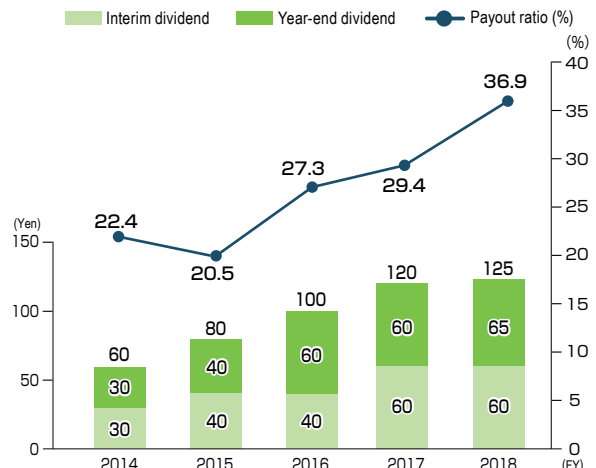
\* Owing to an investment of ¥24.9 billion in Taiyo Holdings Co., Ltd., capital expenditure and investment increased in fiscal year 2017.

## Net Assets, Interest-Bearing Debt and D/C Ratio\*



\* Debt-to-capital (D/C) ratio: Interest-bearing debt / (Interest-bearing debt + Net assets)

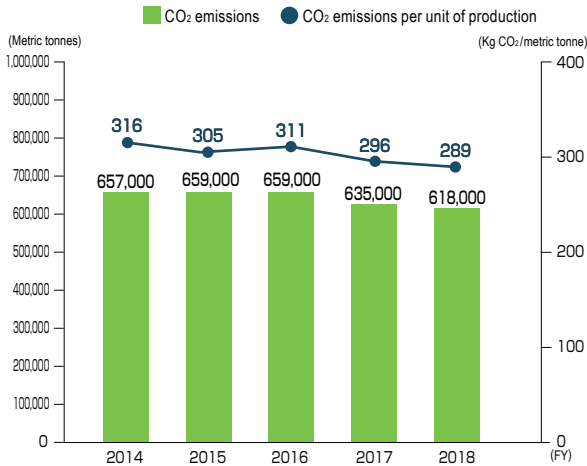
## Returns to Shareholders\* (Dividends per Share and Payout Ratio)



\* Figures have been adjusted to reflect the impact of the consolidation of shares. (In fiscal year 2015, DIC purchased and retired treasury shares.)

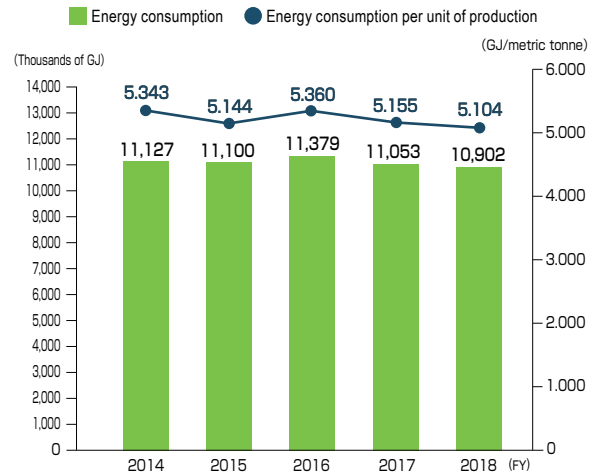
# Nonfinancial Information

## Global CO<sub>2</sub> Emissions and CO<sub>2</sub> Emissions per Unit of Production (DIC Group)



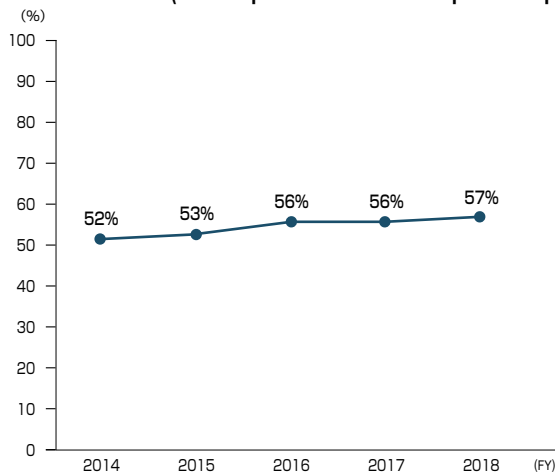
\* CO<sub>2</sub> emissions per unit of production is calculated using adjusted production volume (parent company in Japan only). (Notification submitted to Japan's Ministry of Economy, Trade and Industry)

## Global Energy Consumption and Energy Consumption per Unit of Production (DIC Group)



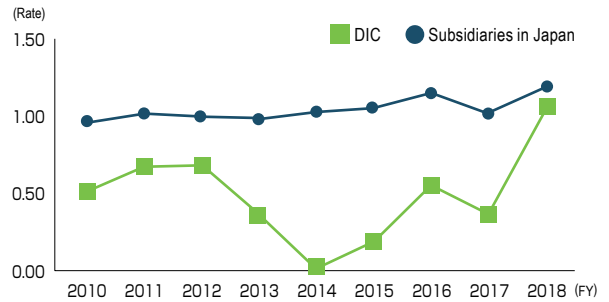
\* Energy consumption per unit of production is calculated using adjusted production volume (parent company in Japan only). (Notification submitted to Japan's Ministry of Economy, Trade and Industry)

## Environment-Friendly Products as a Percentage of Overall Product Portfolio (DIC Corporation and DIC Graphics Corporation)



\* Owing to the introduction of a new SAP enterprise resource planning (ERP) system in fiscal year 2014, the method used to calculate environment-friendly products has changed.

## Occupational Accident Frequency Rate (DIC Corporation)

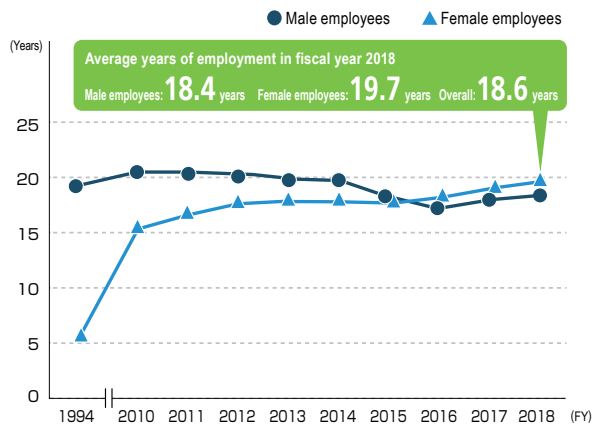


Note: The frequency rate expresses the frequency of accidents resulting in lost workdays in a fiscal year, calculated as the number of deaths or injuries per million work hours.

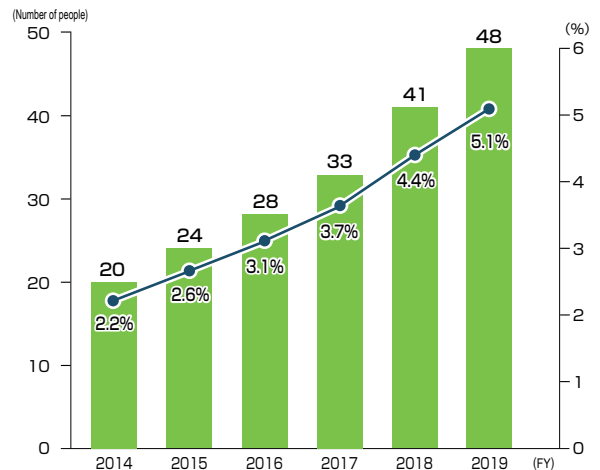
$$\text{Frequency rate} = \frac{\text{Number of deaths or injuries due to occupational accidents}}{\text{Total work hours}} \times 1,000,000$$

A frequency rate of 1.00 means one occupational accident resulting in workdays lost in one year at a site with 500 employees.

## Average Years of Employment (DIC Corporation)



## Female Employees in Management Positions (DIC Corporation)



A Message from  
the President

## Addressing Social Imperatives as We Work to Reposition DIC on a Growth Trajectory

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Future vision:

“Become a unique global company  
that is trusted by society  
by providing value (safety and  
peace of mind, color and comfort)”

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Representative Director,  
President and CEO  
DIC Corporation

**Kaoru Ino**





In February 2019, we celebrated DIC's 111th anniversary. In addition to commanding the top share of the global market for printing inks, a core business since our establishment, we have succeeded in growing pigments and polymers, both derived from printing inks, into prosperous components. Today, we provide indispensable products and services to customers in a broad range of industries, including packaging, housing, automotive, cosmetics, electronics and healthcare.

The DIC Group comprises 174 companies in 64 countries and territories. Approximately 60% of our consolidated net sales are generated by, and over 70% of our more than 20,000 Group employees are located at, bases outside of Japan. Accordingly, a global perspective is crucial to any discussion of the Group.

In recent years, the rapid spread of advanced digital technologies, as represented by the increasing importance of artificial intelligence (AI) and the Internet of Things (IoT), have brought dramatic changes to lifestyles and society, as well as to the business environment. At the same time, social imperatives related to concerns such as climate change, food safety and marine plastics have become increasingly urgent. Amid such significant changes, how do materials manufacturers contribute to society going forward? Since taking the reins as CEO, I have seen this as my principal mission. Ensuring an accurate grasp of global, dynamic paradigm shifts is essential to our ability to achieve sustainable growth and also to enhance our intrinsic value. This recognition underpinned the formulation of our new medium-term management plan, DIC111, which kicked off in fiscal year 2019. Under this plan, we will work to strengthen our business, financial and human resources strategies while taking steps to improve management efficiency and strength.

## | A Look Back at DIC108 (Fiscal Years 2016–2018)

Our previous medium-term management plan, DIC108, was positioned as the first phase in a growth scenario developed to guide the DIC Group's evolution through to fiscal year 2024. The plan centered on two core policies: Ensure the sustainability of businesses with stable earnings bases—e.g., printing inks, pigments and polymers—by responding to environmental concerns, promoting rationalization and making strategic investments, and create business models that address social imperatives in such areas as electronics, packaging, healthcare and decarbonization. In line with these policies, we focused on strengthening our technology development capabilities and business expansion efforts, as well as our financial base. As a consequence, both businesses with stable earnings bases and growth businesses reported steady results over the three years of the plan, underpinning record-high income in fiscal years 2016 and 2017. However, in fiscal year 2018 consolidated operating income declined 14.3%, to ¥48.4 billion, despite a 2.0% increase in consolidated net sales, to ¥805.5 billion. The principal factors behind this are the fact that efforts to revise product prices failed to keep pace with rising raw materials prices and the depreciation of currencies in European emerging economies. Consolidated ordinary income decreased 14.5%, to ¥48.7 billion, and consolidated net income attributable to owners of the parent fell 17.0%, to ¥32.0 billion. Nonetheless, we declared a full-term dividend of ¥125 per share, an increase of ¥5.0 from fiscal year 2017, as a consequence of which our dividend payout ratio exceeded 30.0% in the final year of DIC108.

As demonstrated by our performance in fiscal year 2018, our profitability relies heavily on existing core businesses, meaning that our business structure is vulnerable to macroenvironmental conditions, including rising prices for raw materials. This underscored our recognition of the urgency of transforming our business portfolio so that it's able to withstand demand declines in mature markets and repositioning DIC on a growth trajectory by creating new businesses with the potential to become mainstays. It also clarified what we need to do as we move toward this new growth trajectory.

In fiscal year 2019, risks arising from economic trends in the People's Republic of China (PRC) and worldwide—a consequence of trade friction between the PRC and the United States—and from financial market fluctuations attributable to the United Kingdom's withdrawal from the European Union continue to warrant caution. Nonetheless, we will continue working to revamp our business structure, reinforcing its ability to withstand macroenvironmental changes and drive continuous, robust growth while at the same time applying our inherent talent for resolving issues to our efforts to implement the strategies of DIC111. Our forecasts for the period include consolidated net sales of ¥850.0 billion and consolidated operating income of ¥52.0 billion, up 5.5% and 7.5%, respectively, from fiscal year 2018.

**Consolidated operating income reached record highs in two consecutive years (fiscal years 2016 and 2017), but was significantly below our original target in fiscal year 2018, owing to rising raw materials prices.**

### Achievements

- Reorganized production system in line with demand trends in mature markets (publication inks and polymers)
- Growth in functional pigments business exceeded target
- Strengthened foundation of electronics business through capital and business alliance with Taiyo Holdings Co., Ltd.
- Realized continuous growth in net sales and record-high income (fiscal year 2017)
- Dividend payout ratio exceeded target, thanks to efforts to maintain/improve financial balance

### Challenges

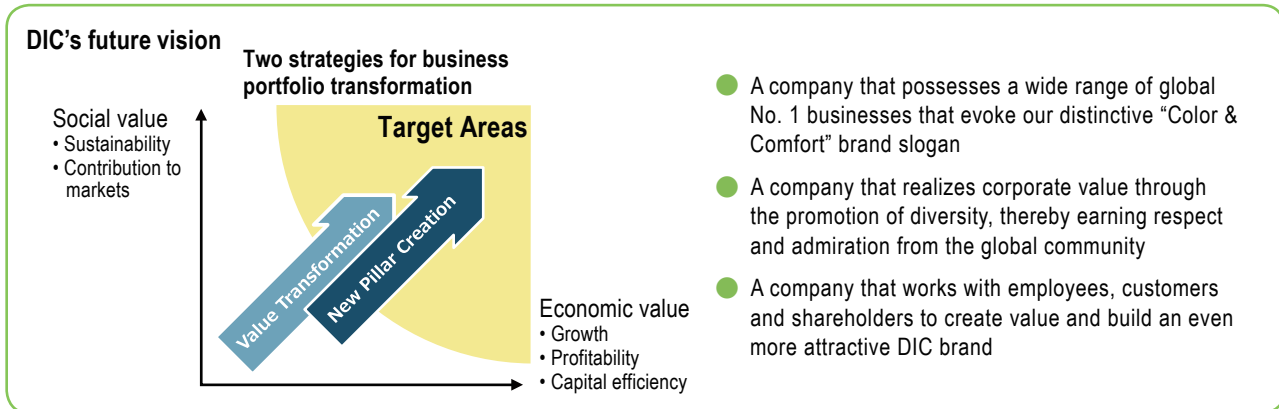
- Reform business structure to offset further demand declines in mature markets (publication inks and general processed products)
- Establish robust business foundation that is impervious to fluctuations in raw materials prices, taking into account the decline in profitability in fiscal year 2018, a consequence of rising raw materials prices
- Create new mainstay businesses to compensate for shrinking demand for publication inks to reposition DIC on a growth trajectory
- Steadily implement strategic investments

Promoting business portfolio transformation and an improved management infrastructure with the aim of achieving consolidated net sales of ¥1.0 trillion in fiscal year 2025

## I Realigning Businesses by Illuminating the Relationship Between Social Value and Economic Value

As a first step in formulating DIC111, we reconfirmed our vision for the DIC Group in the future.

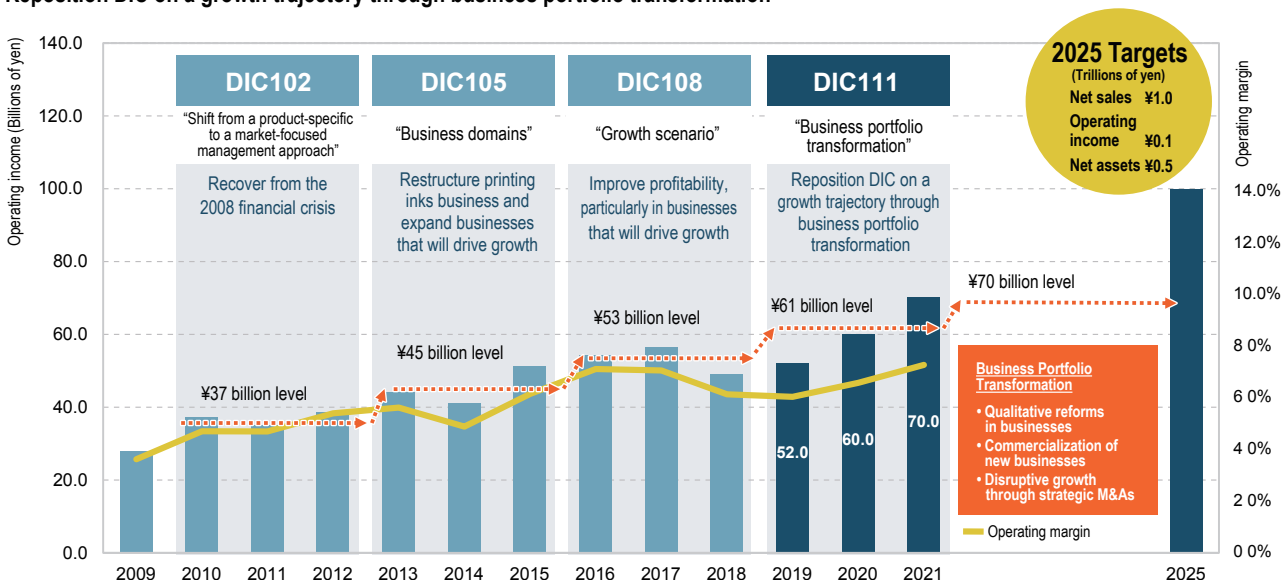
Become a unique global company that is trusted by society by providing value (safety and peace of mind, color and comfort)



To ensure that we realize this vision, we established the Intrinsic Value Working Group, comprising mid-tier and young employees, through which we promoted extensive debate and discussion aimed at better defining the value that DIC provides to society, identifying the challenges we must address and determining how best we can contribute to further sustainability through our operations. This process led us to review existing businesses from the twin perspectives of “social value” and “economic value” and to advance business portfolio transformation in a manner that addresses key imperatives arising from social changes such as the spread of digitization and environment, safety and health (ESH)-related issues, including those affecting the global environment and food supplies.

Leveraging our position as a manufacturer of fine chemicals, we have sought consistently to provide functionality and added value to society in a multitude of forms, thereby helping make people’s lives more convenient. We have also always maintained an awareness of the negative aspects of our operations, including the impact of our production activities on the environment. Going forward, we will further advance this approach with the goal of becoming an organization capable of delivering increased functionality and other features that improve convenience and of providing social value, one facet of which is environmental value. We will bolster efforts to help address ESH-related issues—including climate change, sustainable resource use and human health—through our operations to provide enhanced value that contributes to a richer, more vibrant society. Combining economic value with social value will enable us to realize sustainable growth for the DIC Group. A natural extension of this approach is the milestone performance targets we have set for fiscal year 2025, namely, consolidated net sales of ¥1.0 trillion, operating income of ¥100 billion and net assets of ¥500 billion. Recognizing the achievement of these targets as critical to becoming a unique global company that is trusted by society, over the three years of DIC111 we will emphasize advancing qualitative reforms in existing businesses and commercializing new businesses, and on accelerating disruptive growth through strategic mergers and acquisitions (M&As).

### Reposition DIC on a growth trajectory through business portfolio transformation



## 1 Reorganization of business segments

Effective from fiscal year 2019, we have reorganized our five existing business segments, shifting our focus to value provided, into three new segments: Packaging & Graphic, Color & Display and Functional Products. As a company that provides complex products to customers in a broad range of industries, we often hear from investors that they find it difficult to understand our corporate direction. In that sense, I believe that it's important for us to have a business structure and message that are simple and easy for external stakeholders to understand and at the same time to ensure that all employees are on the same wavelength as we work together to confront challenges ahead.

- **Packaging & Graphic**  
Packaging materials that bring safety and peace of mind
- **Color & Display**  
Color and display materials that make life colorful
- **Functional Products**  
Functional products that add comfort

### Packaging & Graphic

To date, we have pursued independent strategies for printing inks, coextruded multilayer films and adhesives. Grouping these businesses together under the heading “packaging” will bring together common issues such as food safety and food loss. Looking ahead, we will capitalize on our ability to provide printing inks, films and adhesives to marshal technologies and know-how to offer packaging materials that bring safety and peace of mind and promote the expansion of our business while at the same time helping resolve social imperatives.



Presentation introducing DIC111

### Color & Display

This segment focuses on pigments, liquid crystals (LCs) and natural colorants as businesses that make life more colorful. In the area of pigments, we see products for cosmetics as particularly promising. We also expect growth in the market for *Linablue*<sup>®</sup>, a natural blue food coloring derived from Spirulina, owing to increasing concerns worldwide regarding food safety. In the highly profitable area of LCs, we are promoting the joint development of inks for inkjet-printed quantum dot color filters (QDCFs) that use inkjet technology as next-generation display materials.

### Functional Products

This segment centers on polymers and compounds. Guided by the concept of functional products that add comfort, we will leverage our specialized composite technologies to enhance our competitiveness in a variety of areas, including coatings and molded products, with the goal of adding comfort. This segment also includes products such as hollow-fiber membrane modules, which allow gases but not liquids to permeate.

We have also identified four priority areas for developing new businesses—Electronics, Automotive, Next-Generation Packaging and Healthcare—and have established the New Business Development Headquarters to oversee related efforts. The New Business Development Headquarters integrates three key functions—our R&D team, which encompasses medium- to long-term development; the Product Innovation Center, which is charged with bringing together core technologies; and our marketing team, which is responsible for enhancing popularity and market penetration—to seamlessly oversee all stages of new business development.

## 2 Value Transformation: Strengthening our corporate structure through qualitative reforms of businesses

Having defined “qualitative reforms” as clarifying competitive advantages and shifting to products capable of withstanding macroenvironmental changes, we will encourage a shift to businesses with more of a focus on social value and sustainability. In the Packaging & Graphic segment, we will concentrate resources on packaging solutions and specialty inks. In the Color & Display segment, efforts will center on high-performance products, notably functional pigments, and naturally derived products. In the Functional Products segment, we will emphasize environment-friendly products and high-value-added products such as epoxy resins. Shifting to businesses with more of an emphasis on social value will also entail a review of general-purpose products and a bold revamping of business models, including those for core businesses. In some cases, this may necessitate moving resolutely to replace certain businesses. Accordingly, we established Groupwide criteria for withdrawing from a business, which calls for a three-pronged evaluation of any business from three perspectives, namely, growth potential, profitability and scale, and consideration for market standing when plotting exit strategies. The Board of Directors and senior management will have the final say, but establishing criteria will enable us to accelerate the decision-making process, which will in turn strengthen the entire Group.

| Segment             | Value Transformation  |
|---------------------|---|
| Packaging & Graphic | <ul style="list-style-type: none"> <li>● <b>Packaging solutions</b><br/>Printing inks, adhesives, films, polystyrene</li> <li>● <b>Specialty inks</b><br/>Jet inks, security inks</li> </ul>  |
| Color & Display     | <ul style="list-style-type: none"> <li>● <b>High-performance products</b><br/>Functional pigments (pigments for color filters, effect pigments, pigments for cosmetics and pigments for NIP*), LC materials, next-generation display materials</li> <li>● <b>Naturally derived products</b><br/>Natural colorants * Nonimpact printing</li> </ul> |
| Functional Products | <ul style="list-style-type: none"> <li>● <b>Environment-friendly products</b><br/>Waterborne resins, polyurethane resins, UV-curable resins</li> <li>● <b>High-value-added products</b><br/>Epoxy resins, PPS compounds, industrial adhesive tapes, hollow-fiber membrane modules</li> </ul>  |

### 3 New Pillar Creation: Creating new businesses in response to ESH-related issues and social changes

The New Business Development Headquarters has identified four priority areas for developing new businesses: Electronics, Automotive, Next-Generation Packaging and Healthcare. In Electronics, we will seek to apply our ink dispersion technologies in such areas as flexible printed circuit boards (PCBs) and next-generation displays to develop functional materials that contribute to a digital society. Under the Automotive banner, we will foster businesses that make use of our composite technologies, including those used to produce carbon fiber-reinforced plastic (CFRP), which helps reduce vehicle weight, thereby improving fuel efficiency. In Next-Generation Packaging, we will work to develop packaging materials that help address issues such as food safety and food loss. Recognizing the elimination of marine plastics, a result of inappropriately discarded used plastic products, as a critical challenge, we have also established a project team to promote a switch to viable alternatives and develop biodegradable materials. Our focus in Healthcare will be on developing products that leverage biotechnological processes accumulated in the cultivation of algae and contribute to health and longevity. We will also make strategic investments to expedite our entry into new markets. This will include investing in startups in related fields and seeking advantageous M&A opportunities.

### 4 A financial strategy centered on cash flow management

DIC111 places top priority on optimizing cash flow management by working continuously to strengthen our financial health and investing in portfolio transformation. The plan budgets ¥250.0 billion for strategic investments aimed at accelerating growth. Through such investments, we will endeavor to maintain stable, appropriate dividends while at the same time ensuring sufficient risk management capabilities. We are confident that this will enable us to attain the ¥70.0 billion target we have set for consolidated operating income in fiscal year 2021, the final year of DIC111. We have adopted return on invested capital (ROIC) as an indicator of investment efficiency and earnings before interest, taxes, depreciation and amortization (EBIDTA)\*, used globally as a measure of a company's profitability.

\* Differences in interest rates and methods for calculating taxes and depreciation make it impossible to directly compare the profitability of companies in different countries and territories using simple income figures. Because it minimizes these differences, EBITDA is widely used around the world to assess the relative profitability of companies.

## Ensuring the DIC Group is loved and respected worldwide by maintaining effective ESG and human resources management

### I Strengthening Our Management Foundation

Against a backdrop of rapid social change, promoting qualitative reforms in businesses and strengthening our management foundation will be crucial to our ability to respond appropriately and achieve sustainable growth. To this end, we will promote ambitious initiatives in line with three key themes.

#### 1 Using digital transformation to reengineer business processes

We are taking active steps to advance digitization, which we acknowledge will dramatically change our business processes. In production, we are using digital technologies to further automation and enhance the visibility of various data with the goal of improving quality and efficiency. In R&D, we are reengineering business processes by utilizing materials informatics (MI), which involves applying material properties databases and AI to materials science.

Guided by DIC111, we launched a project that employs two main approaches to this challenge. The first is using backcasting to formulate future predictions that take into account advances in IT and other external changes. The second involves exploring how to elevate current themes and what sort of future we can create by doing so. Such initiatives will focus on, among others, advancing factory automation, discovering new chemical materials and creating new business models.

#### 2 Human resources management

The success of our efforts to develop new business models is linked inextricably to our ability to bring together the expertise and energy of diverse human resources. To this end, we inaugurated WING, a program with four core themes that seeks to rally our diverse human resources to enhance our responsiveness to social change and drive diversity management, through which we will transform DIC's fundamental identity. Of paramount importance is to reform work styles to capitalize on individual talents, particularly by shifting the focus of evaluation from quantity to quality. At the same time, we will establish a new global human resources system and a system for selecting our next management team to help us uncover new core human resources from among the more than 20,000 DIC Group employees in 64 countries and territories, as well as to ensure that we have the right people in the right places. To facilitate the efficient execution of these initiatives, in fiscal year 2019 we established the Human Resources Strategy Department.

#### Human resources management (WING)

##### Work Style Reform

Reform work styles to capitalize on diversified individuality

##### HR Infrastructure Reform

Adopt global human resources system and unify Group system

##### Next Management Selection

Establish system to appoint the next management team

##### Global Talent Development

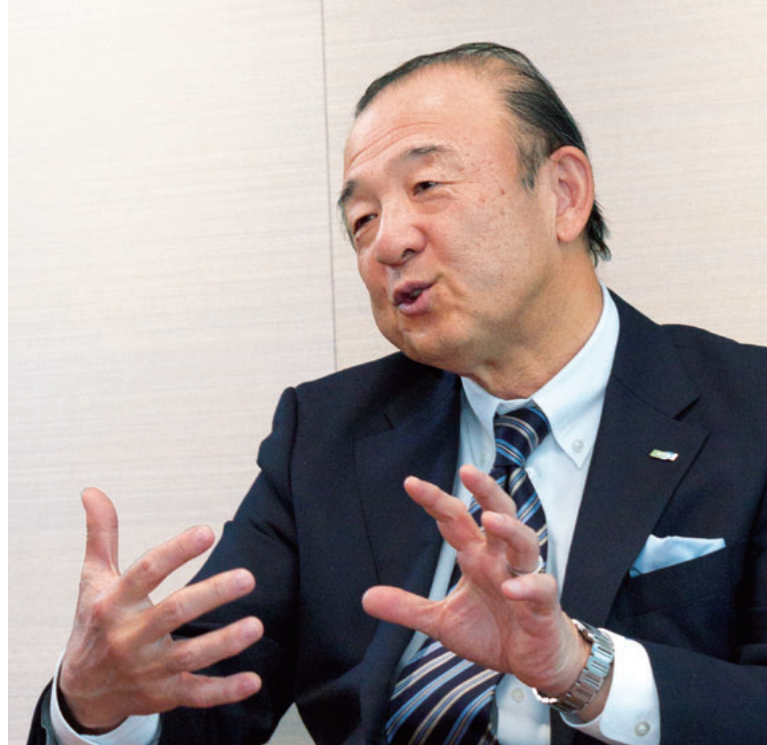
Develop global human resources

### 3 Promoting ESG management, including the setting of numerical targets

Recent years have reconfirmed our awareness of the fact that addressing environmental, social and governance (ESG)-related issues is crucial to realizing sustainable growth and that this is what ultimately determines corporate value over the long term. In fiscal year 2018, we established the ESG Unit to facilitate a more systematic approach to related initiatives. Group companies continue to work as one to promote a variety of efforts worldwide and have set a number of specific numerical targets.

In the area of environmental issues, we aim to reduce carbon dioxide (CO<sub>2</sub>) emissions across global DIC Group sites by 30% from the fiscal year 2013 level by fiscal year 2030. To this end, we encourage sites to introduce or switch entirely to energy from renewable sources, including solar power and biomass. In May 2019, we declared our support for the Task Force on Climate-related Financial Disclosures (TCFD), pledging to disclose climate-related information in line with TCFD recommendations going forward. We also remain committed to effective stewardship of the products we provide and have stepped up efforts to develop products such as inks made with bio-derived materials and highly recyclable polystyrene. As an outgrowth of this, we introduced a proprietary sustainability index that evaluates businesses based on environmental impact and contribution to the aforementioned targets, underscoring our commitment to developing products and solutions that benefit both customers and markets. We have aligned this index to the United Nations' Sustainable Development Goals (SDGs).

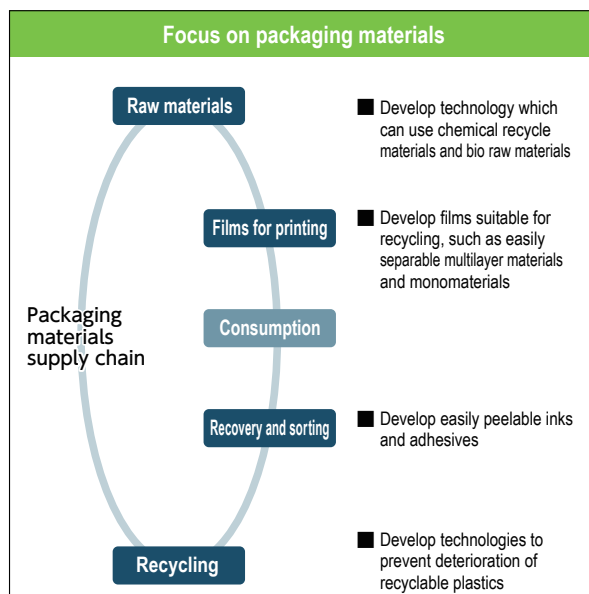
Note: For more information on the SDGs, please see page 52.



#### Introduced a proprietary sustainability index

| Social issues   | Primary value of DIC products   |
|---|---|
| <p style="text-align: center;">Climate change<br/>Resource conservation</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <br/>7 AFFORDABLE AND CLEAN ENERGY         </div> <div style="text-align: center;"> <br/>13 CLIMATE ACTION         </div> <div style="text-align: center;"> <br/>14 LIFE BELOW WATER         </div> <div style="text-align: center;"> <br/>15 LIFE ON LAND         </div> </div> <p style="text-align: center;">SDGs Goals 7, 13, 14 and 15</p> | <ul style="list-style-type: none"> <li>● Contain renewable raw materials</li> <li>● Energy saving and thermal insulation</li> <li>● Reduce weight</li> <li>● Cope with marine plastics</li> </ul> |
| <p style="text-align: center;">Sustainable use of natural resources</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <br/>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE         </div> <div style="text-align: center;"> <br/>11 SUSTAINABLE CITIES AND COMMUNITIES         </div> <div style="text-align: center;"> <br/>12 RESPONSIBLE CONSUMPTION AND PRODUCTION         </div> </div> <p style="text-align: center;">SDGs Goals 9, 11 and 12</p>                         | <ul style="list-style-type: none"> <li>● Recyclable</li> <li>● Reduce waste</li> <li>● Long life</li> <li>● Reduce volume</li> </ul>  |
| <p style="text-align: center;">Food, safety and health</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <br/>2 ZERO HUNGER         </div> <div style="text-align: center;"> <br/>3 GOOD HEALTH AND WELL-BEING         </div> </div> <p style="text-align: center;">SDGs Goals 2 and 3</p>  | <ul style="list-style-type: none"> <li>● Health and comfort</li> <li>● Reduce food waste</li> <li>● Safety</li> <li>● Low VOCs</li> </ul>   |

#### Enhanced measures to cope with waste plastic and marine plastics



Under the “social” heading, we also remain committed to furthering the incorporation of diversity into management to create a corporate culture that allows a wide range of individuals to reach their full potential. In May 2018, we formulated the DIC Group Human Rights Policy, which conforms with global codes governing human rights to guide related initiatives in the years ahead.

Efforts to address governance-related issues include creating a system based on Japan's Corporate Governance Code and establishing key performance indicators (KPIs) to measure diversity in management, including the percentage of foreign nationals and women in executive positions, both of which we intend to boost to 30% by fiscal year 2025.

In closing, as a manufacturer of fine chemicals we continue to recognize ensuring operational and occupational safety, reducing our impact on the environment and promoting the stringent management of chemical substances as fundamental to our business activities, and to see “doing the right thing and doing it right” as the true way forward. We pledge to continue working to ensure that DIC remains a company that is loved and respected worldwide.

# New Medium-Term Management Plan: DIC111

DIC has formulated a new medium-term management plan, DIC111, to clarify strategies for transforming its business portfolio, that is, for building a sophisticated portfolio focused on ESH-related issues and social changes by advancing qualitative reforms in existing core businesses and creating new businesses with the potential to become mainstays.

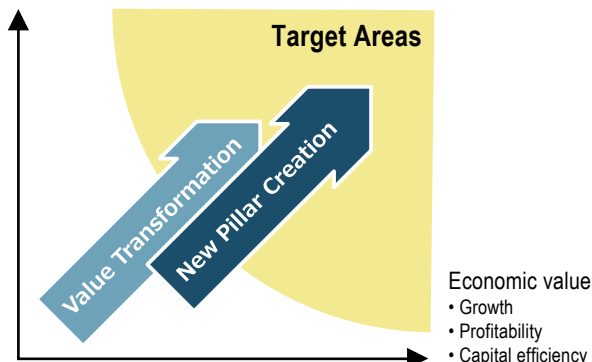
## I DIC's Future Vision

- Establish a vision based on proactive efforts to address key imperatives arising from social changes such as the spread of digitization and ESH-related issues, including those affecting the global environment and food supplies

Social value  
 • Sustainability  
 • Contribution to markets

**Become a unique global company that is trusted by society by providing value (safety and peace of mind, color and comfort)**

### Two strategies for business portfolio transformation

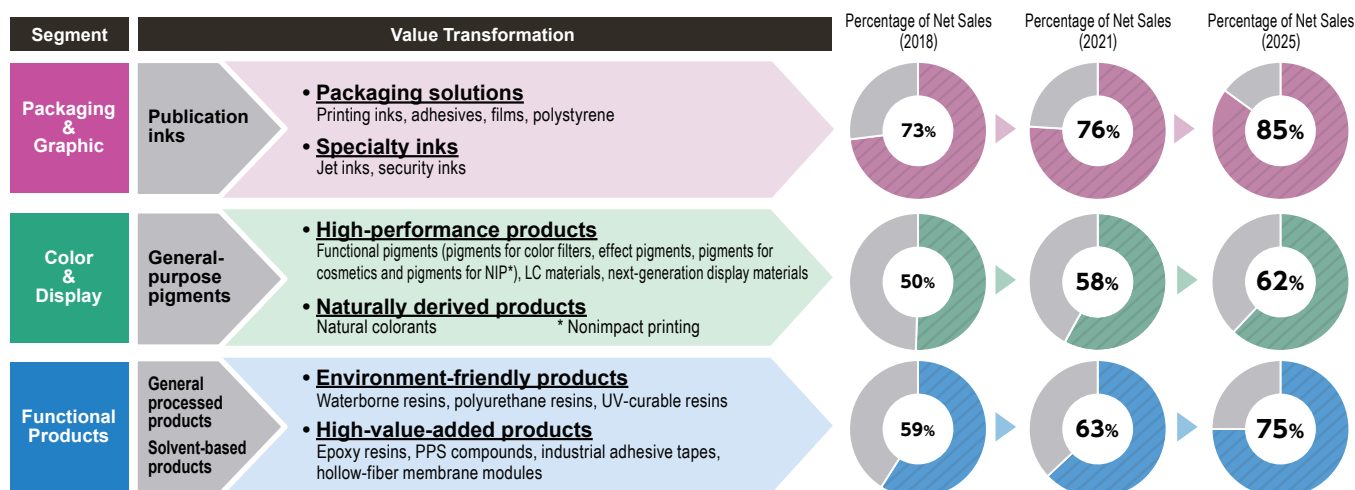


## I Basic Strategies: Business Portfolio Transformation to Achieve Growth

### 1 Value Transformation

Generate sustainable cash inflow by making qualitative reforms to businesses

- Bolster competitiveness by transforming DIC's business structure  
 Shift from businesses vulnerable to macroenvironmental changes to those with differentiated high-value-added products
- Make businesses more conscious of social value  
 Shift to businesses with more of a focus on value provided to customers and markets and on sustainability throughout product life cycles



### 2 New Pillar Creation

Create new pillars by elevating and gaining competencies in priority areas

- Create new businesses from the perspective of ESH-related issues and social changes  
 Contribute to the resolution of challenges through business activities by identifying areas at the intersection of ESH-related issues/social changes and DIC's core competencies
- Make active use of external resources  
 Help establish new social ecosystems through M&As and the use of corporate venture capital (CVC)

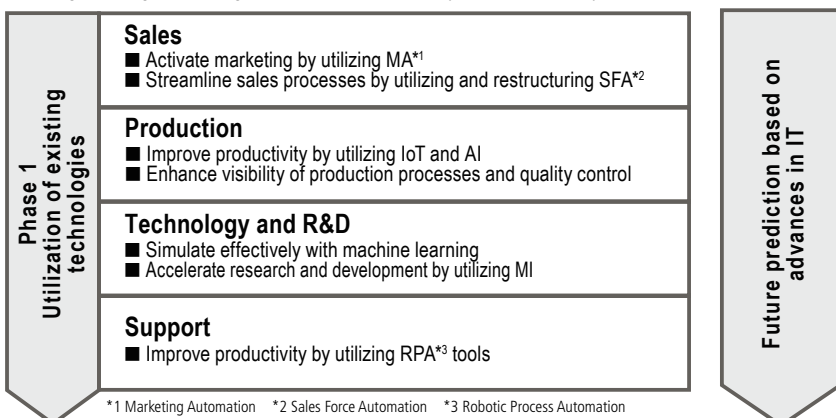
| Priority area                    | ESH-related challenges  | DIC's competencies  | Targets   |
|----------------------------------|---|---|---|
| <b>Electronics</b>               | • High-speed communications<br>• Shift to AI, IoT and the Internet of Everything (IoE)        | Optical control technology<br>Design technologies for functional materials<br>Dispersion and ink technologies | • <b>Next-generation display</b><br>QD inks, peripheral materials<br>• <b>PCB, semiconductors, sensors</b><br>Insulating and conductive materials, sensors  |
| <b>Automotive</b>                | • Connected<br>• Autonomous<br>• Shared<br>• Electric   | Composite technologies  | • <b>Multi-materialization</b><br>CFRP, expanded lineup of engineering plastics<br>• <b>Next-generation battery materials</b><br>Inorganic active materials for negative electrodes and binder resins |
| <b>Next-Generation Packaging</b> | • Food issues<br>• Food safety and security<br>• Marine plastics<br>• Distribution revolution | Global channels<br>Packaging solutions  | • <b>Approach to safety, security and food loss</b><br>Barrier materials<br>• <b>Sustainable packaging</b><br>Monomaterials, recyclable and biodegradable materials                                   |
| <b>Healthcare</b>                | • Health and longevity<br>• Food safety and security  | Algae cultivation technology<br>Color materials   | • <b>Replacement of artificial colorants</b><br>Natural colorants for foods and beverages<br>• <b>Nutrition</b><br>Functional foods, supplements  |

# I Strengthening Management Infrastructure

## 1 IT and Human Resources Strategies

### Digital transformation for business process reengineering

- Realize targeted business process reengineering by using backcasting to formulate future predictions that take into account advances in IT, while at the same time using existing technologies to improve efficiency over the three years of DIC111



**Business process reengineering at DIC**

- Entry into new markets created through the advancement of technologies
- New business models created by revamping in supply chains
- Dramatic productivity improvement and creation of new work styles

### Human resources management

- Rally diverse human resources as the source of DIC's competitiveness as a global company (WING)



## 2 Promotion of ESG Management

### Set targets in each area of ESG and accelerate implementation of initiatives

|  |   |
|--|---|
| <b>Environmental</b><br>■ Reduce CO <sub>2</sub> emissions attributable to production<br>■ Supply products and solutions that contribute to sustainability | <b>Target: 30% reduction of CO<sub>2</sub> emissions*1 (2030)</b>   |
| <b>Social</b><br>■ Promote diversity and work style reform<br>■ Enforce "safety first" principle   | <b>Target: Rate of female employees in management positions in Japan: 4.4% (2018) ⇒ 8% (2021) ⇒ 20% (2025)</b><br><b>Rate of foreign employees in Japan: 1.0% (2018) ⇒ 5% (2021) ⇒ 10% (2025)</b> |
| <b>Governance</b><br>■ Diversify management team<br>■ Reflect cost of capital in decision making   | <b>Target: Rate of foreign nationals or women in executive positions: 15% (2018) ⇒ 20% (2021) ⇒ 30% (2025)</b>  |

\*1 Compared with 2013

# I Cash Flow Management

## Budget ¥250.0 billion for strategic investments aimed at business portfolio transformation and balance financial health and shareholder returns

- Prioritize efforts to maximize cash flow by promoting business portfolio transformation, guided by DIC111, and budget ¥250.0 billion for strategic investments aimed at accelerating growth, while working continuously to strengthen financial health
- Shareholder returns (Dividend payout ratio): Around 30%  
Pay dividends in line with profit growth maintaining stable dividends
- Financial health (D/C ratio): Around 50%  
Support growth by maintaining financing and risk management capabilities



## I Quantitative Targets

Set target for consolidated operating income of ¥70.0 billion in the final year of DIC111. Achieve target by shifting to high-value-added products.

(Billions of yen/%)

|                           | 2018 Actual | 2019 Target | 2020 Target | 2021 Target | Change (2021/2018) |
|---------------------------|-------------|-------------|-------------|-------------|--------------------|
| Net sales                 | ¥805.5      | ¥850.0      | ¥900.0      | ¥950.0      | +18%               |
| Operating income          | 48.4        | 52.0        | 60.0        | 70.0        | +45%               |
| Operation margin          | 6.0%        | 6.1%        | 6.7%        | 7.4%        | —                  |
| Net income*1              | 32.0        | 35.0        | 37.0        | 45.0        | +41%               |
| EBITDA*2                  | 81.4        | 87.0        | 91.0        | 102.0       | +25%               |
| EBITDA to net sales ratio | 10.1%       | 10.2%       | 10.1%       | 10.7%       | —                  |
| ROE                       | 10.4%       |             | 10-12%      |             | —                  |
| ¥/US\$                    | ¥110.46     | ¥110.00     | ¥110.00     | ¥110.00     |                    |

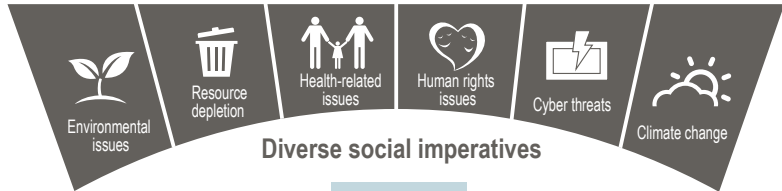
\*1 Net income attributable to owners of the parent

\*2 EBITDA = Net income\*1 + Total income tax + Interest expenses – Interest income + Depreciation and amortization

# The DIC Group's Approach to Value Creation

## Delivering Color & Comfort

### Business Portfolio Transformation Under DIC111



#### Management capital (Inputs)

**Financial capital**  
Funds essential to the provision of products and services

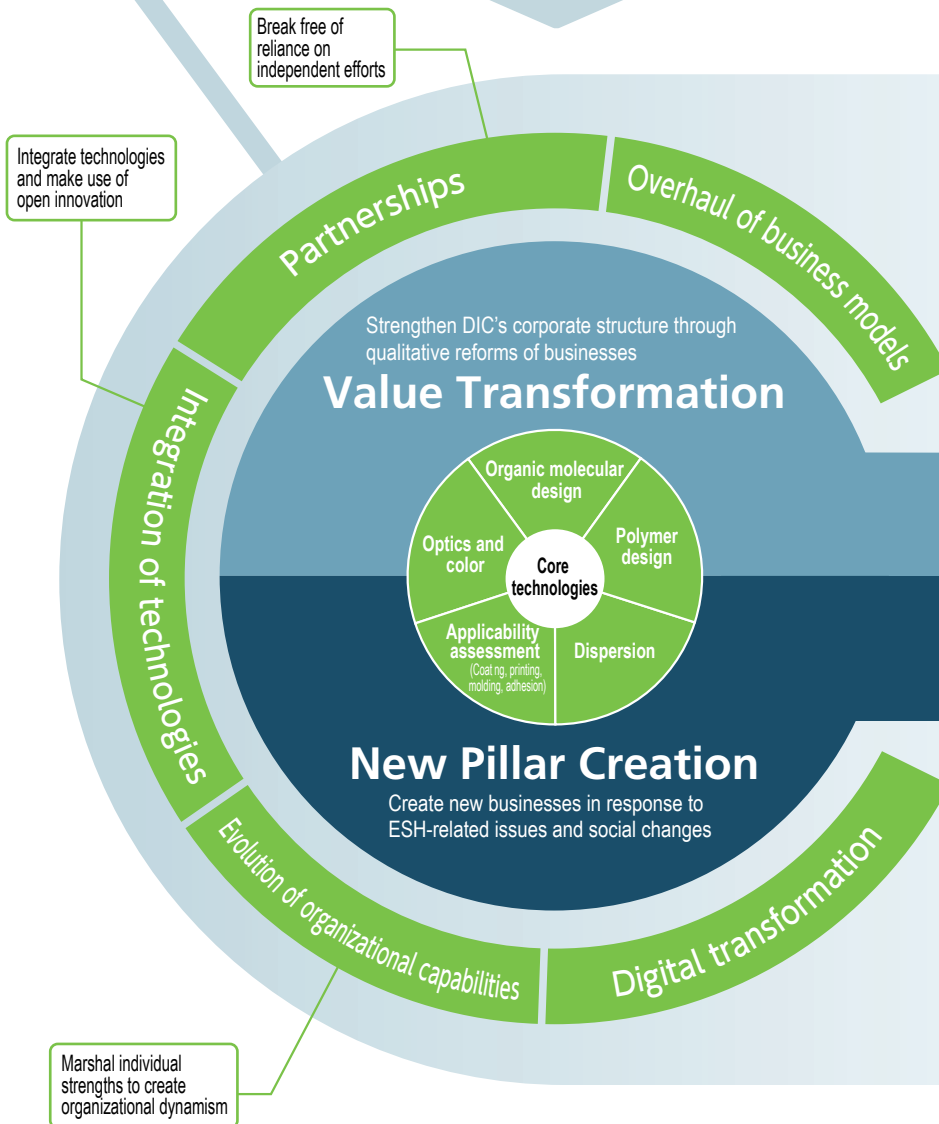
**Manufacturing capital**  
Facilities and equipment essential to the provision of products and services

**Intellectual capital**  
Accumulated technologies and know-how

**Human capital**  
Ability to rally diverse human resources as the source of DIC's competitiveness as a global company (WING)







**Natural capital**  
Environmental resources and raw materials essential to the provision of products and services

**Social capital**  
Cooperation with stakeholders and local communities





With the aim of ensuring a sustainable society, the DIC Group strives to provide products and solutions that respond to the needs of markets and its customers and add color and comfort to life.

| Segment  | Outputs   | Outcomes   |
|--|---|--|
|  <p>Packaging &amp; Graphic</p> | Next-generation packaging inks and coatings, functional packaging adhesives, industrial-use jet inks, others                                    | <p>Packaging materials that bring safety and peace of mind</p>  |
|  <p>Color &amp; Display</p>     | Pigments for color filters, pigments for cosmetics, effect pigments, natural colorants, LC materials, next-generation display materials, others | <p>Color and display materials that make life colorful</p>      |
|  <p>Functional Products</p>    | Sustainable polymers, environment-friendly PPS compounds for automotive components, high-performance industrial adhesive tapes, others          | <p>Functional products that add comfort</p>                    |

| Business area  | Outputs  | Outcomes  |
|--|--|---|
|  <p>Electronics</p>               | Technologies and functional products that support the spread of digitization                         | <p>Provide functional materials that contribute to a digital society</p>  |
|  <p>Automotive</p>                | Technologies and functional materials that underpin efforts to transform the automotive industry     | <p>Provide composite materials that contribute to a mobility society</p>  |
|  <p>Next-Generation Packaging</p> | Packaging materials that help reduce food loss and support sustainability                            | <p>Provide packaging solutions that contribute to environmental sustainability</p>                              |
|  <p>Healthcare</p>                | Algae cultivation technologies with applications extending from food safety to advanced medical care | <p>Provide fine chemicals produced using biotechnological processes that contribute to health and longevity</p> |

**SDGs**



**SDGs** Goals 2, 3, 6, 7, 9, 11, 12, 13, 14 and 15

# Businesses that Contribute to a Sustainable Society

## 1 Business Activities that Add Value to Society

### Developing Environment-Friendly Products

The DIC Group has long been committed to effective stewardship of the products it provides. Conscious always of the importance of harmony with the environment, the Group promotes the development of environment-friendly products that are useful to society by, among others, reducing the volume of hazardous substances it uses, focusing on products that are less hazardous and products that facilitate recycling, and realizing safer production processes that generate less waste and use less energy. DIC established internal standards in Japan for evaluating environment-friendly products in 2002 and has since worked to increase the number of products that qualify for this designation in its portfolio. (For details, please see “New Technology Development and Value Creation” on page 137.)

Standards for Evaluating Environment-Friendly Products

| Evaluation category      | Evaluation standards  |
|--------------------------|---|
| Energy consumed          | Reduction of energy used in production, transportation, etc.                |
| Materials used           | Reduction of volume of materials used, use of nonrecyclable materials, etc. |
| Hazards                  | Use of materials with lower levels of toxicity, etc.                        |
| Waste generated          | Reduction of environmental impact of disposal, etc.                         |
| Downstream contributions | Case by case  |

### Products that Contribute to the Realization of Clean Technologies

The DIC Group develops materials that contribute to the realization of clean technologies designed to resolve critical global environmental issues. The Group promotes the development of clean technology–related products for target markets that leverage its distinctive technologies and shares related information with stakeholders via its global website. (For more information, please see “New Technology Development and Value Creation” on page 137.)

**WEB** [http://www.dic-global.com/en/csr/new\\_technologies\\_products.html](http://www.dic-global.com/en/csr/new_technologies_products.html)

DIC showcases diverse, creative technologies and business activities that contribute to a sustainable society in the special feature section of the DIC Report, published annually, with the goal of helping stakeholders better understand DIC Group products.

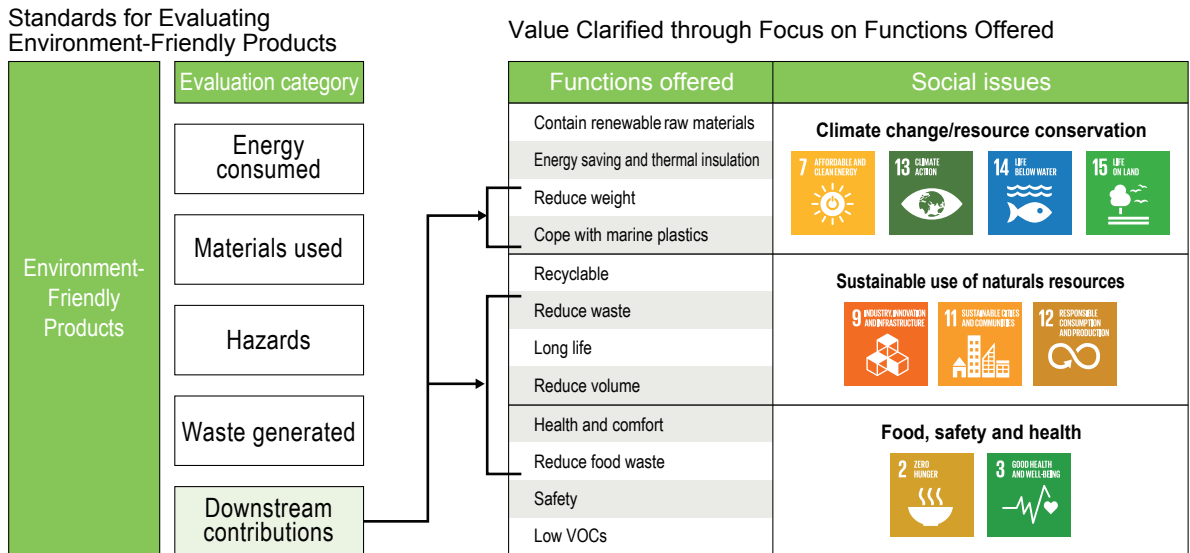
#### Products Showcased in DIC Report Special Features

| Fiscal year | Product   | Value provided to society   |
|-------------|---|---|
| 2010        | PPS resins  | Reduce halogen content, thereby helping suppress the formation of dioxin  |
| 2011        | Hyperbranched polystyrene   | Helps reduce CO <sub>2</sub> emissions by facilitating production of the world's first super-thin film  |
| 2012        | Industrial-use adhesive tapes   | Facilitate thin adhesive tapes with added high-performance features, thereby contributing to the reductions of energy and resource use  |
| 2013        | High-performance epoxy resins and curing agents                                       | Use of environment-friendly epoxy resins and curing agents that boast outstanding heat resistance and flame retardance in electronics components and materials reduces the environmental impact of their disposal |
| 2014        | Hybrid resins for coatings  | Resists pollution and reduces operator working loads  |
| 2015        | Adhesives with oxygen-barrier properties  | Can be used instead of film to prevent oxygen permeation and keep food fresh longer   |
| 2016        | Hollow-fiber membranes and membrane modules   | Facilitate control of the degasification and aeration of liquids  |
| 2017        | PPS compounds   | Reduce vehicle weight, among others, thereby lowering CO <sub>2</sub> emissions   |
| 2017        | Environment-friendly polyurethane resins for use in artificial and synthetic leathers | Facilitate safe and secure production and use   |
| 2018        | Pigments for color filters  | Contribute to superb brightness and picture quality and the reduction of energy consumption   |
| 2018        | Adhesive primers for optical and packaging films                                      | Outstanding seal improves the reliability of liquid crystal displays (LCDs) and the safety of food products   |

## 2 An Expanded Focus: From Environment-Friendly to Sustainable

### Clarifying the Value that the DIC Group Provides

Recognizing that externally driven strategies that involve setting targets from the perspective of helping address social imperatives and environmental issues have gained currency, the DIC Group has reordered its businesses based on functions offered and the markets they serve. Two examples are the DIC Group's polyphenylene sulfide (PPS) compounds, which help reduce the weight of automotive components, and the PASLIM series of adhesives with oxygen-barrier properties, which help prolong the shelf life of food products, thereby contributing to the reduction of food loss. As these examples show, materials have the power to contribute to the betterment of society in ways that may not be immediately visible.



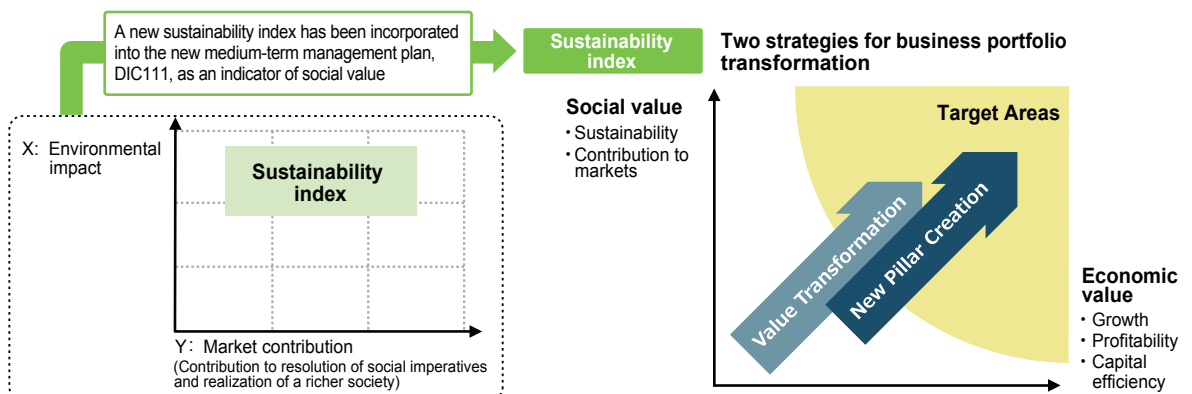
In addition to clarifying the value that DIC Group products provide to stakeholders, DIC believes that a greater focus on product functions will help accelerate efforts Groupwide to advance the development of sustainable products.

### Developing a Proprietary Sustainability Index: Driving Further Evolution

The DIC Group has inaugurated the Sustainability Strategy Working Group, a cross-business working group, and is promoting the development of a new proprietary sustainability index for gauging the effectiveness of efforts to promote sustainable businesses. These include an environmental impact indicator that combines such concepts as sustainable contributions to customers and markets as measured by value provided. The Group believes this index will enable it to better elucidate the functions of its products, which help address social imperatives and respond to social changes.

The new proprietary sustainability index will also facilitate effective management from the perspective of both economic value and social value (the scales of the index) and will underpin its efforts to transform its business portfolio with the aim of strengthening its business structure and assisting product development. This involves quantifying indicators broadly in terms of production, technology and sales. Plans are to begin using the new indicators in Japan in fiscal year 2020 and subsequently to expand application globally.

The DIC Group will continue to promote the evolution of its sustainable businesses in the years ahead as it strives to become a unique global organization that is trusted by society.





## Ensuring the Success of DIC111

### Sun Chemical Corporation

President & CEO

**Myron Petruch**

With over \$3.0 billion in revenue and more than 8,000 employees, Sun Chemical is a proud member of the DIC group. Sun Chemical is a global leader in inks, pigments and rapidly growing in advanced materials, where many of these products have been developed internally by DIC. As we embark on a new Mid Term Plan with DIC111, we look forward to the opportunities and challenges presented by a changing and dynamic marketplace. We will continue to upgrade our products and market portfolio. We will have a global focus yet service our customers' needs locally.

Anchored by our core ink and pigment businesses, Sun Chemical is establishing a platform of high growth, high margin specialty products. These products, which have been added to our portfolio through an active acquisition program and internal development, provide Sun Chemical the opportunity to enter or enhance its position in valuable growth markets such as cosmetics, security inks, plastic and ID cards and printed electronics.

We have benefitted from the ability to leverage the significant resources of the DIC group as we execute our strategy. The world-class research and development resources of the DIC group are the strongest among all our competitors. These resources allow Sun Chemical to continually present our customers and brand owners with new and innovative products and ideas to enable them to succeed in their markets, thereby strengthening our business relationships.

As we continue to develop our product portfolio in order to bring new and innovative products to our customers, we remain mindful of our obligation to do so in a responsible manner that considers our impact on the environment. We are committed to the promotion and development of sustainable products that are eco-friendly and reduce the environmental footprint that we and our customers leave on the planet.

We are excited about our future at Sun Chemical and we are committed to doing our part to make the DIC group and DIC111 a success.



## Transformation and Growth through Collaboration

### DIC Asia Pacific Pte Ltd

Managing Director

**Paul Koek**

The Asia Pacific region is a vibrant and one of the fastest growing region. It is made up of several countries, which is rich in culture, language and ethnicity. With a dynamic and professional workforce of 3,600 employees, we are presently operating in 11 countries with 19 facilities across Asia Pacific.

The Group's vision as embedded in the DIC111 is on the principle of sustainable growth through value transformation. This is against the backdrop where the global economy has significantly changed and the fact that globalisation itself has now taken a different meaning. All this coupled with the dawn of the Fourth Industrial Revolution has taught us that change and transformation is inevitable. The once sheltered Asia Pacific Region is now vulnerable but this can bring us many opportunities.

As part of the strategy to support the DIC111 in the Asia Pacific region, the concept of the “3 S” will be implemented. This will entail the Support and the strengthening of the functional and specialist organisations that we will need to transform into. Capitalising on the professional skillsets of our valued employees and technology, new business pillars aligned to the sustainable theme will be identified, developed and launched. The drive for business alignment through partnership and M&A’s activities will be one of our main focus.

Through Specialization, the “Shared Economy” framework will be expounded, driven and implemented. Driving business efficiency through the use of digital tools and analytics, will help the region to focus on “doing things right the first time” while enhancing our valued Customer’s experience and touchpoints through sustainable quality products.

Capitalising on the Group’s strength in technology and aligning with the fast changing laws in the Region, DIC Asia Pacific group will also drive the Sustainability pillar. This will improve and embrace our outreach to our valued Customers – through “Color and Comfort”, business collaboration with our partners through our practice of the “DIC Way” and promoting “Diversity, Mobility and Transparency” in a safe work environment for our valued employees. We strongly believe that through effective collaboration with all our stakeholders, the drive to success is assured.



## Promoting Our New DIC111 Medium-Term Management Plan

**DIC (China) Co., Ltd.**

Chairman

**Shinsuke Toshima**

DIC (China) oversees the operations of the DIC Group in Greater China, encompassing 29 companies—including two in Hong Kong and five in Taiwan—and approximately 2,300 employees. Having set a target for regional net sales of ¥85 billion-plus for fiscal year 2019, we recognize that achieving Value Transformation, a core policy of DIC111, is the most critical challenge we face in the rapidly evolving local economy. Accordingly, we will press ahead with decisive efforts to make qualitative changes to our core businesses, maintaining an accurate grasp of the direction of market change.

While the size and potential of the market in Greater China cannot be denied, the existence of a wide range of regional business risks is another point that is often raised. Of particular note in recent years is the swift and seemingly relentless deployment of environmental regulations in the PRC, which in addition to causing considerable confusion in the market has given rise to uncertainty regarding business continuity. The DIC Group must take measures to prepare for near-future risks in a number of its businesses. However, if we look at it from another perspective this may also be a major business opportunity. That is to say, the certainty that multiple companies will drop out of the market will likely help dispel the futile, price only-based competition that currently dominates every sector as a result of overcapacity for some time. In such a market, the critical competitive strength will be brand reliability.

Against this backdrop, as a member of the DIC Group—an organization strongly committed to advancing sustainability—we will actively and earnestly promote ESG-related initiatives, leveraging the trust we earn to expand our operations and contributing to achievement of the targets of DIC111.

In the current fiscal year, we established a Corporate Communications Department at DIC (China) with the aim of bolstering recognition of the DIC name and increasing the Group’s profile. The new department will work with DIC’s Corporate Communications Department to promote effective branding efforts in Greater China and support the efforts of product divisions.

# Fiscal Year 2018 DIC Group Topics

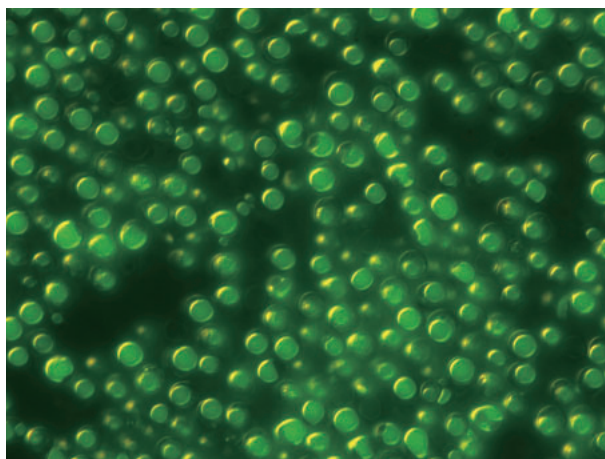
## Topic 1

## DIC Teams Up with Biotech Startups in the Development of Naturally Derived Materials

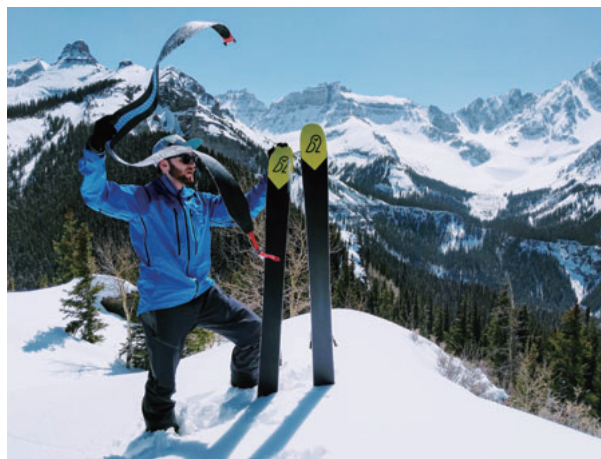
### 1 DIC and U.S. Firm Checkerspot Enter Into JDA for Advanced High-Performance Materials

DIC and Checkerspot, Inc., a high-performance materials innovation company, entered into a joint development agreement (JDA) to create a new class of novel, high-performance polyols. Checkerspot, which boasts unique capabilities in biotechnology, including genetic modification technologies and highly efficient cultivation systems for algae, creates original materials from sugars and other carbohydrate molecules generated from CO<sub>2</sub>. In addition to aligning with its goal of contributing to the realization of a low-carbon society, partnering with Checkerspot is a clear fit for DIC from the perspective of its Value Transformation strategy. The Company also anticipates synergies with its own extensive and pioneering cultivation technologies for Spirulina.

The agreement will enable the two companies to leverage DIC's compounding, polymer design technologies and Checkerspot's bio-derived materials technologies to develop products that reduce the use of petroleum-based ingredients and provide novel performance and functions. The partnership will focus on products and formulations with applications in core DIC business areas, including adhesives, coatings, printing inks and lubricants. DIC will capitalize on the performance features of such materials to develop distinctive products, underpinning its efforts to deliver new value and create new markets.



Algae observed with a microscope



Ski and ski wear made with materials manufactured by Checkerspot

### 2 DIC Invests in Japanese Startup to Develop Bio-Derived Chemicals

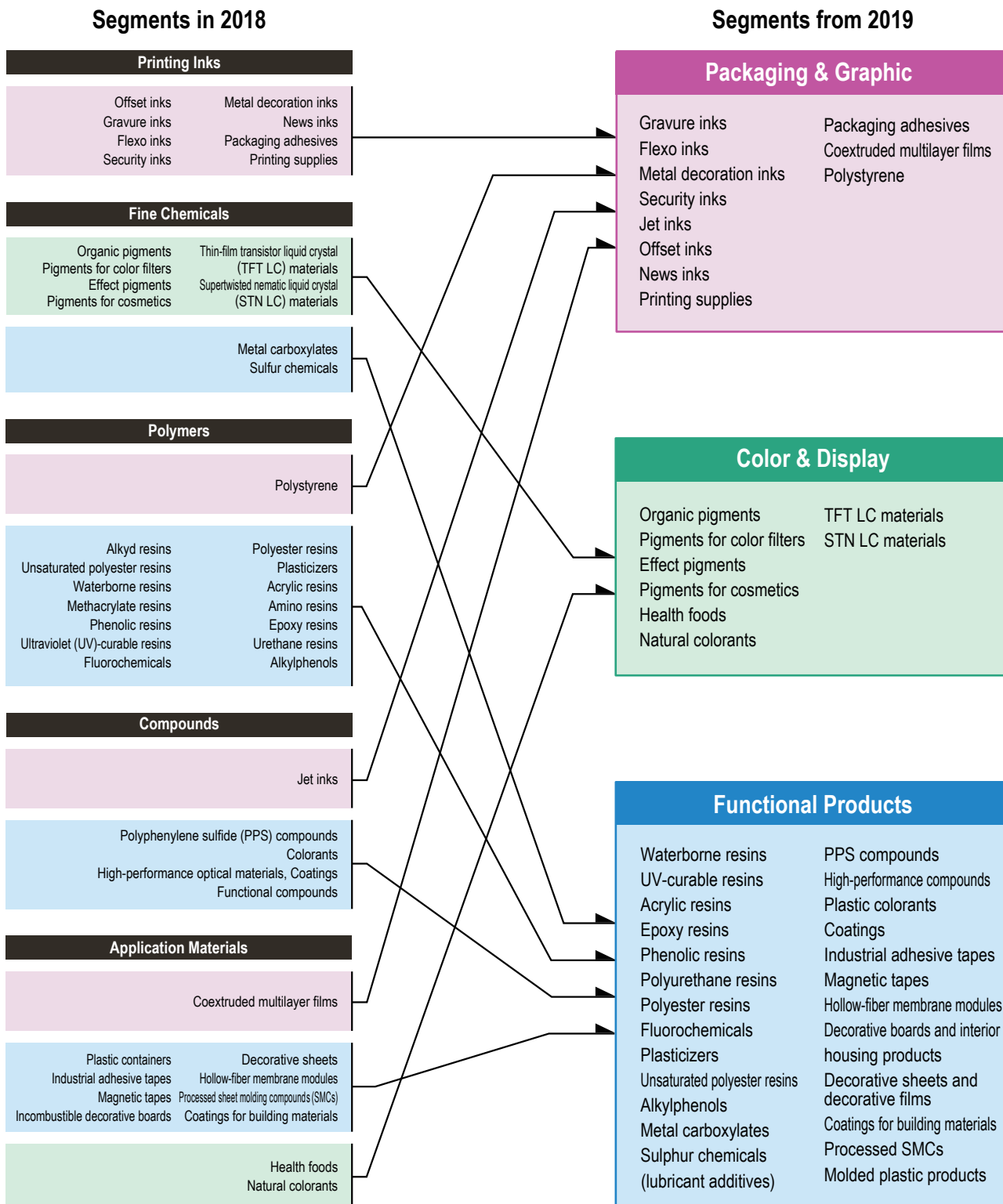
On August 31, 2018, DIC completed investment in Tokyo-based Green Earth Institute Co., Ltd. (GEI), a biotech startup carved out from Research Institute of Innovative Technology for the Earth (RITE) to commercialize sustainably produced "green" chemicals. GEI is engaged in the development and commercial production of bioethanol from nonfood biomass feedstocks and of amino acids for use as food and animal feed additives. GEI has leveraged innovative *Corynebacterium* fermentation technologies to realize a low-cost production process for bio-derived chemicals. The two companies will also capitalize on DIC's global market network, as well as its ability to develop applied products.

DIC is investing in and working with biotech startups with the aim of strengthening its biotechnologies that use algae and other microorganisms and expanding related businesses. Through such efforts, the Company will continue working to expand its portfolio compatible with a sustainable society.

**Topic  
2**

# Prior to the Announcement of DIC111, the Company Announced a New Organization that Clarified the Value Provided by DIC

With the aim of reflecting its commitment to addressing social imperatives and deliver value to society, DIC established business units based on the concepts of market and value provided. The Company also expanded the scope of each business unit to facilitate the swift reallocation of resources.



# Packaging & Graphic

## Packaging Materials that Bring Safety and Peace of Mind



SDGs Goals 12, 13 and 14



President, Packaging & Graphic Business Group  
**Hideo Ishii**



This segment includes not only printing inks but also adhesives, materials and other products and solutions for packaging applications, the markets for which continue to see robust growth in emerging economies in Asia and elsewhere.



### [Printing Materials]

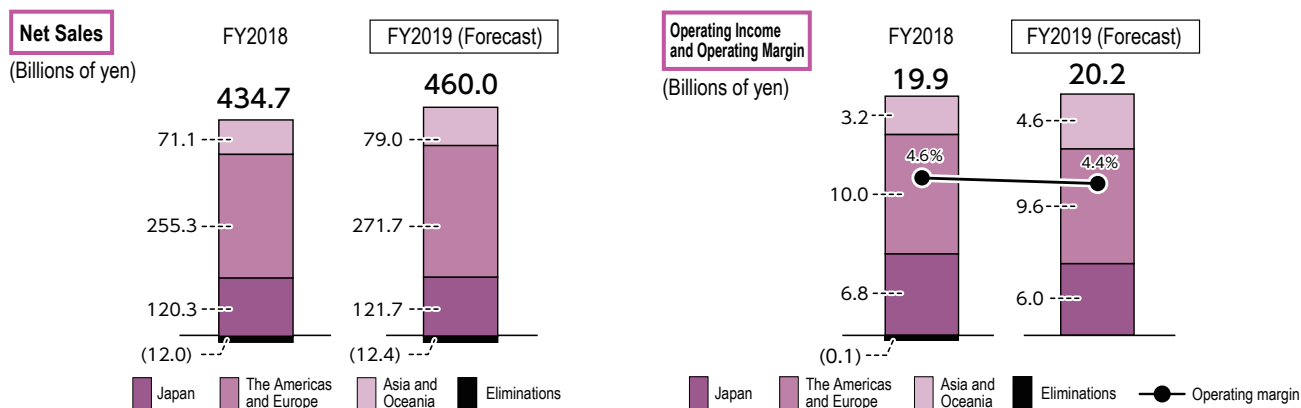
- Gravure inks
- Flexo inks
- Metal decoration inks
- Security inks
- Jet inks
- Offset inks
- News inks
- Printing supplies

### [Packaging Materials]

- Packaging adhesives
- Coextruded multilayer films
- Polystyrene



## Segment Operating Results



Figures for fiscal year 2018 have been restated to reflect revisions to segmentation.

## Business Strategies Under DIC111

### Packaging Solutions

**Products: Gravure inks, flexo inks, adhesives, films and polystyrene**

In the promising market for packaging materials, the DIC Group will endeavor to accelerate the growth of its businesses through product portfolio expansion. To this end, the Group will focus on developing and improving sustainable products in response to the changing needs of packaging manufacturers, enhancing production configurations for gravure inks and adhesives in India, Vietnam and the PRC, and expanding the scale of its operations through joint ventures and M&As.

### Publication Inks

**Products: Offset inks and news inks**

Anticipating a further decline in demand in the publications market, the Group will work to rationalize its operations by rightsizing globally and optimizing its Groupwide production configuration for publication inks and news inks.

### Specialty Inks

**Products: Jet inks and security inks**

With the aim of furthering global management integration and expanding its selection of high-value-added products, the Group will aggressively invest resources in the area of security inks and seek to enhance profits by capturing demand in Asian markets, as well as by cultivating applications and expanding production capacity in the PRC for jet inks.

|                                | Business policy   | Quantitative targets<br>(Upper row: Net sales, Lower row: Operating income) |                    |                    |                    |
|--------------------------------|---|---|--------------------|--------------------|--------------------|
|                                |   | FY2018<br>(Actual)  | FY2019<br>(Target) | FY2020<br>(Target) | FY2021<br>(Target) |
|                                |   |   | ¥434.7             | ¥460.0             | ¥476.7             |
| <b>Packaging &amp; Graphic</b> | Concentrate resources on high-value-added products (packaging solutions and specialty inks) | ¥19.9   | ¥20.2              | ¥23.3              | ¥26.0              |

## TOPIC DIC and Sun Chemical Acquire Luminescence Holdings

In February 2018, DIC and Sun Chemical acquired Luminescence Holdings Ltd., a manufacturer of security inks based in Essex, in the United Kingdom. Inks manufactured by Luminescence are used in security printing, that is, the printing of banknotes, tax stamps, passports, ID cards and other items for which the prevention of forgery and tampering is a key concern. In the year since, Luminescence has seen robust sales, exceeding original estimates, and its operating margin has increased. Despite rising raw materials prices, attributable to the high price of oil, these results underpinned an improvement in profitability in the DIC Group's printing inks business in the Americas and Europe in fiscal year 2018.

Sun Chemical is the leading manufacturer of printing inks in the Americas and Europe and boasts a product portfolio encompassing offset inks, flexo inks, gravure inks and coatings. While it already had a security inks business, the DIC Group looks forward to capitalizing on this acquisition—which brings together Luminescence's technological capabilities and the Group's vast global sales network—to boost its share of this market and cement its competitive advantage.



# Color & Display

## Color and Display Materials that Make Life Colorful



SDGs Goals 3 and 13



President, Color & Display Business Group  
**Masami Hatao**



Products in this segment include a wide variety of materials indispensable to digital devices, including LC materials and organic pigments for color filters, as well as pigments for cosmetics, natural colorants and other materials that are safe and gentle for people to use.



### [Color Materials]

- Organic pigments
- Pigments for color filters
- Effect pigments
- Pigments for cosmetics
- Health foods
- Natural colorants

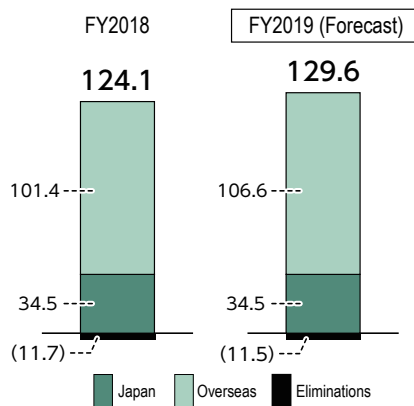
### [Display Materials]

- Thin-film transistor liquid crystal (TFT LC) materials
- Supertwisted nematic liquid crystal (STN LC) materials

## Segment Operating Results

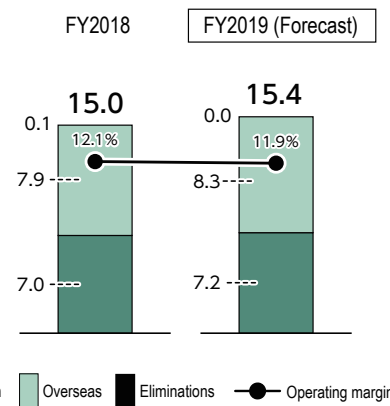
### Net Sales

(Billions of yen)



### Operating Income and Operating Margin

(Billions of yen)



Figures for fiscal year 2018 have been restated to reflect revisions to segmentation.

## Business Strategies Under DIC111

### Color Materials

**Expand functional pigments (pigments for cosmetics, effect pigments and pigments for nonimpact printing (NIP))**

In addition to seeking to establish a leading position globally through M&As, the DIC Group will take steps in the area of pigments for cosmetics to increase its production capacity for specialty pigments and enter the personal care market by expanding its processed pigments business. In the area of effect pigments, the Group will endeavor to catch up to demand by broadening its lineup of

designable metallic and pearlescent pigments, while in pigments for NIP efforts it will emphasize expanding its product lineup by bringing new products into the digital printing market.

### Natural colorants (*Linablue*<sup>®</sup>)

The Group will make a full-scale entry into the promising market for food and beverage colorings.

### Display Materials

#### Functional pigments (pigments for color filters)

The Group will endeavor to maintain its global leading position by broadening its product lineup.

#### TFT LC materials

The focus here will be on leveraging patent and pricing strategies to expand sales and accelerating market development efforts in the PRC.

#### Quantum dot (QD) inks

The Group will continue to promote the development of QD inks, which continue to hold promise as next-generation display materials.

(Billions of yen)

|                 | Business policy   | Quantitative targets<br>(Upper row: Net sales, Lower row: Operating income) |                    |                    |                    |
|-----------------|---|---|--------------------|--------------------|--------------------|
|                 |   | FY2018<br>(Actual)  | FY2019<br>(Target) | FY2020<br>(Target) | FY2021<br>(Target) |
| Color & Display | Ensure balance between acceleration of growth through shifting of resources to strategic products and maintenance of stability through rationalization of existing products | ¥124.1  | ¥129.6             | ¥140.0             | ¥149.4             |
|                 |   | ¥15.0   | ¥15.4              | ¥16.0              | ¥18.2              |

## TOPIC

## DIC Acquires High-Purity Iron Oxide Pigments Business

In July 2018, DIC and Sun Chemical acquired the high-purity iron oxide pigments business of the Cathay Industries Group, the production base of which is located in Valparaiso, Indiana, in the United States.

High-purity iron oxide pigments produced at the Valparaiso site are used extensively in lip color, eye shadow, foundation primer and other cosmetics products. These pigments have obtained certification under the COSMOS (COSmetic Organic Standard) program—the global standard for organic and natural cosmetics—and are thus expected to help grow pigments for cosmetics into a core component of the DIC Group's pigments business, bolstered by market growth, as well as by rising awareness of product safety and the tightening of pertinent regulations. As such, this business will also contribute to the Group's sustainability. Looking ahead, the DIC Group will actively build on this acquisition to expand its global market share and reinforce its production infrastructure.



# Functional Products

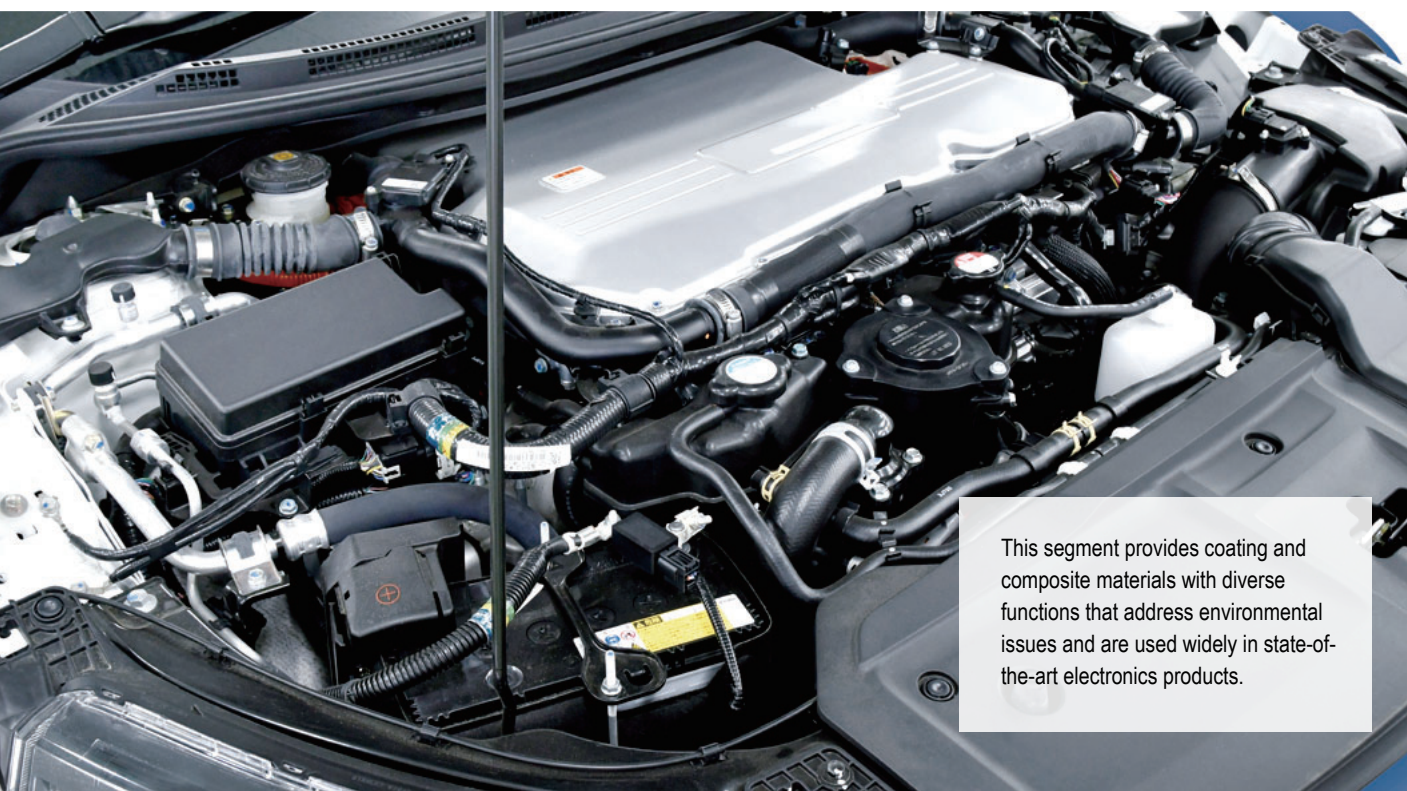
## Functional Products that Add Comfort



SDGs Goals 6, 12 and 13



President, Functional Products Business Group  
**Kazuo Hatakenaka**



This segment provides coating and composite materials with diverse functions that address environmental issues and are used widely in state-of-the-art electronics products.



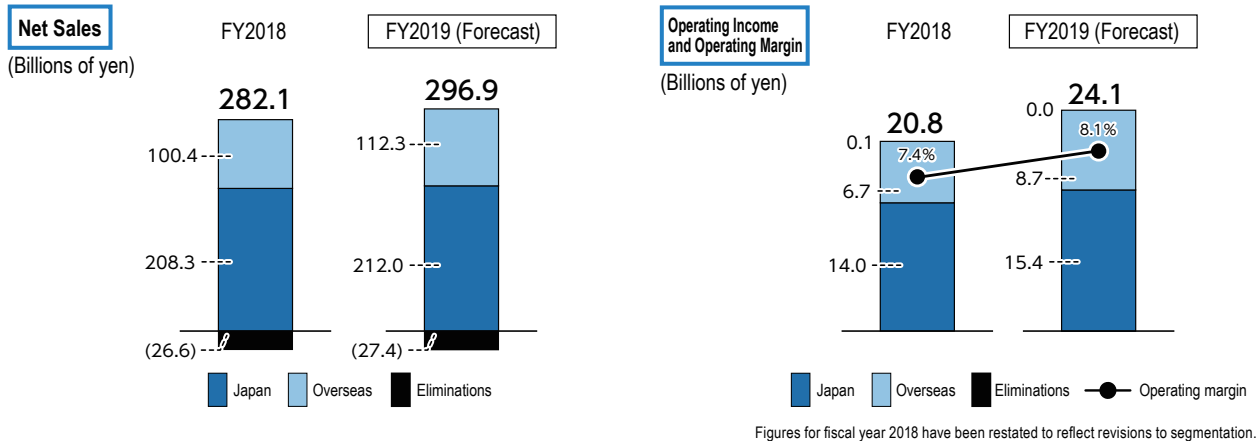
### [Performance Materials]

- Waterborne resins
- Ultraviolet (UV)-curable resins
- Acrylic resins
- Epoxy resins
- Phenolic resins
- Polyurethane resins
- Polyester resins
- Fluorochemicals
- Plasticizers
- Unsaturated polyester resins
- Alkylphenols
- Metal carboxylates
- Sulphur chemicals (lubricant additives)

### [Composite Materials]

- Polyphenylene sulfide (PPS) compounds
- High-performance compounds
- Plastic colorants
- Coatings
- Industrial adhesive tapes
- Magnetic tapes
- Hollow-fiber membrane modules
- Decorative boards and interior housing products
- Decorative sheets and decorative films
- Coatings for building materials
- Processed sheet molding compounds (SMCs)
- Molded plastic products

## Segment Operating Results



## Business Strategies Under DIC111

### Global Strategic Products that Will Expand Sales of Environment-Friendly Products

**Products: Waterborne resins, UV-curable resins, acrylic resins, polyurethane resins, polyester resins and PPS compounds**

The DIC Group will invest actively in products that are not only environment-friendly but also have a positive impact on markets and society. The Group will also seek to expand its resins production bases in Asia and acquire next-generation engineering plastics through M&As. In addition to expanding sales in key markets (coatings, adhesives and products for automotive applications), the Group will work to design sustainable polymers to promote the use of recyclable and biomass-derived raw materials.

### Efforts to Pursue Efficiency and Improve Profitability

**Products: Unsaturated polyester resins, plastic colorants, high-performance compounds, printed products, laminated products and others**

The Group's efforts here will focus on maximizing profitability by rationalizing both low-profit businesses and sites and integrating production facilities to improve efficiency.

### Highly Profitable Products with Functions that Provide Comfort

**Products: Epoxy resins, plasticizers, fluorochemicals, phenolic resins, hollow-fiber membrane modules, industrial adhesive tapes and others**

In addition to responding to sophisticated needs and delivering outstanding functionality in niche markets, the Group will launch highly profitable next-generation resins for optical and electronics applications, expand sales of industrial adhesive tapes for mobile and automotive applications, make a full-fledged entry into and expand share of the market for large-scale hollow-fiber membrane modules, and work to ensure solid growth in the area of molding compounds for medical applications.

(Billions of yen)

|  | Business policy | Quantitative targets<br>(Upper row: Net sales, Lower row: Operating income) |                    |                    |                    |
|--|-----------------|---|--------------------|--------------------|--------------------|
|  |                 | FY2018<br>(Actual)  | FY2019<br>(Target) | FY2020<br>(Target) | FY2021<br>(Target) |
|  |                 | <b>Functional Products</b>  | ¥282.1             | ¥296.9             | ¥318.4             |
|  |                 | ¥20.8   | ¥24.1              | ¥28.4              | ¥33.6              |

## TOPIC DIC Receives Incentive Award in the 17th GSC Awards for its Development of Sheet-Form Heat Storage Material

DIC received an Incentive Award in the 17th Green Sustainable Chemistry (GSC) Awards, conferred by the Japan Association for Chemical Innovation (JACI), for its development of a sheet-form heat storage material. Phase change materials (PCMs), which utilize the thermal properties of phase change—the process of changing from liquid to solid and vice-versa—liquefy at a certain temperature above melting point. PCMs laminated together with other materials have long been used in construction, but difficulties in altering size and poor workability have prompted housing builders and general contractors to call for the development of new materials.

Leveraging its proprietary coating and compounding technologies, DIC developed a technology for uniformly dispersing PCMs into resin with no degradation of properties to create a thick film, thereby preventing the materials from oozing and leaking during phase change. In addition to performance comparable to that of PCMs in laminated packages, the resulting sheet-form heat storage material can be cut, bent and fastened into place with screws on-site. DIC's sheet-form heat storage material can also be laminated together with a variety of other materials such as plasterboard and flooring, expanding options for use in houses and other buildings and facilitating use in walls and ceilings, which is difficult with conventional products.

