



KAITEKI Value for Tomorrow

Mission

We create innovative solutions globally based on our core values of Sustainability, Health and Comfort, striving for the well-being of people, society and our planet Earth.

Vision

Realize KAITEKI

Value

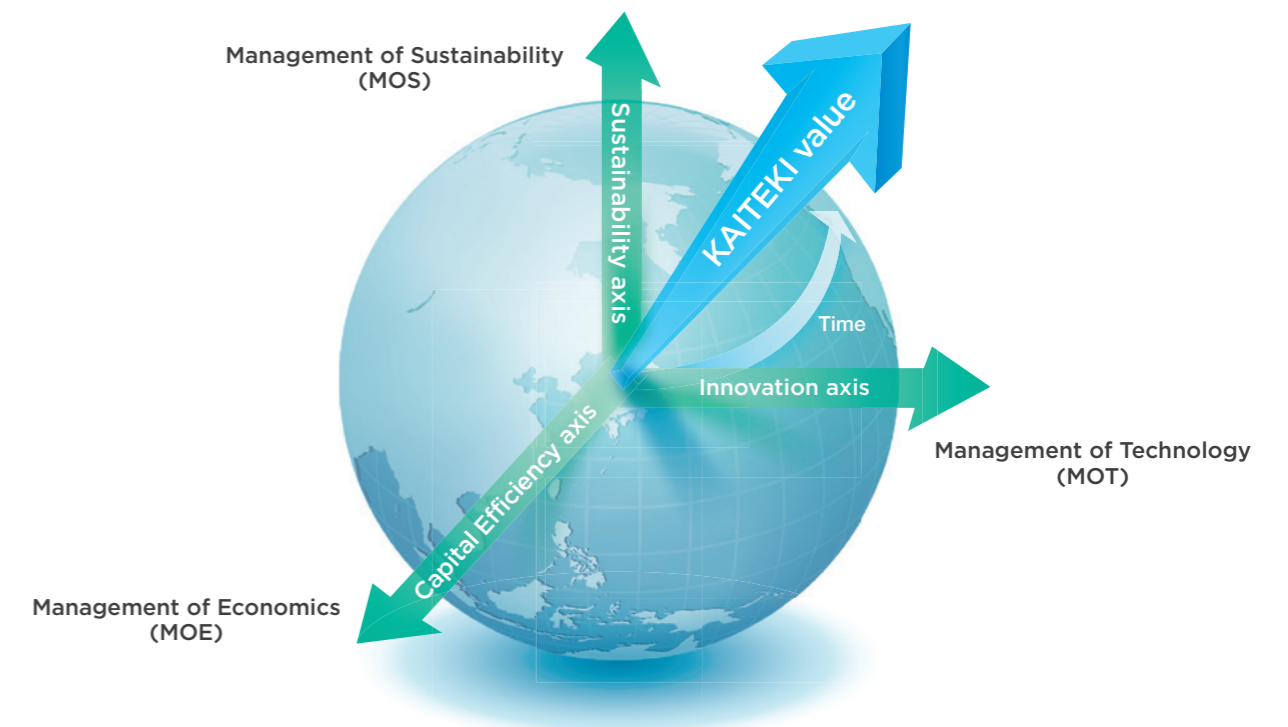
Sustainability, Health, Comfort

KAITEKI Management

The Mitsubishi Chemical Holdings Corporation (MCHC) Group proudly introduces “KAITEKI,” our original concept that denotes “The sustainable well-being of people, society and our planet Earth.”

It also represents our intent to contribute to the global environment and the sustainable development of society as well as providing solutions of environmental and societal issues.

Based on the concept of KAITEKI, the MCHC Group implements KAITEKI Management. We work on developing our corporate value — KAITEKI value, keeping an optimal balance between social and economic values in order to realize KAITEKI.





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Editorial Policy The MCHC Group publishes the KAITEKI Report as a value-creation story that captures our progress and outlook of corporate activities aimed at the realization of KAITEKI. This report summarizes financial and non-financial information from the past, present and projected future based on what we have determined to be highly pertinent to our decision-making criteria and results of materiality assessments for corporate activities. In preparation of this report, we referred to the International Integrated Reporting Framework created by the International Integrated Reporting Council. Further information on the topics of this report is available on MCHC's website.

For detailed financial information, please refer to our securities reports filed with the Financial Services Agency. For detailed governance information, please refer to our corporate governance report to the Tokyo Stock Exchange.

Reporting Period FY2018 (April 2018 – March 2019), including some information from FY2019
Reporting Boundary This report covers information relating to MCHC and the MCHC Group. For matters with a different reporting scope, we clearly specify the covered reporting scope.
Accounting Standards MCHC has adopted International Financial Reporting Standards (IFRS), effective from the first quarter of FY2016, the financial year ended March 31, 2017. In this report, data in and after FY2016 are based on IFRS, while other figures are based on J-GAAP unless otherwise noted.

- Securities Reports
https://www.mitsubishichem-hd.co.jp/ir/library/stock_security_report.html
- Corporate Governance Report
<https://www.mitsubishichem-hd.co.jp/english/pdf/governance.pdf>

Assessment Results of Corporate Value Including ESG

 MEMBER OF Dow Jones Sustainability Indices <small>In Collaboration with RobecoSAM</small>	 MSCI Japan ESG Select Leaders Index*	 <small>MSCI Japan ESG Select Leaders Index</small>	 MSCI Japan Empowering Women Index*	 <small>MSCI Japan Empowering Women Index (WIN)</small>
 FTSE Blossom Japan Index	 FTSE4Good Index	 FTSE4Good		

*The inclusion of MCHC in any MSCI Index, and the use of MSCI logos, trademarks, service marks or index names on this page do not constitute a sponsorship, endorsement or promotion of MCHC by MSCI or any of its affiliates. The MSCI Indexes are the exclusive property of MSCI. MSCI and the MSCI index names and logos are trademarks or service marks of MSCI or its affiliates.

(As of June 30, 2019)

Innovation

Capture new market opportunities by accelerating our innovation cycle



→ P29

Message from the CIO → P29

Driving early commercialization of next-generation businesses in our focus markets → P30

Examples of the MCHC Group Innovation → P31

Sustainability

Realize a recycling-oriented society through creating value based on social expectations



→ P35

Message from the CSO → P35

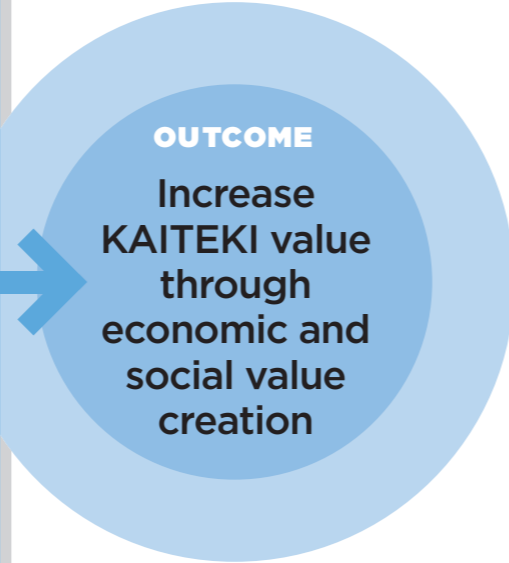
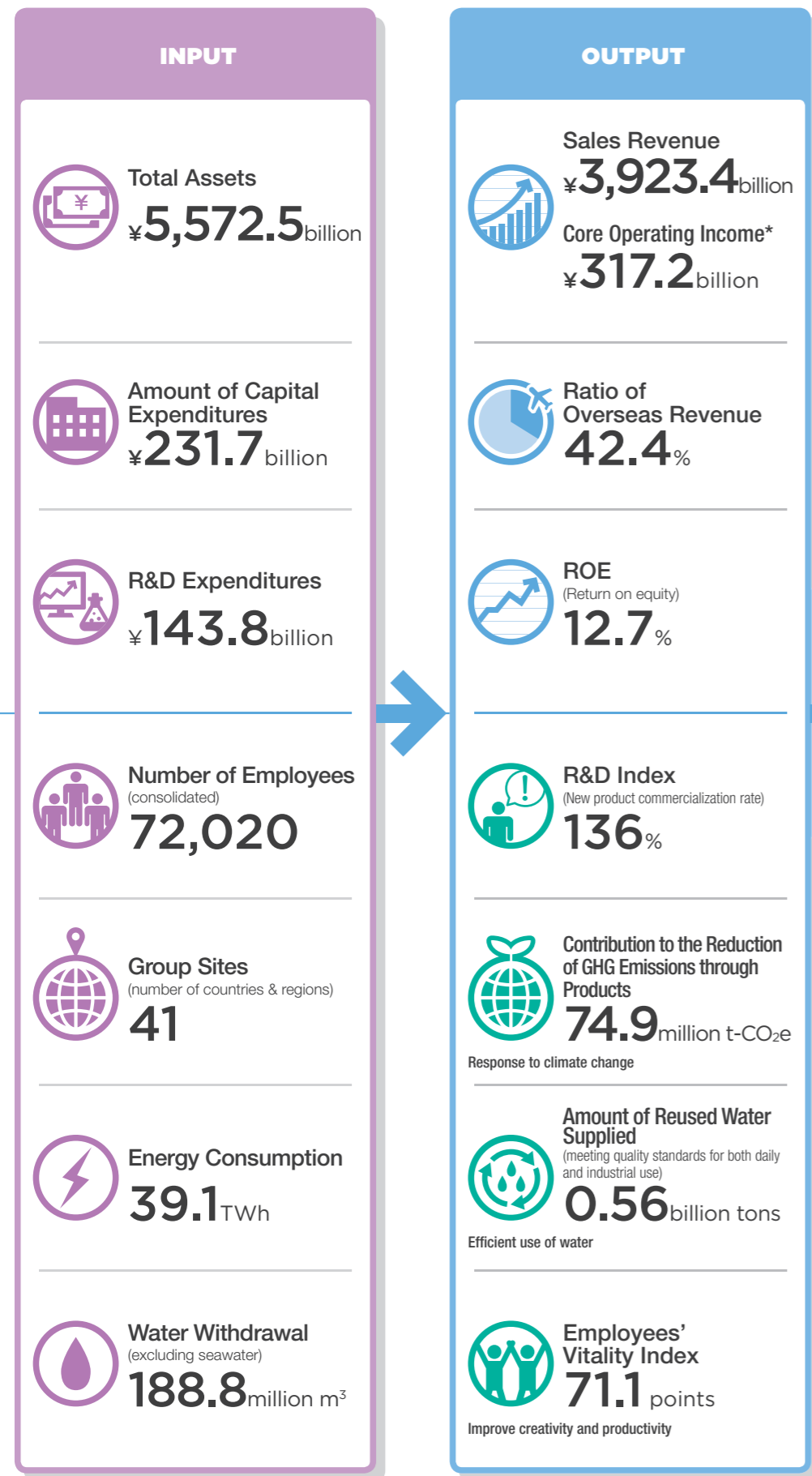
Expanding KAITEKI Value → P37
— Realizing a Recycling-oriented Society

Progress with Sustainability Management → P41

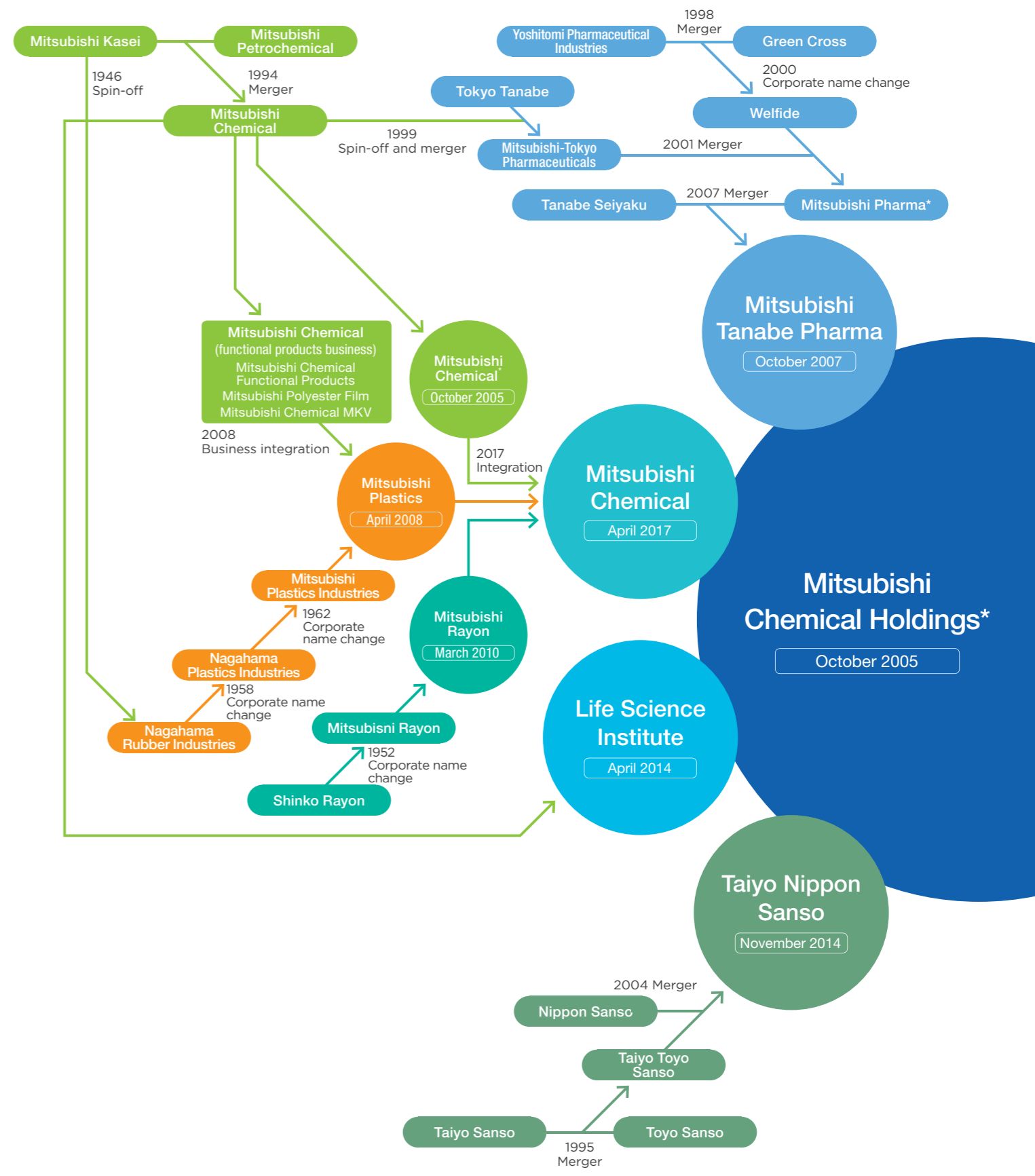
KAITEKI Health and Productivity Management, Human Resource Development → P45

Message from the CHO → P45

Numeric Data for the MCHC Group (As of the end of March 2019)



History of the MCHC Group



*Core operating income is calculated as operating income (loss) excluding certain gains and expenses attributable to non-recurring factors (gains and losses incurred by business withdrawal and contraction, etc.). We disclose core operating income as unique gains/losses incurred by staged gains/losses, while considering the comparability with the operating income of J-GAAP.

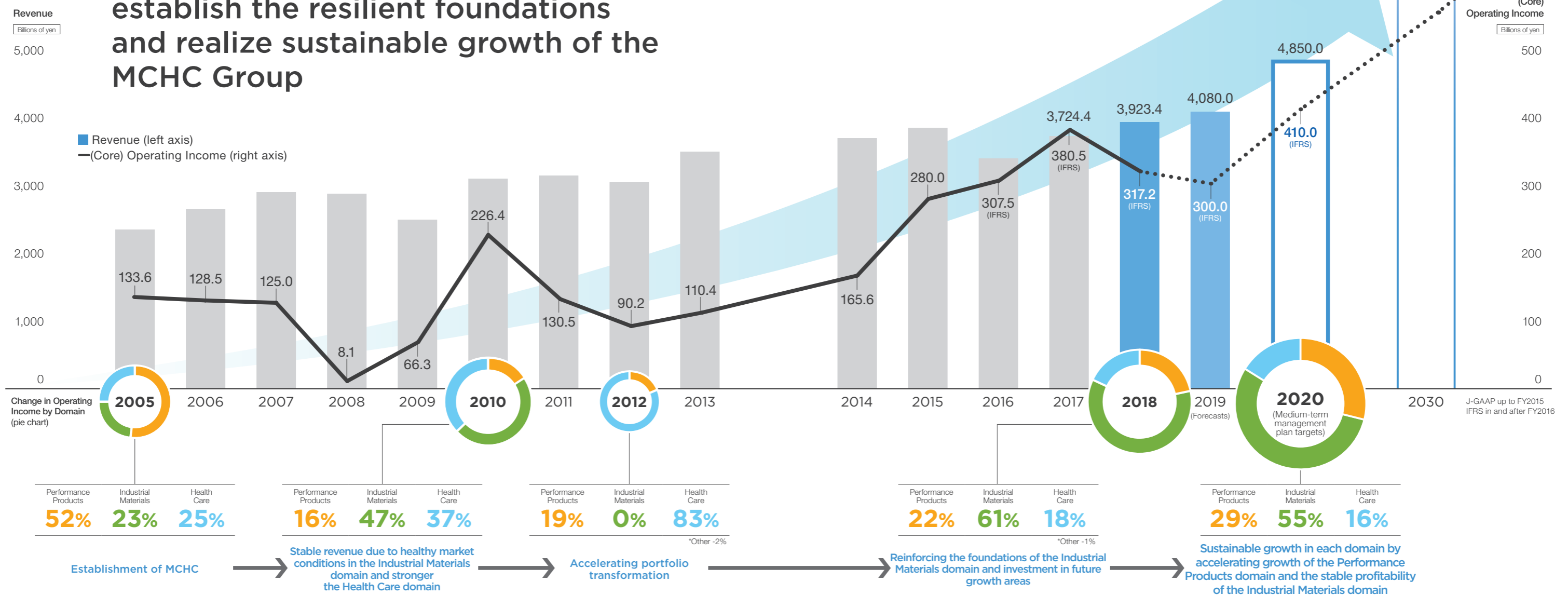
* Mitsubishi Chemical Corporation and Mitsubishi Pharma Corporation established a joint holding company, Mitsubishi Chemical Holdings Corporation.

Pursuit of business scale through M&A and integrations
restructuring of unprofitable businesses

Step forward to become a corporate
group with a high growth and
profitable business structure through
the Performance Products, Industrial
Materials and Health Care domains

“The Realization of KAITEKI”
Achieve our sustainable
growth by driving our
value creation cycle in
view of social trends and
stakeholders’ requirements

Accelerating transformation to establish the resilient foundations and realize sustainable growth of the MCHC Group



Raised the ratio of the pharmaceutical business and strengthened earnings less affected by economic fluctuations

Strengthened the pharmaceutical business

Expanded the Performance Products domain

Shifted to a higher value-added business portfolio

Stabilized profitability of the Industrial Materials domain from conversion of an industrial gas company into a consolidated subsidiary

Accelerated growth of performance product groups through integrations

Reinforced the foundations of fundamental materials and invested in future growth areas

Oct. 2005 Establishment of MCHC
 Oct. 2007 Establishment of MTPC
 Apr. 2008 Integrated MPI, MCC's functional products business, and three affiliate companies
 May 2009 Conversion of Mitsubishi Chemical Advanced Materials Composites AG (Switzerland) in the high-performance engineering plastic business into a consolidated subsidiary
 Mar. 2010 Conversion of MRC into a consolidated subsidiary
 May 2010 Withdrawal from nylon chain business
 Mar. 2011 Withdrawal from PVC chain business
 Mar. 2011 Withdrawal from SM chain business
 Mar. 2013 Conversion of Qualicaps Co., Ltd. in the business of manufacturing capsules and pharmaceutical equipment into a consolidated subsidiary

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Promoting a Value Creation Cycle Based on Addressing Social Issues

The starting point of MCHC's value creation model is to envision an ideal society looking at the future in consideration of people, society and the Earth. We strive to promote our value creation cycle, which starts with our attention to social issues, while taking into account the rapidly changing global environment and stakeholders' requirements. This model enables us to maintain sustainable growth while contributing to the sustainable development of the global environment and society.

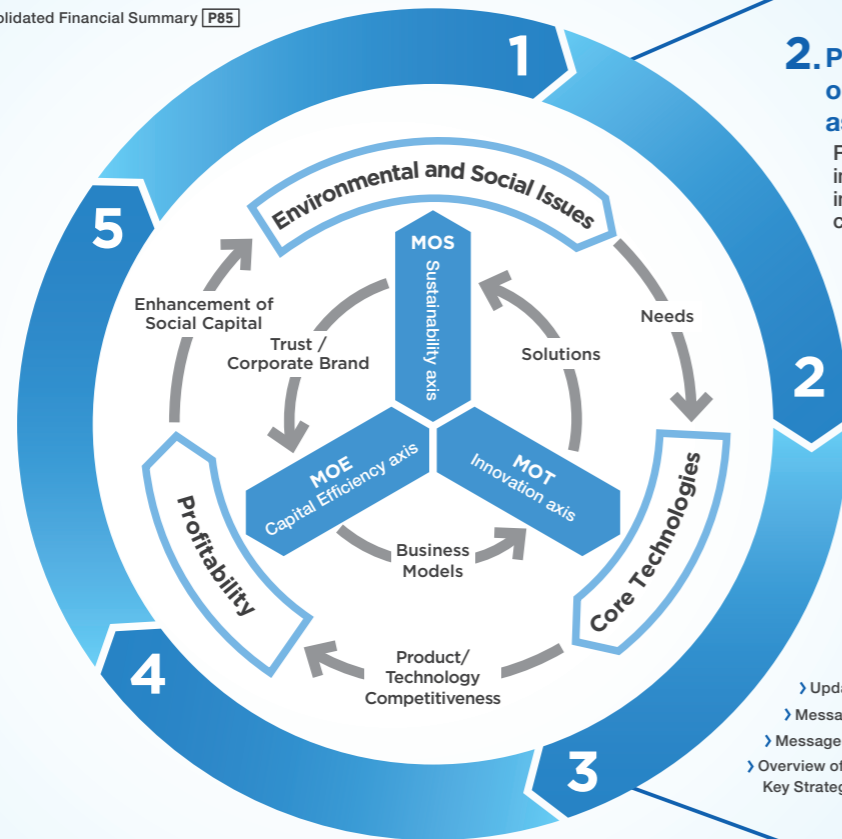
1. Materiality Assessment

Identify material issues to realize KAITEKI

- › The MCHC Group's Material Issues [P13]
- › Corporate Governance [P49]
- › Consolidated Financial Summary [P85]

5. Review

- › Message from the President [P19]
- › Progress with Sustainability Management [P41]
- › Corporate Governance [P49]
- › Overview of Business Domains; Summary [P69]
- › FY2018 Results by Segment [P71]



2. Pursuing a clear vision on what we aspire to be as the MCHC Group

Realizing KAITEKI by leveraging improved profitability, innovation capability, and contribution to sustainability.

- › Mission / Vision [P01]
- › Message from the President [P19]
- › Dialog between the President and an Investor [P23]
- › Message from the CIO [P29]
- › Message from the CSO [P35]
- › Message from the Chairperson [P53]

3. Medium-term Management Plan

Formulate and implement a medium-term management plan every 5 years as part of the KAITEKI Management approach to achieve sustainable growth.

- › Update on APTSIS 20 [P17]
- › Message from the President [P19]
- › Message from the CFO [P27]
- › Overview of Business Domains; Policies & Key Strategies [P75] | [P79] | [P83]

4. Execute KAITEKI Management

Share the values of three axes and realize sustainable growth with stakeholders

- › Innovation [P29] › Sustainability [P35] › Overview of Business Domains [P67]
- › Financial Information [P85] › Non-Financial Information [P175]

KAITEKI Management

KAITEKI Management is a management method to enhance corporate value based on the three axes: sustainability (MOS), innovation (MOT), and capital efficiency (MOE) in an integrated manner. Beginning with environmental and social issues, we provide solutions through the utilization of core technologies, and economic value created by business activities to carry out a sustainable development cycle to create new values.



MOS Contributing to the resolution of various environmental and social issues and creating a better future for the sustainability of people, society and the Earth.

MOT Creating innovations that contribute to the enhancement of economic and social value through the development and differentiation of technologies.

MOE Utilizing a variety of capital resources efficiently, including human resources, assets, and funds, to enhance economic value, including profit.

Rapid change of industrial structure with development in Circular Economy and digital technology

Looking ahead to the future

2030

Progress in sustainability, development of digital technologies and social network, and demographic shifts

Contribute to an optimized recycling-oriented society and realize sustainable well-being

2020

As a solution provider, lead to solve social issues for a sustainable future

Contribute to the sustainable growth for people, society and the Earth, and the achievement of the SDGs

Leadership in creating a recycling, circulative-oriented optimal system aimed at sustainable use of diverse energy and resources, and a scheme to enable the sustainable well-being of people, society and our planet Earth.



Earth

Address climate change and enhance energy efficiency



Society

- Live in safety, secure and comfort
- Promote Circular Economy



People

- Extend healthy-life span
- Enhance job satisfaction, creativity and productivity

Related SDGs



- › KAITEKI Vision 30 [P36]
- › Expanding KAITEKI Value [P37]

Establish a foundation as a leading company driving the realization of KAITEKI

Aiming to remain a high growth / high profit-model company through businesses in the Performance Products, Industrial Materials and Health Care Domains.

Focus Markets

Providing Solutions for Social Issues



Automobiles, Aircraft (Mobility)

Healthcare



IT, Electronics, Displays

Environment, Energy



Medical, Food, Bio Products

Packaging, Labels, Films

- › The MCHC Group's Material Issues and Selection Process of Focus Markets [P13]

The MCHC Group's Material Issues and Selection Process of Focus Markets

In the preparation of the medium-term Management Plan *APTSIS 20*, we conducted a materiality assessment based on macro-trends analysis, and identified important issues (the Materiality) for KAITEKI Management through discussions on the risks and opportunities of the MCHC Group. We prioritized these issues by their business impacts and utilized the Materiality to formulate medium-term and long-term corporate strategy and individual business strategies.

To address those issues with high priorities, we selected

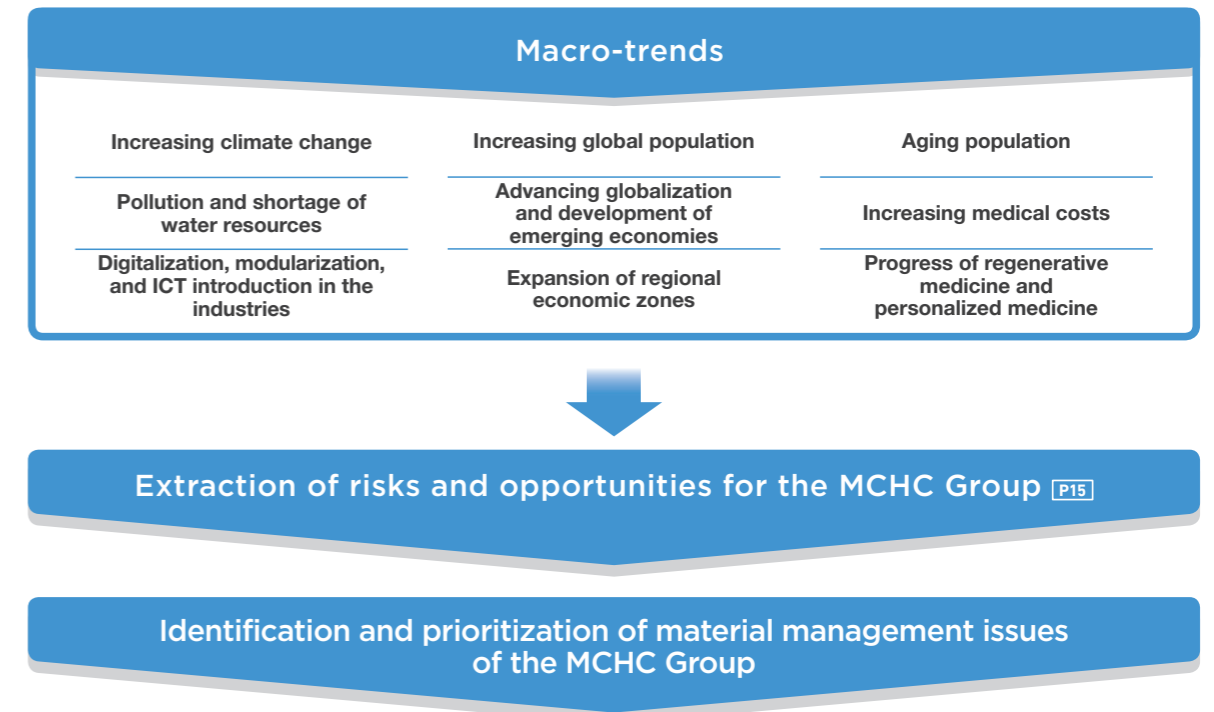
"Focus Markets" where we should focus our efforts for providing solutions by leveraging the entire MCHC Group's innovation capabilities. We will reliably implement our growth strategy and improve sustainable growth by making the maximum use of the strengths of all business segments while collaborating each other.

Furthermore, through initiatives to address the identified Materiality of the MCHC Group, we will contribute to the Sustainable Development Goals (SDGs) adopted at the United Nations in 2015.

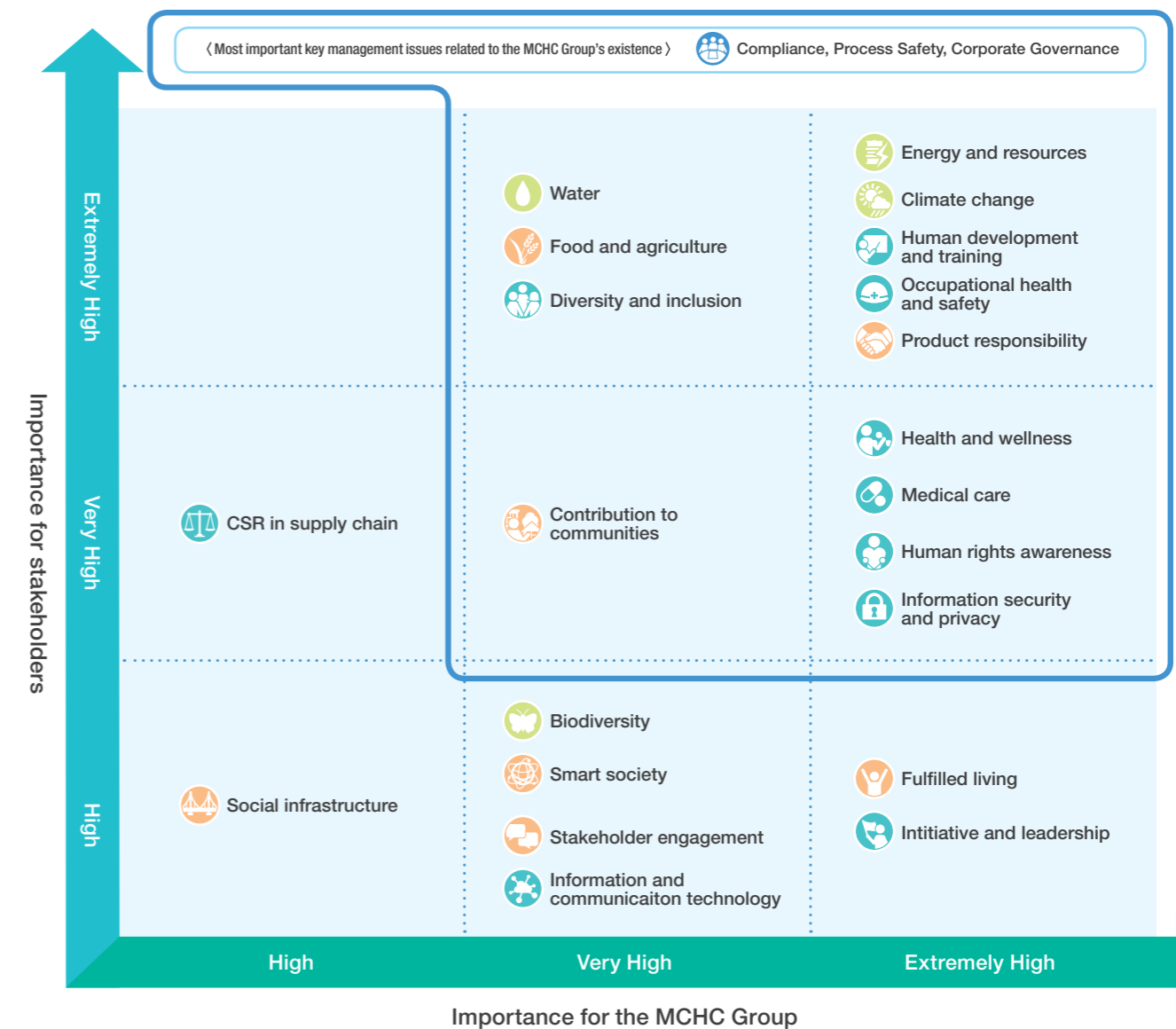
Identification Process of Materiality





Identification of Materiality
















Materiality Matrix



Classification of the Materiality

	Material issues related to the global environment	Key management issues that the MCHC Group should address through its corporate activities, innovation, and provision of products and services with the aim of achieving a sustainable well-being of our planet Earth
	Material issues related to social systems	Key management issues that the MCHC Group should address through its corporate activities, innovation, and provision of products and services in the aim of creating a sustainable well-being of society
	Material issues related to the company and its organizational structure	Key management issues that the MCHC Group should address in its internal operations and social relations as a corporate group aiming to realize KAITEKI


	Material Issues	Risks for the MCHC Group	Opportunities for the MCHC Group
The global environment	 Energy and resources	<ul style="list-style-type: none"> Depletion of natural resources such as fossil resources and rare metals 	<ul style="list-style-type: none"> Transformation and diversification of resources and energy supply sources Practical application of renewable energy and accelerated technological development
	 Climate change	<ul style="list-style-type: none"> Increasing risk of extreme weather events and natural disasters associated with climate change Strengthening regulations caused by climate change 	<ul style="list-style-type: none"> Expanding products to mitigate and adapt climate change Acquiring medium- to long-term support from stakeholders
	 Water	<ul style="list-style-type: none"> Expanding water stress due to higher demand, climate change and other factors Increasing health risk due to shortages of hygienic water 	<ul style="list-style-type: none"> Expanding businesses such as water purification and recycling
Social systems	 Food and agriculture	<ul style="list-style-type: none"> Destabilization in society due to imbalance in the demand and supply of food 	<ul style="list-style-type: none"> Increase of factory-production of foods
	 Product responsibility	<ul style="list-style-type: none"> Loss of social credibility due to deterioration of quality, safety, environmental performance Interruption of the business 	<ul style="list-style-type: none"> Building a relationship of trust with business partners Customer retention and acquisition, expansion of the business
	 Contribution to communities	<ul style="list-style-type: none"> Impact on business activities due to decreased reliability 	<ul style="list-style-type: none"> Building trusted relationships by actively engaging in exchanges with and contributing to the communities of business operations Business stabilization through coexistence with the local communities
The Company and its organizational structure	 Health and wellness	<ul style="list-style-type: none"> Increasing lifestyle disease and mortality rates Increasing failure risk of health insurance systems 	<ul style="list-style-type: none"> Expanding health information service market (shifting from treatment to prevention)
	 Medical care	<ul style="list-style-type: none"> Increasing number of entries into the medical and healthcare business (increase in competition) 	<ul style="list-style-type: none"> Manifestation of unmet medical needs Advancing digitization of medical treatment and health information data through ICT
	 Human development and training	<ul style="list-style-type: none"> Labor shortage, outflow of human resources 	<ul style="list-style-type: none"> Securing and training of talented human resources Increasing creativity and vitality
	 Occupational health and safety	<ul style="list-style-type: none"> Impact on production due to physical damages and personal injuries, etc., loss of social trust Harassment Long working hours 	<ul style="list-style-type: none"> Securement of wellness and safety of employees Enhancement of labor productivity Enhancement of motivation
	 Human rights awareness	<ul style="list-style-type: none"> Delay of the business due to human-rights abuse, interruption of the business 	<ul style="list-style-type: none"> Building optimal supply chain management
	 Information security and privacy	<ul style="list-style-type: none"> Loss of social trust due to information leakage and falsification, interruption of the business Interruption of the business by cyber attacks 	<ul style="list-style-type: none"> Stabilization of business activities
	 Diversity and inclusion	<ul style="list-style-type: none"> Loss of competitiveness from failing to respond to diversifying needs 	<ul style="list-style-type: none"> Securement and trainings of talented human resources Enhancement of value creation process by accepting diversified human resources and values

 **Most important key management issues related to the MCHC Group's existence: Compliance, Process Safety, Corporate Governance**

Selection of Focus Markets


Automobiles, Aircraft (Mobility)

Contribute to the efficient use of resources and energy and the mitigation of climate change by reducing the weight of automobiles and aircraft, promoting electric vehicles, and offering environmentally friendly products (switching to renewable materials).




Health Care

Contribute to people's lives and health by developing ethical pharmaceuticals and regenerative medicines to meet unmet medical needs and by offering health management-related services.




IT, Electronics, Displays

Contribute to a smart society and more comfortable lifestyles by providing high-performance materials for use in next generation displays and semiconductor materials etc.




Environment, Energy

Contribute to energy conservation, the effective use of water resources, improvement of productivity in the agricultural, fishery, and livestock industries and adaptation to climate change by providing lithium-ion battery materials, water treatment-related products, plant factories, and disaster prevention and mitigation products, etc.




Medical, Food, Bio Products

Contribute to solving medical issues and promoting health maintenance by providing medical-related products, pharmaceutical materials and functional food ingredients, etc.



Packaging, Labels, Films

Contribute to the safe storage and distribution of food and the reduction of food loss by providing high gas barrier films for food and medical packaging.



Building the Resilient Foundation of the Group

ESG, Innovation, Health and productivity management, Human resources development, etc.

- Innovation P29
- Sustainability P35
- Corporate Governance P49

Targets for Medium-Term Management Plan APTSIS 20

APTSIS 20
P17

Growth Measures of the Focus Markets
P67

MOT Indices
P32

Sustainability (MOS) Indices
P42

KPIs for KAITEKI Health and Productivity Management
P46

Social Values (Related SDGs)



APTSIS 20

Medium-Term Management Plan (FY2016-FY2020)

APTSIS 20 Basic Policy

Aiming to remain a high growth/high profit-model company through businesses in the Performance Products, Industrial Materials and Health Care domains

Growth

- Promotion of integration and synergies in the MCHC Group
- Accelerate overseas business development and advancing well-integrated management
- Strengthen portfolio management with awareness of earnings

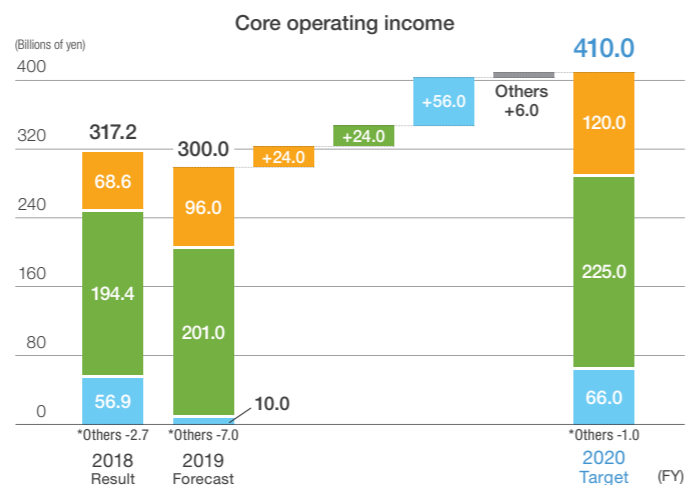
Efficiency

- Realize a highly productive corporate structure through cost-cutting and other measures
- Strengthen the financial position
- Thorough safety and compliance measures

Strengthening Foundations

Numerical Targets

	FY2018 Results	FY2020 Targets (Review)
Core operating income	¥317.2 Billion	¥410.0 Billion
ROS (Ratio of core operating income)	8.1%	9%
Net income attributable to owners of the parent	¥169.5 Billion	¥220.0 Billion
ROE Attain ROE of more than 10% to improve capital efficiency	12.7%	13%
Net D/E ratio	1.26	1.0



Priority Management Measures in APTSIS 20

Performance Products

Industrial Materials

Health Care

Reinforcement and expansion of business foundation by strengthening portfolio management (P23-24)

(Promoting the growth strategies)

- Positioning each business, subsidiary, and affiliate based on domain-specific indicators
- Accelerating resource allocation and portfolio optimization through periodical monitoring
- Consideration and acceleration of restructuring businesses equivalent to total sales revenue of ¥300.0 billion (Reconstruction of businesses equivalent to total sales revenue of ¥120.0 billion was carried out in FY2017-FY2018)

Generating synergies from the establishment of the new Mitsubishi Chemical Corporation (MCC) (P27-28)

(The integration of the three chemical operating companies)

- Aiming to achieve synergies from the integration of ¥50.0 billion by FY2020 (Growth through collaboration: ¥35.0 billion + operational efficiency: ¥15.0 billion)
- Total synergies and growth amounted to approximately ¥13.0 billion in collaboration and ¥14.0 billion in rationalization during the period from FY2016 through FY2018

Intensifying marketing and access to the global market (P75-76, P79-80, P83)

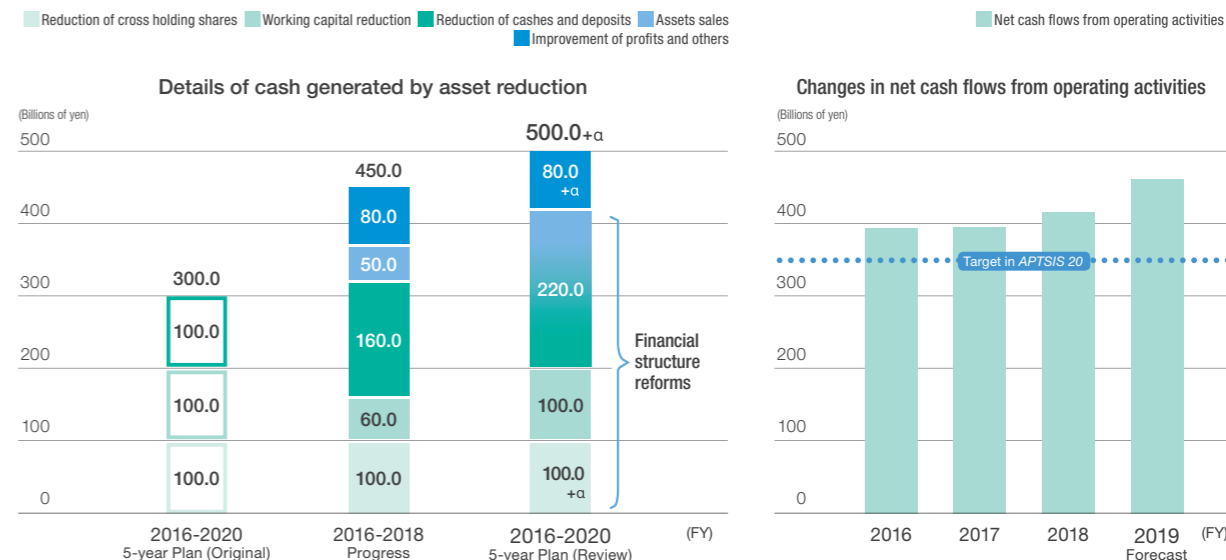
- Overseas revenue ratio — FY2018 result: 42% → FY2020 target: 50%
- MCC established regional headquarters (2017)

Early commercialization of the seeds of next generation businesses (P29-34)

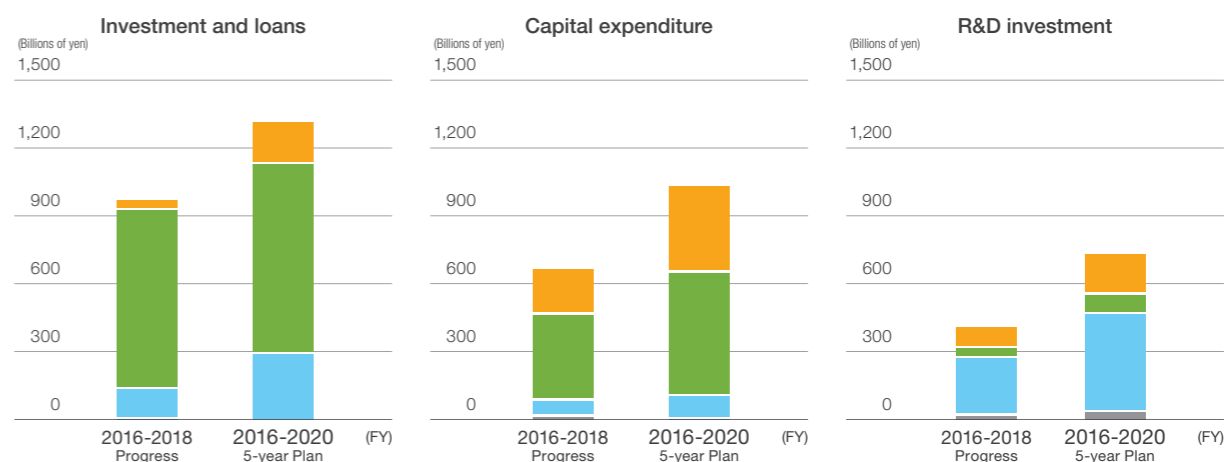
(R&D, open innovation, digital transformation)

Deepening KAITEKI Management, promotion of work style reform (P45-46)

Higher cash-generating capability owing to improved performance and asset reduction



Resource Allocation



Sustainability Targets

As sustainability KPIs, we have introduced the sustainability indices (MOS) that reflect our material issues. The MOS Indices are divided into three categories: global environment items; health care items; and corporate responsibility initiative items. We are monitoring the progress of each index on a quantitative basis converted from the original point systems. We aim to achieve 300 points in FY2020.

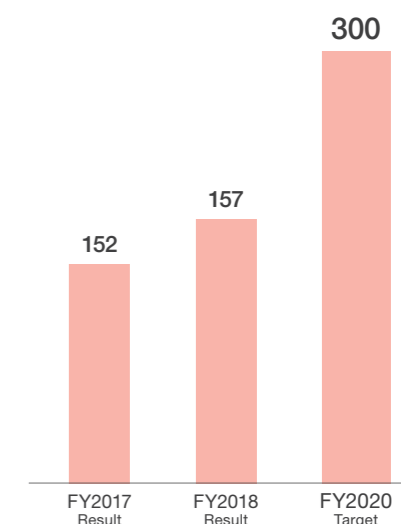
Major results regarding products and services

(We selected indices with large impacts on our operation from MOS Indices.)

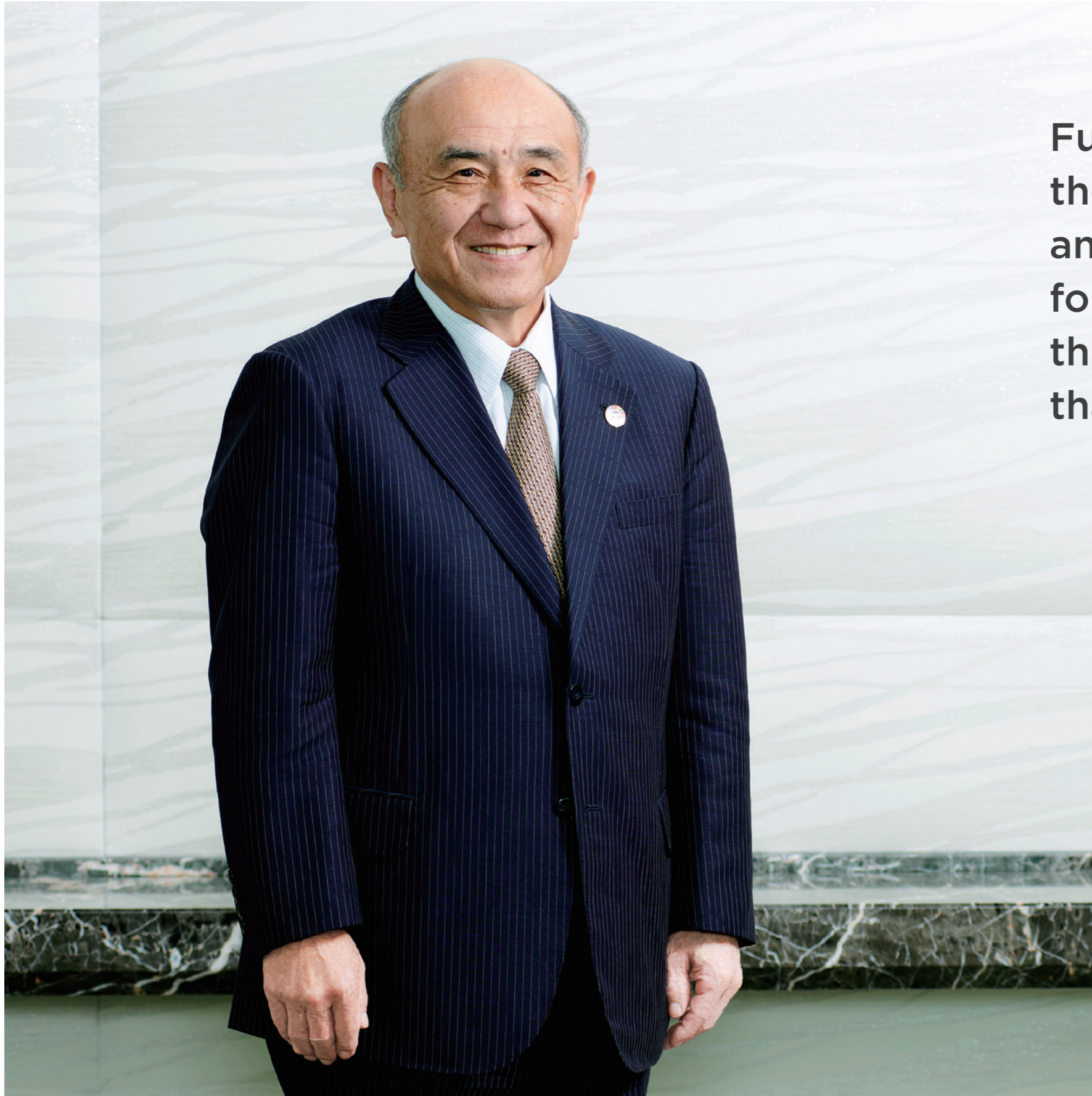
KPI	FY2018 Result	FY2020 Target
Provide products and services that contribute to reducing GHG emissions Contribution to the reduction of GHGs emissions (hundreds of millions of tons-CO ₂ equivalent)	0.75	1.5
Provide products and services that help to solve water resource problems Total supply of reused water (hundreds of millions of tons)	5.6	17

Progress of MOS indices

(unit: point)



Progress with Sustainability Management (P41)



**Further strengthening
the management foundation
and accelerating transformation
for sustainable growth
through long-term management
that envisions the society in 2050**

Hitoshi Ochi

Representative Corporate Executive Officer
President & CEO

**Looking back over the previous fiscal year
as president of MCHC; Looking ahead to
the future**

In the over a decade since the establishment of Mitsubishi Chemical Holdings Corporation (MCHC) as a pure holding company, we have significantly restructured the business, working toward sustainable growth that balances our Performance Products, Industrial Materials, and Health Care domains. In particular, we have drastically reshaped our business portfolio by exiting commodity petrochemicals and inorganic products businesses, while consolidating Mitsubishi Rayon Co., Ltd., Taiyo Nippon Sanso Corporation, and pursuing acquisitions. With major structural reforms progressing smoothly, I passed the baton of my concurrent post as president of Mitsubishi Chemical Corporation to focus on my responsibilities at MCHC since April 2018, which allows me to lead further transformation.

In regard to strengthening corporate governance, I have been promoting the separation of management supervision and operational execution functions. We established a Corporate Executive Officers Committee to decide on important management matters for further flexibility, transparency, and independence. In addition, we revised MCHC Group Management Regulations in FY2018 to clarify the roles of the holding company and the operating companies. Furthermore, we have reinforced a monitoring framework that enhances internal control systems of each operating company for the purpose of reducing operating risks.

In respond to rapidly evolving technology while addressing increasingly complex social issues, I believe that it is crucial to develop a well-conceived medium- to long-term management plan for the Group's sustainable growth.

With people, society, and the planet, as well as advancing technology at its core, our new medium- to long-term basic management policy "KAITEKI Vision 30" demonstrates what we aspire to be in 2030, based on backcasting from 2050. In accordance with this policy, in the next fiscal year we will formulate the next medium-term management plan starting from FY2021. The plan is expected to include a shift to a business portfolio that considers both financial and social risk indices.

Solutions for increasingly serious social issues

In the midst of globalization and rapid technology advancement in digitalization, biotechnology, robotics and others, the world is facing the escalating challenges such as pollution, climate change, water and food supplies, as well as poverty, income disparities, and educational opportunities. The United Nations declared the need for cooperation to achieve the SDGs (Sustainable Development Goals) in 2015, encouraging not only governments, but also corporations and citizens to make a united effort.

The MCHC Group has continued to reflect upon its role in society as a group that offers various solutions to address a range of social issues, and from FY2011 we have placed KAITEKI Management at our core. KAITEKI Management enables us to create value by solving social issues while achieving our own sustainable growth, and thus contribute to the global environment and sustainable development of society. This is my ambition to be a continuously growing group by addressing social concerns and delivering innovation.

The third stage of KAITEKI Management: Leveraging proactive individuals

In the first stage of KAITEKI Management, all employees acquired an understanding of KAITEKI value in order to

better leverage the concept in their own roles. In the second stage, we generated both economic value and social value by offering solutions against material issues which we identified based on global macro-trends analysis, while restructuring our business portfolio. As a result, we obtained recognition in the form of inclusion in the Dow Jones Sustainability World Index. Another key achievement was our improved profitability, namely, growing core operating income from around ¥100 billion to ¥350 billion.

Now, moving into the third stage, we have redefined KAITEKI as "the sustainable well-being of people, society and our planet Earth" to express our determination and aspirational vision to attain health and well-being not only in our company or society, but also for all of humanity around the world. In order to achieve this vision, we dedicate more effort than ever. Each employee must take ownership of social issues and come up with ideas, which can become proactive action plans and be incorporated into business strategies for implementation. In other words: "dedication from forward looking individuals forges business strategy." It is each of us, as part of the MCHC Group, who makes the group to create value for the future.

Developing the people who can deliver innovation

Upraising innovative capacity is indispensable for the Group to attain sustainable growth and deliver solutions for social issues. In 2017, we established the Emerging Technology and Business Development Office to enhance research function at each operating company, spark creativity of researchers, and promote open innovation. This office plays a key role in advancing our medium-term innovative capabilities by accelerating digital transformation, strengthening our business venture capabilities through cooperation with startups and accelerators, and developing new business models. We will further expand our network of domestic and overseas research institutes and universities, primarily through The Global KAITEKI Center*, an allied center established within Arizona State University in the U.S., led by our subsidiary The KAITEKI Institute, Inc.

Such a shift requires integration of new technologies and perspectives into our system, which will come from employing talents from outside of the Group and mobilizing diverse internal talents. For this objective, we will also promote work-style reforms under KAITEKI Health and Productivity Management, while accelerating the personnel system reforms, revising the traditional seniority-based promotion system and the bulk hiring of new graduates. We will embrace true diversity both in Japan and abroad, thereby encouraging our "people" deliver innovation for a new age.

*The Global KAITEKI Center: See page 34



Safety and compliance are our management priority

The cornerstones of the Group are safety and compliance. Past disasters and events must not be forgotten. We ensure that thorough maintenance of production facilities are in place, as well as preventative measures using the latest technologies are properly planned and implemented. In addition, we will transfer expertise in operations and maintenance, and provide training on preventative measures at our 350 overseas subsidiaries. Regarding compliance, we will enhance the internal control system by applying tools such as the "internal control map," which was newly introduced to help us promptly follow changes of local laws, regulations, and standards in the countries where we operate. Ultimately, what matters most for us is "people", and I encourage each employee to take ownership of safety and compliance.

Listening to diverse opinions for value creation

Our business environment is rapidly changing, and the needs of society have become more diverse. In order to swiftly and accurately respond to these changes, we ourselves need to evolve. We must listen to a wide range of ideas and opinions, without being caught up in old thinking, and leverage diversity to enable value creation. Hearing various opinions through stakeholder engagement and dialogs is of great importance to me. With our KAITEKI Management, I am confident in achieving continued developments of both social value and economic value. I would like to express my deepest gratitude and appreciation to all stakeholders for their support and look forward to sustainable partnership.



Hitoshi Ochi
 Representative Corporate Executive Officer
 President & CEO
 Mitsubishi Chemical Holdings Corporation



Akitsugu Era
 Director, Head of Investment Stewardship
 BlackRock Japan Co., Ltd.

Aiming for stable growth through continuous structural reforms, and new businesses that incorporate digital technologies and diversity

Reasons behind the revised targets of APTSIS 20

Era: Under the current medium-term management plan, APTSIS 20, it seems like the MCHC Group has experienced accelerated growth, due partly to acquisitions of industrial gas businesses in Europe and the U.S. What was the rationality behind the upward revisions to the FY2020 targets you made in December 2018?

Ochi: The most critical point in APTSIS 20 is to steadily grow our businesses to be as profitable as possible following the previously made structural reforms, including the period of the previous medium-term management plan. For us to be able to achieve this goal, APTSIS 20 sets out key strategies that include achieving growth in the performance products and industrial materials businesses through new business and product development founded on the integration of the three chemical operating companies and the expansion of the industrial gas business through acquisitions. Additionally, for the pharmaceuticals business, key success criteria is the rapid

development of product candidates with market potential in the U.S. and other overseas markets while taking into consideration patent cliffs. With these goals in mind, we have enhanced portfolio management driven by financial indices such as ROS and ROIC, that are set by business, and used the indices to restructure the businesses to ensure growth.

As a result of these actions, our core operating income is reaching ¥350 billion, a level we consider stable for earnings. There remain considerable uncertainties in the operating environment, such as U.S.-China trade frictions, but we will continue to strive towards realizing ¥410 billion in core operating income, a target set in APTSIS 20, by strengthening our business foundation while accelerating reforms aimed at achieving additional growth.

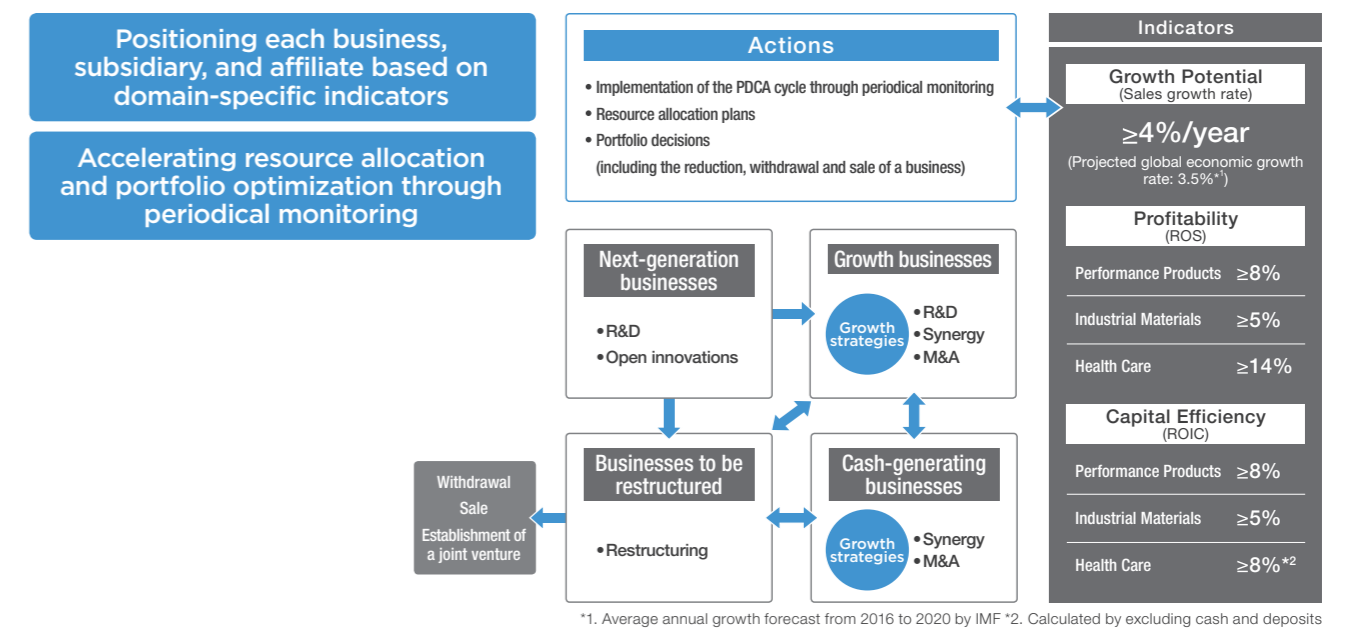
Era: I understand that you have been working to establish a solid business foundation while limiting volatility to ensure steady profit growth. Please explain the results of these efforts.

Ochi: For example, in the petrochemical business, which is a part of the Industrial Materials domain, we have been

reducing our assets with high revenue volatility as much as possible. In the methyl methacrylate (MMA) business, which boasts the world's top market share, we secured stable earnings while allowing for a certain level of volatility. In the first half of FY2018, we faced a tightening supply-demand balance for MMA, which caused the record high market prices. The market was stabilized later of the year, but even amid declining market prices, we maintained the

world's top market share and stable profits by developing highly cost-competitive products using proprietary production methods. In the industrial gas business, the effect of the acquisition in Europe and the U.S. in FY2018 has been contributed to the full-year earnings from FY2019 onwards. Therefore, we expect to further stabilize and expand earnings in the future.

Strengthening Portfolio Management



*1. Average annual growth forecast from 2016 to 2020 by IMF *2. Calculated by excluding cash and deposits

As a leading company, focus on both social issues and business operations



Creating new businesses using internal and external expertise

Era: I have the impression that your performance product lineup is quite interesting due to its diversity. Based on my understanding, the same performance product can be used in various solutions.

Ochi: Performance products are used in a wide range of applications, and their versatility forms the basis of our capability to provide a variety of solutions. Because performance products can be expanded into multiple markets, such as mobility and electronic displays, we can provide the diversified solutions needed in society. The performance product lineup represents a collection of technologies, and we are actively taking steps to further develop them.

Era: Is it correct to state that the source of the MCHC Group's profitability is the numerous applications of its products and that a combination of accumulated data and past experience form the foundation for generating added value?

Ochi: That's correct. Amid accelerating digitalization, materials informatics,*1 which enables the discovery of new substances using AI, is growing in popularity. However, the AI does not automatically derive applications of the discovered substances. We believe that materials informatics can be more widely applied by combining it with the production technology, expertise accumulated to date within the MCHC Group, thus integrating materials science with IT.

Leveraging open innovation

Era: In addition to leveraging in-house expertise, what initiatives have you been promoting to obtain a wide range of expertise from outside the company?

Ochi: I believe a technology platform is a key element to creating a new business, or to put it in other words, a good technology platform shows the strength of a company. Capitalizing on open innovation is essential to our success but it also depends on the extent of our technology platform and what areas we open up for collaboration with the external organizations. In order to keep up with new technological development accelerated by advanced digitalization, we are proactively hiring outside talent, particularly in the area of advanced technology and digital transformation, as well as strengthening our alliances with external organizations. Absorbing cutting-edge and diverse knowledge from outside sources stimulates the existing platform thus enabling us to accelerate our development speed and expand our capability to create new solutions.

Initiatives for social issues present the perfect opportunity to demonstrate the strengths of the MCHC Group

Era: Recently, ESG*2, including international initiatives such as TCFD*3, has been drawing more attention. You have been proactive to define a management approach that strikes an appropriate balance between financial and non-financial elements, thereby, positioning the MCHC Group as a leading company in this area. In particular, on environmental matters, you are addressing a wide range of issues such as mitigating negative environmental impacts of business activities and promoting energy conservations as well as expanding products that contribute to reducing greenhouse gas emissions. Could you tell me how the Group balances its business operations with environmental and social initiatives?

Ochi: The various social issues you mention have been attracting considerable attention and many stakeholders

consider them as relevant issues to their own lives. Not only investors but also the general public are assessing companies' efforts on social issues. For a while now, we at the MCHC Group have believed that our KAITEKI Management helps us to enhance corporate value through a value creation cycle that also prioritizes social issues in addition to economic efficiency. We have actively implemented initiatives to create corporate value alongside measures to solve global environmental challenges such as climate change and ocean plastic. In October 2018, we decided to support the recommendations made by the Task Force on Climate-related Financial Disclosures (TCFD), and we will increase corporate value by pushing forward with related activities under the TCFD and disclosing relevant information. We are now formulating the "KAITEKI Vision 30" to indicate the direction of our business activities towards 2030. As KAITEKI Management has now become embedded in our company, we can now take the next steps and offer concrete solutions for social issues through our businesses. We will continue to clearly communicate these initiatives to our stakeholders.

Era: In particular, you anticipate an involvement in the circular economy. Could you tell me about your approach?

Ochi: I believe that a circular economy is needed to ensure that resources enter a regenerative cycle. It is impossible to create new ecosystems unless we consider the entire supply chain and divide up the responsibilities while working together. For instance, we need to deliberate on how to design plastic products with added functionalities so that they can be easily collected and recycled. However, such design features must also consider consumer preferences to be accepted in the market. This is our real challenge towards circular economy, and we recognize that now is the perfect opportunity to demonstrate our strengths with advantageous of the Group.

Shareholder returns

Era: Although in FY2018 there was outflow of cash due to large-scale acquisitions of industrial gas businesses, stable cash flow is expected due to factors such as stabilized earnings and higher profits. Please tell us about your policy for future shareholder returns.

Ochi: Although we had a temporary deterioration in finances in FY2018 due to the increase in liabilities arising from



the large-scale acquisitions, we expect to set the annual dividend for FY2019 at ¥40 per share. While considering an appropriate balance between improving our financial position and investing in growth, we will endeavor to enhance shareholder returns by continuing stable dividends while aiming at a medium-term consolidated payout ratio of 30%.

*1 Materials Informatics: AI-based method to design new materials and explore alternative materials rapidly and efficiently.

*2 ESG: Acronym of Environment, Social, and Governance. Each element is considered necessary for corporate management and growth.

*3 TCFD: Task Force on Climate-related Financial Disclosures. Established in 2015 as the first international initiative for discussing climate change issues in view of financial stability.



Message from the CFO

Building a strong financial foundation and improving capital efficiency to maximize our corporate value — KAITEKI value

Hidefumi Date
 Managing Corporate Executive Officer
 Chief Financial Officer

Under the current phase of our medium-term management plan, *APTSIS 20*, we recognize the challenges we face as acceleration of growth, improvement of profitability and strengthening of our financial foundation.

Since embarking on *APTSIS 20* in FY2016, right after completing significant structural reforms, we have seen stabilization of return on equity of 10% or above. Our next steps are to maintain these strong performance and reduce capital costs as well, with a view to enhance our corporate value.

Maintain ROE of 10% or above

In April 2017, three of MCHC Group's chemical operating companies were integrated into one company, Mitsubishi Chemical Corporation. With the purpose of measuring the positive effects from this integration, we set targets for achieving ¥35 billion from the synergy created between the businesses and ¥15 billion from operational efficiency, both of which we passed in two years. We attained approximately ¥13 billion against the former target, and ¥14 billion for the latter.

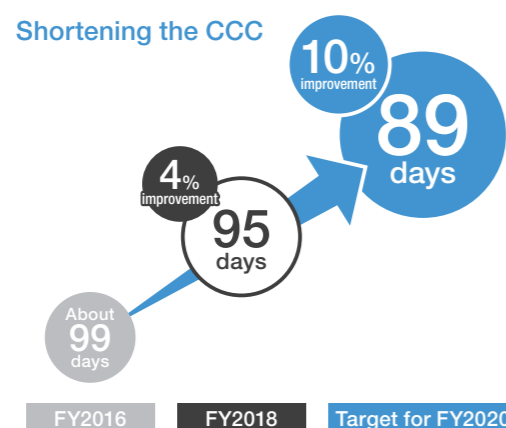
While we completed large-scale acquisitions of industrial gas businesses in Europe and the U.S. in FY2018, we are continually reviewing our business portfolio. Our total revenue

generated by the businesses under the reshaped portfolio, which includes both withdrawals from and newly established alliances with other companies, amounted to approximately ¥120 billion through FY2017 and FY2018 in aggregate. We are making steady progress towards increasing profitability.

Efforts for increased efficiency in strategic asset allocation are also progressing. Our approaches are: shortened our cash conversion cycle (CCC), establishment of a cash management system (CMS) in four regions (Europe, North America, Japan, and Asia), and divestitures of assets that do not meet certain threshold levels. Consequently, we attained ¥450 billion in terms of asset efficiency in the first three years since the 2016 start of *APTSIS 20*, outperforming the initial five-year target of ¥300 billion.

Efforts for Asset Efficiency

- Shorten the cash conversion cycle (CCC)
- Establish a cash management system (CMS) in four regions (Europe, North America, Japan and Asia)
- Sell assets with lowered ownership value by regularly verifying their value



CMS establishment in four regions



Capital cost reduction that bolsters KAITEKI value

We started focusing on achieving significant progress in the context of KAITEKI Management in FY2011, and now, based on our efforts to increase KAITEKI value as a corporate group, we can present the results through means such as integrated report. We are glad that MCHC's efforts have been positively acknowledged, for instance, we were selected as a constituent of Dow Jones Sustainability World Index, a globally prominent socially responsible investment (SRI) index, for the second consecutive year. In the future, we continue our dialog with our stakeholders to communicate our story guided by our ESG-focused approach for KAITEKI value creation.

In terms to Investor Relations information distribution, we have improved with our stakeholders service for international investors and analysts by introducing online streaming audio of financial result presentations for English-language speakers in FY2018. As part of investor engagements, we are committed to support in-depth discussions on our business developments by organizing an IR Day event, and to offer interactive communication including individual dialogs to institutional investors over the world. I am confident in the outcome of our initiatives that contribute to reducing corporate risks and capital costs, and will ultimately improve corporate value.

Results for FY2018 and outlook for FY2019

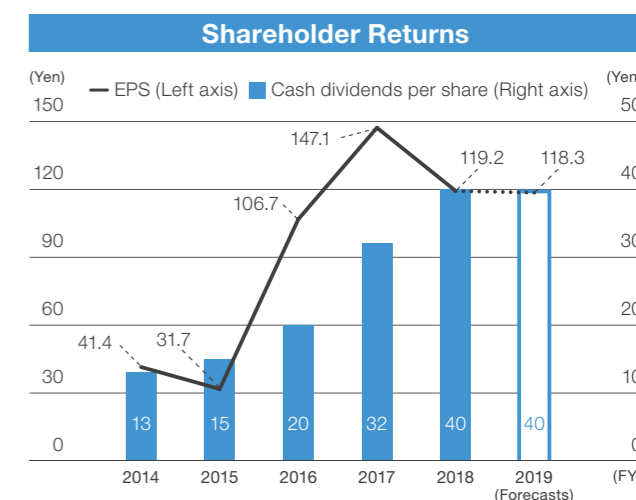
In FY2018, although the markets were favorable in the first half of the year, supply and demand for goods slowed down due to a lower demand in the latter half. However, while the business environment was generally harsh, MCHC achieved record sales revenue as well as its second highest core operating income and net income attributable to owners of the parent since FY2017. We implemented large-scale acquisitions in Europe and the U.S. in the Industrial Gases segment and faced temporary deterioration in the net D/E ratio and a decrease in the ratio of equity attributable to owners of the

parent. We will strive to improve earnings as well as stabilize the financial position with the aim of making improvements as soon as possible.

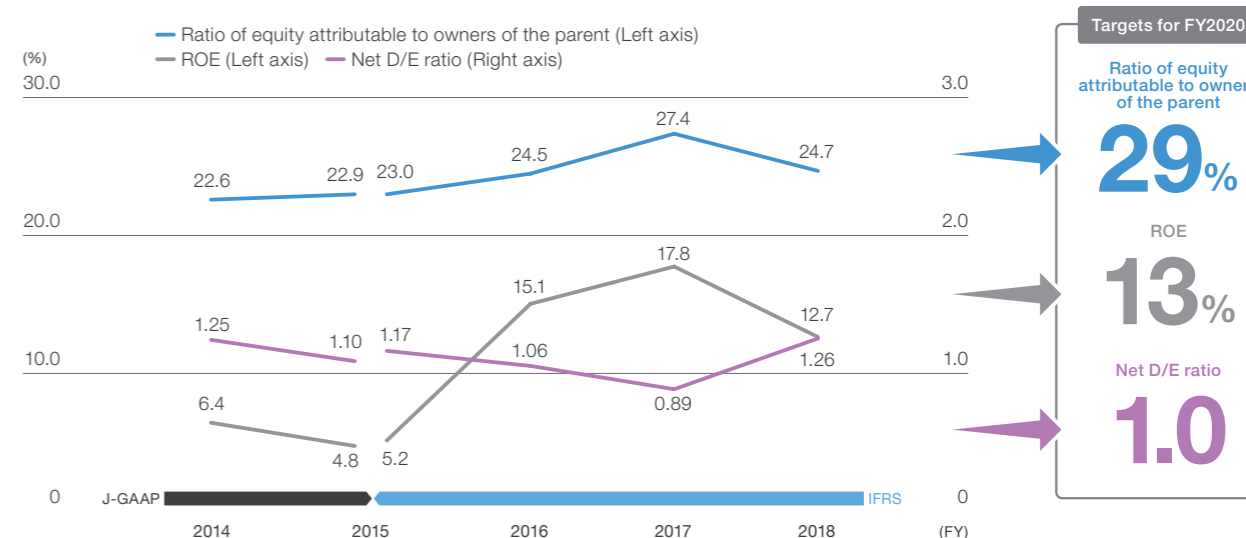
Although the business environment is expected to remain uncertain in FY2019, we aim to improve financial performance to meet the target of net D/E ratio of 1.0 or below at the end of FY2020, the final year of *APTSIS 20*, expecting free cash flow to be ¥190 billion, ROS 7%, ROE 12% and a net D/E ratio 1.21.

Policy on shareholder returns

MCHC is striving to improve shareholder's value by increasing our corporate value — KAITEKI value. With regard to shareholder returns, we plan to achieve a consolidated dividend payout ratio of 30% based on the financial performance over a medium-term time horizon, while maintaining an appropriate balance between investments in growing businesses and efforts to strengthen the financial structure. We will also implement dividend payments in consideration of stability. Concerning dividends per share for FY2018, we paid an interim dividend of ¥20 per share and a year-end of ¥20 per share, or a full year of ¥40 per share, up ¥8 year on year. We expect to maintain the dividend for 2019 at the same level.



Changes in Consolidated Financial Indicators



Innovation

Message from the CIO

Innovation, with global perspective and a sense of speed, is the engine of our sustainable business growth



Larry Meixner
Managing Corporate Executive Officer
Chief Innovation Officer

Social and technological changes are occurring more rapidly than ever before. This environment presents both challenges and tremendous opportunities for the MCHC Group. Innovation is the essential element to enhance our growth and profitability, but we cannot be successful using only the approaches of the past. We must accelerate our innovation cycle and aggressively expand our perspective beyond the chemical industry and beyond Japan. We must exploit new developments globally, wherever and whenever they occur.

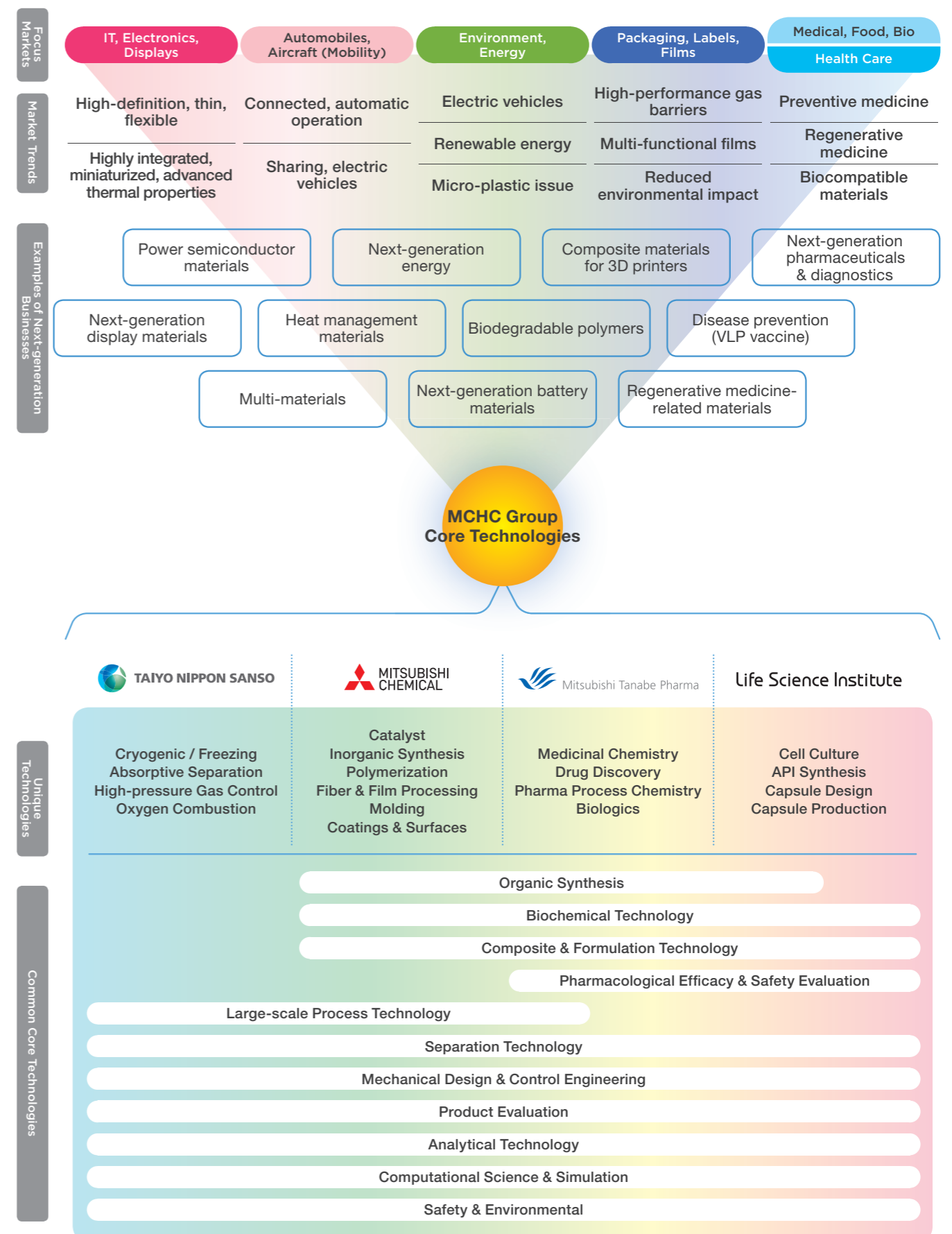
To achieve early commercialization of next-generation businesses in our focus markets, the MCHC Group takes a multi-dimensional approach to innovation. For current and adjacent technology and business areas, the wide-ranging R&D efforts of our four main Business Companies take the lead. We increasingly leverage synergies between multiple MCHC Group companies to create value. In addition, my team in MCHC's Emerging Technology and Business Development Office (ETBDO) is introducing new platform capabilities across the MCHC Group, notably in digital transformation, global venture engagement, and new market development. For example, digital initiatives to improve operational excellence are starting to impact our bottom line, and venture collaborations focused on near-term business growth are expanding rapidly.

These new platform capabilities established by ETBDO also have a critical role in creating the next major jump in shareholder value, by enabling expansion beyond our current technology and business areas. We established a new corporate venture capital fund and Silicon Valley-based subsidiary, Diamond Edge Ventures, Inc., in July 2018. Our first investments are opening doors to new markets for our current businesses, while acting as strategic entry points for disruptive innovation. We are creating new concepts for digital transformation of our supply chain and for emerging market platforms that could become dominant over the next 10 years.

We are also creating a compelling long-term vision for the MCHC Group. The KAITEKI Institute, Inc. is central to this effort. We are partnering with the World Economic Forum to develop policy frameworks in key areas such as 3D printing and healthcare data systems. And as the first foreign executive member of the Council on Competitiveness Nippon (COCN), I continue to promote deeper sharing of perspectives between Japanese businesses and the global community.

Now in my third year as Chief Innovation Officer, I have never been more excited about the future of our company. We are building the framework for growth and transformation now, with relentless focus on shareholder value. It all starts here... with innovation!

Driving early commercialization of next-generation businesses in our focus markets



Examples of MCHC Group Innovation

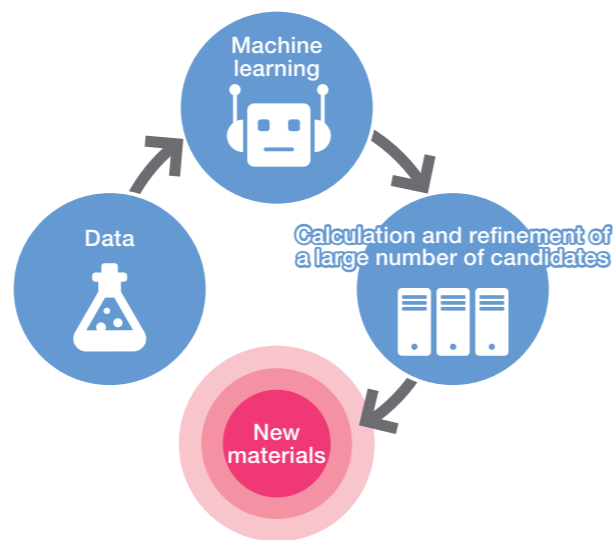
The wide-ranging R&D efforts of our four operating companies take the lead to create value.

Mitsubishi Chemical

Materials Informatics*

Mitsubishi Chemical Corporation actively encourages open innovation. For example, in the digital field, we are developing materials informatics (MI) technology for polymeric materials jointly with three other chemical companies and the National Institute for Materials Science. Furthermore, we have established a joint research division at The Institute of Statistical Mathematics (one of the institute of the Research Organization of Information and Systems) to strengthen the basis of MI technology. We will continue to enhance such initiatives as part of MCHC Group's digital transformation.

* Materials Informatics: AI-based method to design new materials and explore alternative materials rapidly and efficiently



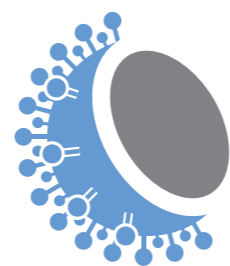
Mitsubishi Tanabe Pharma

Development of Plant-derived VLP Vaccines

Medicago Inc., a consolidated subsidiary of Mitsubishi Tanabe Pharma Corporation, has developed proprietary technology for producing vaccines using plant-derived virus-like particles (VLPs).

VLPs have the same external structure as viruses, and are attracting interest as a highly safe vaccine technology that confers strong immunity. In addition to enabling short-term and low-cost mass production, plant-derived VLP technology may overcome the reduction of effectiveness exhibited by vaccines grown in chicken eggs.

Medicago intends to apply for approval in the U.S. by the end of FY2019 and is continuing development to launch the vaccine in time for the 2021-2022 influenza season.



Structure of VLP



Structure of influenza virus

Taiyo Nippon Sanso

Metal 3D Printing



Model objects made by metal 3D printing

While the MCHC Group has long been engaged in 3D printing using polymer materials, Taiyo Nippon Sanso Corporation entered the metal 3D printing business in 2016. This technology is used to manufacture fully dense metallic parts with high accuracy for a variety of industries particularly aerospace and medical.

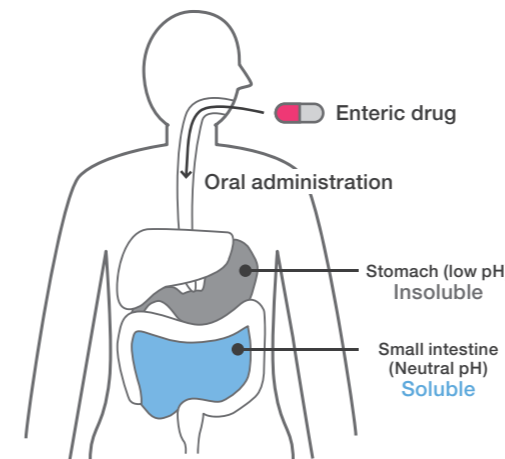
The quality of 3D printed parts depends significantly on gas atmosphere, and is therefore closely related to the welding technology we have developed over many years.

We are collaborating with five business partners, including Sintavia, LLC. Our strategy is to deliver total solutions including printers, metal powder, and prototyping services in addition to our core gas products. Taiyo Nippon Sanso aims to launch its new proprietary products by the end of FY2019 and commercialize additive manufacturing within a few years.

Life Science Institute

Development of Enteric Capsules

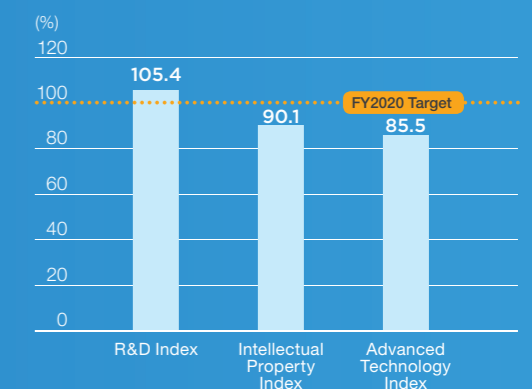
Qualicaps Co., Ltd., one of the Life Science Institute Group companies, is developing enteric capsules by applying the materials technology of MCHC Group. Enteric capsules protect their contents from gastric acid so that medicines can be released efficiently and directly into the small intestine. While enteric tablets and granules are usually produced by the coating method, Qualicaps applies enteric materials to the capsule. The development of enteric capsules shortens the formulation development period compared with other enteric formulations, enabling new medicines to be delivered to patients sooner.



Results of the MOT Indices (Management of Technology)

As part of our KAITEKI Management (see page 11), MCHC measures its progress toward developing powerful and sustainable technology platforms using Management of Technology (MOT) indices. The latest MOT indices are summarized using three main index groups (12 indices): R&D efficiency (R&D Index), technology superiority (Intellectual Property Index), and integration of cutting-edge technology and digital transformation (Advanced Technology Index). Our FY2018 results show good progress toward achieving the FY2020 targets. We continue to use the feedback from our MOT indices to strengthen our Group-wide technological competitiveness.

Performance of MOT Indices in FY2018 vs. FY2020 Target



Mitsubishi Chemical Holdings

The Emerging Technology and Business Development Office, established in 2017, creates new opportunities for expansion beyond the perspective of our current business.

Digital Transformation

In order to realize digital transformation, we leverage both digital technology and “digital way of thinking” to solve problems relevant to our business.

From the viewpoint of operational excellence, we exploit machine learning, text mining, and optimization techniques in order to improve plant stability, optimize energy usage, and improve product quality. We continuously introduce these capabilities to the operating groups of MCHC.

In addition, we publish a “Digital Playbook” as a means to create new business models and optimize global business operations. And we actively develop new methods in key areas including materials informatics and quantum computing, ensuring that we remain current with emerging digital paradigms.



Corporate Venture Activity

We provide new growth opportunities across the entire MCHC Group through strategic partnership with promising startup companies worldwide. In July 2018, we established Diamond Edge Ventures, a new subsidiary company based in Silicon Valley (U.S.). We emphasize close collaboration between our Silicon Valley and Japan teams.

We invested in DigiLens Inc., a startup developing key materials and processes to enable Augmented Reality (AR) devices. We also initiated investment in areas ranging from industrial process control to 3D printing. We continuously introduced startups to MCHC business groups, leading to several promising joint projects. These initiatives allow us to create new business opportunities, build our global networks, and add an important dimension to our innovation processes across the MCHC Group.



The KAITEKI Institute

The KAITEKI Institute, Inc. (TKI) was established in 2009 to serve as a think-tank and to conduct research to realize a KAITEKI society, as envisaged by the MCHC Group, with an eye to the future in 20 to 30 years. TKI proposes solutions to future social issues by collaborating with academic experts globally.

Establishment of The Global KAITEKI Center



Arizona State University

On April 1, 2019, The Global KAITEKI Center was jointly established with its host institution, Arizona State University (ASU). ASU has one of the world’s largest and most accomplished institutes specializing in concepts and technologies associated with sustainability. As a result, the university has been named the most innovative university in the U.S. Our goals for the Center are: to identify the challenges in realizing a sustainable society by effectively using the knowledge of ASU; to establish the concepts and develop the technologies required to solve those challenges; and to share our KAITEKI concept with the rest of the world. We will focus our efforts on social scientific issues as well as the chemical industry and circular economy.

Development Team for Sport Prosthetic Foot Blades



Ms. Kaede Maegawa

Top athlete in women’s 100-meter sprint and long jump, and silver medalist in women’s long jump (T42) at the World Para Athletics Championships (2017, London)

The Team KAITEKI Project brings together experts from various fields, such as researchers in industry, government, academia, physical therapists, coaches and athletes. To contribute to people, society and the world at large, the project has the following three goals:

- 1 To improve the performance of top para-athletes by developing prosthetic foot blades**
- 2 To broadly apply the developed technologies to walking assistance**
- 3 To ultimately eliminate the term “disability”**

Our vision of society in the future is one in which use of a prosthetic foot or walking-assistance tool is not viewed as a “disability”. We have developed prosthetic foot blades by bringing together technologies based on biomechanics, computational engineering, and materials science, and by cooperating with Ms. Kaede Maegawa, a para-track and field athlete whom we sponsor. The foot blades were launched as a business in April 2019.

Sustainability



Message from the CSO

Aligning our business strategy more closely with our sustainability strategy to promote continuous growth

Yoshihiro Ikegawa
Managing Corporate Executive Officer
Chief Sustainability Officer

In recent years, amid growing concern over global environmental and social issues, there has been an upward trend toward pursuing sustainability around the world following the adoption of the UN Sustainable Development Goals (SDGs) and the enforcement of the Paris Agreement. Accordingly, we recognize that expectations for the private sector has been growing, and this is suggested by the expansion of ESG investments.

reflected in the next medium-term management plan.

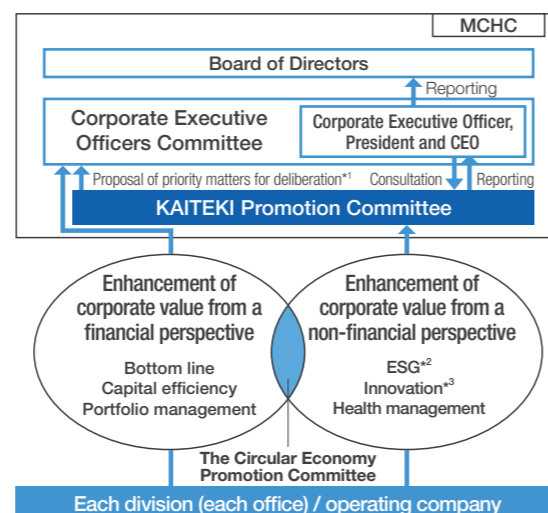
Envisioning our ideal future

With an objective toward sustainable growth among disruptive changes in digital technology that are transforming the structure of the industry, companies must envision the ideal future with a long-term mindset and therefore take prompt actions for that future, instead of conventional approaches of growth strategies that are simply an extension of existing businesses. We have visualized what the MCHC Group should look like in 2030 considering the Earth, society, and people by backcasting from our vision of society in 2050. We are formulating a medium- to long-term basic management policy, "KAITEKI Vision 30" (see the upper figure on page 36), the framework of the strategy to realize what we should be in 2030. We will set clear targets for 2030, such as greenhouse gas (GHG) emission reductions, which will be

Realizing an optimized recycling-oriented society

In order to address pressing issues including climate change and ocean plastic, we recognize the need to be proactive by transforming business models and innovation.

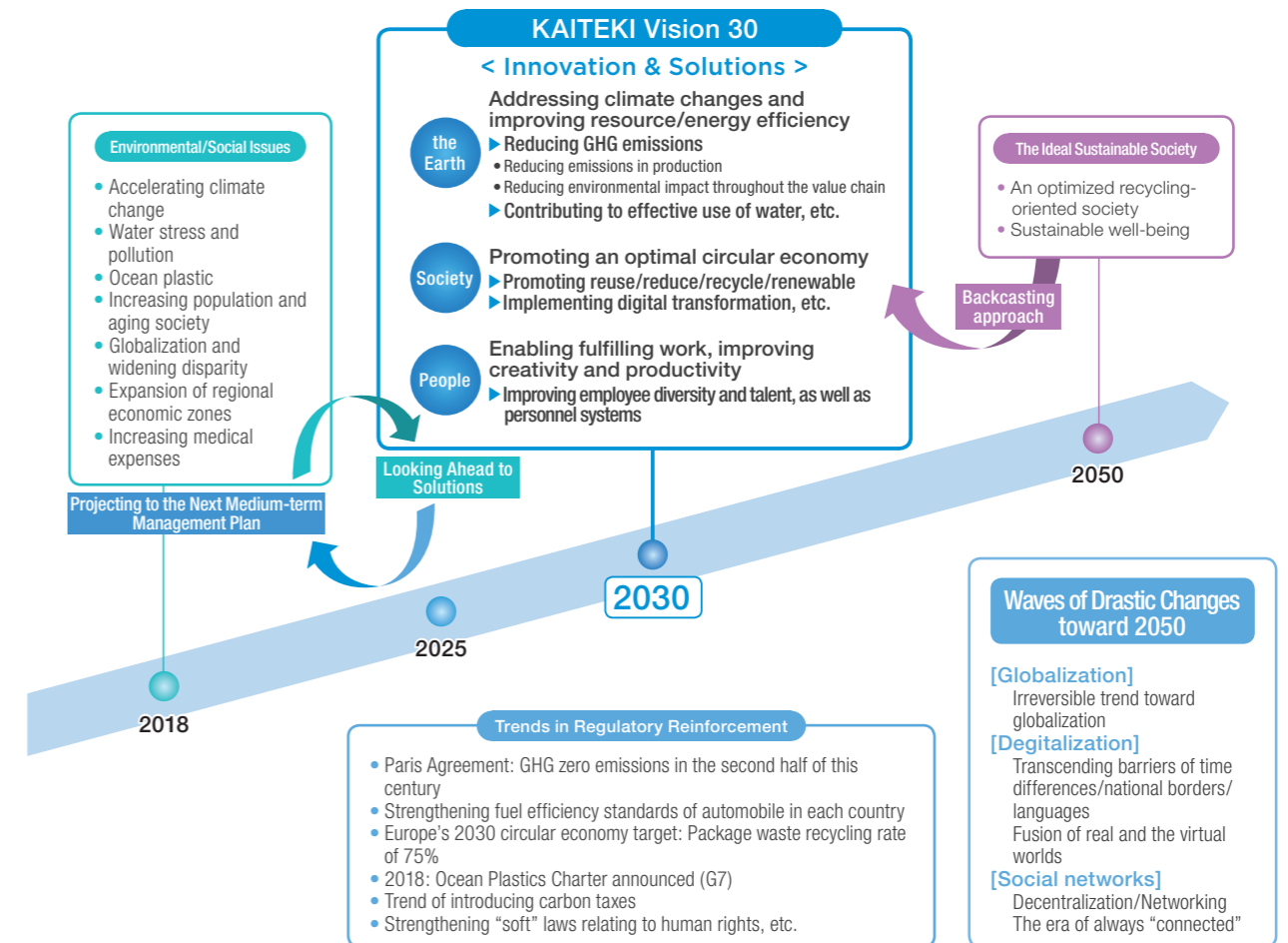
The MCHC Group's Structure for Promoting KAITEKI



*1 Where necessary *2 Governance issues are mainly addressed by committees such as the Nominating Committee *3 Determination of the direction of technologies, etc.

"KAITEKI Vision 30", the medium- to long-term basic management policy

Our core management policy targeting FY2030 is being formulated



With respect to climate change, the Group has made a concerted effort to reduce GHG emissions from its production activities of the Group, while developing products that will help reduce GHG emissions of our customers. In October 2018, we announced support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In a similar manner, we will enhance our climate-related disclosure, and recognize what society expects from us through dialogues with investors and other stakeholders while working to spark innovation in product development.

As a key element for realizing KAITEKI, one of our ambitious initiatives is the enterprise-wide promotion of circular economy, which will drastically change social mechanisms and industrial structures. In May 2019, we established the Circular Economy Promotion Committee and are considering specific development themes that can create both social and economic value (see page 38). However, we cannot build a circular economy on our own; the entire value chain must be involved. Therefore, we will build business models and collaborate with the initiatives that companies and organizations in our value

chain participate in (see page 40).

Truly putting our corporate philosophy into practice

To ensure further adoption of KAITEKI globally, we are further strengthening KAITEKI approach to penetrate our corporate philosophy in the Group. For each employee to take ownership of social issues and to address social issues through business activities, increased awareness of social issues is required from both organizations and individuals. Founded on this, we have held workshops for division managers and general managers to discuss the concept of KAITEKI since FY2018. With these workshops as a starting point, we will promote the adoption of KAITEKI in each workplace, empowering our employees to drive change and strive to put KAITEKI truly into practice.

Sustainability is our priority focus - we will strive to achieve the sustainability targets of APTSIS 20, and ensure continued growth by promoting further alignment between the business strategy and the sustainability strategy.

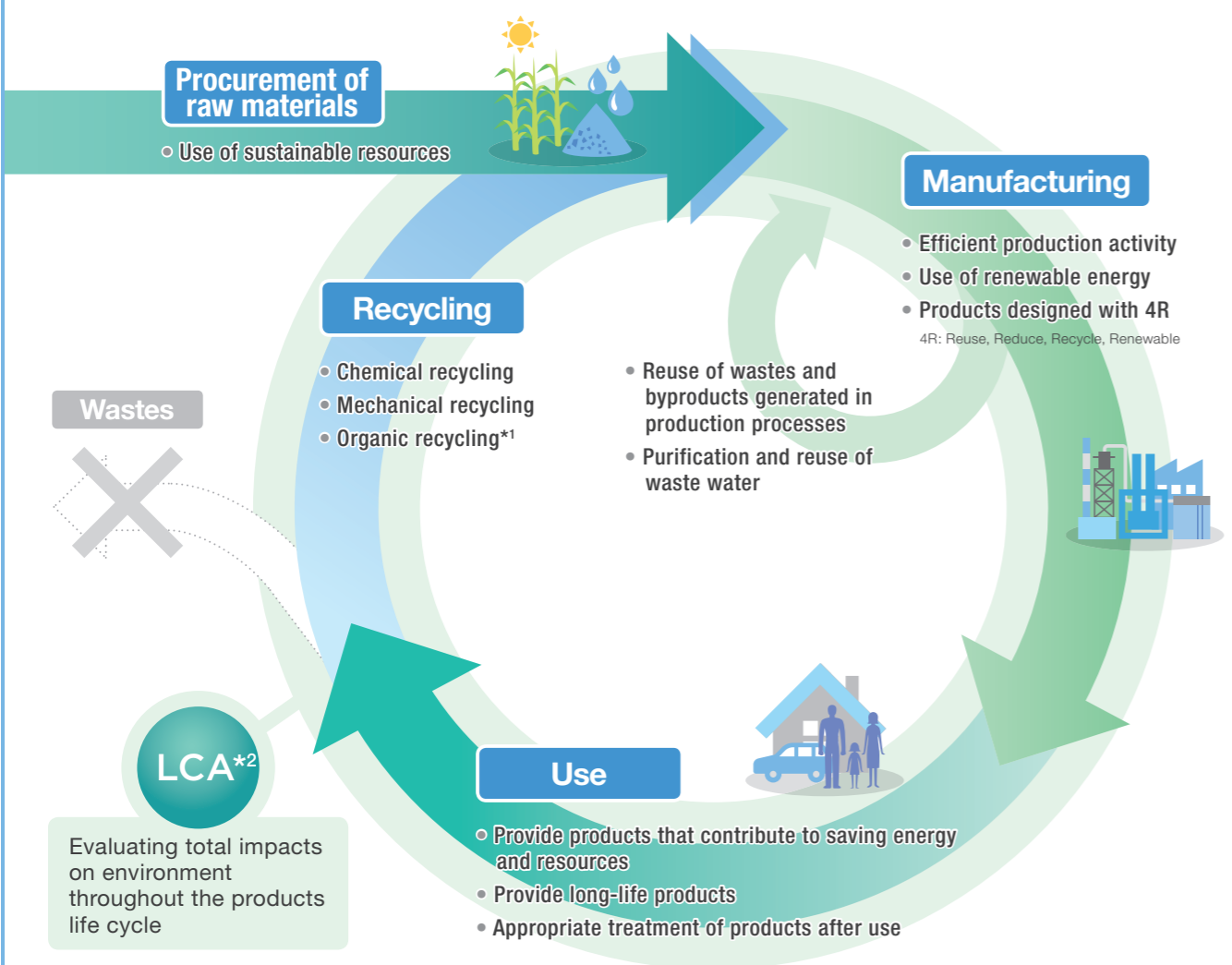
Circular Economy

Realizing a Recycling-oriented Society

The MCHC Group positions the circular economy as a critical strategy for comprehensively resolving environmental issues such as climate change, resources and energy. In order to achieve the recycling-oriented society, we strive to efficiently use resources throughout the entire life cycle from manufacturing process to treatment after product use.

Our Vision of Circulation

- ▶ Use and circulation of carbon as a resource (including carbon dioxide and plastic waste)
- ▶ Efficient use of water resources
- ▶ End of wastes



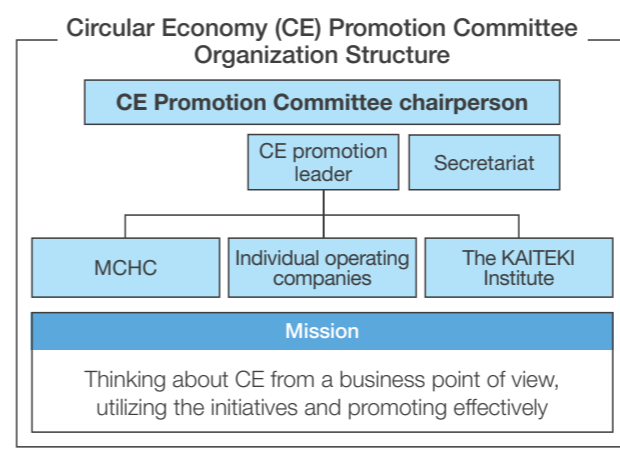
*1 Organic recycling: technology to produce valuable products through composting and methane fermentation.
*2 LCA: life cycle analysis

Challenges to Achieving the Recycling-oriented Society

The Circular Economy Promotion Committee was established in May 2019 as a crossover between social value and economic value, to promote our group-wide shift to a circular economy.

The Group's Policy on the Circular Economy

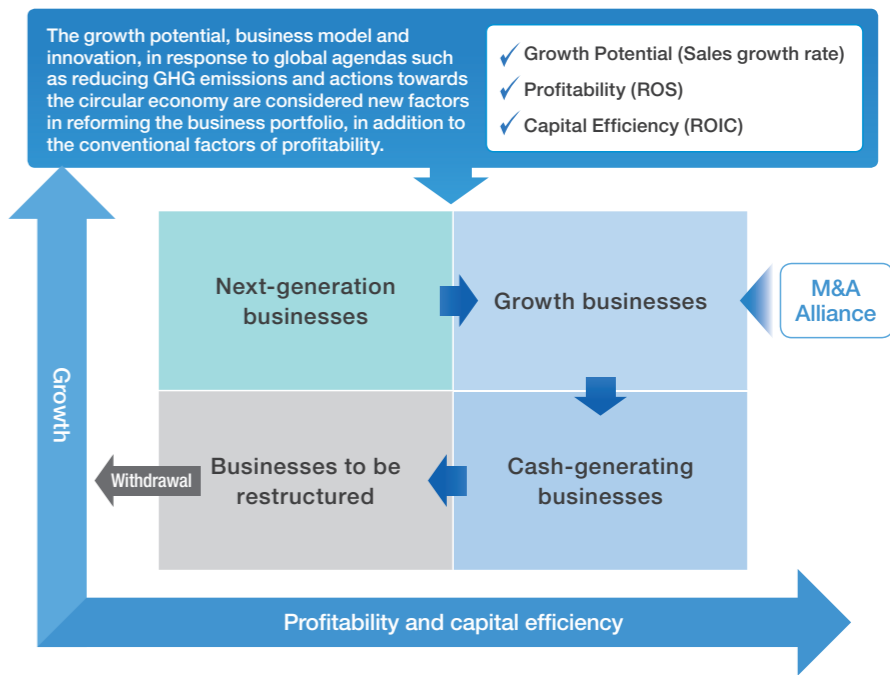
In our vision to realize KAITEKI we will serve a recycling-oriented society through our innovation and business model transformation. We will create new value with innovative products and through an efficient utilization of resources, materials and energy.



- Examples of themes**
- 1 Development of recyclable materials and recycle technologies
Recycling of packaging and industrial materials
Development of mechanical recycling and chemical recycling technologies
 - 2 Enhancement of biotechnology-related business
Business expansion of biodegradable polymers and plant-derived polymers and development of biocatalysts, etc.
 - 3 Implementation of a c-LCA system and recommendations for reforming business portfolios

Business portfolio reforms

Reflecting the cross-over of social value and economic value in portfolio reform



Report in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD*)

In October 2018, MCHC announced its support for the final recommendations prepared by the Task Force on Climate-related Financial Disclosures (TCFD), established by the Financial Stability Board.

The MCHC Group has worked to reduce environmental impact, promote energy-saving activities, increase the use of renewable energy, and expand product groups that contribute to the reduction of GHG emissions. Based on the TCFD's final recommendations, the Group will enhance these initiatives, progressively expanding its disclosure of related information as it strives to increase corporate value.

* In June 2017, TCFD announced the final recommendations concerning disclosure of information to encourage companies to voluntarily disclose to investors the impacts of climate change-related risks and business opportunities on corporate finances.

Governance

MCHC identified climate change as a material management issue by conducting the materiality assessment (see page 13) under APTSIS 20, and have conducted appropriate measures. Several metrics are applied to the climate-related issues to evaluate the progress of measures taken (see "Metrics and Targets" below). We monitor the progress against the target set for each operating company under the KAITEKI Initiative Structure (see page 35) centering on the KAITEKI Promotion Committee, an advisory body to the president of MCHC.

Structure	Roles	Activities in FY2018
Board of Directors	<ul style="list-style-type: none"> Formulation of the basic management policy Supervision of overall management 	<ul style="list-style-type: none"> Supervision through the execution reports of executive officers
Outside Director Liaison Committee	<ul style="list-style-type: none"> Provision to outside directors of important information on management Frank exchange of views on management issues 	<ul style="list-style-type: none"> Exchange of views on "KAITEKI Vision 30" (see page 36) (November)
KAITEKI Promotion Committee (Structure) •President, MCHC •Corporate Executive Officers, MCHC •CSO* of each operating company •Members of the Audit Committee, etc., MCHC	<ul style="list-style-type: none"> Deliberations on basic policy, etc. concerning the KAITEKI initiatives Monitoring through the activity reports of operating companies 	<ul style="list-style-type: none"> Deliberations on "KAITEKI Vision 30": Concept on reduction of GHG emissions (February) Monitoring based on the management indices (MOS indices) (July and February)
Operating Companies	<ul style="list-style-type: none"> Overseeing the progress of KAITEKI initiatives by the CSO of each company Reporting the progress of KAITEKI initiatives and MOS indices, etc. 	<ul style="list-style-type: none"> Reporting the progress of MOS indices, etc. at the KAITEKI Promotion Committee (July and February)

* CSO: Chief Sustainability Officer

Strategy and Risk Management



Metrics and Targets

Category	Report of FY2018	Related Page
Metrics and targets to assess risks and opportunities	Among the management indices that assess the improvement of sustainability (MOS indices), we have set the reduction of burdens on the atmospheric environment such as in terms of greenhouse gases and the degree of contribution to the reduction of GHGs by providing products and services that contribute to reducing GHG emissions. Based on these, we set targets for the final year of the medium-term management plan (for FY2020), and assess the degree of achievement every year. For the progress in FY2018, please see page 42.	› Sustainability (MOS) indices [P42]
Scope 1 to 3 GHG emissions	Please see GHG emissions on page 63 for the performance in FY2018.	› Non-financial highlights [P63] › Environmental data/Independent Assurance Report [P95-96]
Corporate executive remuneration	The performance-based evaluation of the remuneration of corporate executive officers and executive officers is determined based on the degree of achievement of the targets for each fiscal year. The evaluation is determined by using indices including those associated with the improvement of sustainability in addition to economic and capital efficiencies, such as indices associated with climate change through the promotion of energy-saving activities. For details, please refer to the Securities Report.	› Corporate governance, remuneration [P52]

Addressing the Plastic Waste Issues

Plastics are widely used and indispensable in daily life, reflecting their ease-of-use. Global production of plastics has risen 20-fold*1 over the past 50 years, and yet their recycling rate remains as low as around 10%,*2 resulting in serious marine plastic pollution cause by a lack of proper waste treatment. As countermeasures against the plastic waste are required on a global scale, the MCHC Group, as a plastic materials provider, is also working to reduce the plastic waste generated throughout the value chain while also addressing the challenge through its products and technologies, including by developing recycling-friendly materials and technologies, and promoting its biodegradable polymer business.

Furthermore, in collaboration with international initiatives, we will work to build a recycling-oriented society throughout the value chain.

Major Initiatives in Which the MCHC Group Participates

Joined in	Initiative
September 2018	Japan Initiative for Marine Environment (Founding member)
January 2019	Japan Clean Ocean Material Alliance (Chairperson of Engineering Committee)
January 2019	Alliance to End Plastic Waste (Founding member / Executive Committee member)
March 2019	Ellen MacArthur Foundation's Circular Economy 100 (The first Japanese chemical company to join the CE100)

*1 Reference: World Economic Forum (2016)

*2 Reference: OECD, Improving Markets for Recycled Plastic (2018), R. Geyer, J. Jambeck and K. Law, "Production, use, and fate of all plastics ever made," Science Advances, Vol. 3 (2017)

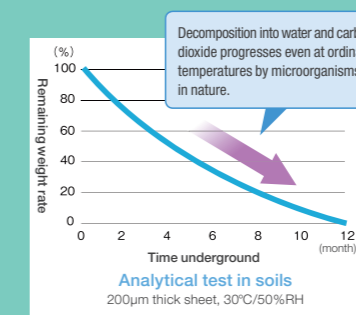
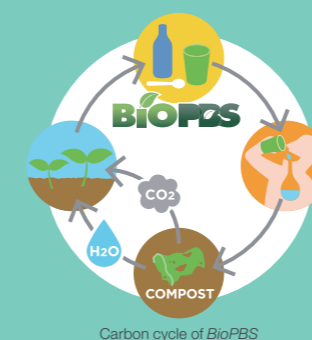
FOCUS



Building a resource-saving and carbon-circulating society: Biodegradable Polymer, BioPBS

Expectations for the use of bioplastics to help in build a recycling-oriented society are increasing. BioPBS is a plant-derived biodegradable polymer developed by Mitsubishi Chemical Corporation and manufactured by PTT MCC Biochem Company Limited, a joint venture established in Thailand with PTT Global Chemical Public Company Limited (Thailand). Microorganisms in the environment decompose BioPBS into water and carbon dioxide, thus causing only a small environmental load. In addition, thanks to its plant origin, the product is carbon neutral as the carbon dioxide released by its incineration is fully absorbed by plants. Paper cups made using this material were first released in October 2018, and since then we have accelerated the development of its applications for food-related products that include such items as coffee capsules, cutlery and straws as well as covering materials used in agriculture such as mulch films.

The development of new materials through public-private-academic partnerships is important to promote the plastic resource circulation strategy, and for this reason, the development and demonstration of applications are being implemented with the government's support. Thus, the MCHC Group is contributing to the circulation of global resources with Japanese technologies by setting up cutting-edge material businesses not only in Japan but also in key locations abroad.



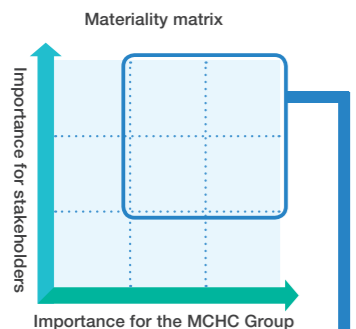
Carbon cycle of BioPBS

Biodegradability of BioPBS

Coffee capsules

› Growth Strategy for Advanced Polymers [P75]

Progress with Sustainability Management



Based on the materiality (important issues; see page 13) identified in the medium-term management plan *APTSIS 20*, the MCHC Group has set the core measures and targets for sustainability. We will take action based on the results of this materiality assessment, to help solve social issues and increase our corporate value.

Materiality	Core Measures
Material issues related to the global environment Energy and resources Climate change Water	Address the depletion of natural resources and energy saving by switching to renewable raw materials, curbing the use of rare metals, reducing raw fuel consumption and promoting 3R and zero emissions.
	Reduce GHG emissions, promote LCA and utilize low-carbon resources and energy, while creating and expanding business opportunities that mitigate or adapt to climate change.
	Use water resources efficiently and clean wastewater while helping to solve water resource issues by providing safe and clean water through our products and services.
Material issues related to social systems Food and agriculture Product responsibility Contribution to communities	Develop solutions to food and agricultural issues by preserving food resources, resolving maldistribution and providing products and services that improve agricultural productivity.
	To ensure that customers can use products and services without concern, pursue initiatives to ensure the quality and safety of products throughout their lifecycle and minimize adverse effects on the environment.
	Broadly contribute to society through business activities while deepening understanding of various communities and continually responding to their requests and expectations.
Material issues related to the Company and its organizational structure Health and wellness Medical care Human development and training Occupational health and safety Human rights awareness Information security and privacy Diversity and inclusion	Promote the use of health information and disease prevention by improving lifestyle habits through self-medication and expanding healthcare products and services, and contribute to the improvement of people's health.
	Improve patient QOL and help people's lives and health by developing pharmaceuticals that meet unmet medical needs and improving medical care through regenerative medicine and remote medicine technologies.
	Offer equal opportunities in hiring, placement, promotion and skills development, while acquiring and developing human resources for the medium to long term. Raise employee awareness of the Corporate Philosophy and increase corporate value by implementing the philosophy.
	Implement safety management in accordance with national and regional laws and regulations and make workplaces safe while maintaining and improving the physical and mental health of employees.
	Respect the dignity and rights of all people in corporate activities and require that business partners refrain from violating human rights or engaging in inappropriate discrimination.
	Recognize the importance and responsibilities associated with protecting information assets and manage information properly to prevent leakage of confidential information of customers, business partners, MCHC or other parties.

Sustainability (MOS) Indices

Since FY2011, the MCHC Group has been using the Management of Sustainability (MOS) Indices to quantify and visualize its contribution to sustainability as its own management indicator for promoting sustainability. This report describes MOS Indices-related achievements (table below) and efforts (pages 43–44 and 46) in an easy-to-understand manner with reference to the International

Integrated Reporting Framework of the International Integrated Reporting Council. For details of these achievements, please visit the following website:

Website (Sustainability) 
<https://www.mitsubishichem-hd.co.jp/english/sustainability/>

Sustainability (MOS) Indices	Assessment Criteria	FY2018 Plan	FY2018 Result	FY2020 Target	Related SDGs	
(Data elements)	(Units)					
The global environment	Reduce burden on the atmospheric environment (GHG, SOx and NOx emissions)	Per-unit impact on the environment (LIME / ¥100 million)	540	499.0	548.7	13, 15, 17
	Reduce burden on the water environment (Total phosphorous, total nitrogen in wastewater and COD emissions)	Per-unit impact on the environment (LIME / ¥100 million)	6.5	5.5	6.1	6, 7, 14
	Reduce burden on the soil environment (total landfill)	Per-unit impact on the environment (LIME / ¥100 million)	4.4	5.5	5.1	12, 13, 15
	Promote use of renewable energy	Volume of renewable energy generated and supplied (MW)	56.0	55.6	50.0	7, 13
	Provide products and services that contribute to reducing GHG emissions	Contribution to the reduction of GHG emissions (hundreds of millions of tons-CO ₂ equivalent)	0.81	0.75	1.5	13, 17
	Provide products and services that help solve water resource problems	Volume of reused water supplied (hundreds of millions of tons)	5.6	5.6	17	6, 14, 17
Social systems	Provide products and services that help solve food problems	Growth in sales of related products and services (%)	11.3	12.3	30	2, 3, 9, 11, 12
	Provide products and services that contribute to a comfortable society and better lifestyles	Growth rate in the comfort value provision index (%)	14.7	8.8	40	3, 6, 11, 12
	Customer satisfaction index (Results of customer satisfaction survey)	Points	27	22	47	9, 11, 12
	Improvement index in the number of complaints	%	40	20.0	50	12, 17
	Improvement index in communication with business partners (Regarding CSR procurement, status of initiatives such as distribution of guidelines, checklists, monitoring of the situation, interviews/visits/audits)	Points	77.8	86.8	100	12, 17
Company and its organizational structure	Contribution index for pharmaceuticals provision (Contribution to treatment, increased effectiveness)	Points	11.4	11.8	15	
	Vaccine provision index	Points	7.7	7.8	14	
	Improvement index in awareness of compliance (Results of awareness survey)	Points	21.0	15.8	21	3, 8, 12, 17
	Reduction rate of environmental incidents	%	100	20	100	
	Employee wellness index (Employee satisfaction, rate of taking paid leave, rate of number of days of sick leave, percentage of female managers)	Points	11.7	11.3	16	

Case Studies of addressing the Materiality

ACTION

Oxygen burner to save energy in the production process

MCHC's Materiality
Energy and resources Climate change

Taiyo Nippon Sanso Corporation developed the Innova-Jet F.H. oxygen burner to achieve significant energy savings in the foreground in the glass manufacturing process. This burner is designed to change the direction of flames periodically to ensure uniform heating of a wider area with fewer burners. In fact, the temperature distribution measured at the bottom of the test furnace shows that the uniform temperature distribution can be obtained even if the number of burners is reduced to less than half of the existing air burners. It was also confirmed that fuel consumption can be reduced by 65% compared with using air burners. The company is working to apply this technology in the steel, glass and ceramic industries to save energy and reduce CO₂ emissions.

Reduction of Fuel Consumption Rate

Item	Unit	Conventional	Innova-Jet F.H.
Oxidant	-	Air	Oxygen
Furnace temp.	°C	1,100	1,100
Fuel consumption*	-	100	35
Reduction rate	%	-	65

* The amount used in the air burner is set to 100.

Joint research on a new treatment for malaria initiative to improve access to medicines in developing countries

MCHC's Materiality
Medical care

Mitsubishi Tanabe Pharma Corporation provides support for the development of new drugs to treat infectious diseases such as malaria, tuberculosis and neglected tropical diseases in developing countries by investing in the Global Health Innovative Technology Fund (GHIT Fund), established as a public-private-civil sector partnership, specialized in research and development of global health care.

The company also provided its pharmaceutical compound library to Medicines for Malaria Venture (MMV), a research

institution focused on the treatment of malaria, via the GHIT Fund. Through the joint research, the company obtained two lead compounds derived from one of promising three hit compounds as candidates for new anti-malarial drugs.

This joint research moved into the next stage in April 2019 and the company has been running two-year program to create candidates for new anti-malarial drugs using a grant from the GHIT Fund.



Spreading and implementing the corporate philosophy

MCHC's Materiality
Human development and training

At the MCHC Group, it is individual employees who are the driving force behind value creation. We are working to nurture a corporate culture that encourages all employees to regard social issues as their own and to strive to achieve KAITEKI in their workplaces and companies based on a shared understanding of the Group's vision. To this end, we have conveyed the views of our top executives through the in-house magazine and have distributed copies of the Brand Book to employees. Moreover, since FY2018, we have been holding a workshop to revitalize human resources and organizations,

targeting divisional and departmental managers who are supervising individual workplaces. (In FY2018 we held the workshop eight times with the participation of 160 managers.)

Through these measures we are instilling the philosophy of KAITEKI and implementing specific initiatives across our workplaces via their leaders.



KAITEKI workshop

Water Management at the MCHC Group

MCHC's Materiality
Water

Of all the water resource on Earth, the available amount of freshwater is only about 0.01%. The water crisis is worsening because of the increase in water consumption due to population growth and economic development and the expansion of areas suffering from water shortages caused by climate change. In response, global companies must play a greater role in the effective use of water and improvement of water quality through their operations.

Approach to Conserving Water Resources

The Group is working to preserve water resources mainly by reducing its business activities' impact on water resources and contributing to solving water supply-and-demand issue through its products.

Water Risk Assessment and On-site Surveys

The MCHC Group is conducting risk assessments through on-site interview surveys and other means to the sites deemed to have high water risks. We identified the plants with potential high water risks by using the Global Water Tool provided by the World Business Council for Sustainable Development (WBCSD) and assessing the possibility of high water stress at the plants. In FY2017 we conducted on-site surveys at 11 locations in Japan and three abroad and have been expanding the scope of the survey since FY2018. Through on-site interview

surveys we evaluated the level of water management and water use reduction measures implemented by the plants considering the social needs, such as contribution to local communities and prevention of water pollution. Today, as a result of taking appropriate risk control measures, none of our plants have water risks that could adversely affect our activities, even those where drought and other water issues used to pose a risk. We will continue to conduct on-site surveys to reduce water risks and conserve water resources.

Examples of Countermeasures for Water-related Risks

Measures to Prevent Water Pollution Mitsubishi Chemical's Okayama Plant

The plant constantly monitors water quality by using a continuous analyzer installed at the end of the drain. Plant operators also conduct regular on-site patrols, visually inspecting water and checking for equipment and system defects. The plant also has a system to automatically shut the downstream water gate in case the analyzer shows an abnormal value.



Water gate

Effectively Reusing Water Mitsubishi Chemical's Ibaraki Plant

The plant uses large amounts of cooling water in the chemicals manufacturing process. In order to reduce the amount of freshwater withdrawn from local water resources, the plant reuses the cooling water several dozen times.



Cooling tower

Securing Safe Water

Expanding KAITEKI Value

The water treatment and supply system of Mitsubishi Chemical Aqua Solution Co., Ltd. supplies safe drinking water by advanced membrane filtration of groundwater. The decentralized water system enables the dual supply of water in addition to the public water supply system, thus ensuring the water supply in the event of disaster. It increases the disaster response capabilities of facilities where water supply is prioritized, such as disaster base hospitals and core manufacturing facilities.



Membrane filtration system for groundwater

KAITEKI Health and Productivity Management, Human Resource Development

The MCHC Group believes that “people” are the driving force behind the sustainable growth of society and the company. People are also a key management resource. We are promoting KAITEKI Health and Productivity Management* to help each employee realize their potential to the fullest.

* “Kenkokeiei,” which means Health and Productivity Management in Japanese, is a registered trademark of the Workshop for the Management of Health on Company and Employee, an NPO. In terms of using “KAITEKI Health and Productivity Management,” the trademark is authorized to be used by the NPO.



Message from the CHO

Devoted to be a company where creative and diverse individuals can thrive

Ken Fujiwara
Managing Corporate Executive Officer
Chief Compliance Officer
Chief Health Officer

Initiatives for KAITEKI Health and Productivity Management

The MCHC Group promotes KAITEKI Health and Productivity Management to boost creativity and productivity of diverse people who contribute to a realization of KAITEKI through improving health and reforming work-styles. Using a PDCA (plan, do, check and act) cycle and based on three core KPIs (see page 46), we are pushing forward initiatives related to human resource development, promoting diversity, supporting flexible work-styles, and improving health conditions. We developed and introduced a proprietary system, i² Healthcare, to support employees' health more than a year ago. As a result, many of our employees now use wearable devices to monitor their sleep quality, exercise, heart rate, and other indicators in real time, raising their health awareness and improving self-care.

The ideal state of individuals and the organization

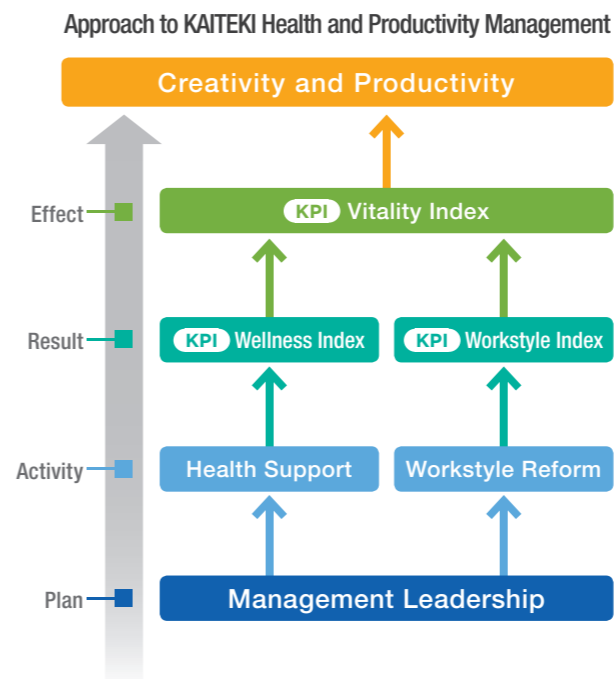
For the MCHC Group to achieve sustainable growth in the face of accelerating changes in the business environment, the Group must have systems in place to maximize the potential of individuals and organizations. As part of strategic investments in human resources, we have introduced an ICT-based communication

infrastructure system, and are enabling flexible work-styles, such as telework, to boost productivity and creativity. In addition, we have been exploring what individuals and the organization should be thorough discussions to formulate the medium- to long-term basic management policy “KAITEKI Vision 30” (see page 36). We are also planning to reinforce efforts to develop employees with digital skills and leverage external resources as part of our shift to a data-driven business model. A diverse workplace that fosters vitality is the foundation of an organization with a culture of open-mindedness and high levels of trust. We will foster a corporate culture that sparks creativity in each employee and promotes the drive to create new value.

ICT-based Health Support System

“i² Healthcare”

A proprietary system that enables each employee to see personal health data on their devices, integrating health data collected daily via wearable devices, health checkup results, and work-style related information.



Three Core KPIs for KAITEKI Health and Productivity Management

Description	FY2018 Result	FY2020 Target
Vitality Index Index for employees' job satisfaction, enthusiasm, trust and growth	71.1pt (+ 8.1 y/y)	+ 15pt Increase positive choices by 15 point or more in the health survey*1.
Workstyle Index Index for levels of workstyle awareness, behavior and initiatives	70.6pt (+2.8 y/y)	+ 10pt Increase positive choices by 10pt or more in the health survey.
Wellness Index Index for health checkup items, lifestyle quality and level of life satisfaction	47.6pt (+2.2 y/y)	+ 10pt For the 10 health criteria items, increase the number of items met by each employee by one item (= 10 points) or more.

*1 We conduct the health survey to assess each employee's awareness and approach to Health and Productivity Management, in combination with the conventional employee awareness survey.

Case Studies of addressing the Materiality

ACTION

- ### 1 Empowerment of Diverse Human Resources

Mitsubishi Chemical

Implementing the “Experience JAPAN” training program

For sustainable growth, companies need a corporate culture that encourages diverse employees to fulfill their potential and collaborate each other. To foster multicultural communication, Mitsubishi Chemical Corporation has a program to help local employees working at overseas bases understand Japanese business customs through OJT, experience cultural differences and build a network with fellow employees working in Japan.


- ### 2 Achieving a Balance between Life Events and Work

Mitsubishi Tanabe Pharma

Helping employees on childcare leave to continue active careers

The MCHC Group helps employees to work flexibly according to their stage of life. Mitsubishi Tanabe Pharma Corporation has introduced a program to help those on childcare leave return to work and continue an active career. Under the program, employees are given opportunities to study MBA subjects and languages online during their leave, as well as financial support to employ babysitters after returning to work. The company thus supports time-constrained employees to be more successful at workplace.
- ### 3 Health Promotion

Life Science Institute


Holding a health measurement event

Employees cannot work with vigor and satisfaction unless they are physically and mentally healthy. Life Science Institute, Inc. holds a special health measurement event which involves measurements that are different to a regular health checkup. In the event, the cognitive functions of employees are assessed to learn how they are using their brains while also having their capillaries visually examined. This helps make participants more aware of their health, and each participant receives the results and advice individually.
- ### 4 Development of Human Resources in charge of On-site Safety

Taiyo Nippon Sanso

Established the “Technical Academy” to help employees improve technical skills and safety

For workplace safety, the MCHC Group believes it is important to improve the work environment and urge individual employees to be more aware of risks. Taiyo Nippon Sanso Corporation opened the Technical Academy in June 2018 as a technical training facility. The Academy is equipped with different types of simulators, including those using virtual reality (VR), to enable employees to virtually experience typical on-site incidents, including getting caught in machinery and falls, as well as incidents involving high-pressure gas, such as cylinders overbalancing and gas leaks. These simulators help employees to be aware of risks at work.



VR simulator for falls

Management Directors



Director of the Board, Chairperson
Yoshimitsu Kobayashi

Dec. 1974 Joined Mitsubishi Chemical Industries Ltd.
Jun. 2003 Executive Officer, MCC
Apr. 2005 Managing Executive Officer, MCC
Jun. 2006 Director of the Board, MCHC
Feb. 2007 Director of the Board, Managing Executive Officer, MCC
Apr. 2007 Director of the Board, President and Chief Executive Officer, MCHC
Director of the Board, President and Chief Executive Officer, MCC
Apr. 2012 Director of the Board, Chairperson, MCC (until Mar. 2017)
Apr. 2015 Director of the Board, Chairperson, MCHC (current)



Director of the Board, Corporate Executive Officer, President and Chief Executive Officer
Hitoshi Ochi

Apr. 1977 Joined Mitsubishi Chemical Industries Ltd.
Jun. 2007 Executive Officer, MCHC
Executive Officer, MCC (until Mar. 2010)
Apr. 2009 Director of the Board, MPI (until Mar. 2011)
Jun. 2009 Director of the Board, Executive Officer, MCHC
Jun. 2010 Director of the Board, Managing Executive Officer, MCHC
Director of the Board, MRC (until Jun. 2011)
Apr. 2011 Director of the Board, MCHC (until Jun. 2011)
Director of the Board, Managing Executive Officer, MCC (until Mar. 2012)
Apr. 2012 Director of the Board, President and Chief Executive Officer, MRC (until Mar. 2018)
Jun. 2012 Director of the Board, MCHC
Apr. 2015 Director of the Board, President and Chief Executive Officer, MCHC
Jun. 2015 Director of the Board, Corporate Executive Officer, President and Chief Executive Officer, MCHC (current)



Director of the Board, Managing Corporate Executive Officer, Chief Financial Officer
Hidefumi Date

Apr. 1982 Joined Mitsubishi Chemical Industries Ltd.
Apr. 2013 Executive Officer, MCC (until Mar. 2015)
Apr. 2015 Executive Officer, MCHC
Apr. 2018 Managing Corporate Executive Officer, MCHC
Jun. 2019 Director of the Board, Managing Corporate Executive Officer, MCHC (current)
Director of the Board, TNSC (current)



Director of the Board, Managing Corporate Executive Officer, Chief Compliance Officer
Ken Fujiwara

Apr. 1984 Joined Mitsubishi Chemical Industries Ltd.
Apr. 2015 Executive Officer, MCHC
Apr. 2017 Executive Officer, MCC (until Mar. 2018)
Apr. 2018 Managing Corporate Executive Officer, MCHC
Jun. 2018 Director of the Board, Managing Corporate Executive Officer, MCHC (current)

- Chairperson of the Nominating Committee
- Member of the Nominating Committee
- ◆ Chairperson of the Audit Committee
- ◆ Member of the Audit Committee
- Chairperson of the Compensation Committee
- Member of the Compensation Committee



Director of the Board
Glenn H. Fredrickson

Jan. 1990 Associate Professor, Departments of Chemical Engineering and Materials, University of California, Santa Barbara (UCSB)
Jul. 1991 Distinguished Professor, Departments of Chemical Engineering and Materials, UCSB (current)
May 1998 Chairperson, Department of Chemical Engineering, UCSB (until Jul. 2001)
Mar. 2001 Director, Mitsubishi Chemical Center for Advanced Materials at UCSB (current)
Apr. 2014 Managing Executive Officer, MCHC
Jun. 2014 Director of the Board, Managing Executive Officer, MCHC
Jun. 2015 Director of the Board, Managing Corporate Executive Officer, MCHC
Apr. 2017 Director of the Board, MCHC (current)



Director of the Board
Hisao Urata

Jan. 1991 Joined Mitsubishi Kasei Corporation
Jun. 2011 Executive Officer, MCHC
Executive Officer, MCC (until Mar. 2014)
Apr. 2015 Managing Executive Officer, MCHC
Jun. 2015 Managing Corporate Executive Officer, MCHC (until Mar. 2016)
Jun. 2016 Director of the Board, MCHC (current)
Corporate Auditor, MPI (until Mar. 2017)
Apr. 2017 Corporate Auditor, LSII (until Jun. 2019)
Jun. 2019 Corporate Auditor, MCC (current)



Director of the Board
Shigeru Kobayashi

Apr. 1980 Joined Mitsubishi Chemical Industries Ltd.
Apr. 2013 Executive Officer, MPI
Apr. 2015 Director of the Board, Executive Officer, MPI
Apr. 2016 Director of the Board, Managing Executive Officer, MPI
Apr. 2017 Managing Executive Officer, MCC (until Mar. 2019)
Jun. 2019 Director of the Board, MCHC (current)
Corporate Auditor, LSII (current)

Directors

(As of June 25, 2019)



Outside Director of the Board
Taigi Ito

Jan. 1970 Joined Tsuji Audit Corporation
May 1973 Registered as a Certified Public Accountant
Feb. 1989 Representative Partner, MISUZU Audit Corporation
Jul. 2004 Deputy Chairperson, the Japanese Institute of Certified Public Accountants (JICPA) (until Jun. 2007)
May 2006 Executive Board Member, MISUZU Audit Corporation (until Jul. 2007)
Apr. 2009 Professor, Graduate School of Accounting, Waseda University (until Mar. 2013)
Jan. 2012 Chairperson, Disciplinary Committee of JICPA (until Aug. 2016)
Jun. 2014 Outside Corporate Auditor, MCHC (until Jun. 2015)
Corporate Auditor, MCC (until Mar. 2017)
Jun. 2015 Outside Director of the Board, MCHC (current)



Outside Director of the Board
Hideko Kunii

May 1982 Joined Ricoh Co., Ltd.
Jun. 2005 Corporate Senior Deputy CEO, Ricoh Co., Ltd. (until Mar. 2008)
Apr. 2008 Chairperson, Ricoh Software Co., Ltd. (currently Ricoh IT Solutions Co., Ltd.)
Apr. 2009 Associate Director, Ricoh Co., Ltd. (until Mar. 2013)
Jul. 2009 Chairperson, Ricoh IT Solutions Co., Ltd. (until Mar. 2013)
Apr. 2012 Professor, Graduate School of Engineering Management, Shibaura Institute of Technology
Apr. 2013 Deputy President, Shibaura Institute of Technology (until Mar. 2018)
Oct. 2013 Head of the Office of the Gender Equality Promotion Center, Shibaura Institute of Technology (until Mar. 2018)
Jun. 2015 Outside Director of the Board, MCHC (current)
Apr. 2018 Visiting Professor, Graduate School of Engineering Management, Shibaura Institute of Technology (until Mar. 2019)
Apr. 2019 Visiting Professor, Shibaura Institute of Technology (current)



Outside Director of the Board
Takayuki Hashimoto

Apr. 1978 Joined IBM Japan, Ltd.
Apr. 2000 Director of the Board, IBM Japan, Ltd.
Apr. 2003 Managing Executive Officer, IBM Japan, Ltd.
Jan. 2007 Senior Managing Executive Officer, IBM Japan, Ltd.
Apr. 2008 Director of the Board, Senior Managing Officer, IBM Japan, Ltd.
Jan. 2009 Director of the Board, President, IBM Japan, Ltd.
May 2012 Director of the Board, Chairperson, IBM Japan, Ltd.
Apr. 2014 Chairperson, IBM Japan, Ltd.
Jan. 2015 Vice Chairperson, IBM Japan, Ltd.
Jun. 2016 Outside Director of the Board, MCHC (current)
May 2017 Honorary Executive Advisor, IBM Japan, Ltd. (current)



Outside Director of the Board
Chikatomo Hodo

Sep. 1982 Joined Accenture Japan Ltd
Sep. 2005 Representative Director, Accenture Japan Ltd
Apr. 2006 Representative Director and President, Accenture Japan Ltd
Sep. 2015 Director and Chairperson, Accenture Japan Ltd
Sep. 2017 Director and Senior Corporate Advisor, Accenture Japan Ltd
Jul. 2018 Senior Corporate Advisor, Accenture Japan Ltd (current)
Jun. 2019 Outside Director of the Board, MCHC (current)



Outside Director of the Board
Kiyomi Kikuchi

Apr. 1986 Joined The Dai-ichi Kangyo Bank, Ltd. (currently Mizuho Bank, Ltd.) (until Dec. 1990)
Apr. 1999 Registered as a lawyer
Asahi Law Offices
Sep. 2002 Allen & Overy LLP (London)
May 2003 Admitted to the bar of the State of New York
Oct. 2003 Asahi Law Offices
Sep. 2004 Taiyo Law Office
(currently Paul Hastings LLP/Gaikokuho Kyodo Jigyō)
Sep. 2006 JPMorgan Securities Japan Co., Ltd.
Apr. 2008 TMI Associates (current)
Jun. 2019 Outside Director of the Board, MCHC (current)

Diversity of Directors

The Board of Directors decides on the MCHC Group's basic management policies and supervises the execution of business in an appropriate manner. The Board of Directors consists of diverse directors with a high expertise.

	Management experience	Finance and accounting	Science technology, IT and production	Risk management	Business strategies and marketing	Laws and regulations, etc.	Globality and diversity
Yoshimitsu Kobayashi	●		●				●
Hitoshi Ochi ♦	●		●		●		
Hidefumi Date ♦		●		●			●
Ken Fujiwara ♦				●		●	●
Glenn H. Fredrickson			●		●		●
Hisao Urata			●	●	●		
Shigeru Kobayashi	●			●	●		
Taigi Ito		●		●			
Hideko Kunii			●		●		●
Takayuki Hashimoto	●				●		●
Chikatomo Hodo	●		●				●
Kiyomi Kikuchi						●	●

* Each director is expected to hold up to three fields of expertise as set the above

* In order to enhance supervisory function, a majority of the Board of Directors are non-executive directors. (♦Directors are in an executive function)

Policies on the Nomination of Director Candidates

The Nominating Committee shall appoint potential directors who meet the following criteria:

- Has high expertise, profound insights into relevant fields and can make decisions independently and fairly, which required to fulfill their duty as a director of a company with a nominating committee, etc.
- Has high ethical standards and a law-abiding spirit.
- Is healthy enough to fulfill the responsibilities of a director.
- For outside directors, meet the independence criteria set separately and are able to devote sufficient time to fulfill their duties. In addition, the Committee shall ensure diversity among outside directors.

Standards for Independence of Outside Directors

The Company shall elect those as Outside Directors who do not fall under any of the following and are capable of overseeing the Company's management from a fair and neutral standpoint, free of a conflict of interest with general shareholders.

1. Related party of the Company

- (1) Person engaged in execution of operation of the Company Group (executive director, corporate executive officer, executive officer, manager, employee, partner, etc. The same shall apply hereafter.)
- (2) Person who was engaged in execution of operation of the Company Group over the last 10 years

2. Major shareholder

A person who directly or indirectly holds 10% or more of the Company's total voting rights or a person engaged in execution of operation of a company that directly or indirectly holds 10% or more of the Company's total voting rights

3. Major business partner

- (1) A person engaged in execution of operation of a company*¹ whose major business partner includes the Company and Group Operating Companies (Mitsubishi Chemical Corporation, Mitsubishi Tanabe Pharma Corporation, Life Science Institute, Inc., and Taiyo Nippon Sanso Corporation. The same shall apply hereafter.)
- (2) A person engaged in execution of operation of a major business partner*² of the Company and Group Operating Companies

4. Accounting Auditor

Accounting Auditor of the MCHC Group or an employee thereof

5. Transaction as an individual

A person who receives money and other financial benefits of 10 million yen or more per year from any of MCHC and Group Operating Companies

Main Agenda Items Discussed at the Board of Directors Meeting During FY2018

- Reports on major items discussed at the Corporate Executive Officers Committee
- Acquisition of treasury stock
- Deliberation on large-scale M&A executions at the operating company
- Business monitoring
- Portfolio strategy in mid- to long-term perspective
- Outcomes of the engagement activities with institutional investors
- Effectiveness of internal control system
- Budgeting and planning of investment for the next fiscal year

6. Donation

A person who receives a donation or financial assistance of 10 million yen or more per year from any of MCHC and Group Operating Companies or a person engaged in execution of operation of a company that receives a donation or financial assistance of 10 million yen or more per year from any of MCHC and Group Operating Companies

7. Reciprocal assumption of the position of Director

A person engaged in execution of operation of a company that has elected any of the Directors and employees of the MCHC Group as its Director

8. Close relatives, etc.

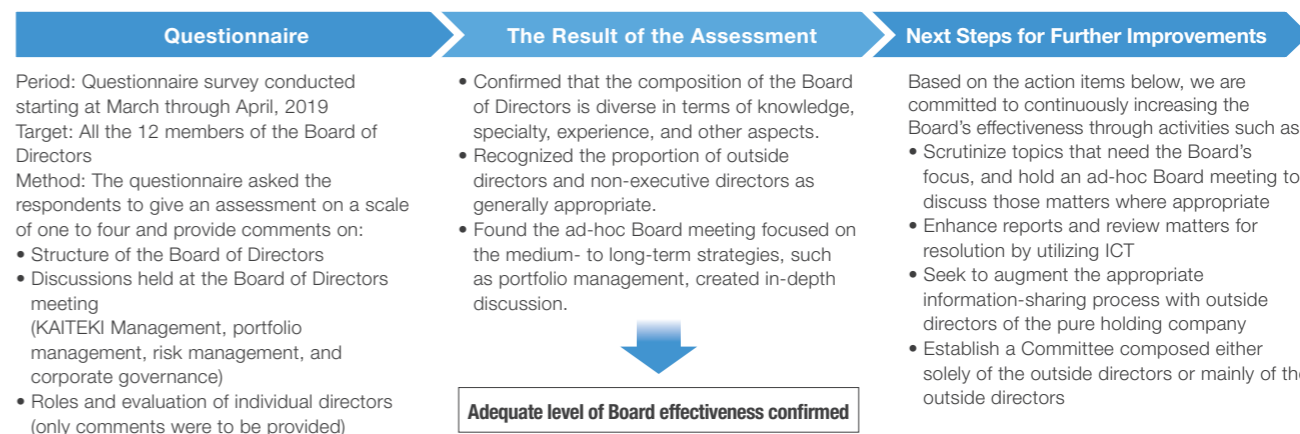
- (1) Close relatives, etc. of a person engaged in execution of important operations of the MCHC Group (spouse, relatives within the second degree of relationship or any person who shares the same livelihood. The same shall apply hereafter.)
- (2) Close relatives, etc. of any person who meets the definition of items 3 through 7 above
- (3) A person who met the definition of items 3 through 7 above over the last three years

*¹ If the said business partner receives from MCHC and Group Operating Companies an amount equivalent to 2% or more of its annual consolidated net sales in the latest fiscal year, this company shall be considered as the one whose major business partner includes MCHC.

*² If MCHC and Group Operating Companies receives from the said business partner an amount equivalent to 2% or more of MCHC's annual consolidated net sales in the latest fiscal year or the said business partner loans to the MCHC Group an amount equivalent to 2% or more of MCHC's total consolidated assets, the said business partner shall be considered as a major business partner of MCHC.

FY2018 Assessment of the Board's Effectiveness

The annual evaluation exercise was facilitated by questionnaires which all the Board member participated in, and its outcomes were discussed at the Board meeting. Based on the discussion, the chairperson evaluated the effectiveness of the Board.



Director Remuneration

Policy on Deciding Remuneration for Directors and Corporate Executive Officers

The remuneration system for directors, and that for corporate executive officers shall be different. Remuneration is determined by the Compensation Committee based on the following concepts.

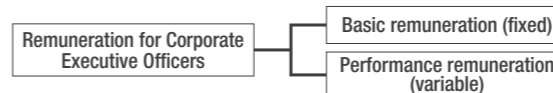
Directors



- Remuneration for directors shall consist only of basic remuneration (fixed remuneration).
- Basic remuneration shall be based on title and classification such as full-time or part-time.
- The amount of remuneration shall be determined such that it would be at a level necessary for securing personnel suitable for carrying out the responsibilities of a director of a company with a nominating committee, etc., while also taking into consideration the levels of other companies.

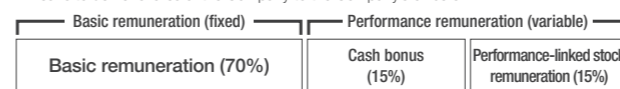
* When a director concurrently serves as a Corporate Executive Officer, remuneration as a Corporate Executive Officer shall be applied.

Corporate Executive Officers



- Remuneration for Corporate Executive Officers shall consist of basic remuneration (fixed remuneration) and performance remuneration (variable remuneration).
- Basic remuneration shall be based on title and duties such as having the right of representation.
- The amount of remuneration shall be determined such that it would be at a level necessary for securing good management personnel and improving the Company's competitiveness, while also taking into consideration the levels of other companies.
- Performance remuneration shall utilize cash bonus and performance-linked stock remuneration plan* in order to improve continuously medium-to long-term corporate value as well as to create incentive for sharing shareholder value. While a base amount and the number of shares shall be variable between 0 and 200% depending on the degree of attainment of performance goals, the ratio of performance remuneration to total remuneration shall be higher for executive officers.

*The performance-linked stock remuneration plan uses a board incentive plan (BIP) as the means to deliver shares of the Company to the Company's officers.



*In the case of President

Performance remuneration (variable remuneration) is decided at the Compensation Committee based on the following formula.

$$\text{Performance remuneration (variable)} = \text{Base amount and number of shares by title} \times \text{Coefficient based on evaluation* for performance remuneration}$$

* Evaluation for performance remuneration is decided at the Corporate Executive Officers Committee meetings based on the degree of attainment of annual goals, and its validity is verified at the Compensation Committee.

- The evaluation for cash bonus is determined by adding a qualitative evaluation for the status of initiatives that tackle the management's key issues to the aggregate evaluation from the three axes of MOE indicator, MOT indicator and MOS indicator.

- The evaluation for the performance-linked, stock remuneration plan is determined by using the MOE indicator, MOT indicator and MOS indicator.

MOE indicator: Indicator for core operating income, ROE, ROIC, free cash flow, and asset compression

MOT indicator: Indicator for efficiency of research and development, superiority of technologies, and consistency with social needs

MOS indicator: Indicator determined as significant in terms of contribution of MCHC in resolving environmental and social issues

Aggregate Amount of Remuneration of Company's Officers

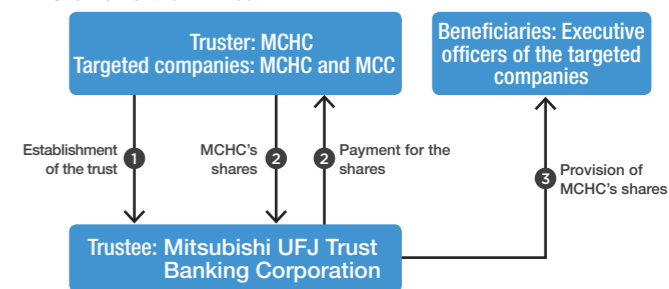
Category	No. of Persons	Amount of Remuneration, etc. Paid (in million yen)		
		Basic Remuneration	Performance Remuneration	Total
Directors (inside)	6	223	52	275
Directors (outside)	5	71	-	71
Corporate Executive Officers	7	304	144	448
Sum Total	18	598	196	794

- (Notes) 1. The total amount of remuneration, etc. MCHC and its subsidiaries paid to officers is shown as the amount of remuneration, etc. paid above.
2. The amount of remuneration, etc. MCHC paid is ¥343 million to eleven Directors (of which, ¥71 million to five Outside Directors) and ¥430 million to seven Corporate Executive Officers.
3. MCHC remunerates Directors who concurrently serve as Corporate Executive Officers for their services as Corporate Executive Officers as Policy on Deciding Remuneration for Directors and Corporate Executive Officers.
4. Performance remuneration to Directors (inside) is cash bonus and stock options paid to the director who concurrently served as Corporate Executive Officer in the previous fiscal year as performance remuneration at the time of standing as a Corporate Executive Officers.
5. Performance remuneration to Corporate Executive Officers is remuneration paid by MCHC based on cash bonus and stock options, and cash bonus paid by subsidiaries of MCHC.
6. At the June 6, 2018 meeting of the Compensation Committee, MCHC decided to introduce a new stock remuneration plan with a board incentive plan (BIP) trust. With the introduction of the plan, stock remuneration-type stock options will no longer be issued from fiscal 2019 (15th Term) onward.

Board Incentive Plan (BIP) Trust

The newly introduced performance-linked stock compensation system is based on a BIP Trust. Under this incentive plan set for five consecutive fiscal years (including the three years from FY2018 to FY2020) corresponding to the period of MCHC's medium-term management plan, MCHC's corporate executive officers and executive officers as well as MCC's president and representative director, directors who also serve as executive officers, and executive officers (excluding residents outside Japan; hereinafter collectively referred to as "executive officers") will be given points according to their titles and achievement level for the fiscal year targets and the targets set in the medium-term management plan. Then, in proportion to the number of points gained, the officers will receive MCHC shares and dividends paid for the trust's shares after their resignation from their position.

Overview of the BIP Trust



Message from the Chairperson

Creating new value to contribute to a sustainable society

Yoshimitsu Kobayashi
Chairperson



Looking back at the Board meetings held in FY2018

In FY2018, the Board of Directors met 11 times to monitor the progress of the medium-term management plan and discuss the investment in future growth, among other themes. One of the meetings focused on the MCHC Group's medium- to long-term strategies, featuring in-depth discussions about the Group's portfolio management, proposed by Director Fredrickson.

The environment surrounding the MCHC Group

Recently, the environment issues such as climate change, depletion of natural resources, plastic waste, aging society, those are affecting people, society and the Earth are growing more serious. In the future, I believe the dominant business model will be providing solutions for a range of environmental and health issues using a combination of goods and services, backed by technological innovation. Various businesses are developing services using data, such as "mobility as a service"^{*1}, and as digital platform providers such as GAFA^{*2} create new business models, the line between the "manufacturing" and "services" industries is becoming blurred.

For the sustainable development of people, society and the Earth, the MCHC Group has been channeling its innovation capacity on products and services that help solve social issues. Going forward, we plan to strategically categorize the Group's technologies and data as either

internal or open source. This will enable us to proactively collaborate with other companies, venture firms, universities, and public organizations in Japan and abroad to create new value.

Toward realizing KAITEKI

Currently, under the leadership of President Ochi, management is creating an action plan for 2030 by backcasting from our vision of society in the year 2050. This is one of priorities that will be discussed by the Board of Directors.

In FY2019, Chikatomo Hodo, who served as president and chairperson of Accenture Japan Ltd, and Kiyomi Kikuchi, a lawyer with international experience, joined the Board as outside directors. In my capacity as chairperson of the Board of Directors, I will ensure that our discussions encompass various viewpoints and involve active participation of outside directors to improve Board effectiveness. For the realization of KAITEKI, the Board will support the management team in making bold business decisions to achieve higher corporate and shareholder value.

^{*1} A new concept of transportation where all modes of transportation except private vehicles are connected on the cloud to enable the provision of seamless mobility solutions.

^{*2} GAFA stands for the four tech giants, Google, Apple, Facebook, and Amazon.

Outside Directors' Major Activities and Attendance at Board of Directors and Committee Meetings

Name	Status of Activities	Attendance at Board of Directors and Other Meetings (FY2018)		
		Board of Directors		
Takeo Kikkawa	During the Board of Directors meetings, he provided input on such matters as risks in the industrial materials domain and the portfolio management, drawing on his profound insight on company management from a view of the business history as well as his experience as an energy industry expert. At the Nominating Committee, he led meetings as its chair with respect to major agenda items such as senior management turnover and roles expected of Directors, and otherwise fulfilled his assigned duties in part by reporting outcomes of discussions to the Board of Directors. As a member of the Compensation Committee, he provided appropriate input to the committee with respect to major agenda items such as compensation levels of senior management and revision of the performance-based compensation system.	Board of Directors	11 / 11	100%
		Nominating Committee	5 / 6	83%
		Compensation Committee	7 / 7	100%
Taigi Ito	During the Board of Directors meetings, he provided input on such matters as finance and accounting as well as the risk management, drawing on his experience and profound insight as a certified public accountant. At the Audit Committee, he appropriately fulfilled his assigned duties as an outside member of the Audit Committee in terms of conducting audits based on audit plans, focusing on matters such as the development and operations of the internal control system, and intensive auditing regarding the progress of the APTSIS 20 medium-term management plan during the fiscal year under review. At the Compensation Committee, he led meetings as its chair with respect to major agenda items such as compensation levels of senior management and revision of the performance-based compensation system, and otherwise fulfilled his assigned duties in part by reporting outcomes of discussions to the Board of Directors.	Board of Directors	11 / 11	100%
		Audit Committee	13 / 13	100%
		Compensation Committee	7 / 7	100%
Kazuhiro Watanabe	During the Board of Directors meetings, he provided input on such matters as the internal control and the compliance, drawing on his experience and profound insight as a prosecutor and lawyer. At the Audit Committee, he appropriately fulfilled his assigned duties as an outside member of the Audit Committee in terms of conducting audits based on audit plans, focusing on matters such as the development and operations of the internal control system, and intensive auditing regarding the progress of the APTSIS 20 medium-term management plan during the fiscal year under review. At the Compensation Committee, he provided appropriate input to the committee with respect to major agenda items such as compensation levels of senior management and revision of the performance-based compensation system.	Board of Directors	11 / 11	100%
		Audit Committee	13 / 13	100%
		Compensation Committee	7 / 7	100%
Hideko Kunii	During the Board of Directors meetings, she provided input on matters such as woman's empowerment promotion, science technology, and IT, drawing on her profound insight in diversity promotion as well as her extensive experience in company management and her expertise in the information processing domain. At the Nominating Committee, she provided appropriate input to the committee with respect to major agenda items such as senior management turnover and roles expected of Directors. At the Audit Committee, she appropriately fulfilled her assigned duties as an outside member of the Audit Committee in terms of conducting audits based on audit plans, focusing on matters such as the development and operations of the internal control system, and intensive auditing regarding the progress of the APTSIS 20 medium-term management plan during the fiscal year under review.	Board of Directors	11 / 11	100%
		Nominating Committee	6 / 6	100%
		Audit Committee	13 / 13	100%
Takayuki Hashimoto	During Board of Directors meetings, he provided input mainly in relation to global management, business strategy, and portfolio management, drawing on his extensive experience in company management and profound insights into digital business. At the Nominating Committee, he provided appropriate input to the committee with respect to major agenda items such as senior management turnover and roles expected of Directors.	Board of Directors	11 / 11	100%
		Nominating Committee	6 / 6	100%

Outside Director Liaison Committee

Apart from the Board of Directors meetings, the Outside Director Liaison Committee holds a monthly meeting, which is attended by outside directors, the chairperson of the Board of Directors and the president of the company, to share important management information and exchange frank opinions on management issues. The meeting provides outside directors with opportunities to utilize their talents and provide expert considered advice on the topics.

Training

Outside directors are constantly briefed on the MCHC Group's business details and organizations and are regularly given the opportunity to visit the Group's bases in Japan and abroad and to discuss with the management team. Internal directors are also given opportunities to develop the qualities required of directors through training sessions on compliance/internal control and a range of seminars held by external organizations.

Message from the Outside Director of the Board

Aligned with an ambition for the realization of KAITEKI, I expect MCHC will deliver its strong leadership in society for the future ahead

Hideko Kunii
Outside Director of the Board

Q1. This is your fifth year as outside director. What is your view on the present corporate governance system of MCHC?

MCHC was one of the first Japanese companies to transfer a company with a nominating committee, etc. and this has improved the transparency and efficiency of the governance system of the company. The Board of Directors encourages us to speak frankly, and the appropriate division of roles among the three committees has made governance more effective. The management policy is to accelerate the realization of KAITEKI.

Q2. Please explain your role as an outside director.

Amid this so-called “Fourth Industrial Revolution,” destructive innovation by ICT is the key to realizing KAITEKI. I believe my background of studying computer science and my experience of starting up the software company and office solution business help me contribute to the discussions. Regarding R&D, I monitor the acceleration of open innovation, and the enhancement of materials informatics and bioinformatics. Recently, deep-learning technology has been applied in many industries based on big data. With our accumulated technologies, the MCHC Group has not only the data, but also the knowledge to establish a tailored model that meets customer needs. I believe the Group will create new value by applying them. One of the characteristics of the Fourth Industrial Revolution is the speed of evolution, and I intend to help change the corporate culture from this perspective.

Regarding encouraging the participation of women, the MCHC Group companies, with the exception of Mitsubishi Tanabe Pharma Corporation, are yet to obtain the “Eruboshi (L-star)” certification* from the Ministry of Health, Labour and Welfare. We must actively work to achieve the high-level goals of KAITEKI Management. We must carefully analyze whether the working environment is truly “KAITEKI” for women, and whether working women face disadvantages in practice, including unconscious discrimination. I intend to discuss specific details from



various viewpoints such as whether an exclusive men’s society exists, and whether you would encourage your own daughter to apply to our company.

Q3. What are your expectations for the MCHC Group?

I applaud the MCHC Group for aiming to realize KAITEKI as its policy. Today, the concept of the SDGs has spread globally, and the MCHC Group has been working on this initiative for many years with great success. I expect the MCHC Group to take the lead in social reform with the aim of realizing KAITEKI, and to demonstrate stronger corporate leadership in society in the future.

* “Eruboshi” certification: This certification system started on April 1, 2016. Under it, the Minister of Health, Labour and Welfare certifies companies that have made excellent progress with initiatives for the active participation of women in the workplace from among those companies that submit action plans for such participation to their prefectural labor bureau.

Compliance

For the MCHC Group, the word “compliance” is a broad term covering corporate ethics and general social norms, not only basic adherence to laws.

We regard compliance as one of the most important managerial issues to ensure that we continue to exist as a company and be trusted by the public. Accordingly, we take various measures to instill a culture of compliance in the entire Group.

Compliance Promotion Structure

The Group’s Chief Compliance Officer (CCO) is appointed by the Board of Directors, and the Internal Control Office supports the CCO, acting as a secretariat for compliance matters.

As part of its responsibilities, the secretariat prepares standard training tools, organizes training courses, and has established hotlines and educational system for overseas Group companies. It seeks to ensure compliance in accordance with local conditions through Regional Headquarters (RHQ) established in the U.S., Europe, and China. Each operating company has its own Compliance Promotion Committee as well as an Internal Control Department that serves as secretariat. They operate hotline systems and implement training courses and seminars, business audits and compliance awareness surveys based on the MCHC Group Compliance Promotion Rules.

If an actual or potential compliance violation is found, it must be reported to and discussed with the relevant company’s Internal Control Department and the MCHC Internal Control Office, so that corrective actions and measures to prevent recurrence shall be taken.

Hotline Systems

Hotline systems are managed and operated with the Group, operating companies’ Internal Control Departments, and external lawyers serving as contact points. In FY2018, 194 cases were reported via the hotline systems. We respond to reported issues through our investigation teams, which are headed by the managers of the Internal Control Departments. Corrective measures are taken promptly in line with the relevant regulations under the CCO’s direction.

Measures and Results in FY2018

In FY2018, we commissioned an external agency to survey employees’ awareness of compliance within the Group in Japan in order to continuously monitor the spread of compliance awareness. The results are fed back to the operating companies and help raise awareness of compliance. Awareness surveys, training, and hotlines are installed and operated overseas as well. We have identified that our employees’ compliance awareness has been increasing year by year.

We will continue sharing information between Japan, the U.S., Europe, China, and other parts of Asia, and will promote compliance as a Group through this network.

Case Studies of addressing the Materiality ACTION Compliance Training

In the Group, we conducted compliance training in Japan and overseas for all officers and employees by hierarchy. To enhance the effectiveness of the training, we provide a variety of learning settings, including lecture-style training for large groups and discussion-style training for small groups.



Compliance training for managers (Japan)



Compliance training for compliance promotion staff (China)

Risk Management

The MCHC Group defines risks as “potential events that could, during the course of corporate activities, undermine public trust in or the corporate value of the MCHC Group.” We recognize, analyze, and evaluate risks and prevent materialization of significant risks. We take measures to minimize the personal, economic, and social damage arising in case of materialization.

Charter of Corporate Behavior

The MCHC Group Charter of Corporate Behavior, consisting of thirteen chapters, explicitly declares that we act with sound ethics and good common sense in every aspect of our corporate activities.

It also stipulates that we share the fundamental behavioral principles for sustainable development, our approach to major issues for contributing to the realization of KAITEKI, and the basic ideas on and initiatives for the realization of KAITEKI, with our business partners and others.

MCHC Group Charter of Corporate Behavior

01 Awareness and Responsibility	08 Fair Business Practices
02 Accountability and Transparency	09 Customer Satisfaction
03 Legal Compliance and Fairness, Equitability, and Integrity	10 Information Management
04 Valuing Stakeholders	11 Science and Technology
05 Respecting Human Rights	12 Community Involvement
06 Employment and Labor	13 Shared Standards
07 Environment and Safety	

Risk Management

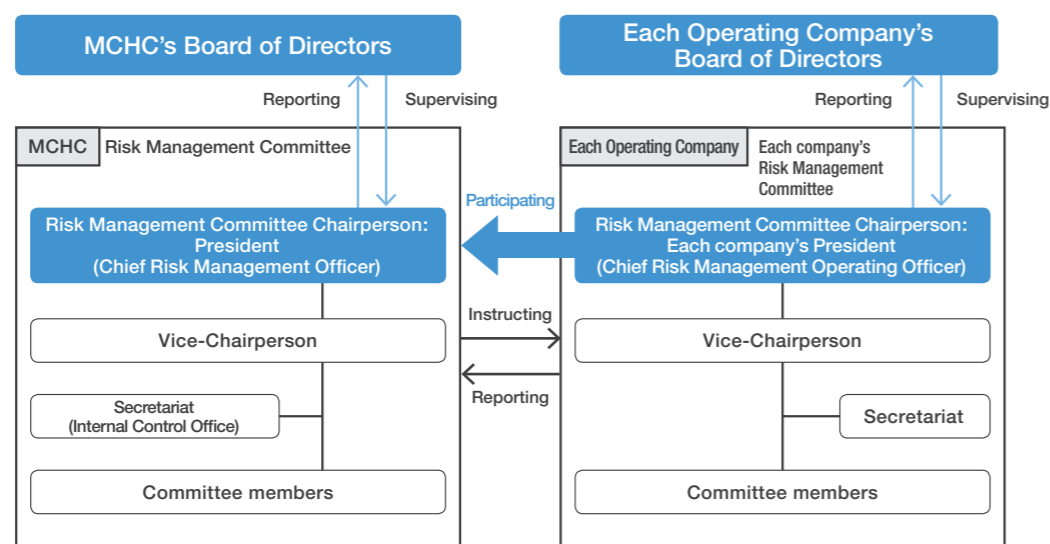
The MCHC Group is engaged in corporate activities with the objective of improving corporate value. These activities are related to social conditions, the global environment, and various other externalities, and they involve potential risks.

Risk Management System

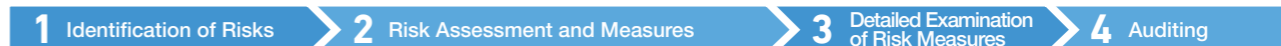
The MCHC Group has in place a risk management system whereby the MCHC President is responsible for the entire risk management across the Group, in accordance with the MCHC Group Risk Management Basic Rules. The status of significant risks management and risk management policy that affect the entire Group are deliberated and decided by the MCHC’s Risk Management Committee. Those deliberations and decisions are reported to the Board of Directors, as needed.

The presidents of operating companies are responsible for establishing each company’s risk management system and conducting management through each Risk Management Committees. Underlining the fostering the risk control awareness among executives and employees, all individuals are expected to be involved in risk management from their own standpoints.

Risk Management System Conceptual Diagram



Risk Management Process



1 Identification of Risks
All operating companies of the Group regularly identify both internal risks associated with business types and models, and external risks such as country specific risks and economical risks.

2 Risk Assessment and Measures
Each operating company prioritizes the identified risks with unified system, based on impact and frequency. Senior managers specify risks with significant impacts on the Group management (the major risks). The relevant departments then implement appropriate risk mitigation measures, as instructed.

3 Detailed Examination of Risk Measures
Risk measures are periodically scrutinized. Countermeasures against the major risks, in particular, are reported to each Chief Risk Management Officer at the operating company.

4 Auditing
To ensure the proper administration of these risk management systems, the Internal Audit Office periodically conducts audits and reports to the Chief Risk Management Officers.

Measures against Major Risks

The MCHC Group has categorized the following risks as high priority. Having identified the major risks below, we try the best endeavors either to avoid such occurrences and to minimize damages.

Compliance

In order to entrench compliance within the Group, we have taken comprehensive necessary actions such as preparing the Group Charter of Corporate Behavior and rules and standards, distributing compliance guidebook, providing trainings and seminars, implementing regular audits, as well as operating and maintaining a compliance hotline. We also strengthen compliance at oversea operations, by adjusting codes of conduct in accordance with corresponding national rules and regulations and social norms.

Information Security

MCHC has developed the Group Information Security Policy, in order to protect information assets and to maintain corporate value as a whole. Also, we continuously reinforce information security capability at our global business sites.

We are also promoting awareness of strict follow-up of the Group Information Security Policy among all employees by providing special trainings, including practical drills against e-mails attack with virus or other trainings via e-learning system.

Accidents, work injuries, and large-scale natural disasters

As a safety measure to prevent any accidents at each operating site, we enhance quality of trainings to operators for keeping appropriate operation and maintaining facilities. In the event of accidents, we would analyze the cause, plan countermeasures and verify those effectiveness. Also, we try to prevent similar accidents by sharing technical and operational measures among Group companies.

Regarding the preparation for large-scale natural disasters, we take special trainings customized for each operating company's condition to minimize damages and to secure business continuity under such event.

Overseas Business Development

While actively expand our business in overseas, we are minimizing risks to violate corresponding national rules and regulations. We have collected and disseminated cases of significant accidents and violation of laws in each country to raise awareness of those risks at overseas Group companies. In addition, we established a special communication system between regional headquarter and MCHC for sharing information related to social turmoils in the relevant country in timely manner. Moreover, regarding the governance of subsidiaries, we clarify responsibilities of corporate organizations and improve systematic approach to reduce overall group risks.



Training for a large-scale natural disaster (Left: Head office, Mitsubishi Chemical; Right: Factory, Mitsubishi Tanabe Pharma Group)

Measures against Future Risks

The MCHC Group is also tackling to future risks by planning the medium- to long-term strategy.

Climate Change

While the chemical industry is one of the high GHGs emitting industries, it is also the mitigation solution providing industry through its products.

The Group could face to a risk of losing future earnings, if we could not meet the new demand to reduce GHGs emissions from clients highly conscious with environmental compliances or energy intensity of products. For this reason, the Group has set quantitative targets for providing products and services attributable to GHGs emission reductions, and has been putting endeavors on new product development to mitigate climate change impacts.

Digital Technology

Digital technologies represented by AI and IoT show potential to create dramatic changes in the chemical industry. The Group could face to a risk of losing of competitive advantage in the market, without properly adjusting to a new digital era. In respond to this, we establish the “Advanced Technology & Business Development Office.” Under the new structure, we practically apply AI and IoT into process control, product quality inspection, automation of analysis, and development of new materials and medicines, for keeping our competitive position in the market.

Financial Summary

J-GAAP (FY2008 - FY2015)

	2008	2009	2010	2011	2012	2013	2014	2015
Millions of yen								
For the Year								
Net sales	2,909,030	2,515,079	3,166,771	3,208,168	3,088,577	3,498,834	3,656,278	3,823,098
Operating income	8,178	66,342	226,493	130,579	90,241	110,460	165,681	280,026
Income (loss) before income taxes and minority interests in consolidated subsidiaries	(44,002)	43,311	169,552	127,474	82,900	116,594	165,621	198,248
Net income (loss) attributable to owners of the parent	(67,178)	12,833	83,581	35,486	18,596	32,248	60,859	46,444
Total comprehensive income	—	37,513	86,742	64,199	94,900	134,016	173,692	7,695
Capital expenditures	139,011	119,025	117,806	116,145	132,221	133,339	165,057	176,508
Depreciation and amortization	119,230	129,574	148,697	145,695	129,549	131,571	151,253	180,374
R&D expenditures	127,802	136,863	130,825	138,545	134,723	134,260	132,217	138,364
Net cash provided by (used in) operating activities	76,149	116,073	288,853	217,954	206,504	177,027	329,776	388,663
Net cash provided by (used in) investing activities	(189,233)	(327,006)	(101,064)	(63,404)	(169,758)	(159,789)	(277,223)	(202,796)
Net cash provided by (used in) financing activities	179,526	94,437	(149,493)	(164,146)	(26,250)	(8,307)	(2,061)	(156,957)

At Year-end

	2008	2009	2010	2011	2012	2013	2014	2015
Total assets	2,740,876	3,355,097	3,294,014	3,173,970	3,307,758	3,479,359	4,323,038	4,061,572
Property, plant and equipment	834,046	1,167,073	1,088,369	1,032,738	1,061,551	1,118,050	1,498,146	1,390,727
Short-term and long-term debt	1,033,239	1,454,126	1,304,589	1,164,128	1,198,799	1,258,186	1,603,595	1,465,752
Total net assets	940,114	1,032,865	1,114,003	1,144,954	1,203,316	1,314,870	1,588,601	1,554,528

Per Share

	Yen							
Net income (loss) - basic	(48.81)	9.32	58.72	24.06	12.61	21.89	41.40	31.70
Net assets	486.09	490.99	514.30	522.77	553.54	611.95	669.77	636.43
Cash dividends	12.00	8.00	10.00	10.00	12.00	12.00	13.00	15.00

Major Index

Return on assets (ROA) (%)	(1.5)	1.4	5.1	3.9	2.6	3.4	4.2	4.7
Return on equity (ROE) (%)	(8.9)	1.9	11.6	4.6	2.3	3.7	6.4	4.8
Shareholders' equity ratio (%)	24.4	20.0	23.0	24.2	24.6	25.8	22.6	22.9

Other

Number of employees	41,480	53,907	53,882	53,979	55,131	56,031	68,263	68,988
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International Financial Reporting Standards (IFRS FY2015 - FY2018)

	2015	2016	2017	2018	Increase or decrease (%)	2018
Millions of yen						
Thousands of U.S. dollars						
For the Year						
Sales revenue	3,543,352	3,376,057	3,724,406	3,923,444	5.3%	35,314,527
Core operating income	300,410	307,522	380,489	317,187	(16.6%)	2,854,968
Income before taxes	252,791	258,343	344,077	288,056	(16.3%)	2,592,763
Net income attributable to owners of the parent	51,358	156,259	211,788	169,530	(20.0%)	1,525,923
Total comprehensive income	34,302	226,493	297,476	205,898	(30.8%)	1,853,267
Capital expenditures	213,134	206,482	225,189	231,742	2.9%	2,085,887
Depreciation and amortization	182,656	174,040	178,895	199,332	11.4%	1,794,167
R&D expenditures	126,782	126,290	138,833	143,836	3.6%	1,294,653
Net cash provided by (used in) operating activities	299,612	396,643	397,940	415,575	—	3,740,549
Net cash provided by (used in) investment activities	(234,078)	(289,056)	(335,933)	(895,068)	—	(8,056,418)
Net cash provided by (used in) financing activities	(40,945)	1,411	(150,592)	519,062	—	4,672,025

At Year-end

	2015	2016	2017	2018	Increase or decrease (%)	2018
Total assets	4,223,774	4,463,547	4,701,415	5,572,508	18.5%	50,157,588
Property, plant and equipment	1,403,437	1,431,681	1,433,509	1,683,354	17.4%	15,151,701
Interest-bearing debt	1,579,575	1,693,742	1,606,123	2,246,751	39.9%	20,222,781
Equity attributable to owners of the parent	972,197	1,091,398	1,285,750	1,377,947	7.2%	12,402,763

Per Share

	Yen					U.S. Dollars	
Basic earnings	35.06	106.73	147.14	119.22	(19.0%)	1.1	
Equity attributable to owners of the parent	663.71	758.30	893.26	970.46	8.6%	8.7	
Cash dividends	15.00	20.00	32.00	40.00	25.0%	0.4	

Major Index

Return on assets (ROA) (%)	5.9	5.9	7.5	5.6	(1.9pt)	—
Return on equity (ROE) (%)	5.2	15.1	17.8	12.7	(5.1pt)	—
Ratio of equity attributable to owners of the parent (%)	23.0	24.5	27.4	24.7	(2.7pt)	—

Other

Number of employees	68,988	69,291	69,230	72,020	4.0%	—
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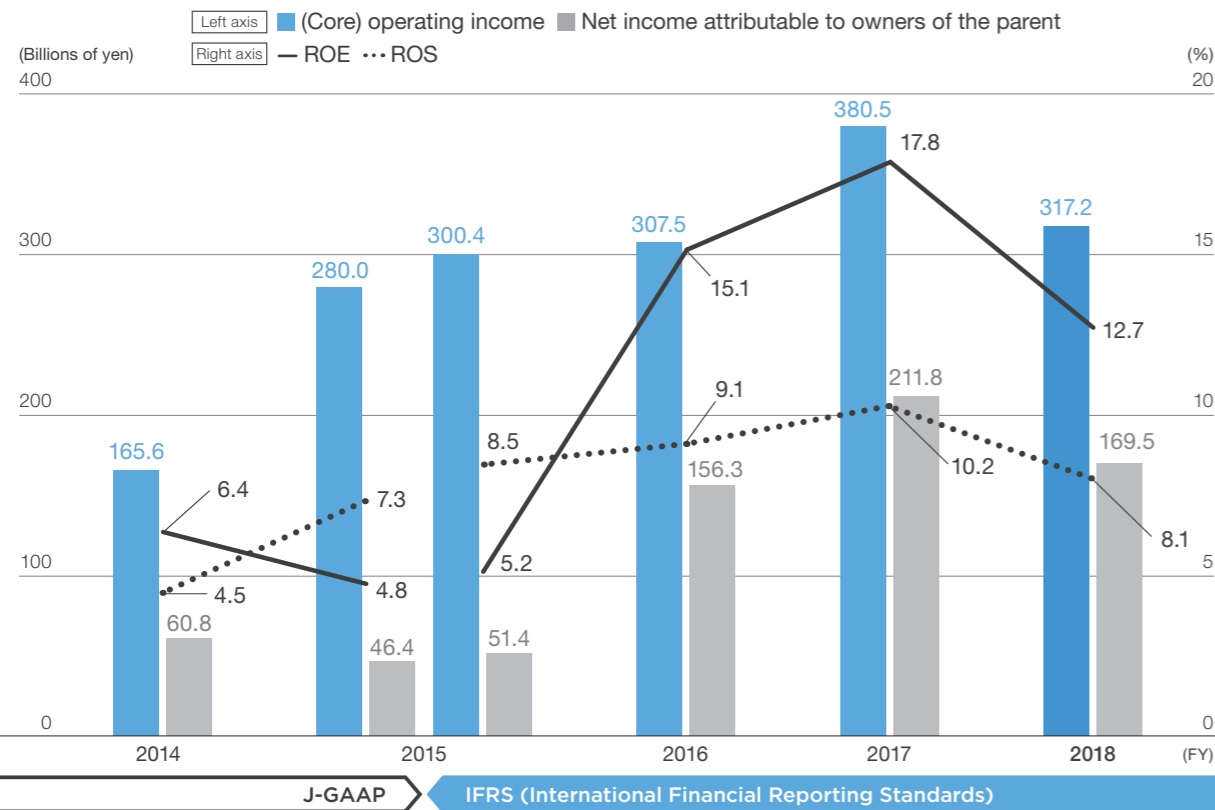
(Notes) 1. In this report, the fiscal year refers to the period beginning April 1 and ending March 31 of the following year. FY2018 refers to the year ended March 31, 2019.
2. U.S. dollar amounts are converted from yen at the rate of ¥111.1 = U.S. \$1.00.
3. Return on assets (ROA) (%) is calculated by dividing profit before tax by the average of the beginning and ending balances of total assets.

(Notes) 4. Return on equity (ROE) (%) is calculated by dividing net profit attributable to owners of the parent by the average of the beginning and ending balances of equity attributable to owners of the parent.
5. When non-recurring depreciation on non-current assets is recorded, the amount is included in depreciation and amortization.

Financial Index

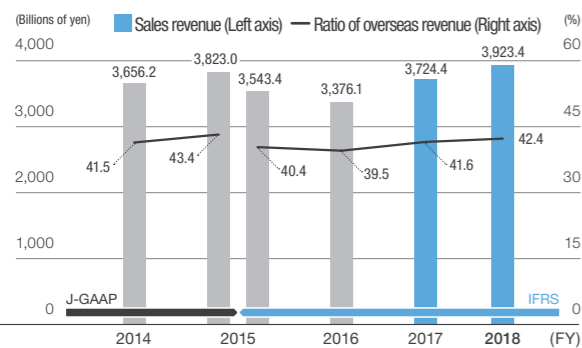
With the start of the medium-term management plan *APTSIS 20*, we have adopted the International Financial Reporting Standards (IFRS) in FY2016. Core operating income is calculated as operating income (loss) excluding certain gains and expenses attributable to non-recurring factors (gains and losses incurred by business withdrawal and contraction, etc.). We disclose core operating income as our unique gains/losses incurred by staged gains/losses, considering the comparability with the operating income of J-GAAP.

Net Income and ROS/ROE



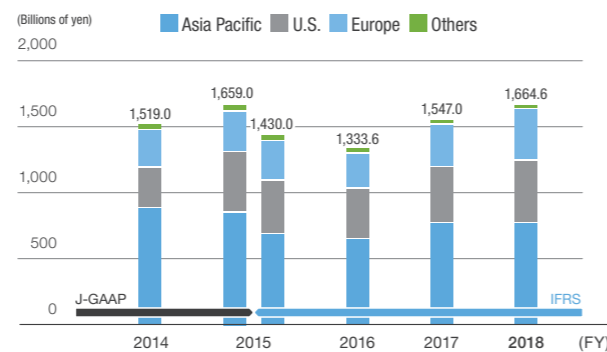
We implemented business portfolio reforms under the previous medium-term management plan (for FY2011 to FY2015) and the present plan, *APTSIS 20*, launched in FY2016. As a result, we stabilized sales revenue in the Industrial Materials domain and increased sales volumes mainly in the Performance Products domain. In FY2017, we set new records for both core operating income and net income attributable to owners of the parent. In FY2018, the market remained brisk in the Industrial Materials domain in the first half, however, a greater impact of demand slowdown of some products, the scheduled maintenance and repair at petrochemical production facility in Petrochemicals subsegment, and national health insurance (NHI) drug price revision in the Health Care domain in the second half caused decrease in core operating income by ¥63.3 billion (16.6%) to ¥317.2 billion and drop of ROS to 8.1%, down 2.1 points year on year. Net income attributable to owners of the parent declined ¥42.3 billion (20.0%), to ¥169.5 billion and ROE also decreased to 12.7%, down 5.1 points year on year.

Sales Revenue and Ratio of Overseas Revenue



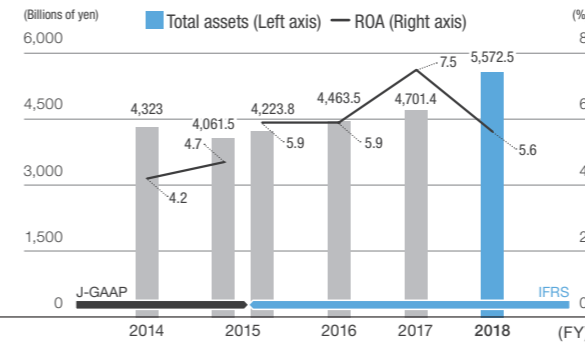
Sale revenue increased by ¥199.0 billion (5.3%) from a year earlier, driven by the brisk market in the Industrial Materials domain, despite the impact of the NHI drug prices revision and demand slowdown in the Performance Products domain. The ratio of overseas revenue rose to 42.4%, up 0.8 points year on year.

Overseas Revenue by Region



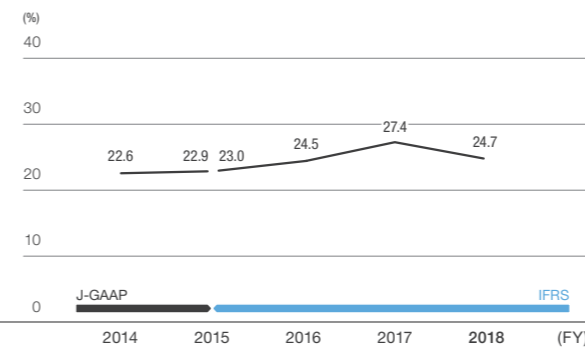
Overseas revenue were up owing to the acquisitions of an industrial gas business in Europe and the U.S. and increase in sales of *Radicava*, a treatment for amyotrophic lateral sclerosis (ALS) in the U.S.

Total Assets and ROA



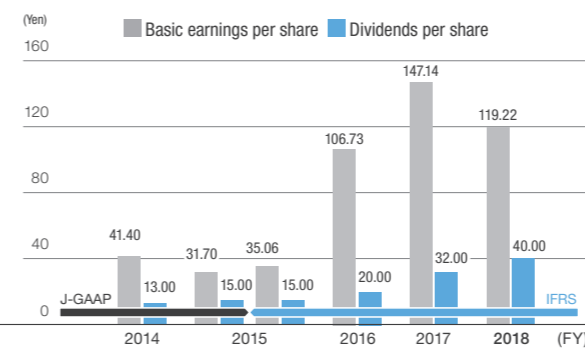
Total assets amounted to ¥5,572.5 billion. Owing to the industrial gas business acquisitions in Europe and the U.S., the fixed assets and goodwill increased by ¥871.1 billion from the end of the previous fiscal year. ROA was 5.6%, down 1.9 points year on year.

Ratio of Equity Attributable to Owners of the Parent



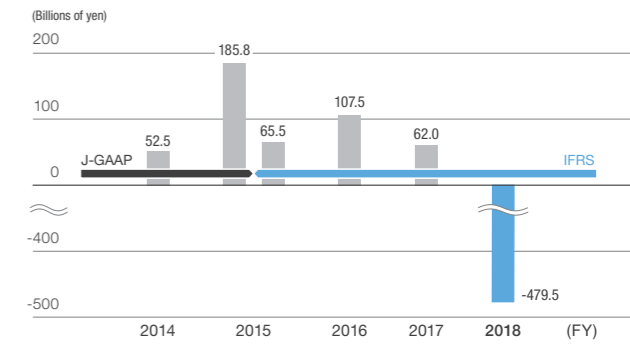
Equity attributable to owners of the parent increased ¥92.1 billion, to ¥1,377.9 billion. Consequently, the ratio of equity attributable to owners of the parent decreased 2.6 points year on year, to 24.7%. We will continue striving to achieve 30%, the target in the medium-term management plan, *APTSIS 20*.

Basic Earnings per Share and Cash Dividends per Share



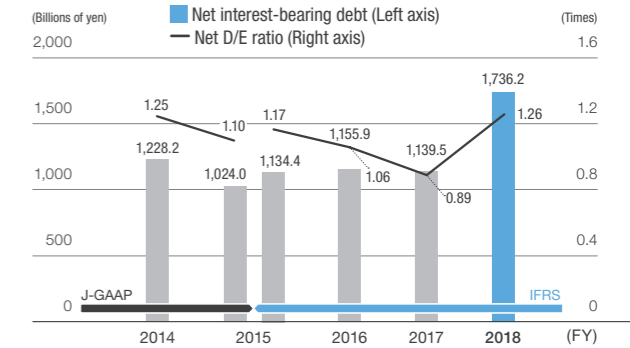
Basic earnings per share amounted to ¥119.22. The full-year cash dividend per share increased ¥8 year on year, to ¥40, in consideration of maintaining an appropriate balance between strengthening the financial position, investing in growth business, and enhancing shareholder returns.

Free Cash Flow



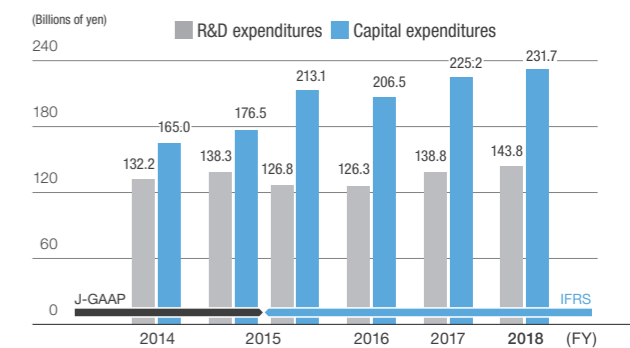
Net cash flows by operating activities was ¥415.6 billion, mainly due to the posting of income before taxes. Net cash used by investing activities was ¥895.1 billion, due to ¥677.6 billion used on the industrial gas business acquisitions in Europe and the U.S. Accordingly, net free cash used (by operating and by investing activities) was ¥479.5 billion.

Net Interest-bearing Debt and Net D/E Ratio



Net interest-bearing debt rose to ¥1,736.2 billion, up ¥596.7 billion year on year, owing to the industrial gas businesses acquisitions in Europe and the U.S. The net D/E ratio increased 0.37 from the end of the previous fiscal year, to 1.26. We will continue striving to achieve 1.0, the target in the medium-term management plan, *APTSIS 20*.

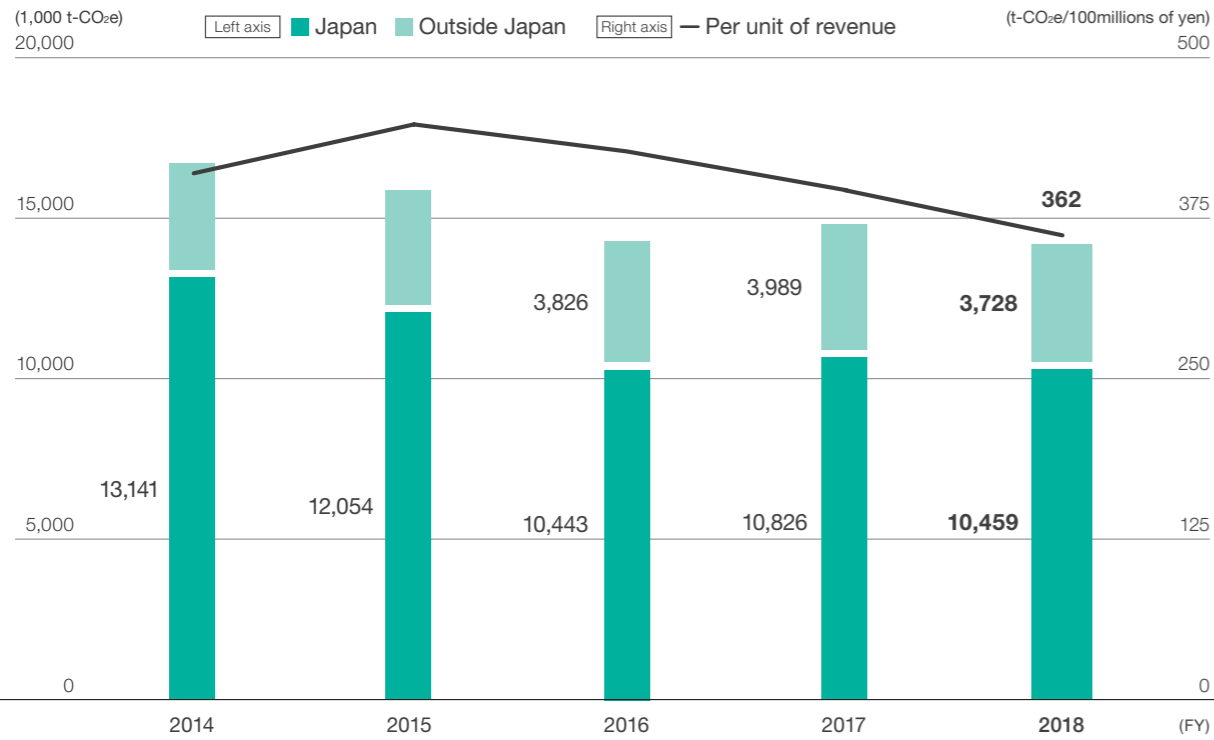
R&D Expenditures and Capital Expenditures



R&D expenditures increased ¥5 billion year on year, to ¥143.8 billion, mainly in the Performance Products domain. These expenditure were applied to refine and develop technologies. Capital expenditures increased to ¥231.7 billion, up ¥6.5 billion year on year, due to expenses the construction of new facilities or the expansion and renewal of existing facilities, mainly in the Industrial Materials domain.

Non-Financial Index

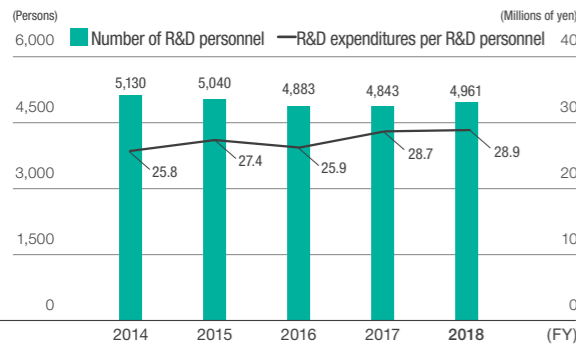
GHG Emissions



In FY2018, our GHG emissions (Scope 1 + Scope 2) came to 14,187 thousand t-CO₂e and the emissions per unit of revenue were 362 t-CO₂e/100millions of yen.

Our absolute GHG emissions decreased by 4% from the previous fiscal year as a result of the periodic repair and maintenance large production facilities and of the improvement of the emission factor for electricity outside Japan. We decreased per-unit emissions substantially as in the previous fiscal year. To achieve the 2030 reduction targets in alignment with the Paris Agreement, we will continue to plan and implement GHG emission reduction measures. Additionally, in FY2016 the emission calculation method was revised to be in line with the global standards. We will continue to expand the scope of calculation and enhance the reliability of the method so that we can achieve the medium-term reduction targets.

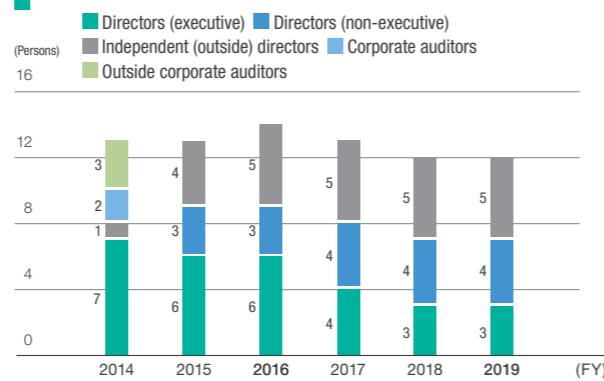
Number of R&D Personnel and R&D Expenditures per R&D Personnel



For FY2018, the number of R&D personnel increased by 118 persons from the previous fiscal year to 4,961 persons. R&D expenditures per R&D personnel remained at the same level as the previous fiscal year, 28.9 million yen.

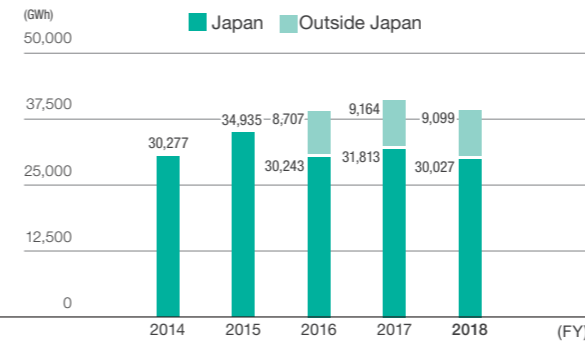
* International Financial Reporting Standards (IFRS) basis since FY2016

Number of Directors and Outside Directors



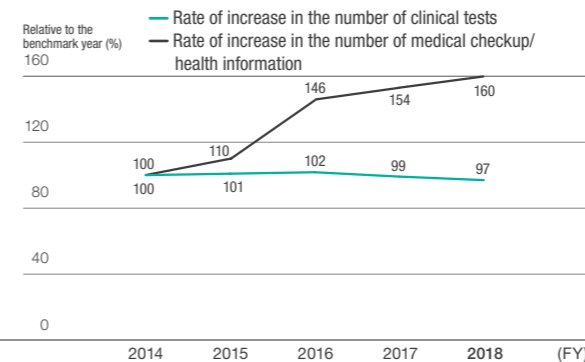
MCHC transitioned to a company with nominating committee, etc. in June 2015.

Energy Consumption



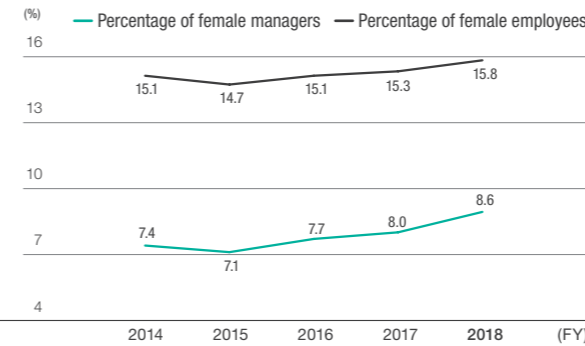
Since FY2016, we have expanded the scope of tracking energy consumption to a global level, and the results are assured by a third party. In FY2018, our energy consumption decreased in Japan mainly as a result of the periodic maintenance of our large production facilities, while the power consumption increased as a result of the brisk production for the performance products. As a total, our energy consumption slightly decreased. To accelerate the reduction of energy consumption, we will further expand measures for stable process operation, energy conservation and efficient use of energy.

Increase Rate of Number of Clinical Tests and Medical Checkup/Health Information



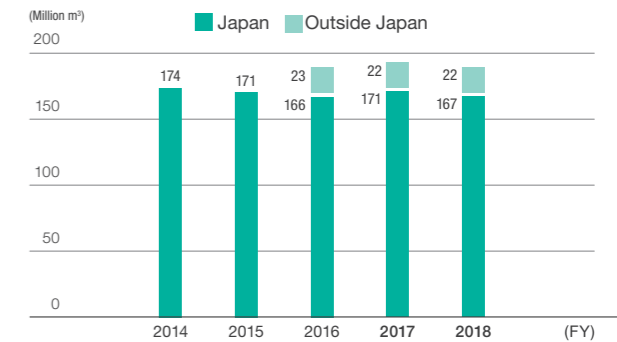
The number of clinical tests and the number of medical checkup/health information came to 97% and 160%, respectively, relative to the benchmark year (FY2014) for the MOS indices.

Percentage of Female Employees/Percentage of Female Managers



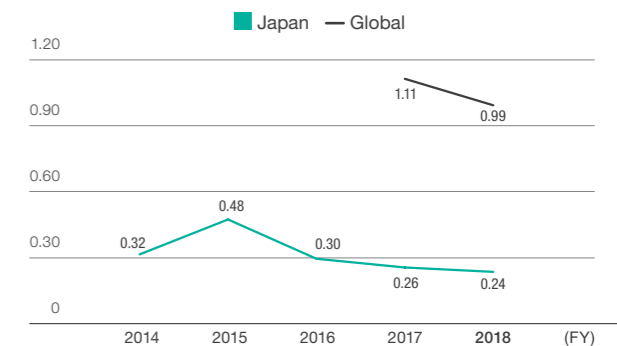
The percentage of female employees increased by 0.5 points to 15.8% from the previous fiscal year while the percentage of female managers was 8.6%, up 0.6 points from the previous fiscal year. We are continuing to implement measures for the empowerment of women.

Water Withdrawal



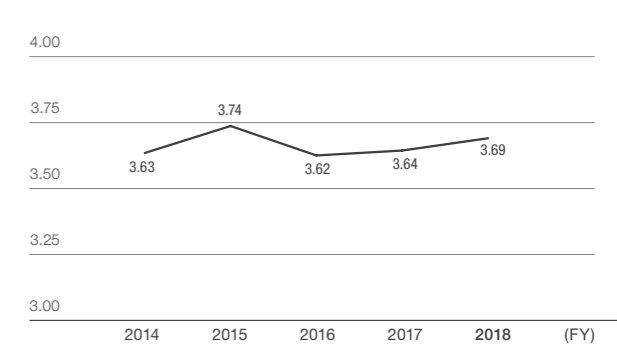
Since FY2016, we have tracked our water withdrawal (excluding seawater) globally and the results have been assured by a third party. For FY2018, we used 189 million m³ of water, down 4 million m³ year on year, due to the efficient use of the water. We will continue to make effective use of water resources to reduce our water consumption and thereby contribute to greater sustainability of water resources.

Lost-time Injury Frequency Rate (LTIFR)



The LTIFR in Japan was 0.24, a slight improvement from the previous year. Meanwhile, the global LTIFR, for which data started to be gathered and calculated in FY2017, has been higher than that in Japan. We will strive to reduce the LTIFR by stepping up efforts to prevent occupational accidents through measures such as ensuring compliance with basic behavioral and operational rules for safety as well as undertaking risk assessments.

Employee Satisfaction



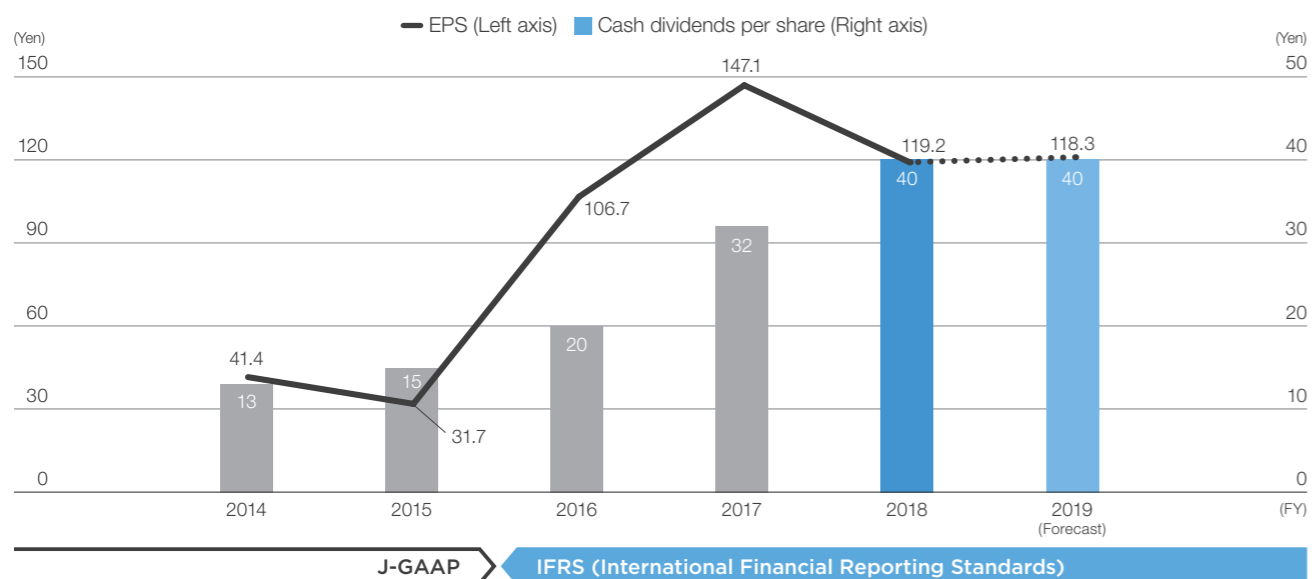
The level of employee satisfaction rose 0.05 points from the previous fiscal year to 3.69 and has remained favorable as a whole. We will foster health and productivity management and work-style reforms to further raise the level of satisfaction.

Basic Policy on Shareholder Returns

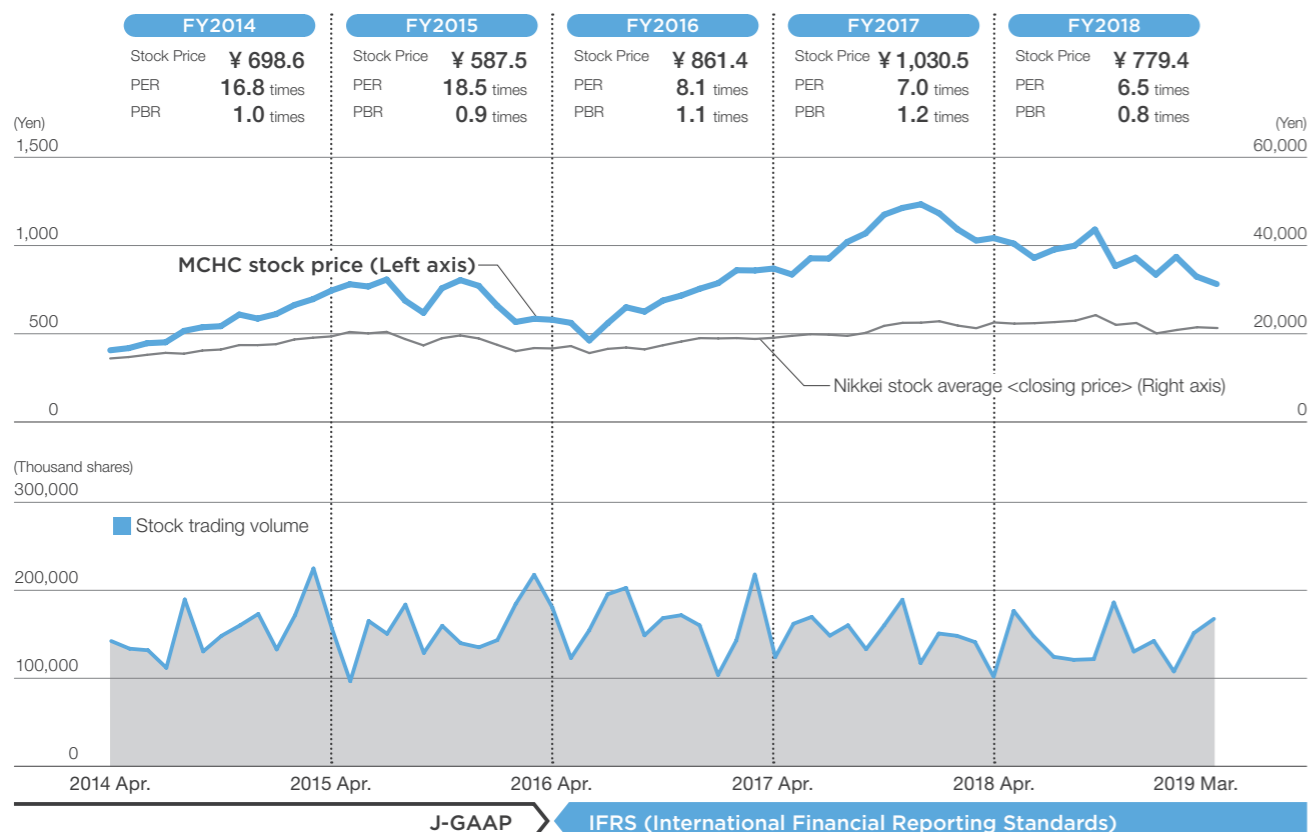
Aim to improve shareholder value by enhancing corporate value
In dividend policy, consider the balance between growth investment and improving financial position

Targeting a medium-term consolidated payout ratio of 30% / Paying stable dividends

EPS/Cash Dividends per Share



Stock Price / Stock Trading Volume



*Stock price: As of March 31 PER: Share price as of March 31/Basic earnings per share (Net income (loss)-basic per share in the J-GAAP) PBR: Share price as of March 31/Equity attributable to owners of the parent per share (Net assets per share in the J-GAAP)

Stock Information (As of March 31, 2019)

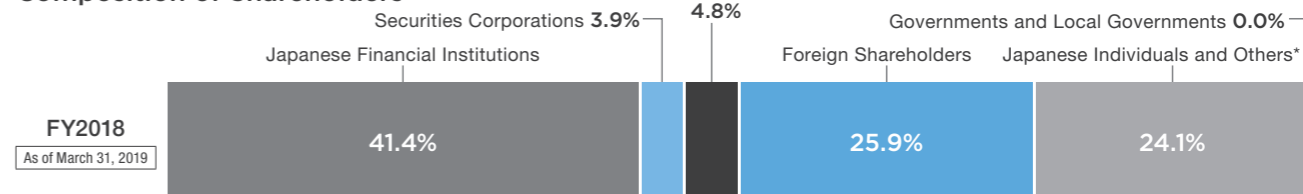
Securities code	4188 (First Section of the Tokyo Stock Exchange)
Shares per unit	100
Authorized shares	6,000,000,000
Outstanding shares	1,506,288,107
Number of shareholders	206,844

Major Shareholders

Name	Number of Shares (Thousands)	Percentage (%)
The Master Trust Bank of Japan, Ltd. (Trust account)	103,414	7.3
Japan Trustee Service Bank, Ltd. (Trust account)	82,308	5.8
Meiji Yasuda Life Insurance Company	64,389	4.5
Nippon Life Insurance Company	42,509	3.0
Japan Trustee Service Bank, Ltd. (Trust account 4)	28,319	2.0
Japan Trustee Service Bank, Ltd. (Trust account 5)	25,724	1.8
Japan Trustee Service Bank, Ltd. (Trust account 7)	25,552	1.8
SSBTC CLIENT OMNIBUS ACCOUNT	21,503	1.5
MUFG Bank, Ltd.	20,553	1.4
State Street Bank West Client-Treaty 505234	20,472	1.4

(Notes) 1. In addition to the above, MCHC holds 83,118 thousand shares as treasury stocks, but these shares are non-voting pursuant to the provisions of Article 308, Paragraph 2 of the Companies Act.
2. Equity investment ratios are calculated to the exclusion of the treasury stock (83,118 thousand shares).
3. In addition to the above, equity investments of MUFG Bank, Ltd. in MCHC include 2,375 thousand shares of stock (representing the equity investment ratio of 0.2%) held in the name of "The Nomura Trust and Banking Co., Ltd (Retirement Benefit Trust MUFG Bank Account)" over which MUFG Bank, Ltd. retains the right to issue instructions regarding the exercise of the relevant voting right.

Composition of Shareholders



* Shares held by the Group as treasury stock are included in "Japanese Individuals and Others."

FY2018 IR Report

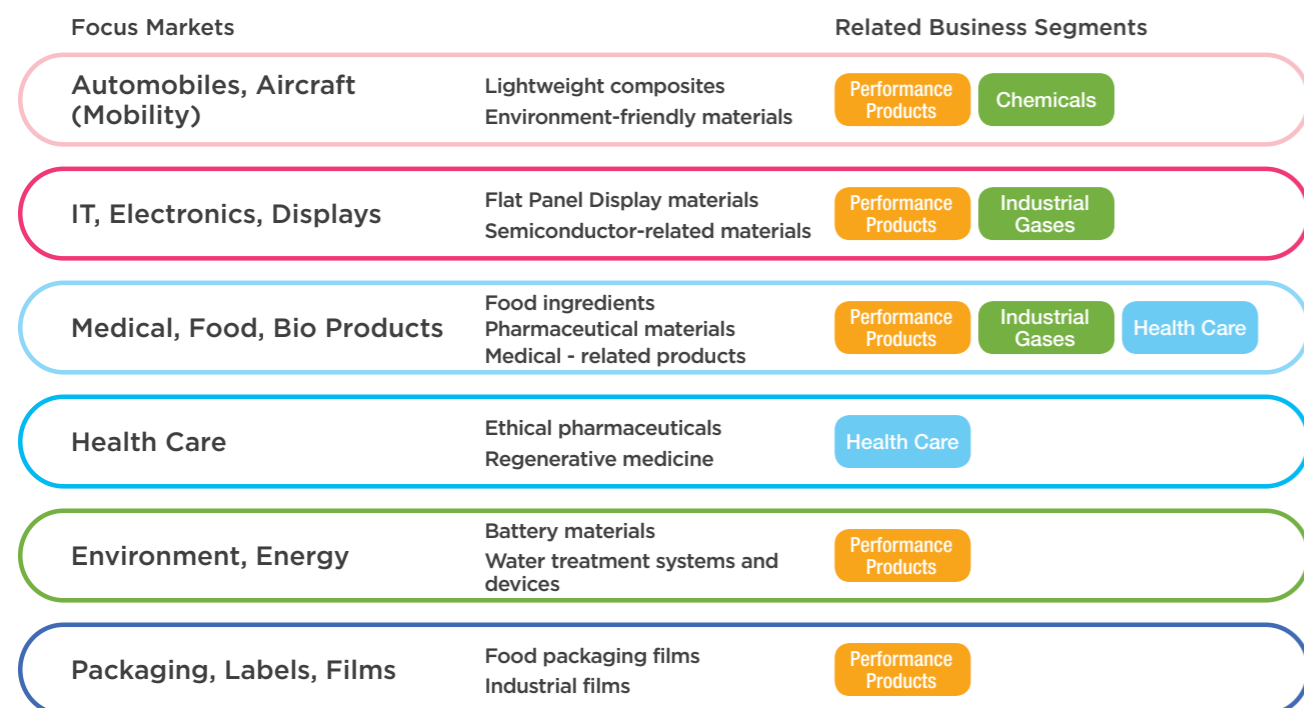
MCHC has an active and constructive dialog with shareholders, customers and other stakeholders through various opportunities and aims to cooperate for realization of KAITEKI by sharing issues and goals. In dialog with shareholders and investors, we will ensure appropriate disclosure so as to gain the trust of our shareholders and encourage long-term holding of our shares. We also intend to engage in active dialog with shareholders and reflect it in our corporate activities.

Activities	Description
1 General Meeting of Shareholders	Held on June 25, 2019, Attendance: 2,782 persons (Reference: 1,826 attended in 2018)
IR briefings (large meetings)	2 sessions, Jun.: IR Day, Dec.: Business briefing
Top management's dialog with investors	Small meetings (Jun., Dec.), Visits to investors Overseas roadshows (6 times, 9 countries in North America, Europe and Asia)
2 For domestic and overseas institutional investors, analysts	Conference call, following the financial results announcement 4 sessions (following the quarterly financial results announcement), Audio data available on the website (Japanese and English)
Participation in conference held by securities firms	6 sessions (4 sessions in Japan, 2 sessions in overseas)
Visit to operating sites	2 tours, Sep.: Mie district plants, Feb.: Kagawa Plant
Other IR activities	Individual meetings following the financial results announcement and small meetings on specific subjects
3 For individual investors	IR briefings 10 sessions for 1,901 attendees (including those in the online sessions and in briefings by the CEO and CFO)



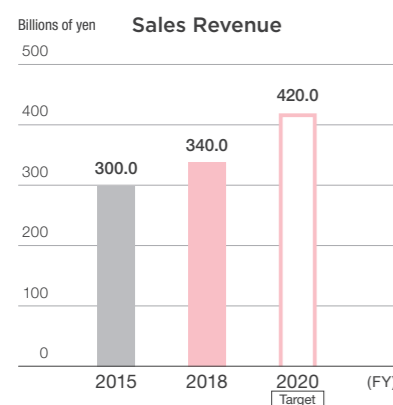
Growth Measures of the Focus Markets and Updates of Actions in the Three Business Domains

We expand our business in the six focus markets through generating synergy effects among related business segments.



3 Business Domains: Performance Products Industrial Materials (Chemicals, Industrial Gases) Health Care

Automobiles, Aircraft (Mobility)



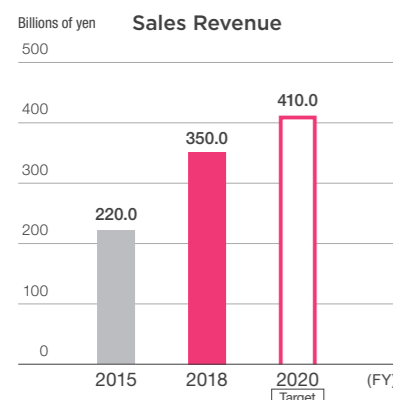
Growth Measures

Responding to trend toward CASE (Connected, Autonomous, Shared, Electric) in the automotive industry, reinforce response to environmental issues
Reinforcing carbon fiber and composite material business and accelerate overseas expansion
Accelerating overseas expansion of resin compound business

Progress

- Reinforcing overseas network for carbon fiber and composite material business
- Expanding adoption of carbon fiber sheet molding compound: *Prius PHV* of Toyota Motor Corporation, other
- Higher performance of polypropylene: A new polypropylene manufacturing facility is under construction at the Goi Plant (150kt/y)
- Acquired 2 overseas compound producers (India, Indonesia)

IT, Electronics, Displays



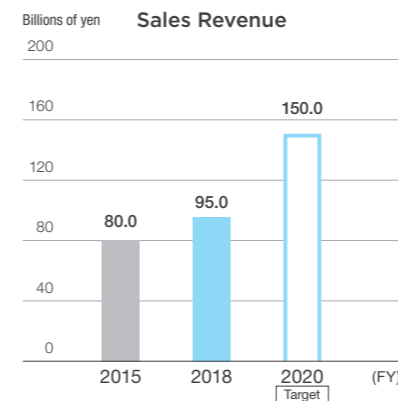
Growth Measures

Reinforcing display-related product business: LCD and OLED materials
Expanding semiconductor related business: Expanding precision cleaning agent related business, developing thermal management materials

Progress

- Optical films: A new line is under construction in China
- Optical PVOH film, *OPL Film*: A new line is under construction
- Precision cleaning of semiconductor manufacturing equipment: Acquired Cleanpart Group GmbH

Medical, Food, Bio Products



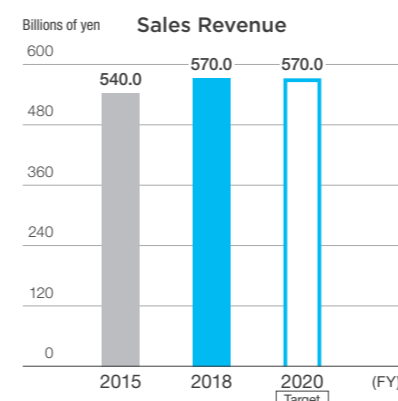
Growth Measures

Expanding the implant material business
Expanding the nutrition-related business
Expanding the medical use gas business

Progress

- Acquired a U.S. high-performance engineering plastics molding company (Piper Plastics, Inc.)
- Food emulsifier: Expanding sales mainly in China and other ASEAN countries
- Respiratory-related business including home healthcare services: Acquired IMI Co., Ltd.

Health Care



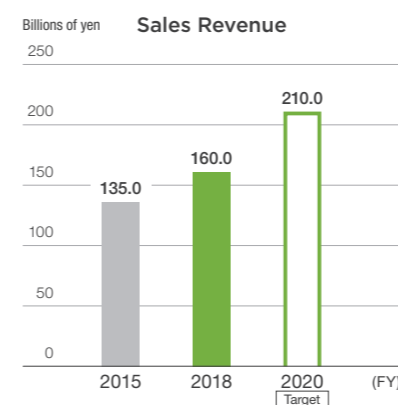
Growth Measures

Reinforcing pipelines for ethical pharmaceuticals
Developing the business in the U.S.
Commercialization of VLP (Virus Like Particles) vaccine
Commercialization of regenerative medicine

Progress

- Expanding *Radivava*, a treatment for ALS, globally
- Advancing development of influenza VLP vaccine and constructing a manufacturing facility for commercialization
- Developing Muse cell-based regenerative medicine and promoting commercialization

Environment, Energy



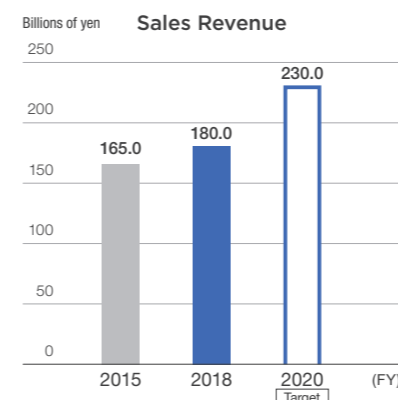
Growth Measures

Expanding Lithium-ion battery materials business
Accelerating development of wastewater treatment in China and water supply treatment business in Japan
Developing products that reduce environmental impact

Progress

- Accelerating global expansion of electrolyte business (Europe/U.S./China)
- Start of full-scale sales of wastewater treatment facilities for farming villages and pig farms in China
- Accelerating development of other applications of biodegradable polymer, *BioPBS*

Packaging, Labels, Films



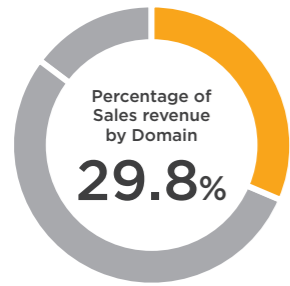
Growth Measures

Barrier application: Accelerating overseas expansion of food packaging film, reinforcing development of new high-barrier performance products
High-performance films: Developing new products by combining the Group's technologies

Progress

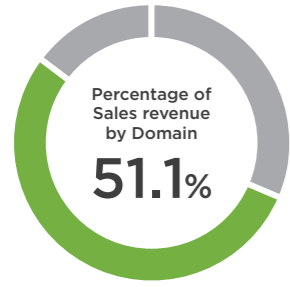
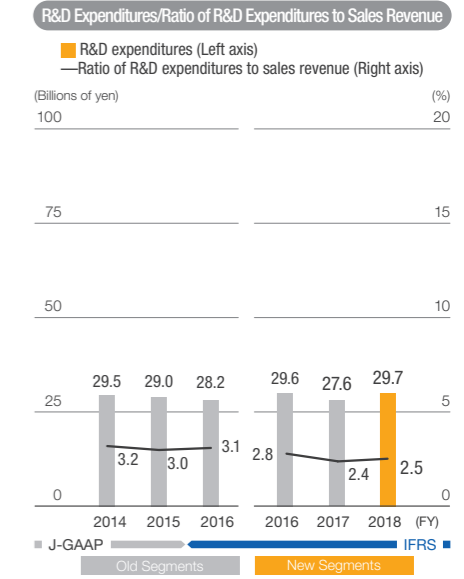
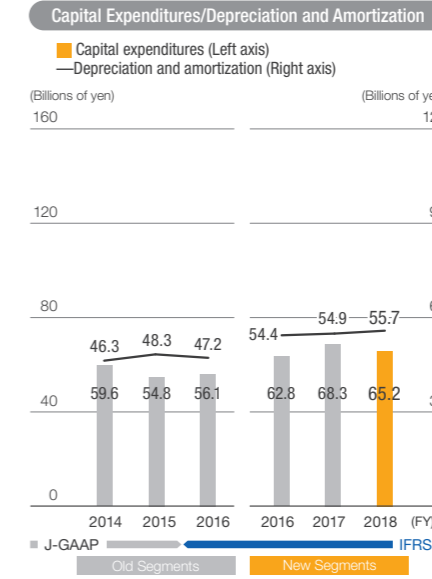
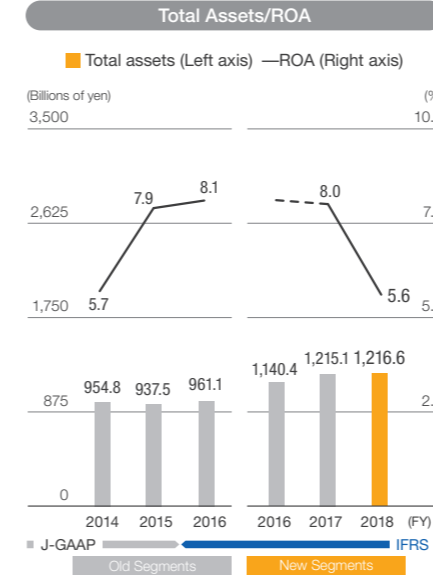
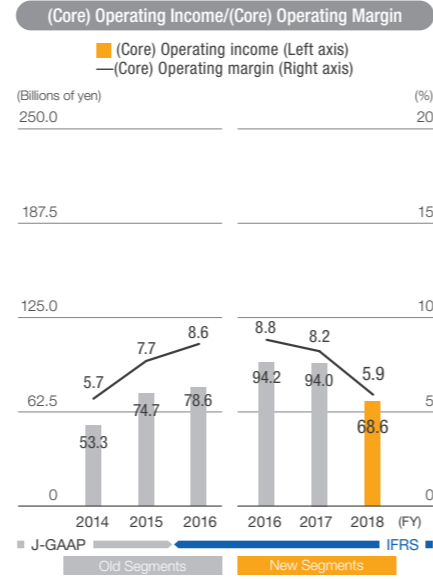
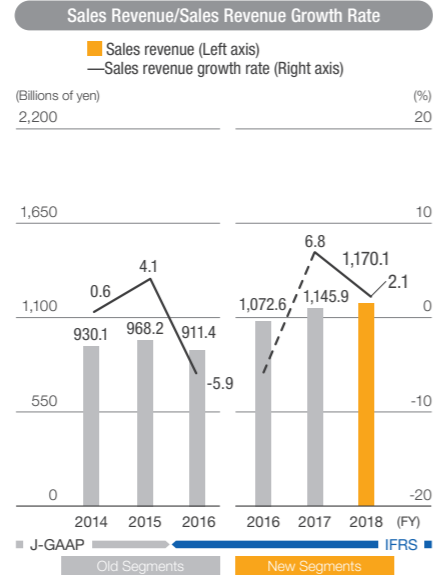
- Started full-scale operation of a new polyester film line in the U.S. in FY2018
- Launch of high-barrier performance deep-formed microwavable containers
- Multilayer co-extruded film *DIAMIRON* production site is under construction in Thailand

* Figures for FY2016 do not include discontinued operations.
 * Figures for FY2014 to 2016 of reporting segments prior to the change are presented for reference purposes only.
 * Sales Revenue Growth Rate and ROA figures for FY2016 in the New Segments section are presented for reference purposes only.
 * ROA = (Core) Operating Income / Total Assets (Annual Average)



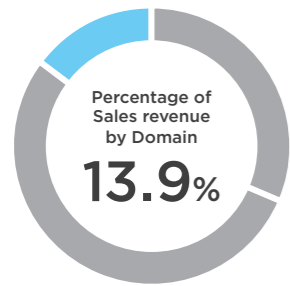
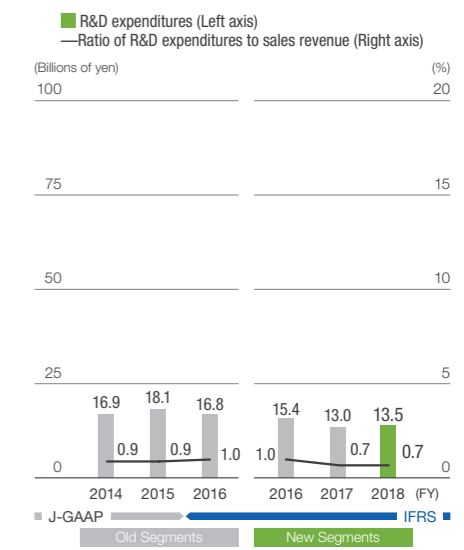
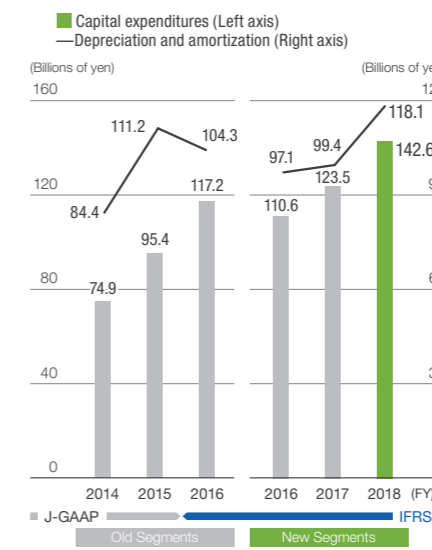
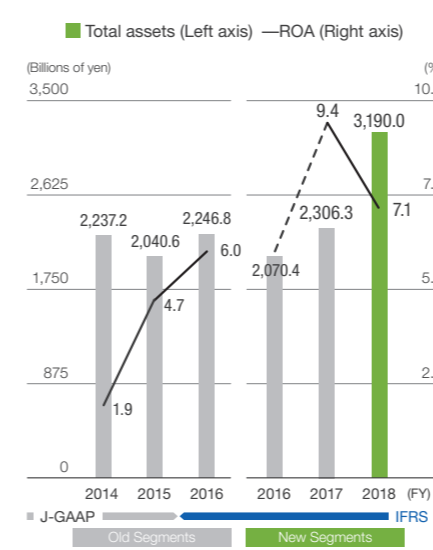
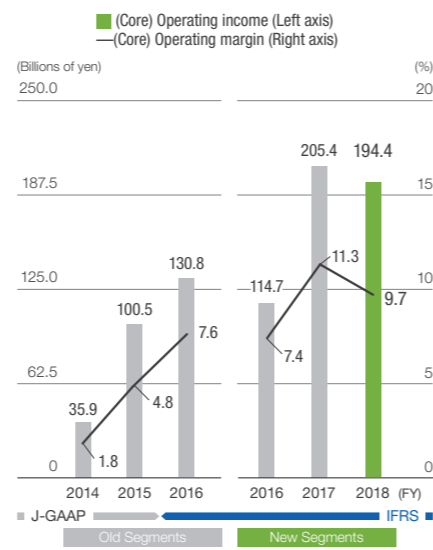
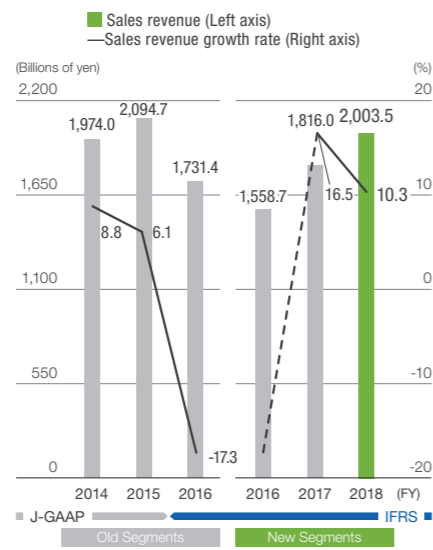
Performance Products Domain

Sales revenue
¥1,170.1 billion
 ROIC
6.1%



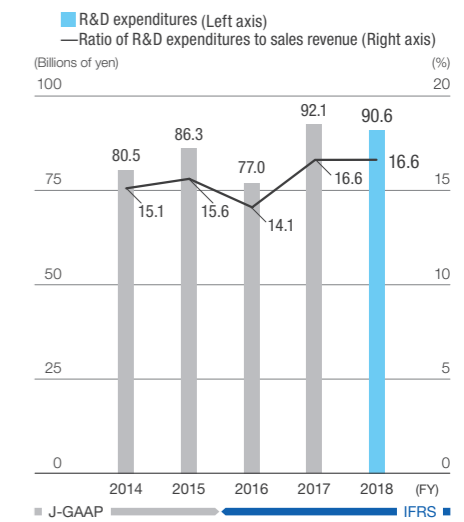
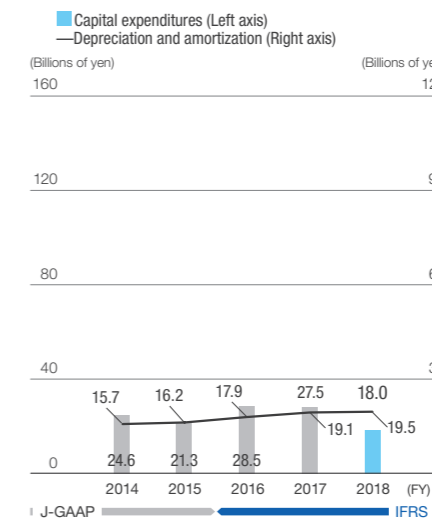
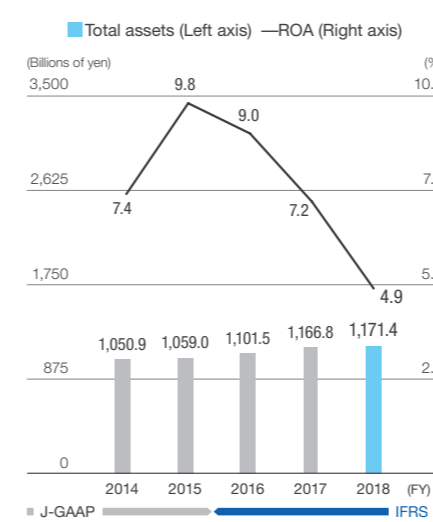
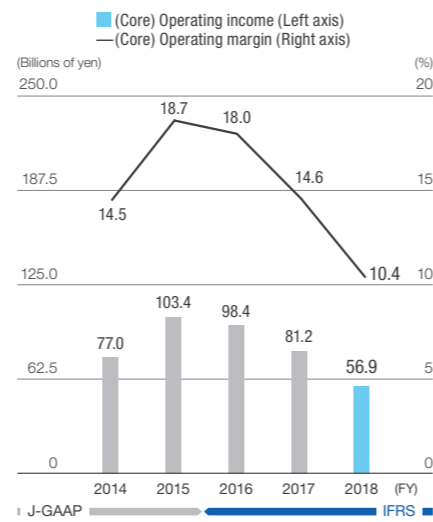
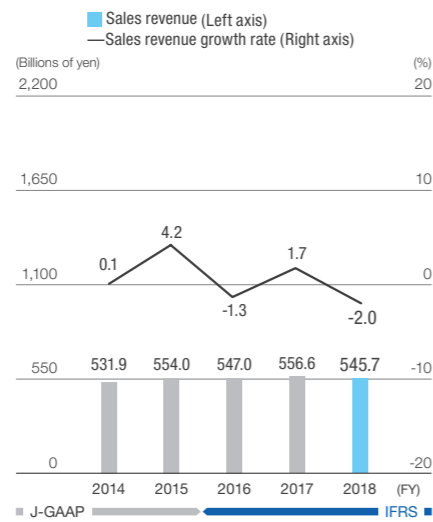
Industrial Materials Domain

Sales revenue
¥2,003.5 billion
 ROIC
7.3%



Health Care Domain

Sales revenue
¥545.7 billion
 ROIC
5.9%



FY2018 Results by Segment

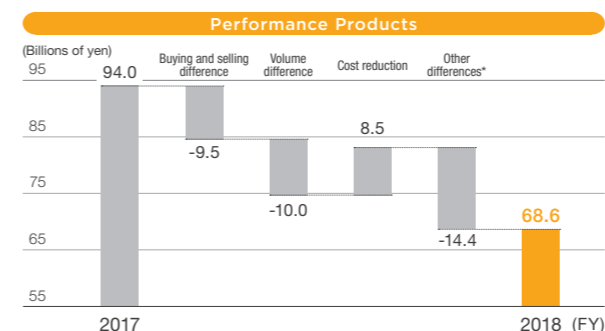
Performance Products Domain

Performance Products Segment

This segment posted increased sales revenue and decreased income. Sales revenue advanced ¥24.2 billion, to ¥1,170.1 billion, but core operating income dropped ¥25.4 billion, to ¥68.6 billion. Sales revenue remained basically flat in the Functional Products subsegment. This was because sales volumes dwindled for products related to information and electronics, and displays, and other products with demand slowing, principally in the second half, despite higher sales volumes in high-performance engineering plastics and other products for advanced moldings and composites. Sales

revenue rose in the Performance Chemicals subsegment by reflecting favorable market conditions in the first half for phenol-polycarbonate chain materials in advanced polymers, which outweighed a downturn in the second half. Another positive factor was higher automotive battery materials sales volumes in the new energy business. However, core operating income in this segment was down owing to generally higher raw materials costs, higher fixed expenses, and the impact of scheduled maintenance and repairs at production facilities for phenol-polycarbonate chain materials in advanced polymers.

Contributing Factors to Core Operating Income



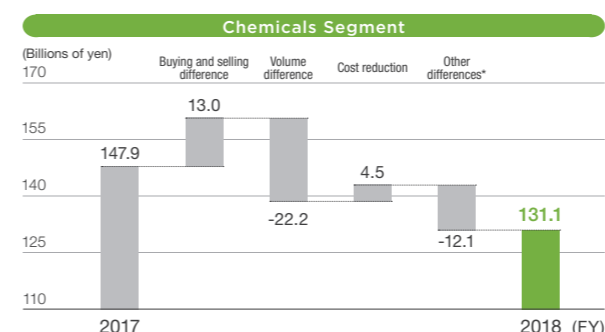
Industrial Materials Domain

Chemicals Segment

This segment posted increased sales revenue and decreased income. Sales revenue rose ¥93.4 billion, to ¥1,270.7 billion. Core operating income declined ¥16.8 billion, to ¥131.1 billion. Sales revenue in the MMA subsegment was basically unchanged. This was because a demand slowdown in the second half, particularly in China, offset the impact of favorable MMA monomer and other products market conditions in the first half. In the Petrochemicals subsegment, sales volumes fell because of the impact of scheduled maintenance and repairs at the ethylene production facility. Sales revenue increased, however,

on higher prices in line with increased raw materials costs. Sales revenue rose in the Carbon Products subsegment because prices increased in the needle coke market amid firm demand for coke and other products. Core operating income in this segment declined because a widened price spread between raw materials costs and prices of carbon products was outweighed by a greater impact of scheduled maintenance and repairs at petrochemicals product facilities, inventory valuation losses stemming from plunging raw materials costs since the end of the previous year, and a fall in MMA sales volumes.

Contributing Factors to Core Operating Income

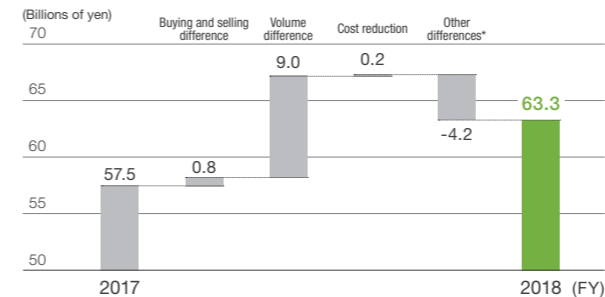


Industrial Gases Segment

This segment recorded growth in both sales revenue and income. Sales revenue rose ¥94.1 billion, to ¥732.8 billion. Core operating income was up ¥5.8 billion, to ¥63.3 billion. These gains reflected the solid performances of overseas

businesses and the impact of the acquisition of a portion of the European business of Praxair, Inc. of the U.S. and part of the U.S. hydrogen and carbon monoxide business and related assets of Linde Gas North America LLC.

Contributing Factors to Core Operating Income



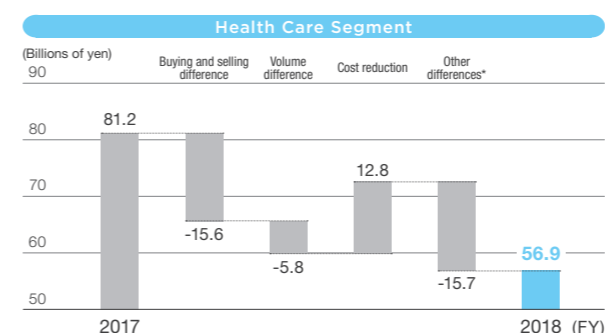
Health Care Domain

Health Care Segment

This segment posted increased sales revenue and decreased income. Sales revenue declined ¥10.9 billion, to ¥545.7 billion. Core operating income dropped ¥24.3 billion, to ¥56.9 billion. In pharmaceuticals, sales revenue was down despite higher U.S. sales of *Radicava* for treating amyotrophic lateral sclerosis, owing to the impact of national health insurance price revision in domestic

ethical pharmaceuticals in April 2018 and lower royalty revenue. Core operating income decreased because of lower sales revenue and higher research and development expenses. Royalty revenue from Novartis International AG for *Gilenya*, multiple sclerosis treatment was down, as a part of the revenue was not recognized under IFRS 15 owing to start of arbitration proceedings.

Contributing Factors to Core Operating Income



Functional Products	Information, Electronics and Displays	Optical films, liquid crystal- and semiconductor-related products, etc.	
	High Performance Films	Food packaging materials, industrial-use and medical films, etc.	
	Environment and Living Solutions	Aqua solutions, ion-exchange resins, agricultural and infrastructural solutions, etc.	
Performance Chemicals	Advanced Moldings and Composites	Carbon fibers, alumina fibers, high-performance engineering plastics, etc.	
	Advanced Polymers	Phenol and polycarbonate, performance polymers, etc.	
	High Performance Chemicals	Specialty chemicals, food ingredients, etc.	
	New Energy	Lithium-ion batteries materials, optoelectronics materials, etc.	
Chemicals	MMA	MMA (raw materials), PMMA (acrylic resins), etc.	
	Petrochemicals	Basic petrochemicals and derivatives, polyolefins, etc.	
	Carbon Products	Coke, carbon materials, carbon black, synthetic rubber, etc.	
Industrial Gases	Industrial gases, industrial gas-related equipment and facilities, etc.		
Health Care	Pharmaceuticals	Ethical pharmaceuticals, etc.	
	Life Science	Capsules and pharmaceutical processing equipment, active pharmaceutical ingredients and intermediates, etc.	

* "Other differences" include impacts from inventory valuation gain/loss and differences of equity income, etc.

Performance Products



Performance Products Domain

In the performance products domain, the MCHC Group focuses on five growing markets while coordinating a wide range of products and technologies of the Group to differentiate and enhance the performance of products in order to provide a variety of solutions to the respective markets.

SWOT Analysis

Optical Films Strong market position and ability to deliver solutions for various optical applications	High-performance Films Technologies to add functions including gas barrier, porous control and multiple layers	Optical Films Ability to adapt to the short-term demand changes that fluctuated beyond expectation	High-performance Films Business development with a focus on the domestic market
High-performance Engineering Plastics Global network across business groups from materials to forming processing field	Carbon Fiber and Composite Materials Business development through a vertically-integrated value chain which covers materials from carbon fibers to intermediate base material/composites	High-performance Engineering Plastics Widespread and direct impacts from social/economic/foreign exchange risks in different regions around the world	Carbon Fiber and Composite Materials Exchange rate impacts due to the high ratio of overseas sales
Optical Films Increase in the sophistication of market needs (greater demand for high-performance and high-precision products)	High-performance Films Roll-out of high-performance products to overseas businesses	Optical Films Shrinkage of existing market due to disruptive technology and innovation	High-performance Films Medium-term decrease in domestic demand
High-performance Engineering Plastics Expanded demand in industrial (aircraft, semiconductors) and medical use	Carbon Fiber and Composite Materials Expanded demand in industrial use (automobiles, wind power generation, pressure vessels, and others)	High-performance Engineering Plastics Shrinkage of existing market due to diffusion of new technologies such as 3D printer	Carbon Fiber and Composite Materials Intensified competition due to quality improvement of products from developing countries

Main businesses and products

Functional Products

FY2018 Sales revenue
¥785.9 billion

FY2018 Core operating income
¥40.1 billion

Information, Electronics and Displays

Optical films, precision cleaning, color resist



Optical films

We swiftly respond to the globally expanding markets, increasingly sophisticated needs and support the advancement of displays through products such as polyester films, optical clear adhesive sheets and optical PVOH films.

Information and electronics materials

We focus on developing and selling products and services that create new value consistent with customers' needs, including through various materials for FPD (Flat Panel Display) and precision cleaning for semiconductors.

High Performance Films

High-performance films: food package materials, industrial-use films, medical and sanitary films



High-performance films

Through the optimal combination of technologies, including polymer material design, forming processing, surface treatment and composition, we offer products with added functionalities such as gas barrier, weather resistance, moisture permeability, and easy-opening, applied in different markets such as food, industrial, and healthcare.

Environment and Living Solutions

Aqua solutions, ion-exchange resins, separator and aqua chemicals, agricultural solutions, infrastructure solutions



Aqua solutions

Through offerings such as water treatment chemicals, filtration membranes, and ion-exchange resins, we cover the whole water treatment process ranging from drinking water to wastewater, aiming to provide solutions to any and all water-related issues worldwide.

Agricultural solutions

We offer agricultural materials such as high-performance films with superior durability for greenhouses and plant factories for cultivating high-quality vegetables stably throughout the year.

Advanced Moldings and Composites

High-performance engineering plastics, carbon fiber and composite materials, fibers and textiles, alumina fibers, functional moldings and composites



High-performance engineering plastics

As a leading global manufacturer of high-performance engineering plastics, we are developing our business in a wide range of fields, such as industrial machinery, automobiles, aircrafts, and medical use.

Carbon fiber and composite materials

We have realized one of the most integrated product chains in the world, covering materials from PAN-based and pitch-based carbon fibers to intermediates and composite products using fibers as base materials.

Performance Chemicals

FY2018 Sales revenue
¥384.2 billion

FY2018 Core operating income
¥28.5 billion

Advanced Polymers

Performance polymers, phenol and polycarbonate, polybutylene terephthalate, sustainable resources



Performance polymers

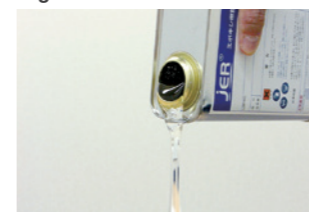
With a broad product range centered on thermoplastic elastomers, performance polyolefins and PVC compounds, we contribute to the customers' innovations in areas ranging from medical care and industry to daily consumer goods.

Phenol and polycarbonate

Integrating our proprietary manufacturing process technologies with polymer design technologies and compound technologies, we have expanded our business globally while having one of the largest market shares in Asia.

High Performance Chemicals

Coating materials, epoxy resins, resin additives, food ingredients, inorganic chemicals



Coating materials

We provide added value with a strong consciousness of sustainability for polymers used in paints, inks, adhesives, hair care materials and resist materials for semiconductors based on advanced technologies of synthesis, formulation and evaluation.

Food ingredients

We have expanded our business to a wide range of fields from food to pharmaceuticals and cosmetics in product groups such as emulsifiers, represented by our sugar ester, which has the leading global market share, and vitamin E.

New Energy

Lithium-ion battery materials, phosphors, scintillators, GaN substrates



Lithium-ion battery materials

While targeting the increasingly sophisticated needs of customers, we are developing electrolytes and anode materials primarily for the batteries used in electric vehicles based on high technological capabilities and a global supply chain network covering from material development to safety evaluation.

Phosphors, scintillators, GaN substrates

We are providing phosphors for fluorescent backlights and LED lighting, and scintillators for security and medical diagnostic devices, such as CT scanners. We are also developing gallium nitride (GaN) substrates used in lasers and other high-performance devices.

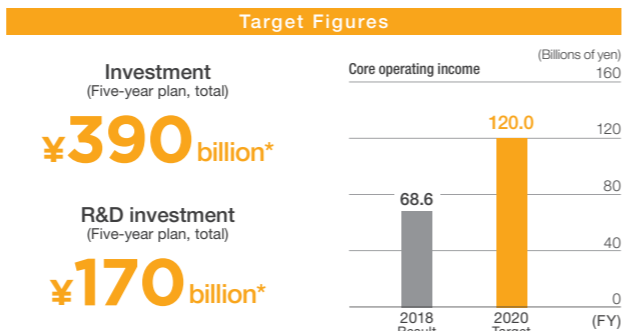
APTSIS 20

Policies

Provide high-performance products and solutions on a global scale by accelerating growth through cooperation and integration.

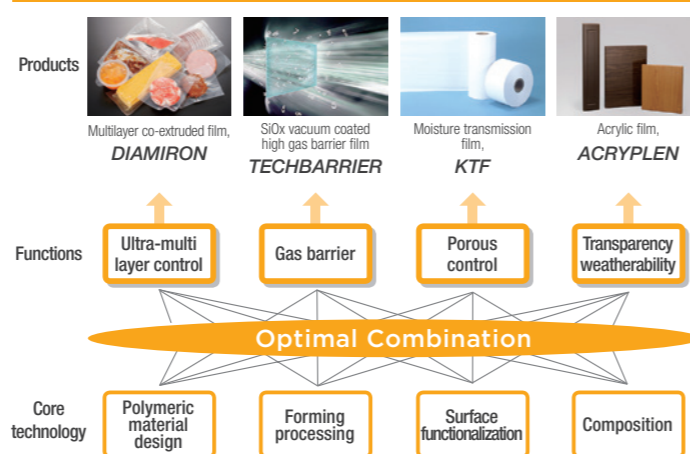
Key Strategies

- Expand high-performance, higher value-added products and solutions business
- Accelerate global development
- Enhance innovation through business integration
- Achieve profitability of new energy businesses at an early stage



* In November 2017, MCHC announced that it would increase investments and loans by 200 billion yen and R&D investments by 25 billion yen on a company-wide basis.

Technology Platform



Growth Strategies of High Performance Films

While strengthening our advantage in product development, delivering solutions by increasing positive synergy among other business domains, and advancing a seamless technology platform, we will accelerate the global expansion of higher value-added products by making full use of resources of overseas affiliates. We are constructing a new production facility in Thailand for multilayer co-extruded film, DIAMIRON, that is widely used in food and medical packaging in order to expand business in the ASEAN where growing market demands are expected. (Commercial production will begin in April 2020). We will also globally expand the business of barrier films through our M&A strategy and enhance the technological development of next-generation products, such as smart packaging, with focus on achieving SDGs, solving the food-loss issue (longer shelf life), and others.

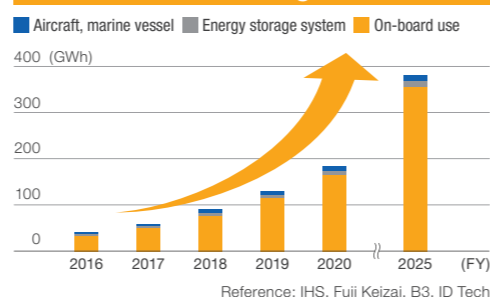
Growth Strategies of Advanced Polymers

Our growth strategies are: enhancing the competitiveness of the existing businesses, pioneering a circular economy, and promoting M&A and alliances. In the existing businesses, the strength of our solution proposals are bolstered by our global network. In FY2018, we decided to establish a new production facility for PVC compound production in China (Chengdu), and acquired two PVC compound producers in Indonesia and India. Toward the actualization of a circular economy, we proactively contribute to the achievement of the SDGs and the reduction of GHGs with a strong focus on the feature improvement of biomass and biodegradable polymers. We are accelerating M&A and alliances activities with the aim of acquiring new technologies, new applications, new customers and new business models for further business growth.

Expanding Production and Sales Bases



Demand Forecast for Large-scale LiB Use



Growth Strategies of New Energy

We will cultivate next-generation businesses by promoting early commercialization and profitability of business clusters that contribute to the realization of a sustainable society. The electrolyte and anode materials used in the lithium-ion batteries (LiBs) that we manufacture and distribute are widely adopted for automobile LiB as high-performance products capable of improving performance such as LiB life, output and charging characteristics. Going forward, we will continue to enhance our global supply chains through increased production capacity at overseas business bases, and will meet our customers' needs for more sophisticated performance with our advanced technological capabilities.

FOCUS

Provide a wide range of solutions and accelerate global business deployment in the IT, electronics, and displays market.

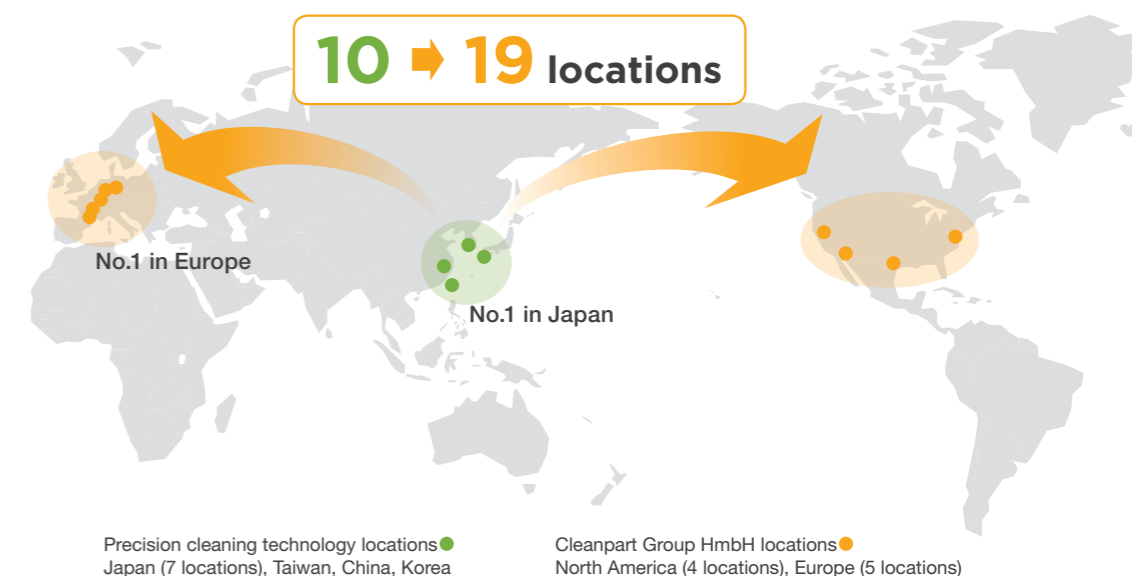
The integration of businesses involving optical films used in electric displays and information and electronics materials, such as color resists, realized a timely response to the remarkable technological innovation in this market. As LCD panels become thinner and larger, we are not only accelerating the building-up of production lines for wider optical PVOH film, OPL Film used in polarizer but also applying our technology and expertise in displays to OLED panel materials, which are expected to grow in the future.

On the other hand, as the volume of data being processed increases due to the development of information technologies such as AI and IoT, the semiconductor market has been growing

remarkably, which is expected to continue. To date, we have endeavored to enhance businesses including cleaning solutions and precision cleaning services. In October 2018, we acquired Cleanpart Group GmbH, one of the leading companies in fields that include precision cleaning and coating services for semiconductor manufacturers in Europe and the U.S. We will strengthen our access to the semiconductor industry based on the advanced precision cleaning technology cultivated in Japan and Asia and the acquired business bases and their client networks in Europe and the U.S. We will also enhance our solution proposal capability to respond to customers' technological development and needs.

Established a global cleaning service system based on the acquisition of Cleanpart Group GmbH

Expanding business by transferring advanced precision cleaning technology developed in Japan and Asia to semi-conductor manufactures in Europe and North America



Expanding KAITEKI Value

Provide innovative advanced moldings and composites to the aircraft markets to realize a KAITEKI society

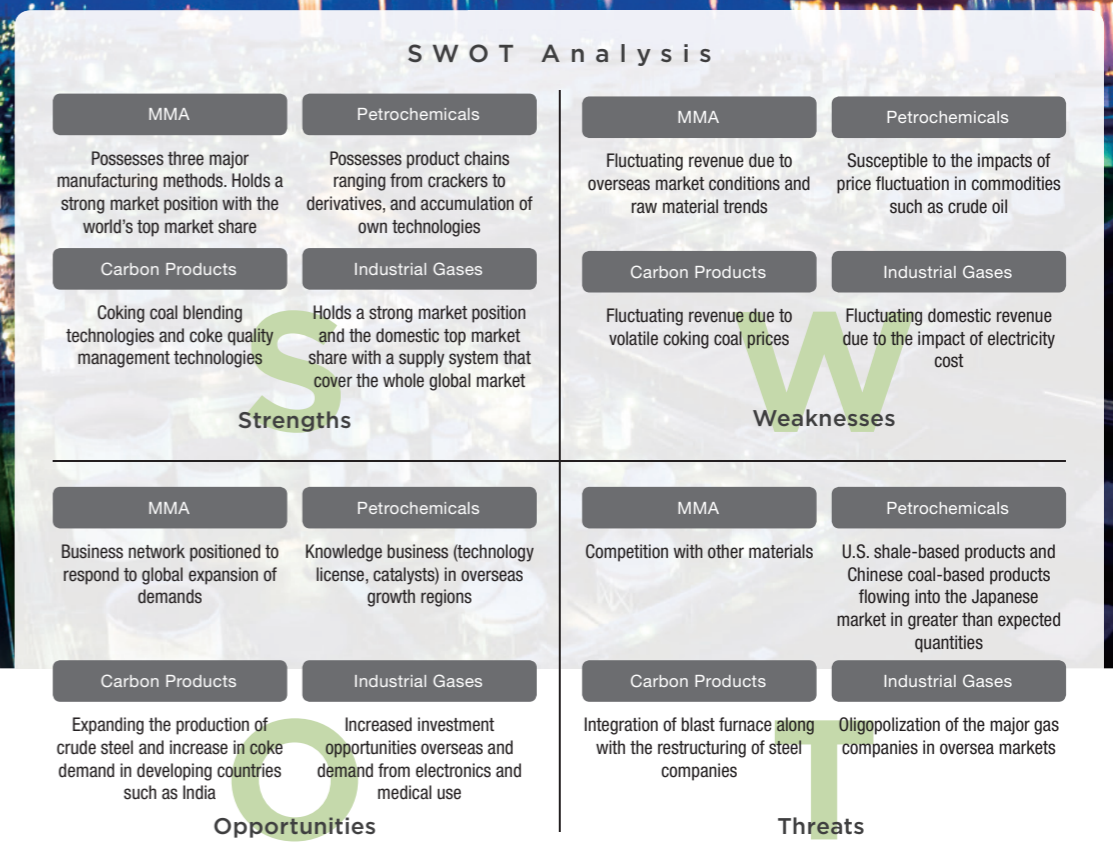
Our high-performance engineering plastics and carbon fiber reinforced plastic are also applied to various parts of aircrafts. In addition to their light weight, these products have requisite characteristics for aircraft, such as strength, heat resistance, flame retardance, sound insulation and vibration damping, allowing aircraft to achieve higher performance. Going forward, as the global leader in high-performance engineering plastics and carbon fiber reinforced plastic, we will continue to make utmost efforts to contribute to improving safety and reliability in the growing aircraft markets of the world and realize a KAITEKI society.



Industrial Materials

Industrial Materials Domain

MCHC will continue to advance the diversification of raw materials, including renewable resources, provide products and technologies through a framework that reflects the needs of the time, and support the growing markets.

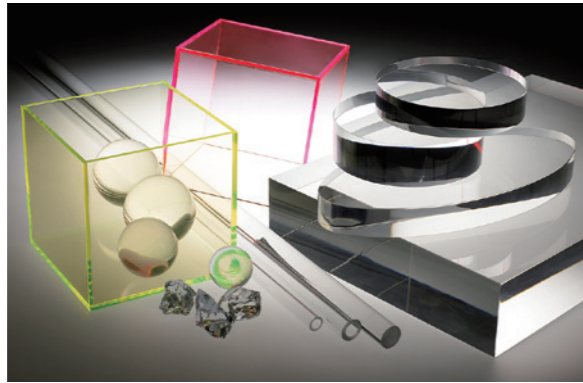


Major Businesses and Products

MMA

FY2018 Sales revenue
¥388.8 billion

FY2018 Core operating income
¥94.4 billion



MMA, PMMA

MMA*1

We possess three major manufacturing methods*2 that utilize different raw materials, and maintain a leading 40% share of the global market. By establishing a global supply chain that takes advantage of raw material availability for each plant as well as cost competitiveness, MCHC aims to actualize sophisticated operations.

*1 Methyl methacrylate
 *2 Acetone cyanohydrin (ACH) method, C4 direct oxidation process, and New Ethylene Method (Alpha Technology)

PMMA*3

PMMA (acrylic resin) has various excellent characteristics such as superior transparency, strong weatherability, and formability. We operate businesses that utilize a variety of PMMA products including acrylic sheets for signs, display shelves and aquarium tanks, molding materials for automotive products, optical components and home electronic parts, and plastic optical fibers.

*3 Polymethyl methacrylate

Carbon Products

FY2018 Sales revenue
¥280.3 billion

FY2018 Core operating income
¥24.5 billion



Coke, carbon materials, carbon black, synthetic rubber

Coke

Coke supports the global steel industries, and it serves as a raw material for various products which are produced from the tar created in the coke manufacturing process. Each year we import coal from countries around the world and produce coke of different qualities by blending around 60-70 types of raw materials in various combinations.

Carbon black

Carbon black is a material used for products found in daily life, such as tires, printing ink and colored resins. We manufacture carbon black under stringent quality control throughout the manufacturing process, covering all stages from raw material processing to the final products.

Petrochemicals

FY2018 Sales revenue
¥601.6 billion

FY2018 Core operating income
¥12.2 billion



Basic petrochemicals, basic chemical derivatives, polyolefins

Basic petrochemicals and basic chemical derivatives

Our ethylene plants are located in Ibaraki and Okayama,* Japan, where we manufacture olefins such as ethylene and propylene, and aromatics such as benzene and toluene. We also deal in various ethylene, propylene and C4 derivatives, terephthalic acid and more.

*The Okayama ethylene plant is owned by Asahi Kasei Mitsubishi Chemical Ethylene Corporation, which is jointly owned by Asahi Kasei Corporation and Mitsubishi Chemical Corporation (MCC).

Polyolefins

Our polyolefin (polyethylene and polypropylene) business offers high-quality and high-performance product lineups for a wide range of fields including automobiles, electrical wires, medical devices and food packaging based on proprietary catalyst and process technologies. We are also expanding this business to markets outside Japan as a global supplier of high-performance materials while developing the growing global markets including the automobile industry.

Industrial Gases

FY2018 Sales revenue
¥732.8 billion

FY2018 Core operating income
¥63.3 billion



Industrial gases, industrial gas-related equipment and facilities

Industrial gases

We have a leading 40% share of the domestic market for industrial gases, centered on oxygen, nitrogen and argon. We are expanding our business overseas with a focus on North America, Europe, Asia and Oceania as the key markets.

Industrial gas-related equipment and facilities

Besides our domestic production of Japan's first air separation units plant, we have earned a stellar reputation as a world class plant manufacturer through the production of space-simulation chambers and liquid helium-related equipment.

APTSIS 20

Policies

Stabilizing earnings by strengthening cost-competitiveness
Accelerating growth and increasing presence in the global market

Key Strategies

Enhance cost-competitiveness
Accelerate global business development (MMA, industrial gasses)
Business restructuring

Growth Strategies of the MMA Domain

We will continue to increase our production capacity and optimize the production system with the aim of maintaining our competitiveness as the leading global supplier of MMA, boasting a roughly 40% share of the global production capacity.

In April 2018, a new plant with the world's largest production capacity started its operation. The plant utilizes the MCC Group's proprietary New Ethylene Method (Alpha Technology) together with the highly cost-competitive natural gas of Saudi Arabia. Furthermore, in North America, we are also considering the establishment of a new plant that utilizes the New Ethylene Method with a less expensive shale gas-based ethylene. Thus, we will secure stable earnings while maintaining the competitiveness by retaining a leading share in MMA and building optimal production systems.

Strategic Approach to Strengthening Competitiveness of Petrochemicals

We have completed the large-scale structural reforms, including the consolidation of naphtha cracker and withdrawal from unprofitable businesses, to a certain extent. Looking ahead, we will continue to increase the added value by commercializing the unused fraction between crackers and derivatives, developing high-performance polyolefin, and expanding technology licenses through the refinement of possessed technologies.

For high-performance polyolefin, we are accelerating the development to add higher value to polyolefin by developing a new catalyst to improve the strength, heat resistance and molding capability of polyolefin.

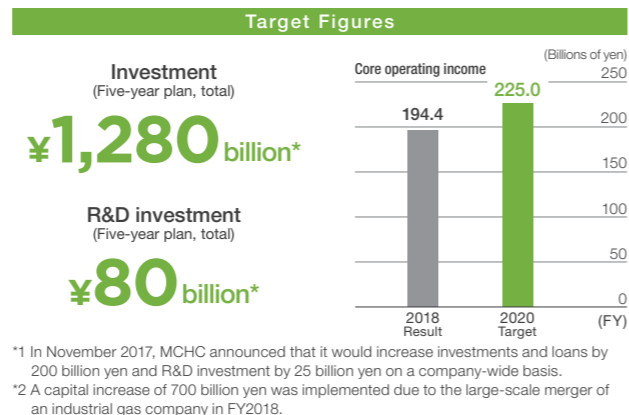
We will continue to maximize earnings by increasing the value of our petrochemical business.

Strategic Approach to Strengthening Competitiveness of Carbon Products

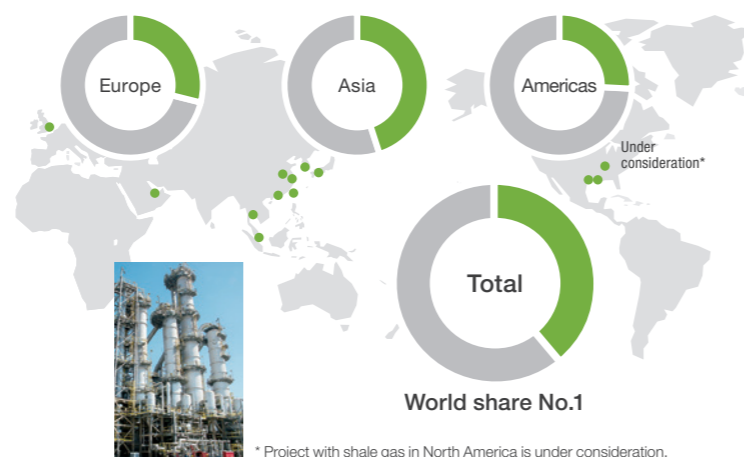
We will endeavor to secure stable earnings by consistently producing coke, core product, and maximizing the added value of coke byproducts, such as needle coke.

In 2009, MCC introduced large-scale partial refining operation under a coke oven (hot renewal method) for the first time in Japan, enabling us to stably produce coke without suspending the operation of the oven while at the same time maintaining its soundness.

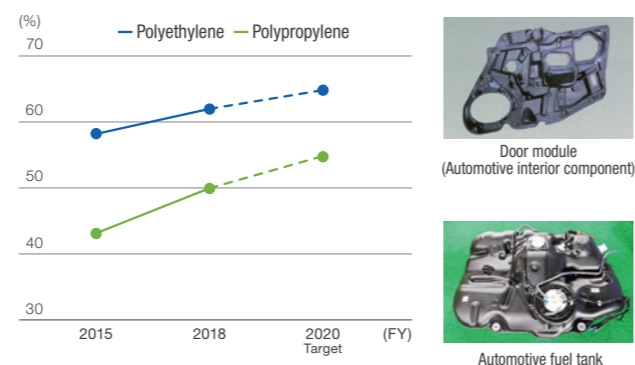
We will focus on maximizing earnings by consistently promoting efforts to increase the added value of coke byproducts, such as needle coke, the demand for which has been sharply increasing in recent years due to its use in graphite electrodes.



MMA Production Bases and Regional Share



Ratio of Higher Value-added Polyolefin



Industrial gases: Aiming at further growth based on the tetrapolar global production structure

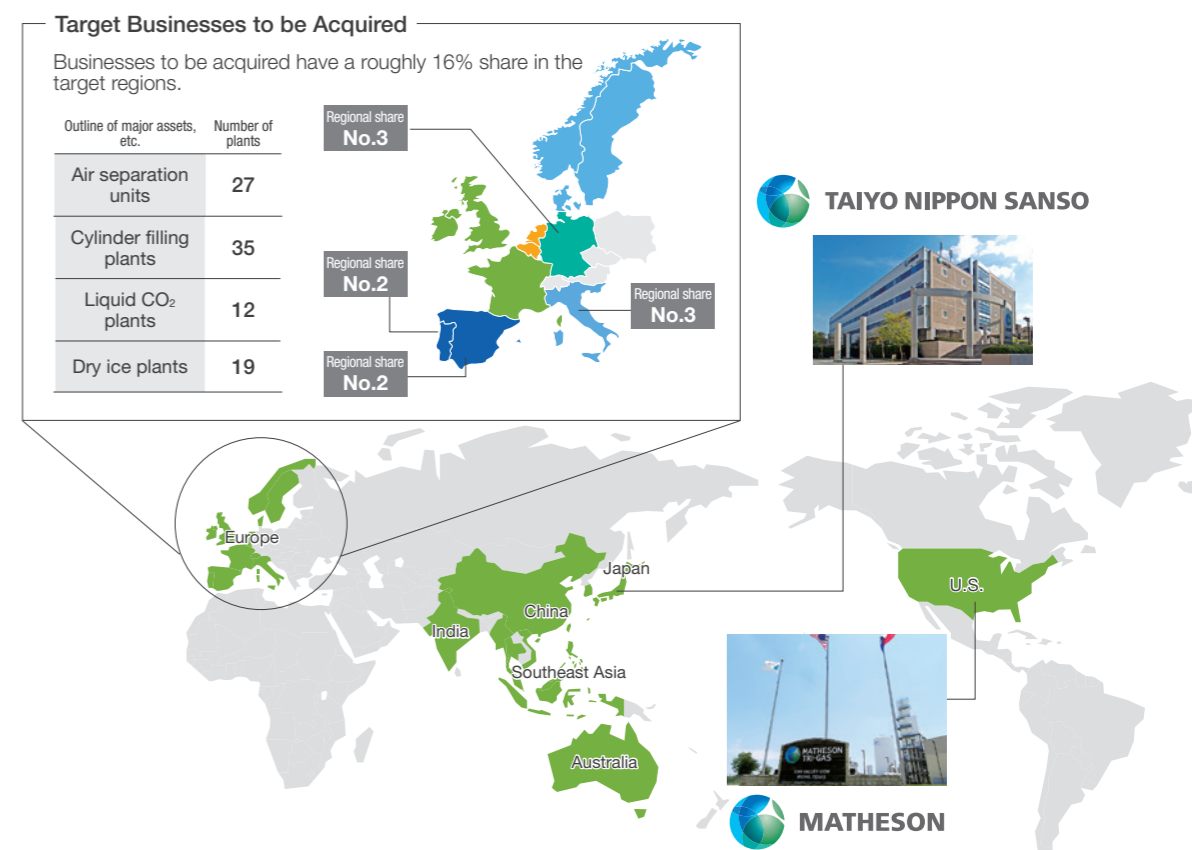
As the oligopolization of the industrial gas industry advances due to internal reorganizations, Taiyo Nippon Sanso Corporation (TNSC) has been implementing its Ortus Stage 2, a four-year Medium-term Management Plan, starting from the fiscal year ended March 2018, with the aim of firming up its position by enhancing its global competitiveness. In December 2018, TNSC acquired a European subsidiary of Praxair, Inc. and thereby obtained the company's market share in Europe, a market which TNSC was yet to enter at that time. As the regional headquarters in Europe, TNSC established Nippon Gases Euro-Holding S.L.U. in Spain to organize the governance system of each subsidiary. As a result, the tetrapolar global production structure (Japan, the

U.S., Europe, and Asia-Oceania) was finally established.

Amid its efforts to expand the gas technology domain through M&A based on the priority strategy of Innovation under the Ortus Stage 2 Plan, TNSC made an entry into the HyCO business by acquiring the U.S. HyCO business of Linde Gas North America LLC, a subsidiary of Linde AG, in February 2019.

HyCO business refers to the large-scale supply of hydrogen (H₂) and carbon monoxide (CO) separated from natural gas and other raw materials by steam reforming equipment, etc. pipelined to be used mainly in the oil refinery/petrochemical industries. TNSC will endeavor to enhance its ability to make proposals to users by expanding the product lineup.

Expanding global market share by moving into new business areas



Expanding KAITEKI Value

Business development of earth-friendly and high-performance plant-derived materials

MCC has developed *BENEBIOL*, the world's first plant-derived polycarbonate diol (PCD). While PCD has been applied to resin coating materials, such as artificial/synthetic leather and exterior and interior coating materials for automobiles, the plant-derived PCD not only has an excellent environmental performance but also the capability of improving texture, flexibility and strength compared to conventional PCD from petroleum. Looking forward, our Group will continue to promote the business development of earth-friendly and high-performance plant-derived materials, thus contributing to the construction of a resource-saving and recycling-oriented society.



"Ultrasuede® BX," Toray Industries' environmentally friendly non-woven material with a suede texture using our *BENEBIOL*. (Image courtesy of Toray Industries, Inc.)

Health Care

Health Care Domain

MCHC will develop the healthcare businesses beyond the treatment of diseases, with an aim to create a society where people around the world live longer and healthier.

SWOT Analysis

<p>Pharmaceuticals</p> <ul style="list-style-type: none"> • Capabilities for drug discovery and IKUYAKU (drug fostering and evolution) in the pharmaceutical business • Presence in focus areas, including autoimmune diseases 	<p>Pharmaceuticals</p> <ul style="list-style-type: none"> • Delay in global business expansion (especially in North America)
<p>Life Science</p> <ul style="list-style-type: none"> • Broad business foundation covering sick care, health care, and life care • Strong market position in the capsule manufacturing business 	<p>Life Science</p> <ul style="list-style-type: none"> • Product/service lineup insufficient to meet a range of customer needs
<p>Strengths</p>	<p>Weaknesses</p>
<p>Pharmaceuticals</p> <ul style="list-style-type: none"> • Diversification of medical needs • Expanding demand in the healthcare domain due to global aging 	<p>Pharmaceuticals</p> <ul style="list-style-type: none"> • Declining success rate for new drug discovery, and increasing R&D costs due to stricter drug approval processes • Various measures taken to control medical expenditures by governments
<p>Life Science</p> <ul style="list-style-type: none"> • Expanded use of big data by health and medical ICT • Governmental incentives to maintain health and prevent serious diseases in order to stop the increase of medical expenses • Enhanced awareness of health, including self-medication 	<p>Life Science</p> <ul style="list-style-type: none"> • Lack of economic incentives in the healthcare business
<p>Opportunities</p>	<p>Threats</p>

Major Businesses and Products

Health Care

FY2018 Sales revenue
¥545.7 billion

FY2018 Core operating income
¥56.9 billion

Pharmaceuticals



Remicade Simponi Stelara

Immuno-inflammation

We have a strong sales foundation based on the relationships of trust built with medical professionals through one of our main products, *Remicade* (indication: inflammatory autoimmune diseases such as rheumatoid arthritis). We will continue to take the top share in this area by maximizing the advantages provided by three products: *Remicade*, *Simponi* (indication: rheumatoid arthritis, etc.) and *Stelara* (indication: psoriasis, Crohn's disease, etc.).



Tenelia Canaglu Canalia

Diabetes and kidney

We aim to obtain clinical evidence and expand sales channels for *Tenelia* Tablets and *Canaglu* Tablets, originally developed by Mitsubishi Tanabe Pharma Corporation (MTPC) as Japan's first treatment for type 2 diabetes mellitus, and for *Canalia* Combination Tablets, thereby establishing our presence in this area.



Lexpro Radicut

Central nervous system

It is thought that *Radicut* (*Radicava* in the U.S.) has the effect of scavenging free radicals, which increase in ALS, protecting motor neurons from oxidative stress, and delaying the decline in muscle strength and the progress of muscular atrophy. For this product, we obtained approval for the indication of ALS first in Japan in June 2015 and subsequently in South Korea, the U.S., Canada, and Switzerland. We are now applying for approval in China while developing an oral agent in the U.S.



Influenza vaccine Tetrabik Varicella vaccine

Vaccines

MTPC and the Research Foundation for Microbial Diseases of Osaka University founded BIKEN Co., Ltd., a joint venture to produce vaccines, which started operation in September 2017. We plan to double or triple the production volume of varicella vaccine and to increase total vaccine production capacity by 20 to 30% in the future. We will also enhance the production platform for vaccines that are in greater demand and help further stabilize the supply of vaccines.

Life Science



Regenerative medical product

Next-generation healthcare

We began the clinical testing with a formulation that uses Muse* cells, which were discovered by a team led by Professor Mari Dezawa of Tohoku University. To obtain an approval for Muse cell-based product (CL2020) by FY2021, we have been conducting clinical tests for four indications. Additionally, we constructed a new cell processing center ("Tonomachi CPC") for the commercialization of Muse cell-based products. In February 2019, we began preparing for production at the CPC for the launch. (See page 84).

*Muse: Multilineage-differentiating Stress Enduring



Pharmaceutical capsules, active pharmaceutical ingredients and intermediates

Drug discovery solutions

We manufacture active pharmaceutical ingredients and intermediates. We also provide high-quality, high-performance hard capsules, such as HPMC*, the world's first HPMC made from plant-derived materials, and pharmaceutical processing equipment made by using our manufacturing technologies and expertise.

*HPMC: Hydroxypropyl methylcellulose



Medical ICT

Health and medical ICT

To solve social issues, such as the aging society and regional disparities in medical treatment, we will develop diagnosis support systems for higher quality medical care by using digital technology thereby creating a new business that helps mitigate the burdens imposed on doctors. Presently we are collaborating with universities and others to develop an AI-based diagnostic imaging support system.

APTSIS 20

Policies

Worldwide growth in the pharmaceutical business
Establish and improve the healthcare and medical business utilizing ICT and the regenerative medical products

Key Strategies

- Promote the development of overseas pharmaceutical business, particularly in the U.S.
- Strengthen capabilities for drug discovery
- Maximize the value of new drugs and priority products by strengthening capabilities of IKUYAKU (drug fostering and evolution) and marketing
- Expand the healthcare and medical business utilizing ICT
- Expand the regenerative medicine business
- Improve profitability and global expansion of the business for capsules

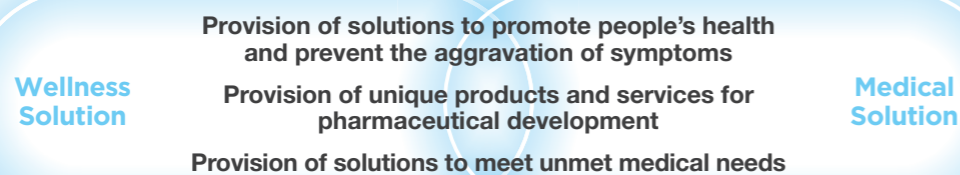
Growth Strategies in the Pharmaceutical Business

MTPC engages in the pharmaceutical business within the MCHC Group. In November 2018 it revised the FY2020 targets set in its Medium-term Management Plan, "Open Up the Future." Specifically, it made downward revisions to revenue (down ¥70 billion to ¥430 billion) and to core operating income (down ¥40 billion to ¥60 billion), mainly because of a decrease in the royalty revenue gained for *Invocana*, a treatment for type 2 diabetes mellitus, and the delayed business contribution by the M&A project in the U.S.

MTPC Aims to Achieve the Initial Targets by FY2023 Through the Following Measures

	Peak sales (Billions of yen)
U.S. and Europe	
Launch of <i>Radicava</i> oral agent	70-100 (including intravenous agent)
Launch of influenza VLP vaccine	40-60
Launch of ND0612 (indication: Parkinson's disease)	50-80
Japan	
Launch of <i>Vadadustat</i> (indication: renal anemia)	
5-in-1 vaccine (for pertussis, diphtheria, tetanus, polio and Hib)	Total in five products
<i>Fasinumab</i> (indication: osteoarthritis), and <i>Valbenazine</i> (indication: tardive dyskinesia), and an additional indication to <i>Canaglu</i> (diabetic nephropathy)	50-70

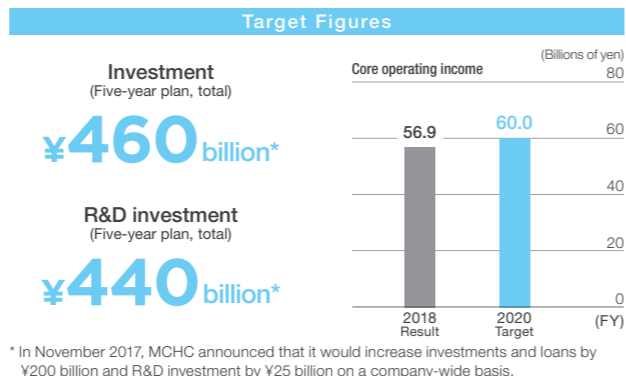
Growth Strategies in the Life Science Business



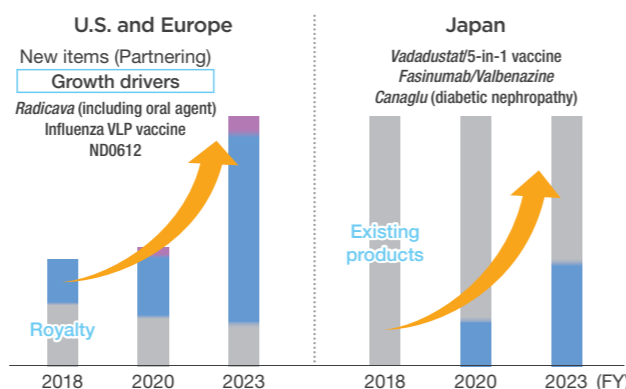
Next-generation Healthcare
We will address unmet medical needs by developing regenerative medicine of Muse cell-based formulation, and aim to obtain approval for the manufacture and sale of the product in FY2021. In February 2019, we began preparations for the production and commercialization of said product at the newly completed cell processing center.

Health and Medical ICT
We will create new businesses to improve the quality of medical treatment by using digital technology, thereby contributing to solving social issues such as the aging society and regional disparities in medical treatment.

Drug Discovery Solutions
While taking an integrated approach across the pharmaceutical business (active pharmaceutical ingredients and intermediates, capsules, etc.), we will provide pharmaceutical companies with higher value-added one-stop solutions through alliances with other organizations.



In the U.S. and Europe, accelerate growth through the three drivers as maintaining revenue of ¥300 billion achieved by launching new drugs and promoting IKUYAKU in Japanese market



Aiming to meet Unmet Medical Needs by providing Muse cell-based products

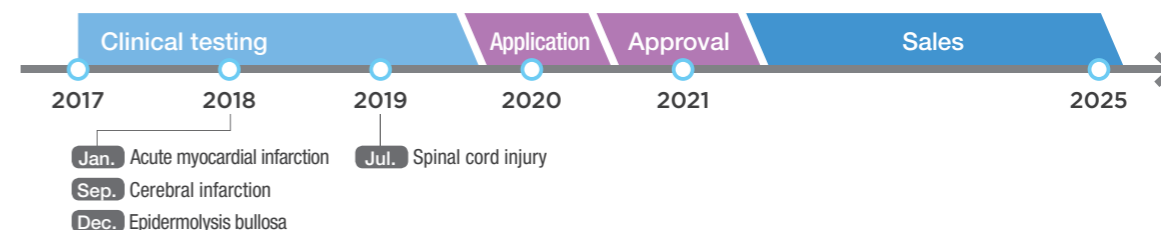
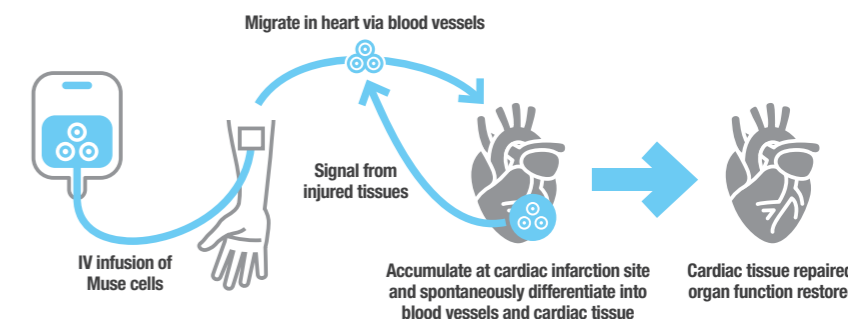
Development of new drugs and medical technologies have tremendously progressed in recent years, however, some disease have not had effective therapies yet. They call them unmet medical needs and we are working to address these unmet medical needs by creating Muse cell-based regenerative medicine and other products.

Muse cells were discovered by a team led by Professor Mari Dezawa of Tohoku University in 2010. These pluripotent stem cells have the capacity to differentiate into a range of human cells. Muse cells naturally exist in the connective tissue of the human body and therefore risks of tumorigenicity is likely low. Moreover, they have characteristics

not to necessarily induce into damaged tissues, but through iv injection, to accumulate and engraft injured tissues for repairing.

We are developing Muse cell-based products (CL2020) through the use of Muse cell enrichment culture techniques. Exploratory clinical test for the treatment of acute myocardial infarction started in January 2018 and we are now conducting another tests indicated for cerebral infarction and epidermolysis bullosa. Furthermore, we have conducted the clinical study for spinal cord injury from July 2019. We will continuously work on research and development for new treatment options.

Outline of the use of the Muse cell product for acute myocardial infarction



For CL2020, we aim to obtain manufacturing and sales approval by FY2021. We started preparations for commercial manufacturing of CL2020 from February 2019 at the newly completed cell processing center (CPC).

We will continue our efforts to deliver CL2020 to patients as soon as possible.

Tonomachi CPC (within the Life Innovation Center in Kanagawa)



Expanding KAITEKI Value

Providing patients with easier-to-take drugs

Radicava was released in the U.S. in 2017 as the first new drug developed in 20 years to help ALS patients delay the progression of the damage caused by the disease to their physical functions, and we are working to introduce it to other countries. Presently, however, the drug can be administered only by instillation and patients and their caregivers need to visit and remain at medical facilities for the administration of the drug.

In order to mitigate this burden, we are developing an oral suspension that can be easily taken by patients and aim to obtain approval for it in FY2021.



Consolidated Financial Summary

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries
Years ended March 31

	IFRS				
	Millions of yen				
	April 2015 (Transition date)	2016	2017	2018	2019
For the Year:					
Sales revenue	¥ —	¥3,543,352	¥3,376,057	¥ 3,724,406	¥ 3,923,444
Income before taxes	—	252,791	258,343	344,077	288,056
Net income	—	104,858	216,515	276,362	216,729
Net income attributable to owners of the parent	—	51,358	156,259	211,788	169,530
Total comprehensive income	—	34,302	226,493	297,476	205,898
Total comprehensive income attributable to owners of the parent	—	253	165,709	233,619	161,655
Net cash provided by (used in) operating activities	—	299,612	396,643	397,940	415,575
Net cash provided by (used in) investing activities	—	(234,078)	(289,056)	(335,933)	(895,068)
Net cash provided by (used in) financing activities	—	(40,945)	1,411	(150,592)	519,062
Cash and cash equivalent at end of period	252,749	267,148	363,510	277,624	321,541
At Year-End:					
Equity attributable to owners of the parent	993,011	972,197	1,091,398	1,285,750	1,377,947
Total assets	4,368,998	4,223,774	4,463,547	4,701,415	5,572,508
				Yen	
Per Share:					
Equity attributable to owners of the parent	¥677.98	¥663.71	¥758.30	¥893.26	¥970.46
Net income attributable to owners of the parent —Basic	—	35.06	106.73	147.14	119.22
Net income attributable to owners of the parent —Diluted	—	35.03	105.95	136.06	110.05
Ratios:					
Ratio of equity attributable to owners of the parent (%)	22.7	23.0	24.5	27.3	24.7
Ratio of earnings attributable to owners of the parent (ROE) (%)	—	5.2	15.1	17.8	12.7
Price earnings ratio (Times)	—	16.8	8.1	7.0	6.5
Other:					
Number of employees (People)	68,263	68,988	69,291	69,230	72,020
Temporary employees (People)	6,101	6,967	6,878	7,428	7,558

- Notes: 1. The consolidated financial statements have been prepared in keeping with International Financial Reporting Standards ("IFRS") since the fiscal year, ended March 31, 2017.
2. Sales revenues do not include consumption taxes.
3. In the fiscal year ended March 31, 2017, the Company classified terephthalic acid operations in India and China as discontinued. The Company accordingly presents sales revenue and income before taxes for the fiscal years ended March 31, 2016, and 2017, as amounts for continuing operations after excluding discontinued operations.
4. As it accounted provisionally for business combinations in the fiscal year ended March 31, 2019, the Company has retroactively revised the related key business indicators for the fiscal year ended March 31, 2018.

	Japan GAAP			
	Millions of yen			
	2014	2015	2016	2017
For the Year:				
Net Sales	¥ 3,498,834	¥3,656,278	¥3,823,098	¥3,432,398
Ordinary income	103,092	163,059	270,616	258,073
Net income attributable to owners of the parent	32,248	60,859	46,444	113,237
Total comprehensive income	134,016	173,692	7,695	205,319
Net cash provided by operating activities	177,027	329,776	388,663	333,150
Net cash used in investing activities	(159,789)	(277,223)	(202,796)	(264,566)
Net cash provided by (used in) financing activities	(8,307)	(2,061)	(156,957)	40,123
Cash and cash equivalent at end of period	179,556	243,055	263,770	360,012
At Year-End:				
Total net assets	1,314,870	1,588,601	1,554,528	1,608,324
Total assets	3,479,359	4,323,038	4,061,572	4,295,260
			Yen	
Per Share:				
Net assets	¥611.95	¥669.77	¥636.43	¥691.18
Net income attributable to owners of the parent —Basic	21.89	41.40	31.70	77.35
Net income attributable to owners of the parent —Diluted	21.45	41.37	31.68	76.78
Ratios:				
Shareholders' equity ratio (%)	25.8	22.6	22.9	23.2
Return on equity (ROE) (%)	3.7	6.4	4.8	11.8
Price earnings ratio (Times)	19.5	16.8	18.5	11.1
Other:				
Number of employees (People)	56,031	68,263	68,988	69,291
(Temporary employees in parentheses) (People)	(5,208)	(6,101)	(6,967)	(6,878)

- Notes: 1. The consolidated financial statements for the fiscal year ended March 31, 2017, are based on Japanese standards, and have not been audited pursuant to Paragraph 1 of Article 193-2 of the Financial Instruments and Exchange Act.
2. Sales revenues do not include consumption taxes.

Segment Information

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries
Years ended/as of March 31

The Overview of Reporting Segments is detailed in Note 4 (Segment Information).

REPORTING SEGMENT	Sales revenue		Core Operating Income (Loss)	
	Millions of yen		Millions of yen	
	2018	2019	2018	2019
Performance Products	¥1,145,932	¥ 1,170,119	¥ 93,995	¥ 68,564
Chemicals	1,177,352	1,270,750	147,868	131,132
Industrial Gases	638,675	732,837	57,467	63,323
Health Care	556,568	545,666	81,227	56,865
Others	205,879	204,072	7,119	7,553
Subtotal	3,724,406	3,923,444	387,676	327,437
Elimination and corporate	—	—	(7,187)	(10,250)
Total	¥3,724,406	¥3,923,444	¥380,489	¥317,187

* Inter-segment revenue and transfers are not included.

REPORTING SEGMENT	Total assets		Depreciation and Amortization	
	Millions of yen		Millions of yen	
	2018	2019	2018	2019
Performance Products	¥1,215,112	¥ 1,216,636	¥ 54,861	¥ 55,661
Chemicals	1,290,102	1,340,129	53,741	59,563
Industrial Gases	1,016,171	1,849,857	45,708	58,554
Health Care	1,167,599	1,171,411	19,049	19,549
Others	961,554	1,002,178	3,018	3,273
Subtotal	5,650,538	6,580,211	176,377	196,600
Adjustments	(949,123)	(1,007,703)	2,518	2,732
Total	¥4,701,415	¥5,572,508	¥178,895	¥ 199,332

REPORTING SEGMENT	Capital Expenditures		R&D Expenditures	
	Millions of yen		Millions of yen	
	2018	2019	2018	2019
Performance Products	¥ 68,301	¥ 65,188	¥ 27,624	¥ 29,655
Chemicals	61,910	70,623	9,989	10,053
Industrial Gases	61,549	72,056	2,989	3,494
Health Care	27,505	17,985	92,140	90,613
Others	3,535	3,729	310	273
Subtotal	222,800	229,581	133,052	134,088
Adjustments	2,389	2,161	5,781	9,748
Total	¥225,189	¥231,742	¥138,833	¥143,836

REPORTING SEGMENT	Employees	
	Number	
	2018	2019
Performance Products	23,601	23,950
Chemicals	8,510	8,168
Industrial Gases	16,746	19,229
Health Care	11,894	11,989
Others	7,586	7,857
Subtotal	68,337	71,193
Corporate	893	827
Total	69,230	72,020

GEOGRAPHIC SEGMENT	Net Sales	
	Millions of yen	
	2018	2019
Japan	¥ 2,589,590	¥ 2,678,735
Overseas	1,134,816	1,244,709
Total	¥ 3,724,406	¥ 3,923,444

GEOGRAPHIC SEGMENT	Core Operating Income (Loss)	
	Millions of yen	
	2018	2019
Japan	¥ 223,165	¥ 165,395
Overseas	157,324	151,792
Total	¥ 380,489	¥ 317,187

OVERSEAS SALES	Millions of yen	
	2018	2019
	Overseas sales	¥1,547,060
Overseas sales as a percentage of consolidated net sales	41.5%	42.4%

Results of Operations

Sales Revenue and Core Operating Income

In the fiscal year ended March 31, 2019, the MCHC Group enjoyed favorable market conditions in Industrial Materials domain during the first half of the fiscal year, despite the impact of national health insurance drug price revision in Japan in April 2018 in the Health Care domain and decelerating demand and higher raw materials costs in Performance Products domain. In the second half, the outlook became uncertain amid concerns about worsening U.S.-China trade friction and an easing of supply and demand in some product areas.

It was against this backdrop that consolidated sales revenue for the fiscal year ended March 31, 2019 increased ¥199.0 billion from a year earlier, to ¥3,923.4 billion. Core operating income decreased ¥63.3 billion, to ¥317.2 billion. The ratio of core operating income to sales revenue was 8.1%, from 10.2% a year earlier.

Results by Segment

Performance Products Segment (Functional Products and Performance Chemicals)

Sales revenue advanced ¥24.2 billion, to ¥1,170.1 billion, but core operating income dropped ¥25.4 billion, to ¥68.6 billion.

Sales revenue remained basically flat in the Functional Products subsegment. This was because sales volumes dwindled for products related to information and electronics, and displays, and other products with demand slowing, principally in the second half, despite higher sales volumes in high-performance engineering plastics and other products for advanced moldings and composites.

Sales revenue rose in the Performance Chemicals subsegment. This reflected favorable market conditions in the

first half for phenol-polycarbonate chain materials in advanced polymers, which outweighed a downturn in the second half. Another positive factor was higher automotive battery materials sales volumes in the new energy business.

Core operating income in this segment was down owing to generally higher raw materials costs, higher fixed expenses, and the impact of scheduled maintenance and repairs at production facilities for phenol-polycarbonate chain materials in advanced polymers.

Chemicals Segment (MMA, Petrochemicals and Carbon Products)

Sales revenue rose ¥93.4 billion, to ¥1,270.7 billion. Core operating income declined ¥16.8 billion, to ¥131.1 billion.

Sales revenue in the MMA subsegment was basically unchanged. This was because a demand slowdown in the second half, particularly in China, offset the impact of favorable MMA monomer and other products market conditions in the first half.

In the Petrochemicals subsegment, sales volumes fell because of the impact of scheduled maintenance and repairs at the ethylene production facility. Sales revenue increased, however, on higher prices in line with increased raw materials costs.

Sales revenue rose in the Carbon Products subsegment because prices increased in the needle coke market amid firm demand for coke and other products.

Core operating income in this segment declined because a widened price spread between raw materials costs and prices of carbon products was outweighed by a greater impact of scheduled maintenance and repairs at petrochemicals product facilities, inventory valuation losses stemming from plunging raw materials costs since the end of the previous year, and a fall in MMA sales volumes.

Industrial Gas Segment (Industrial Gases)

Sales revenue rose ¥94.1 billion, to ¥732.8 billion. Core operating income was up ¥5.8 billion, to ¥63.3 billion.

These gains reflected the solid performances of overseas businesses and the impact of the acquisition of a portion of the European business of Praxair, Inc. of the United States and part of the U.S. hydrogen and carbon monoxide business and related assets of Linde Gas North America LLC.

Health Care Segment (Pharmaceuticals and Life Science)

Sales revenue declined ¥10.9 billion, to ¥545.7 billion. Core operating income dropped ¥24.3 billion, to ¥56.9 billion.

In Pharmaceuticals, sales revenue was down despite higher U.S. sales of *Radicava* for treating amyotrophic lateral sclerosis, owing to the impact of national health insurance price revision in domestic ethical pharmaceuticals in April 2018 and lower royalty revenue.

Core operating income decreased because of lower sales revenue and higher R&D expenditures. Royalty revenue from Novartis Pharma AG of Switzerland for *Gilenya* multiple sclerosis treatment was down, as a portion of the revenue was not recognized under IFRS 15 owing to start of arbitration proceedings.

Others

Sales revenue decreased ¥1.8 billion, to ¥204.1 billion, while core operating income advanced ¥400 million, to ¥7.6 billion.

Non-Recurring Items and Operating Income

In the fiscal year ended March 31, 2019, non-recurring items recorded a loss of ¥19.2 billion, representing a decrease in loss of ¥5.6 billion compared to the previous fiscal year. Key factors were an ¥11.8 billion impairment loss and an ¥8.5 billion loss on sale and disposal of fixed assets.

As a result of these factors, operating income for the fiscal year ended March 31, 2019 was down ¥57.7 billion, to ¥298.0 billion.

Financial Income / Expenses and Income Before Taxes

Financial income rose ¥1.8 billion, to ¥10.2 billion. This was due largely to higher interest and dividend income.

Financial expenses were up ¥100 million, to ¥20.1 billion. This reflected increased interest expense associated with increased interest-bearing debt related to Taiyo Nippon Sanso Corporation's business acquisitions in Europe and the United States.

Income before taxes therefore declined ¥56.0 billion, to ¥288.1 billion.

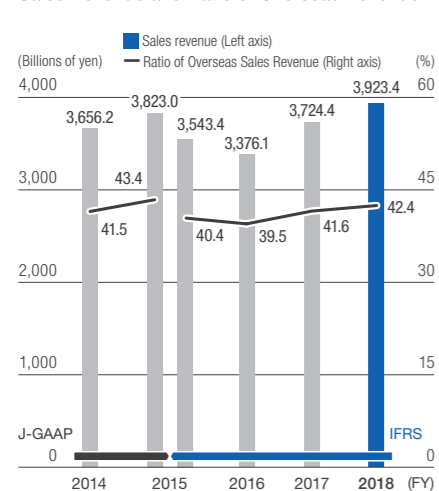
Income Taxes and Net Income

Income taxes in the year under review was ¥71.4 billion, up ¥3.7 billion. This was despite lower income before taxes, and reflected a reversal in deferred tax liabilities following a reduction in U.S. federal income tax rates in the previous year.

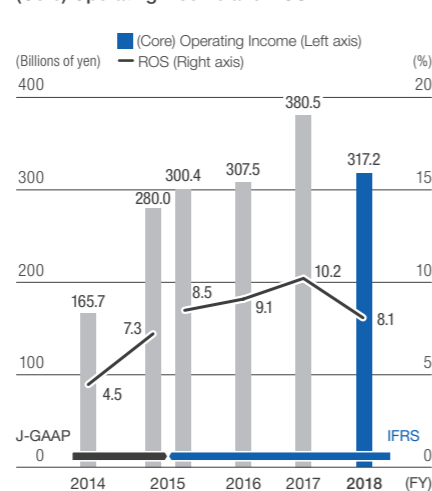
The effective tax rate after applying tax-effect accounting was 24.8%, whose difference from the statutory rate was 5.8 points.

As a result of these factors, net income declined ¥59.7 billion, to ¥216.7 billion. Net income attributable to owners of the parent was ¥169.5 billion, down ¥42.3 billion.

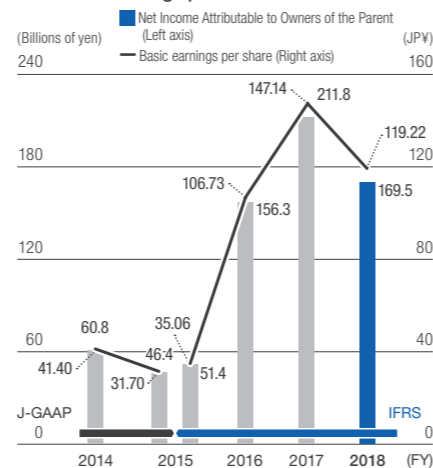
Sales Revenue and Ratio of Overseas Revenue



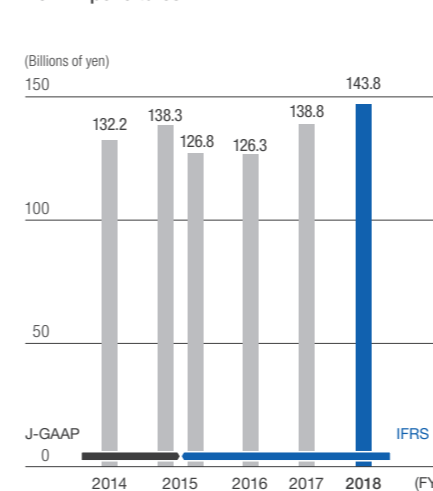
(Core) Operating Income and ROS



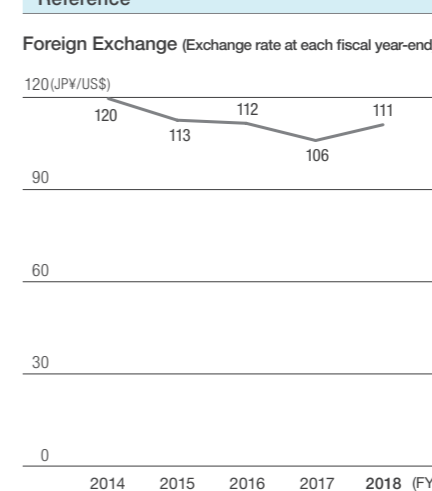
Net Income Attributable to Owners of the Parent and Basic Earnings per Share



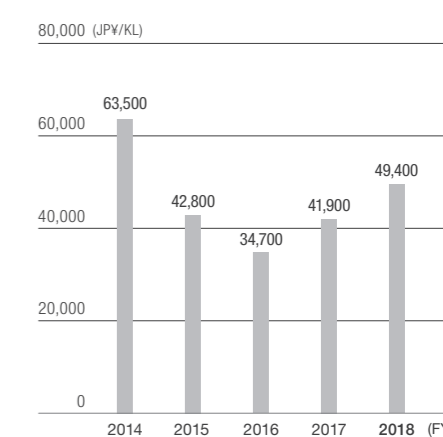
R&D Expenditures



Reference



Domestic Naphtha Average Price of Each Fiscal Year



R&D Expenditures

MCHC Group companies maintain independent R&D programs and collaborate closely with each other by sharing technology and market information, conducting joint research, and undertaking and outsourcing R&D. They are also working proactively with businesses outside the Group to refine and develop technologies. The Group has 4,961 R&D employees. R&D expenditures totaled ¥143.8 billion in the year under review.

Sources of Funds and Liquidity

Under the medium-term management plan *APTSIS 20*, the MCHC Group has set out the basic policy of "Aim to become a corporate group with a high-growth and high-profit business structure through the Performance Products, Industrial Materials and Health Care domains." It has also set basic management indicators comprising core operating income, ROS (ratio of core operating income to sales revenue), net income attributable to owners of the parent, ROE (return on equity attributable to owners of the parent) and net D/E ratio. We seek to improve corporate value while maintaining an appropriate balance between investing in growth businesses, enhancing shareholder returns and strengthening our financial position.

The MCHC Group funds working capital and capital expenditures largely by drawing on internal reserves, loans and bonds. The Group deployed a cash management system to employ its funds efficiently and cut financial expenses. Going forward, management will pursue Group-wide improvements in capital efficiency by consolidating Group fund procurement and management functions.

Financial Position

At March 31, 2019, total assets were ¥5,572.5 billion, up ¥871.1 billion from a year ago. This increase was due largely to an increase in fixed assets and goodwill associated with Taiyo Nippon Sanso Corporation's business acquisitions in Europe and the United States.

Total liabilities were ¥3,546.6 billion, up ¥764.7 billion. This mainly reflected higher interest-bearing debt after procuring funds for these acquisitions.

Total equity was ¥2,025.9 billion, up ¥106.4 billion. The prime factor was an increase in net income, which outweighed the impacts of dividend paid to shareholders and purchase of treasury stock.

As a result of these factors, the ratio of equity attributable to owners of the parent decreased 2.6 points, to 24.7%.

The balance of main account items at March 31, 2019, and details of increases and decreases are as follows.

Assets

Increases in each of the line items below stemmed from Taiyo Nippon Sanso Corporation's business acquisitions in Europe and the United States.

Trade Receivables

Trade receivables increased ¥300.0 million, to ¥855.1 billion.

Inventories

Inventories rose ¥15.3 billion, to ¥623.0 billion.

Property, Plant and Equipment and Intangible Assets

Property, plant and equipment and intangible assets increased ¥463.4 billion, to ¥2,252.1 billion.

Liabilities

Interest-bearing Debt

Interest-bearing debt was ¥2,246.8 billion, up ¥640.7 billion, owing to funding for Taiyo Nippon Sanso Corporation's business acquisitions in Europe and the United States.

Equity

Retained Earnings

Retained earnings increased ¥117.0 billion, to ¥1,073.9 billion, mainly because of the posting of net income attributable to owners of the parent.

Net Cash Provided by (Used in) Financing Activities

Net cash provided by financing activities was ¥519.1 billion, up ¥669.7 billion year on year. The main factors in this change were short- and long-term borrowings and corporate bonds to fund Taiyo Nippon Sanso Corporation's business acquisitions in Europe and the United States.

As a result of these factors, free cash flow, comprising cash flows from operating and investing activities, was outflow of ¥479.5 billion, an increase of ¥541.5 billion. Cash and cash equivalents at March 31, 2019 were ¥321.5 billion, up ¥43.9 billion.

Cash Flows

Net Cash Provided by (Used in) Operating Activities

Net cash provided by operating activities in the fiscal year ended March 31, 2019 was ¥415.6 billion, up ¥17.7 billion year on year, mainly due to the posting of income before taxes.

Net Cash Provided by (Used in) Investing Activities

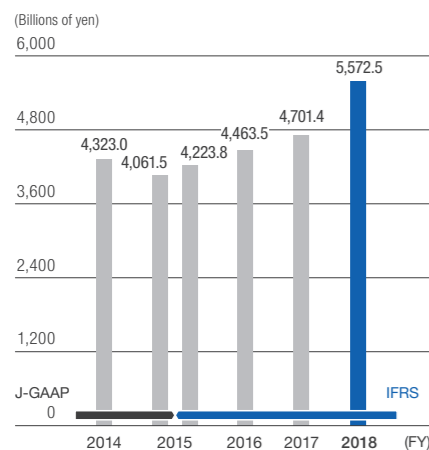
Net cash used in investing activities was ¥895.1 billion, up ¥559.2 billion year on year. This rise stemmed from Taiyo Nippon Sanso Corporation's business acquisitions in Europe and the U.S., which outweighed the impact of asset divestments and sales of businesses in line with business portfolio reforms.

Capital Expenditures

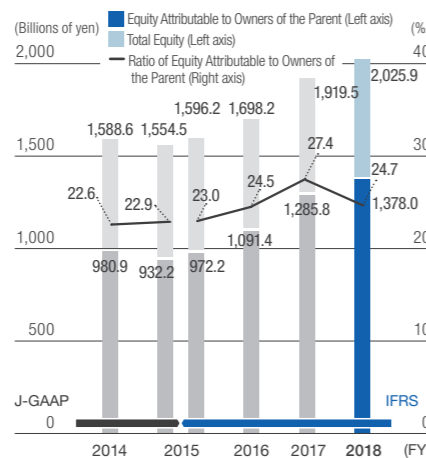
Capital expenditures for the fiscal year ended March 31, 2019 were ¥231.7 billion, up ¥6.5 billion from a year earlier. These expenditures were largely applied to the construction of new facilities or the expansion and renewal of existing facilities, and rationalization investments in other facilities.

New additions of facilities during the year under review included polyvinyl alcohol film production facilities at The Nippon Synthetic Chemical Industry Co., Ltd. (now Mitsubishi Chemical Corporation), and polyester film production facilities at Mitsubishi Chemical Converting Film Wuxi Co., Ltd. in the Performance Products segment. In the Chemicals segment, Japan Polypropylene Corporation installed polypropylene production facilities. In the Industrial Gas segment, Taiyo Nippon Sanso Corporation installed air separation units. In the Health Care segment, Life Science Institute, Inc., set up regenerative medicine cell processing facilities, while Medicago Inc. installed vaccine manufacturing facilities.

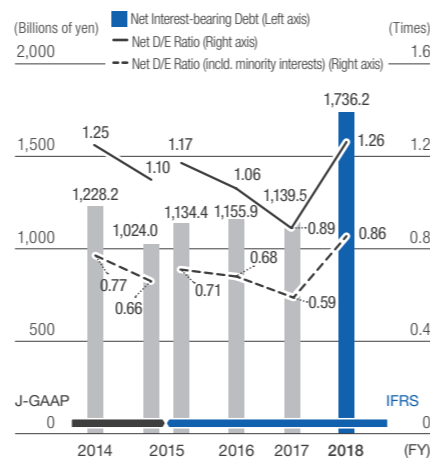
Total Assets



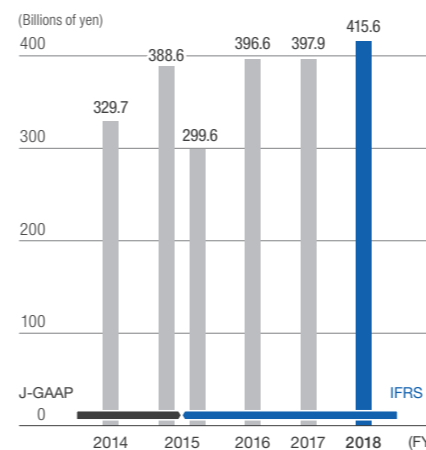
Total Equity and Equity Attributable to Owners of the Parent Ratio of Equity Attributable to Owners of the Parent



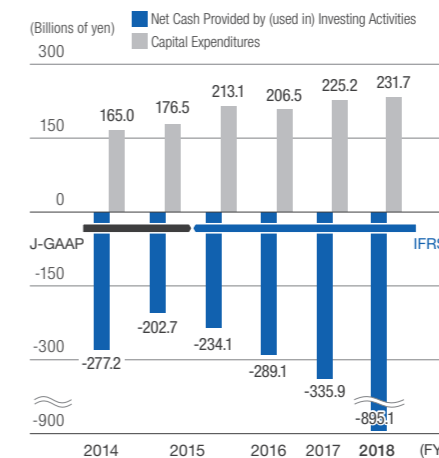
Net Interest-bearing Debt and Net D/E Ratio Net D/E Ratio (incl. minority interests)



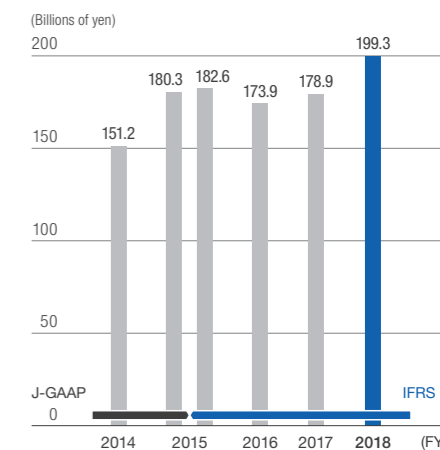
Net Cash Provided by (Used in) Operating Activities



Net Cash Provided by (Used in) Investing Activities and Capital Expenditures



Depreciation and Amortization



Business Risks

The MCHC Group ("the Group") faces the following key risks, which could adversely affect its operating results and financial position. This section contains forward-looking statements based on information deemed relevant at March 31, 2019. The business risks presented are not all-encompassing. In recognition of exposure to risks such as those detailed below, the Group conducts risk assessments once a year. Based on these assessments, risk management systems are established and revised in consideration of the risks faced by specific businesses. In this manner, the Group is working to prevent the risks from occurring and minimize the impacts of such risks be realized.

Changes Affecting Operating Results

Many of the Group's products can be impacted by demand and product markets domestically and abroad; pricing and procurement volumes for crude oil, naphtha, utilities, and other raw materials and supplies; foreign exchange rates; and relevant laws and regulations. The principal assumed risks for each business domain are as follows.

(a) Performance Products Domain (Performance Products segment)

These products must satisfy high-quality and performance requirements, and the Group must develop and supply them at the appropriate times to meet market needs. Group business results ("results") may be adversely affected if market needs change far more than the Group envisages, or if the Group is unable to ensure the timely supply of products that meet market needs, including issues with the availability of raw materials. If supply is interrupted for raw materials that can only be procured from certain areas or specific suppliers, then this could adversely affect results.

The Group outsources production of most information and electronics-related materials to other Asian manufacturers, so disasters or other issues with those facilities could disrupt the supply structure, adversely affecting results. Specifically, film and sheet products rely greatly on demand for liquid crystal display (LCD) panels, so drastic fluctuations in demand for LCD panels could adversely affect results.

(b) Industrial Materials Domain (Chemicals segment and Industrial Gases segment)

In this area, MCHC consumes large volumes of naphtha and other raw materials, and uses considerable amounts of electricity and steam in production processes. For those reasons, drastic fluctuations in the costs of naphtha, fuels, and other resources owing to changes in crude oil prices; the demand and supply balance for raw fuels or naphtha; or the impact of foreign exchange rates could adversely affect results if MCHC is not fully able to adjust its product prices, or if there are delays in such adjustments. MCHC relies on suppliers from certain areas for its raw fuels, and an inability to secure required fuels at the right times could adversely affect results. A worldwide recession or increased production capacity among rivals could adversely affect results if it becomes impossible to maintain the product demand and supply balance or MCHC is unable to generate revenues and earnings or reach goals that are commensurate with its capital expenditures.

MCHC relies heavily on certain business partners for some products in the Industrial Materials domain. For example, the coke business depends greatly on specific steelmakers, so if the steel output of those companies declines, such as because of dramatic fluctuations in the demand and supply of raw steel, the performances of such business partners could adversely affect MCHC's results.

(c) Health Care Domain (Health Care segment)

The results of the pharmaceuticals business are subject to the Group being unable to reach revenue and earnings targets by adequately expanding sales volumes of existing treatments or rationalizing operations in response to lower prices from periodic revisions in National Health Insurance prices of pharmaceuticals. Results are also subject to government policies in each country to constrain medical expenditures.

In general, lead times for drug research and development are far longer than in other industries, whereas the percentage of drugs receiving approval is not high. It is therefore difficult to produce accurate forecasts for the certainty or timing of commercialization. Results are thus subject to drugs not being commercialized as planned. Even where drugs are commercialized, results are subject to sales volumes being lower because of intensified competition with rival offerings, volumes declining on reports of new side effects when usage of these drugs becomes broad-based, generic drugs are commercialized after patents expire, or when approval is withdrawn.

We undertake activities on commission in such fields as joint research and development, product derivations and introductions, manufacturing, and sales. Changes in or cancellations of contracts with business partner, operating downturns or business policy changes among business partners, or delays or slowdowns in pharmaceutical supplies from these enterprises could affect business results.

In clinical testing and diagnostic reagents and instruments, results can be affected by periodic revisions in medical treatment fees and drug price revisions. Results in these businesses are subject to the Group being unable to reach revenue and earnings targets by adequately expanding sales volumes of existing treatments or rationalizing operations in response to lower fees or prices. In the pharmaceutical intermediates and active pharmaceutical ingredients business and the capsules for pharmaceutical products, results are subject to lower sales volumes of customers' pharmaceuticals following revisions in National Health Insurance prices or patent expiries on customer products.

(d) Others

The Group includes companies offering engineering and logistics services. Those companies secure some external orders. Significant fluctuations in demand within and outside the Group, or in market conditions worldwide, could adversely affect results.

(e) Overall Operations

The Group aims to grow, innovate, and leap ahead by orchestrating its strengths. It is therefore reinforcing its structure and implementing growth strategies (including to deliver high performance and added value), while cultivating innovative businesses. Changes in the economic or business climates (including social demands relating to climate change measures and other aspects of the environment) that are far greater than projected could adversely affect results.

The Group's broad overseas activities include exporting products and manufacturing around the world. Risks in countries or regions relating to Group businesses, notably of conflicts, terrorism, civil wars, riots, demonstrations, deteriorating security, and other international geopolitical problems, unforeseeable issues with regulations, taxation, working conditions, customs, and other country risks, large-scale natural disasters, difficulties hiring and retaining employees, inadequate supplies from utilities or other infrastructural shortfalls, changes in the economic and financial climates, or other risks impacting specific countries or regions could adversely affect results.

Interest-Bearing Debt

The Group aims to balance its growth and innovation strategies with efforts to enhance its financial position. MCHC's results could be adversely affected in a situation where interest payments on interest-bearing debt rises, such as because interest-bearing debt increases, interest rates rise, or MCHC's credit rating declines owing to fluctuating Group performances. Results could also be adversely affected if it becomes essential to procure funds to upgrade facilities and the Group must obtain financing at unfavorable terms.

Risks Associated with Acquisitions, Mergers, or Restructuring

Results could be adversely affected if mergers, acquisitions, or joint ventures created in Japan or abroad to expand scale or overhaul MCHC's business portfolio fail to deliver anticipated synergies or other benefits, or if the Group's financial burden thereby increases or, if after mergers or acquisitions, the Group encounters new debt or other issues that it did not initially envisage. Other factors that could adversely affect results include reorganizations as part of business selection and concentration initiatives, through which MCHC withdraws from unprofitable businesses or liquidates affiliates.

Deferred Tax Assets

The Group records deferred tax assets for deductible temporary differences on tax loss carryforwards. Deferred tax assets are calculated based on various predictions and assumptions about future taxable income. If results differ from such predictions and assumptions, or if tax rates change in line with changes to the tax system, MCHC would need to recalculate deferred tax assets, which could adversely affect results.

Impairment of Securities

The Group holds marketable securities, mainly as a non-controlling shareholder in customer companies or financial institutions, to help improve corporate value over the medium and long terms. Major declines in the market values of such securities could adversely affect its financial position.

Impairment of Fixed Assets

Dramatically deteriorating performances or major declines in property values, which could cause the Group to incur impairment losses, adversely affecting results. Although the Group conducts impairment tests on goodwill acquired through business integrations, if carrying amounts exceed recoverable amounts owing to lower profitability, it could incur impairment losses, which could adversely affect results.

Pension and Severance Plans

The Group calculates retirement benefit obligations and expenses for current and former employees based on actuarial assumptions, investment returns on plan assets, and other factors. A decline in the value of pension assets, fluctuations in the interest rate climate, and changes in retirement benefit obligations and expenses owing to changes in the retirement plan and pension systems could adversely affect results and its financial position.

Impact of Inventory Valuations

The Group states inventory assets principally at cost based on the weighted average method. Declines in the costs of naphtha or raw materials during the fiscal period could detract from earnings by affecting relatively expensive inventories at the start of a term, thereby increasing the cost of sales. Earnings would conversely rise if fuel costs rose during the fiscal period. Changes in fuel costs could therefore affect results. Any book value write-down based on lower profitability could adversely affect results.

Changes in Foreign Exchange Rates	<p>The Group endeavors to minimize the short-term impact of fluctuations in foreign currency transactions, primarily for exports and imports, notably by using forward foreign exchange contracts. Changes in exchange rates in the short, medium, and long terms may affect results.</p> <p>The Group engages in production and sales in Asia, Europe, North America, and other locations overseas. It translates sales, expenses, assets, and other items denominated in foreign currencies in such regions into yen in its consolidated financial statements. Even if the foreign currency valuations of such items remain unchanged, the yen equivalents could change after conversion from other currencies, so foreign exchange rate fluctuations could affect the Group's results and financial position.</p>
Laws and Regulations	<p>The Group's operations are subject to related laws and regulations in Japan and abroad. Such laws and regulations may govern security and safety, the environment and chemical substances, pharmaceutical safety policies, and other areas relating to Group operations.</p> <p>The Group maintains voluntary rules that are stricter than legal provisions while pursuing thorough compliance to satisfy laws and regulations in engaging in business activities. Dramatic changes in laws and regulations or strengthened legislation could further restrict the Group's activities or increase its costs. Furthermore, should the Group violate laws or regulations, it could be ordered to halt operations at plants, and trust from society could be lost. All these factors have the possibility of influencing results.</p>
Product Liability	<p>The Group manufactures and sells products that conform with standards as ISO 9001, the international standard for quality management systems. The Group endeavors to prevent product liability problems from arising when launching products or improving quality by previously evaluating such liability risks. The Group cannot guarantee, however, that all of its products will be free of defects. It therefore has product liability insurance to cover possible accidents. Regardless, product defects that could cause major product liability exposure with damages exceeding the range of such insurance could adversely affect results.</p>
Accidents and Disasters	<p>The Group regularly inspects its plants and otherwise endeavors to prevent accidents at facilities. It cannot, however, completely prevent or mitigate accidents at such facilities, nor natural disasters such as earthquakes. Accidents that damage property, cause human suffering or loss of life, or create environmental pollution could adversely impact production activities and reduce social trust in the Group, thereby adversely affecting results. Natural disasters that damage property, cause human suffering or loss of life, or significantly damage or functionally degrade the social infrastructure and chronically affect the Group's activities could affect results.</p>
Information Management	<p>The Group strictly manages corporate and personal information in its possession. Problems resulting from leaks of such information could decrease competitiveness or reduce social trust in the Group, which may adversely affect results. Although the Group has taken various measures to safeguard against cyber attacks, if problems were to arise with the plant control systems of business sites, it would take steps that include adjusting production volumes to maintain safety, which could adversely affect results.</p>
Research and Development	<p>The Group deems research and development as pivotal to supporting sustainable corporate growth, and has long undertaken solid R&D. It intends to deploy resources in a planned and sustainably stable manner from long-term perspectives. Results could be adversely affected, however, if the fruits of R&D are far less than anticipated.</p>
Intellectual Property	<p>The Group takes ample precautions to avoid violating the intellectual property of third parties. Nonetheless, injunctions or damages claims by third parties on the basis of patent or other infringements could adversely affect results.</p>
Litigation	<p>The Group maintains various businesses, as mentioned in Changes Affecting Operating Results. In engaging in business, or in reorganizing or restructuring operations, the Group could face litigation from business partners or other third parties relating to intellectual property or the Group's products. It is impossible to predict or assess the results of such lawsuits, which could adversely affect results.</p> <p>Litigation proceedings to which the Group is currently subject is as follows:</p> <p>Mitsubishi Tanabe Pharma Corporation was a codefendant with the Japanese government in damages lawsuits over blood products tainted with hepatitis C virus. In September 2008, the defendants concluded a basic agreement with nationwide plaintiff groups and their attorneys to resolve this case in response to the Act on Special Measures concerning the Payment of Benefits to Relieve the Victims of Hepatitis C Infected through Specified Fibrinogen Concentrates and Specified Coagulation Factor XI Concentrates. The plaintiffs began dropping litigation against the company, and in April 2009 the company decided to pay costs to the hepatitis C sufferers according to the payment apportionment standards of the above act.</p>

Consolidated Statement of Income

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries
Years ended March 31

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Continuing operations:		
Sales revenue (Notes 4 and 6)	¥ 3,724,406	¥ 3,923,444
Cost of sales	(2,604,344)	(2,821,889)
Gross profit	1,120,062	1,101,555
Selling, general and administrative expenses	(764,317)	(800,843)
Other operating income (Note 9)	19,679	21,462
Other operating expenses (Note 9)	(46,350)	(51,074)
Share of profit of associates and joint ventures (Note 4)	26,637	26,850
Operating income (Note 4)	355,711	297,950
Financial income (Note 10)	8,404	10,243
Financial expenses (Note 10)	(20,038)	(20,137)
Income before taxes	344,077	288,056
Income taxes (Note 11)	(67,715)	(71,327)
Net income	¥ 276,362	¥ 216,729
Net income attributable to:		
Owners of the parent	¥ 211,788	¥ 169,530
Non-controlling interests	64,574	47,199
Earnings per share: (Yen)		
Basic earnings per share attributable to owners of the parent (Note 12)	¥ 147.14	¥ 119.22
Diluted earnings per share attributable to owners of the parent (Note 12)	¥ 136.06	¥ 110.05

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Comprehensive Income

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries
Years ended March 31

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Net income	¥276,362	¥216,729
Other comprehensive income:		
Items that will not be reclassified to profit or loss:		
Net gain (loss) on revaluation of financial assets measured at fair value (Note 25)	9,682	4,743
Remeasurements of defined benefit pensions plans (Note 25)	22,170	(4,482)
Share of other comprehensive income (loss) of associates and joint ventures for using the equity method (Note 25)	—	107
Total items that will not be reclassified to profit or loss	31,852	368
Items that may be subsequently reclassified to profit or loss		
Exchange differences on translation of foreign operations (Note 25)	(13,598)	(5,751)
Net gain (loss) on derivatives designated as cash flow hedges (Note 25)	2,278	(3,152)
Share of other comprehensive income (loss) of associates and joint ventures for using the equity method (Note 25)	582	(2,296)
Total items that may be subsequently reclassified to profit or loss	(10,738)	(11,199)
Total other comprehensive income (net of tax)	21,114	(10,831)
Total comprehensive income	¥297,476	¥205,898
Total comprehensive income attributable to:		
Owners of the parent	¥233,619	¥161,655
Non-controlling interests	63,857	44,243

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Financial Position

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries

Assets	Millions of yen	
	March 31, 2018	March 31, 2019
Current assets:		
Cash and cash equivalents (Note 21)	¥ 277,624	¥ 321,541
Trade receivables (Note 20)	854,804	855,107
Inventories (Note 19)	607,671	623,049
Other financial assets (Note 17)	247,365	248,262
Other current assets (Note 18)	62,050	76,072
Subtotal	2,049,514	2,124,031
Assets held for sale (Note 22)	2,139	17,810
Total current assets	2,051,653	2,141,841
Non-current assets:		
Property, plant and equipment (Note 14)	1,433,509	1,683,354
Goodwill (Note 13)	324,201	648,806
Intangible assets (Note 13)	355,151	568,787
Investments accounted for using the equity method (Note 16)	175,905	183,067
Other financial assets (Note 17)	244,489	228,571
Other non-current assets (Note 18)	36,145	33,573
Deferred tax assets (Note 11)	80,362	84,509
Total non-current assets	2,649,762	3,430,667
Total assets (Note 4)	¥4,701,415	¥5,572,508

The accompanying notes are an integral part of these consolidated financial statements.

		Millions of yen	
		March 31, 2018	March 31, 2019
Liabilities and Equity			
Liabilities	Current liabilities:		
	Trade payables (Note 34)	¥ 488,592	¥ 492,404
	Bonds and borrowings (Note 29)	580,854	1,108,643
	Income tax payable	41,293	31,768
	Other financial liabilities (Note 31)	201,208	222,377
	Provisions (Note 28)	7,463	8,296
	Other current liabilities (Note 33)	127,108	138,089
	Subtotal	1,446,518	2,001,577
	Liabilities directly associated with assets held for sale (Note 22)	364	11,723
	Total current liabilities	1,446,882	2,013,300
	Non-current liabilities:		
	Bonds and borrowings (Note 29)	1,025,268	1,138,108
	Other financial liabilities (Note 31)	29,174	26,755
	Retirement benefit liabilities (Note 27)	110,639	120,816
	Provisions (Note 28)	30,712	28,294
Other non-current liabilities (Note 33)	38,014	41,971	
Deferred tax liabilities (Note 11)	101,236	177,410	
Total non-current liabilities	1,335,043	1,533,354	
Total liabilities	2,781,925	3,546,654	
Equity	Common stock: (Note 23)	50,000	50,000
	Additional paid-in capital (Note 23)	321,111	321,477
	Treasury stock (Note 23)	(43,569)	(63,560)
	Retained earnings (Note 23)	956,946	1,073,873
	Other components of equity (Note 23)	1,262	(3,843)
	Equity attributable to owners of the parent	1,285,750	1,377,947
	Non-controlling interests	633,740	647,907
	Total equity	1,919,490	2,025,854
	Total liabilities and equity	¥4,701,415	¥5,572,508

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Changes in Equity

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries

Years ended March 31

	Common stock	Additional paid-in capital	Treasury stock	Retained earnings
Balance at April 1, 2017	¥50,000	¥ 321,703	¥(43,587)	¥761,364
Net income	—	—	—	211,788
Other comprehensive income (Note 25)	—	—	—	—
Total comprehensive income	—	—	—	211,788
Purchase of treasury stock (Note 23)	—	—	(62)	—
Disposal of treasury stock (Note 23)	—	(77)	80	—
Cash dividends (Note 24)	—	—	—	(38,861)
Share-based payment transactions (Note 26)	—	144	—	—
Share-based payment transactions of subsidiaries (Note 26)	—	—	—	—
Changes in interests in subsidiaries	—	(659)	—	—
Changes in scope of consolidation	—	—	—	1,242
Transfer from other components of equity to retained earnings	—	—	—	21,413
Transfer from other components of equity to non-financial assets, etc.	—	—	—	—
Total transactions with owners	—	(592)	18	(16,206)
Balance at March 31, 2018	¥50,000	¥321,111	¥(43,569)	¥956,946

	Other components of equity				Total	Equity attributable to owners of the parent	Non-controlling interests	Total equity
	Net gain (loss) on revaluation of financial assets measured at fair value	Remeasurements of defined benefit pensions plans	Exchange differences on translation of foreign operations	Net gain (loss) on derivatives designated as cash flow hedges				
Balance at April 1, 2017	¥46,831	¥ —	¥(43,886)	¥(1,027)	¥1,918	¥1,091,398	¥606,799	¥1,698,197
Net income	—	—	—	—	—	211,788	64,574	276,362
Other comprehensive income (Note 25)	6,918	19,208	(6,569)	2,274	21,831	21,831	(717)	21,114
Total comprehensive income	6,918	19,208	(6,569)	2,274	21,831	233,619	63,857	297,476
Purchase of treasury stock (Note 23)	—	—	—	—	—	(62)	—	(62)
Disposal of treasury stock (Note 23)	—	—	—	—	—	3	—	3
Cash dividends (Note 24)	—	—	—	—	—	(38,861)	(40,946)	(79,807)
Share-based payment transactions (Note 26)	—	—	—	—	—	144	—	144
Share-based payment transactions of subsidiaries (Note 26)	—	—	—	—	—	—	41	41
Changes in interests in subsidiaries	—	—	—	—	—	(659)	3,882	3,223
Changes in scope of consolidation	—	—	—	—	—	1,242	107	1,349
Transfer from other components of equity to retained earnings	(2,205)	(19,208)	—	—	(21,413)	—	—	—
Transfer from other components of equity to non-financial assets, etc.	—	—	—	(1,074)	(1,074)	(1,074)	—	(1,074)
Total transactions with owners	(2,205)	(19,208)	—	(1,074)	(22,487)	(39,267)	(36,916)	(76,183)
Balance at March 31, 2018	¥51,544	¥ —	¥(50,455)	¥173	¥ 1,262	¥1,285,750	¥633,740	¥1,919,490

The accompanying notes are an integral part of these consolidated financial statements.

	Millions of yen			
	Common stock	Additional paid-in capital	Treasury stock	Retained earnings
Balance at April 1, 2018	¥50,000	¥ 321,111	¥ (43,569)	¥956,946
Cumulative effects of changes in accounting policies	—	—	—	(85)
Restated balance at April 1, 2018	50,000	321,111	(43,569)	956,861
Net income	—	—	—	169,530
Other comprehensive income (Note 25)	—	—	—	—
Total comprehensive income	—	—	—	169,530
Purchase of treasury stock (Note 23)	—	—	(20,033)	—
Disposal of treasury stock (Note 23)	—	(39)	42	—
Cash dividends (Note 24)	—	—	—	(52,867)
Share-based payment transactions (Note 26)	—	609	—	—
Share-based payment transactions of subsidiaries (Note 26)	—	—	—	—
Changes in interests in subsidiaries	—	(204)	—	—
Business combinations or business divestitures	—	—	—	—
Changes in scope of consolidation	—	—	—	(24)
Transfer from other components of equity to retained earnings	—	—	—	373
Transfer from other components of equity to non-financial assets, etc.	—	—	—	—
Total transactions with owners	—	366	(19,991)	(52,518)
Balance at March 31, 2019	¥50,000	¥321,477	¥(63,560)	¥1,073,873

Other components of equity

	Net gain (loss) on revaluation of financial assets measured at fair value	Remeasurements of defined benefit pensions plans	Exchange differences on translation of foreign operations	Net gain (loss) on derivatives designated as cash flow hedges	Total	Equity attributable to owners of the parent	Non-controlling interests	Total equity
Balance at April 1, 2018	¥51,544	¥ —	¥(50,455)	¥173	¥1,262	¥1,285,750	¥633,740	¥1,919,490
Cumulative effects of changes in accounting policies	—	—	—	—	—	(85)	(61)	(146)
Restated balance at April 1, 2018	51,544	—	(50,455)	173	1,262	1,285,665	633,679	1,919,344
Net income	—	—	—	—	—	169,530	47,199	216,729
Other comprehensive income (Note 25)	4,152	(3,823)	(5,075)	(3,129)	(7,875)	(7,875)	(2,956)	(10,831)
Total comprehensive income	4,152	(3,823)	(5,075)	(3,129)	(7,875)	161,655	44,243	205,898
Purchase of treasury stock (Note 23)	—	—	—	—	—	(20,033)	—	(20,033)
Disposal of treasury stock (Note 23)	—	—	—	—	—	3	—	3
Cash dividends (Note 24)	—	—	—	—	—	(52,867)	(38,025)	(90,892)
Share-based payment transactions (Note 26)	—	—	—	—	—	609	—	609
Share-based payment transactions of subsidiaries (Note 26)	—	—	—	—	—	—	25	25
Changes in interests in subsidiaries	—	—	—	—	—	(204)	5,796	5,592
Business combinations or business divestitures	—	—	—	—	—	—	2,265	2,265
Changes in scope of consolidation	—	—	—	—	—	(24)	(76)	(100)
Transfer from other components of equity to retained earnings	(4,196)	3,823	—	—	(373)	—	—	—
Transfer from other components of equity to non-financial assets, etc.	—	—	—	3,143	3,143	3,143	—	3,143
Total transactions with owners	(4,196)	3,823	—	3,143	2,770	(69,373)	(30,015)	(99,388)
Balance at March 31, 2019	¥51,500	¥ —	¥(55,530)	¥187	¥(3,843)	¥1,377,947	¥647,907	¥2,025,854

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statement of Cash Flows

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Cash flows from operating activities:		
Income before taxes	¥344,077	¥288,056
Depreciation and amortization	178,895	199,332
Share of profit of associates and joint ventures	(26,637)	(26,850)
Interest and dividend income	(7,669)	(9,627)
Interest expense	15,652	18,868
Impairment loss	12,062	17,340
Loss on sales and retirement of property, plant and equipment	10,414	13,824
Provision for loss on business liquidation	—	5,169
Environmental measures costs	3,672	886
Provision for loss on litigation	1,170	626
Gain on sales of shares of subsidiaries and associates	(3,747)	(7,546)
Gain on sales of non-current assets	(4,183)	(3,839)
(Increase) decrease in trade receivables	(80,607)	25,149
(Increase) decrease in inventories	(70,882)	(13,193)
Increase (decrease) in trade payables	51,755	(20,090)
Increase (decrease) in retirement benefit assets and liabilities, net	8,876	(1,324)
Others	18,184	6,783
Subtotal	451,032	493,564
Interest received	2,699	4,816
Dividends received	16,941	27,781
Interest paid	(15,041)	(18,114)
Income tax (paid) received, net	(57,691)	(92,472)
Net cash provided by (used in) operating activities	397,940	415,575
Cash flows from investing activities:		
Purchase of property, plant and equipment	(199,871)	(225,740)
Proceeds from sales of property, plant and equipment	10,268	7,170
Purchase of intangible assets	(28,390)	(4,839)
Purchase of other financial assets	(401,573)	(453,070)
Proceeds from sales/redemption of other financial assets	441,464	438,748
Purchase of investments in subsidiaries	(122,977)	(655,629)
Proceeds from sales of investments in subsidiaries	12,701	16,619
Payments for transfer of businesses	(343)	(50,900)
Net (increase) decrease in time deposits	(55,835)	31,581
Others	8,623	992
Net cash provided by (used in) investing activities	(335,933)	(895,068)
Cash flows from financing activities:		
Net increase (decrease) in short-term borrowings	25,243	428,298
Net increase (decrease) in commercial papers	(16,000)	44,000
Proceeds from long-term borrowings	80,638	213,182
Repayment of long-term borrowings	(148,016)	(122,954)
Proceeds from issuance of bonds	29,828	132,036
Redemption of bonds	(40,000)	(65,000)
Net (increase) decrease in treasury stock	(60)	(20,030)
Dividends paid to owners of the parent	(38,861)	(52,867)
Dividends paid to non-controlling interests	(40,946)	(38,011)
Proceeds from stock issuance to non-controlling interests	5,473	6,548
Others	(7,891)	(6,140)
Net cash provided in (used in) financing activities	(150,592)	519,062

Effect of exchange rate changes on cash and cash equivalents	847	6,207
Net increase (decrease) in cash and cash equivalents	(87,738)	45,776
Cash and cash equivalents at the beginning of the period	363,510	277,624
Net increase (decrease) in cash and cash equivalents resulting from transfer to assets held for sale	(6)	(1,899)
Net increase (decrease) in cash and cash equivalents resulting from change in scope of consolidation	1,640	40
Net increase in cash and cash equivalents resulting from merger and acquisition	218	—
Cash and cash equivalents at the end of the period (Note 21)	¥277,624	¥321,541

The accompanying notes are an integral part of these consolidated financial statements.

Notes to Consolidated Financial Statements

Mitsubishi Chemical Holdings Corporation and Consolidated Subsidiaries

Note 1

Reporting Entity Mitsubishi Chemical Holdings Corporation (the “Company”) is a corporation domiciled in Japan, whose shares are listed on the First Section of the Tokyo Stock Exchange. The registered address of its Head Office is presented on its website (<https://www.mitsubishichem-hd.co.jp/>). The Company’s Consolidated Financial Statements for the years ended March 31, 2019 comprise those of the Company, its subsidiaries and associates, and interests under joint arrangements (collectively, the “Group”). The Group’s three principal domains are Performance Products, Industrial Materials, and Health Care. Further details are presented in Note 4 Segment Information.

Note 2

Basis of Presentation 1. Compliance with IFRS

The accompanying consolidated financial statements of the Group have been prepared in accordance with International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board. The provisions of Article 93 of the Ordinance on Terminology, Forms, and Preparation Methods of Consolidated Financial Statements apply, as the Company meets the requirements for a “Specified Company applying Designated International Financial Reporting Standards” prescribed in Article 1-2 of said ordinance.

2. Approval of Consolidated Financial Statements

The Group’s consolidated financial statements were approved on June 25, 2019, by Hitoshi Ochi, Representative Corporate Executive Officer, President and Chief Executive Officer, and Hidefumi Date, Managing Corporate Executive Officer and Chief Financial Officer.

3. Basis of Measurement

The consolidated financial statements are prepared on a historical cost basis, except for certain financial instruments measured at fair value presented in Note 3 Significant Accounting Policies.

4. Presentation Currency

The consolidated financial statements are presented in Japanese yen, which is the Company’s functional currency, rounded to the nearest million yen.

5. Use of Judgments, Estimates and Assumptions

Management has made a number of judgments, estimates and assumptions relating to the application of accounting policies, reporting of revenues and expenses and assets and liabilities in the preparation of these consolidated financial statements in accordance with IFRS. Actual results may differ from these estimates.

Estimates and underlying assumptions are continually evaluated. The effect of changes to accounting estimates is recognized in the reporting period in which the revision was made and in future periods.

Information regarding judgments, estimates, and assumptions used in applying accounting policies that could materially affect the Company’s consolidated financial statements is included in the following notes:

- Impairment of Non-Financial Assets (Note 13, Goodwill and Intangible Assets, Note 14, Property, Plant and Equipment and Note 15, Impairment Losses)
- Recoverability of Deferred Tax Assets (Note 11, Income Taxes)
- Measurement of Defined Benefit Obligations (Note 27, Retirement Benefits)
- Fair Value of Financial Instruments (Note 35, Financial Instruments)
- Contingent Liabilities (Note 39, Contingent Liabilities)

6. Newly Applied Standards and Interpretations

Main standards and interpretations newly applied by the Group from the year ended March 31, 2019, are as follows.

Standard and Interpretation	Overview of Introduction or Revision
IFRS 15 Revenue from Contracts with Customers	Accounting standards and disclosure methods for revenue recognition have been revised. Specifically, revenue is recognized based on the rights expected to be received in exchange for transferring goods or services to customers.

The impact on the Group's consolidated financial statements of adopting IFRS 15 is immaterial.

The Company estimates that the impact on the consolidated financial statements of adopting IFRS 15 is immaterial. In adopting IFRS 15, the Company employed a retroactive adjustment as a transitional measure to recognize the cumulative effect retrospectively to the adoption date.

Because of the application above, Note 6 Sales Revenue is disclosed.

7. New Standards and Interpretations Not Yet Applied

Standards and interpretations that have not been applied by the Group as of March 31, 2019 because application was not mandatory among key standards and interpretations issued by the date of approval of the consolidated financial statements are as follows.

The adoption of IFRS 16 will increase the carrying amounts of the Group's lease-related assets by around ¥100 billion while increasing lease liabilities by about the same amount. In adopting IFRS 16, the Company employed a retroactive adjustment as a transitional measure to recognize the cumulative effect retrospectively to the adoption date.

Standards and Interpretations	Mandatory Application (Hereafter, Starting Year)	Year of Application by the Group	Overview of Introduction or Revision
IFRS 16 Leases	January 1, 2019	Year ending March 31, 2020	Accounting standards and disclosure methods for handling leases have been revised. Specifically, under a single model, the financial statements must generally reflect asset usage rights and payment obligations for borrower leases exceeding 12 months.

Note 3

Significant Accounting Policies

1. Basis of Consolidation

(1) Subsidiaries

Subsidiaries are entities controlled by the Group. The Group has control over an entity if it has exposure or rights to variable returns from its involvement with the investee and has the ability to affect those returns through its influence over the investee.

In preparing its consolidated financial statements, the Company based the financial statements of each Group company prepared as of the same closing date based on common Group accounting policies. Subsidiaries' financial statements are adjusted, if necessary, when their accounting policies differ from those of the Group.

The Group consolidates entities from the date on which it acquires control until the date on which it loses control.

All intergroup balances, outstanding receivables and obligations, unrealized gains and losses are eliminated on consolidation.

A change in ownership interest of a consolidated subsidiary, without a loss of control, is accounted for as an equity transaction. Differences between adjusted non-controlling interest amounts and fair value are recognized directly as equity attributable to owners of the parent.

In the event of a loss of control, the Group measures and recognizes any remaining investments at fair value. Any gain or loss arising from a loss of control is recognized in profit or loss.

Non-controlling interests in a subsidiary's net assets are recognized separately from those under the Group's control. The comprehensive income of consolidated subsidiaries is attributed to owners of the parent and non-controlling interests even if this results in the non-controlling interests having a deficit balance.

(2) Associates

Associates are entities in which the Group has significant influence over the financial and operational policies but does not have control or joint control. Normally, the Group is assumed to be able to exercise significant influence when it holds 20% to 50% ownership. Other factors considered in assessing whether or not the Group can exercise significant influence include sending any of its officers being on the Board of Directors. In such cases, the Group may be considered to be able to exercise significant influence over an associate even if its investment accounts for less than 20% of voting rights.

The Group accounts for investments in associates under the equity method. Such investments are recognized at cost upon acquisition. After acquisition, the Group's share of net assets of associates is adjusted and recorded in the consolidated statement of financial position.

The consolidated financial statements reflect the Group's share of earnings in associates. If amounts recognized in other comprehensive income of associates change, the Group's share with respect to those changes is also recognized in other comprehensive income.

The Group's consolidated financial statements have been adjusted to eliminate its share in unrealized gains and losses arising from transactions between it and associates.

Associates prepare their financial statements for the same reporting period as the Group, adjusting their accounting policies to align with those of the Group.

In the event that the Group loses significant control over an associate, it assesses and recognizes the remaining investment at fair value as of the day on which it lost such influence. Gains and losses arising from the loss of significant influence are recognized in profit or loss.

In preparing the consolidated financial statements, the requirements of local laws and shareholder agreements made it effectively impossible to match reporting dates of all associates to that of the Group. For certain associates for which it was impracticable to provisionally settle accounts on the Group's reporting date owing to business or other factors, the Group uses relevant provisional financial statements for the period ending December 31. Significant transactions or events between the reporting dates of those associates and the consolidated closing date are reflected in the consolidated financial statements.

(3) Joint Arrangements

A joint arrangement is an arrangement in which unanimous consensus from the parties that have joint control of decision-making over related activities is required.

A joint venture is a joint agreement through which parties with joint control over an arrangement have rights to the net assets of an arrangement.

The Group uses the equity method to account for its equity interests in joint ventures.

A joint operation is one in which parties with joint control of an arrangement have rights to assets and obligations for liabilities relating to the joint arrangement.

If the Group holds an interest in a joint operation, the Group recognizes assets, liabilities, revenues and expenses generated from joint operating activities only to the extent of its interest. Inter-company transactions among the Group's companies as well as receivable and payable balances and unrealized gains and losses arising from such transactions are eliminated.

The principal joint operation is The Saudi Methacrylates Company, in which the Group and Saudi Arabia have a 50-50 interest. That company manufactures methyl methacrylate monomer, acrylic resin, and other offerings.

2. Business Combinations

The Group uses the acquisition method to account for business combinations.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts and adjusts the amounts in a measurement period that does not exceed one year from the acquisition date.

The Group measures the cost of an acquisition as the aggregate of the consideration transferred, measured at acquisition-date fair value and the amount of any non-controlling interest in the acquiree.

For each business combination, the Group measures components of non-controlling interests in the acquiree at fair value or the amounts of non-controlling interests in the acquiree's identifiable net assets.

The Group accounts for acquisition-related costs as expenses in the periods in which such costs are incurred.

When the Group acquires a business, the Group classifies or designates the identifiable assets acquired and liabilities assumed on the basis of the contractual terms, economic conditions and other pertinent conditions as they exist at the acquisition date. In principle, the Group generally measures the identifiable assets acquired and the liabilities assumed at their acquisition-date fair values.

If a business combination is achieved in stages, the Group reassesses the equity of the acquiree before acquisition of control at fair value on the acquisition date, and recognizes the resulting gain or loss in profit or loss. The Group accounts for the equity interest of the acquiree booked in other comprehensive income before the acquisition on the same basis as would be required if the Group had disposed directly of the previously held equity interest.

Goodwill is measured as the difference by which total value recognized as transferred consideration and non-controlling interests exceeds the net value of identifiable assets acquired and liabilities assumed.

If the total amount recognized as transferred consideration and non-controlling interests is less than net amount of identifiable assets acquired and liabilities assumed, the Group recognizes the difference as profit or loss.

After initial recognition, the Group does not amortize goodwill acquired through a business combination, but records goodwill at cost less any accumulated impairment loss. The Group conducts impairment tests annually or when there are signs of impairment.

3. Foreign Currency Translations

The consolidated financial statements of the Group are presented in Japanese yen, which is the Company's functional currency.

In addition, each company in the Group determines its individual functional currency and measures transactions using these functional currencies.

Foreign currency denominated transactions are translated into functional currencies at spot exchange rates as of the transaction dates or at similar rates.

Foreign currency monetary assets and liabilities are translated into the functional currency using the spot exchange rate on the date of end of the consolidated reporting period. Exchange differences arising from translations or settlement are recognized in profit or loss. However, exchange differences arising from financial instruments designated as hedging instruments of net investments in foreign operations (foreign subsidiaries, etc.), financial assets measured through other comprehensive income and cash flow hedges are recognized in other comprehensive income.

The Group translates assets and liabilities of foreign operations using the spot exchange rate at the end of the reporting period, and revenue and expenses using the spot exchange rate on the transaction date or an approximate rate in Japanese yen, respectively. The Group accounts for any exchange differences arising in such retranslation in other comprehensive income.

On the disposal of a foreign operation, accumulated exchange differences related to the foreign operation are recognized in profit or loss in the corresponding period of disposal.

4. Sales Revenue

The Group recognizes sales revenue based on the following five-step model in amounts reflecting the Group's anticipated entitlements in exchange for goods or services transferred to customers.

Step 1: Identify the contract(s) with a customer

Step 2: Identify the performance obligations in the contract

Step 3: Determine the transaction price

Step 4: Allocate the transaction price to performance obligations in the contract

Step 5: Recognize revenue when (or as) the entity satisfies a performance obligation

The Group offers an array of products and services to domestic and foreign customers through its business activities. The Group operates in four business areas centered on four operating companies. They are Mitsubishi Chemical Corporation, Mitsubishi Tanabe Pharma Corporation, Life Science Institute, Inc., and Taiyo Nippon Sanso Corporation. The business segments are Performance Products, Chemicals, Industrial Gases, and Health Care.

Regarding product sales in these businesses, once customers gain control over delivered products and it is determined that the performance obligations are met, sales revenue is recognized upon product delivery.

Sales revenue is measured at the amount of consideration promised in contracts with customers, net of discounts, rebates and returns.

Considerations in product sales contracts are generally collected within one year after control of products transfers to customer, and do not include significant financial elements.

5. Government Grants

Government grants are recognized at fair value when there is reasonable assurance that the Group will comply with grant terms and that the grant will be received.

Government grants related to income are recognized as income on a systematic basis over the periods in which the Group recognizes as expenses the related costs for which the grants are intended to compensate.

Government grants relating to assets are deducted from asset acquisition costs.

6. Borrowing Costs

The Group capitalizes borrowing costs that are directly attributable to the acquisition, construction or production of assets that require considerable time before use as intended or sale as part of the cost of that asset. The Group recognizes all other borrowing costs as expenses in periods incurred.

7. Income Taxes

The Group calculates current tax liabilities or assets for the current and prior periods as amounts that it expects to pay to or recover from taxation authorities. The Group uses tax rates and tax laws enacted or substantively enacted by the end of a reporting period to determine tax amounts.

The Group uses the asset and liability method to record deferred taxes for differences between carrying amounts of assets or liabilities on the accounts at the end of the reporting period and the tax basis (temporary differences).

In principle, the Group recognizes deferred tax liabilities for all future taxable temporary differences. Deferred tax assets are recognized to the extent that it is probably that taxable income will be available against which deductible temporary differences and for tax credits and tax loss carryforwards can be used.

As exceptions, however, the Group does not recognize deferred tax assets or deferred tax liabilities for the following temporary differences:

- The initial recognition of goodwill
- The initial recognition of assets or liabilities in transactions that are not business combinations and do not affect profits in the accounts at the time of transactions or taxable profits or losses.
- Deductible temporary differences arising from investments in subsidiaries and associates, and interests in joint ventures to the extent that it is probable that the timing of the reversal of the temporary difference in the foreseeable future and it is not probable that future taxable profits will be available against which they can be utilized.
- Taxable temporary differences arising from investments in subsidiaries and associates, and interests in joint ventures to the extent that the timing of the reversal of the temporary difference is controlled and that it is probable the temporary difference will not reverse in the foreseeable future.

The Group reviews the carrying amount of deferred tax assets and liabilities (including unrecognized deferred tax assets) at the end of each reporting period. The Group calculates deferred tax and liabilities based on tax rates that have been enacted or substantively enacted by the end of the reporting period, estimating tax rates at the time assets materialize or liabilities are settled.

8. Earnings per Share

The Company calculates basic earnings per share by dividing the net income attributable to ordinary shareholders by the weighted average number of ordinary shares, adjusted for treasury stock during that period. The Company calculates diluted earnings per share by adjusting the effects of all potentially dilutive shares.

9. Cash and Cash Equivalents

Cash and cash equivalents comprise cash on hand, demand deposits, and short-term investments that are readily convertible to cash, which are subject to insignificant risks of changes in value, and whose maturities are three months or less from the date of acquisition.

10. Inventories

The cost of inventories comprises all purchase costs, processing costs, and all costs incurred in bringing the inventories to their present location and condition. Inventories are measured at the lower of acquisition cost and net realizable value. The Company mainly uses the weighted average cost formula to calculate costs. The Company calculates net realizable value by deducting the estimated selling price in the ordinary course of business from the estimated costs required to make a sale.

11. Assets Held for Sale and Discontinued Operations

The Company classifies a non-current asset (or disposal group) as held for sale if its carrying amount is expected to be recovered principally through a sale transaction rather than through continuing use. This applies only if the asset (or disposal group) is available for immediate sale in its present condition and a sale is highly probable within one year. The Company measures a non-current asset (or disposal group) classified as held for sale at the lower of the carrying amount and fair value, less the cost to sell.

The Group does not depreciate or amortize property, plant or equipment or intangible assets classified as held for sale.

Discontinued operations include units that have been disposed of or are classified as held for sale. The Group recognizes an operation as discontinued if it is a Group business and is scheduled for disposal.

12. Property, Plant and Equipment

The Group applies the cost model to measure property, plant and equipment.

The Group carries property, plant and equipment at acquisition cost less accumulated depreciation and accumulated impairment losses.

The acquisition cost includes direct costs of acquisition, estimated costs of dismantlement, removal and restoration, and borrowing costs that satisfy capitalization criteria.

Except for land, property, plant and equipment, less the residual value at the end of the reporting term, is depreciated using the straight-line method.

Depreciation is computed over the following estimated useful lives for the following major classes of assets:

Buildings and structures	3 to 50 years
Machinery, equipment and vehicles	2 to 22 years
Tools, furniture and fixtures	2 to 25 years

13. Intangible Assets

The Group uses the cost model to measure intangible assets.

Intangible assets are stated at acquisition cost less accumulated amortization and impairment losses.

Separately acquired intangible assets are initially recognized at cost. The acquisition cost of an intangible asset acquired in a business combination is measured at fair value at the acquisition date.

Expenditure on an internally generated intangible asset is recognized as an expense when it is incurred, excluding development expenditures that satisfy the criteria for capitalization.

The Group amortizes intangible assets with finite useful lives on a straight-line basis over their useful lives. It tests intangible assets when there are indications of impairment. Amortization periods and methods for intangible assets with finite useful lives are reviewed at year-end. Any changes are applied to the future as changes in accounting estimates.

Amortization is over the following estimated useful lives for the following major classes of intangible assets:

Technology-related intangible assets	4 to 20 years
Customer-related intangible assets	5 to 30 years
Software	3 to 5 years

The Group does not amortize intangible assets with indefinite useful lives, and conducts impairment tests individually or by cash-generating unit (or groups of cash-generating units) annually, and whenever there are indications of impairment.

14. Impairment of Assets

(1) Impairment of Non-Financial Assets

The Group assesses whether indications of asset impairment exist at the end of each reporting period. If there are such indications and annual impairment testing is necessary, the Group estimates recoverable amounts, which are the higher amount of fair value less costs of disposal and value in use. If a recoverable amount of an asset cannot be estimated, the Group estimates the recoverable amount of each cash-generating unit or group of cash-generating units of the asset class. If the carrying amount of an asset exceeds its recoverable amount, the Group recognizes an impairment loss and reduces the carrying amount of the asset to its recoverable amount. In measuring value in use, the Group determines the present value of cash flow projections, discounted by pre-tax rates reflecting current market assessments of the time value of money and risks specific to the asset. The Group estimates cash flow projections using a business plan for five years or less, in principle. Cash flow projections beyond the business plan period use long-term-average growth rates according to individual circumstances.

The Group uses an appropriate valuation model supported by an available fair value index to measure fair value less costs of disposal.

The Group allocates goodwill after acquisition dates to individual or groups of cash generating units expected to benefit from corporate combination synergies.

For goodwill, intangible assets with indefinite useful lives and intangible assets not yet available for use, the Group tests for impairment annually and when there are indications of impairment.

(2) Reversal of Impairment Loss

For assets other than goodwill, at the end of each reporting period the Group evaluates whether assumptions used to measure recoverable amounts have changed for impairment losses recognized in prior periods and if there are indications that such losses have decreased or disappeared.

If such indications exist, the Group reverses impairment losses if recoverable amounts exceed the Group's carrying amounts of assets or cash-generating units. Any reversal is limited to the lower of the estimated recoverable amount or the carrying value that would have been determined, net of accumulated depreciation, had no impairment loss been recognized in prior periods.

Impairment loss reversals are recognized in profit or loss.

Goodwill impairment losses are not reversed.

15. Leases

A lease contract is classified as a finance lease if it transfers substantially all the risks and rewards incidental to ownership of a leased asset to the Group. An operating lease is a lease other than a finance lease.

In finance lease transactions, leased assets and lease obligations are recognized in the consolidated statement of financial position at the lower of the fair value of the leased property or the present value of the minimum lease payments, each determined at the inception of the lease. Lease payments are apportioned between the financial cost and reduction of lease obligations based on the interest method. Financial costs are recognized in profit or loss. Leased assets are depreciated on a straight-line basis over the useful lives or lease term, whichever is shorter.

In operating lease transactions, lease payments are recognized as an expense in the Consolidated Statement of Income on a straight-line basis over the lease terms. Variable lease is charged as expenses in the period when they are incurred.

Determining whether an arrangement is, or contains, a lease is based on the substance of the arrangement regardless of whether it takes the legal form of a lease.

16. Provisions

A provision is recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and the amount of the obligation can be estimated reliably.

Where the effect of the time value of money is material, the provision is measured at the present value of the expenditures expected to be required to settle obligations. The discount rate used in measuring the present value is a pre-tax rate that reflects current market assessments of the time value of money and risks inherent in the liability.

17. Retirement Benefits

The Group operates a defined benefit plan and defined contribution plan as employee retirement benefit plans.

The Group uses the projected unit credit method to determine the present value of its defined benefit obligations and the related current and past service costs for each plan.

The rate used to discount post-employment benefit obligations is determined by referring to market yields at the end of the reporting period on high quality corporate bonds.

The fair value of any plan assets is deducted from the present value of the defined benefit obligation in determining the amount of the net defined benefit liabilities or assets of defined benefit plans.

Remeasurements of liabilities and assets associated with defined benefit retirement plans are recognized in other comprehensive income in the period incurred and immediately reflected in retained earnings. Prior service costs are recognized as expenses in the periods incurred.

The Group recognizes contributions payable to defined contribution plans as expenses at the time of contribution.

18. Capital

(1) Ordinary Shares

The Company allocated the issue price of ordinary shares between common stock and additional paid-in capital.

(2) Treasury Shares

Acquired treasury stock is recognized at cost and deducted from equity, while the difference between the carrying value of treasury stock and its value at the time of sale is recognized in additional paid-in capital.

19. Share-Based Payment

The Company and some subsidiaries employ equity-settled share-based compensation plans.

Under such plans, services received are measured at fair value as of the date capital financial instruments are granted. If granted capital financial instruments are immediately determined, all services received on the grant date is recognized as expenses, that amount being recognized as an increase in equity. If granted capital financial instruments are determined after a certain period of time, they are recognized as expenses over the vesting period from the date granted, that amount being recognized as an increase in equity.

20. Financial Instruments

(1) Financial Assets (Except Derivatives)

(i) Initial Recognition and Measurement

The Group initially recognizes trade receivables at the date of occurrence. The Group initially recognizes all other financial assets on the transaction dates on which the Group becomes a contract party.

Financial assets are classified as financial assets measured at fair value through profit or loss or other comprehensive income and financial assets measured at amortized cost. The Group determines classifications at initial recognition.

Debt financial instruments are classified as financial assets measured at amortized cost if both of the following conditions are met.

- Financial assets are based on a business model where the aim is to hold financial assets to recover contractual cash flows
- Contractual terms of financial assets give rise on specified dates to cash flows that are solely payments of principal and interest on principal amounts outstanding

Debt financial instruments meeting the following conditions and measured at fair value are classified as financial assets measured at fair value through other comprehensive income. Otherwise, they are classified as financial assets measured at fair value through profit or loss.

- Financial assets are based on a business model where the aim is to hold financial assets to collect contractual cash flows and sell assets
- Contractual terms of financial assets give rise on specified dates to cash flows that are solely payments of principal and interest on principal amounts outstanding

Equity instruments other than those for trading purpose are designated as measured at fair value through profit or loss or as measured at fair value through other comprehensive income. Such designations are applied subsequently on a consistent basis.

Except for financial assets measured at fair value through profit or loss, financial instruments are measured at fair value plus transaction costs attributable directly to them.

(ii) Subsequent Measurements

After initial recognition, financial assets are measured based on the following classifications:

(a) Financial Assets Measured at Amortized Cost

Financial assets measured at amortized cost are measured at amortized cost using the effective interest method.

(b) Other Financial Assets

Financial assets other than those measured at amortized cost are measured at fair value.

Changes in the fair value of financial assets measured at fair value are recognized in profit or loss or in other comprehensive income.

Changes in the fair value of equity instruments designated as measured at fair value through other comprehensive income are recognized in other comprehensive income and the amount in other comprehensive income is transferred to retained earnings when equity instruments are derecognized or when the fair value of equity instruments declines significantly.

(iii) Derecognition

The Group derecognizes a financial asset only when the contractual rights to the cash flows from the financial asset expire or when the Group transfers the financial asset and the substantially all the risks and rewards of ownership of the financial asset are transferred.

If the Group neither transfers nor retains substantially all the risks and rewards of ownership of a transferred asset and retains control of the transferred asset, the Group recognizes the residual interest in the transferred asset and the associated liability to be payable to the extent of the Group's continuing involvement.

(iv) Impairment

At each closing date, the Group assesses whether the credit risk on a financial asset or a financial asset group measured at amortized cost or a financial guarantee contract has increased significantly since initially recognizing the impairment of a financial asset or financial guarantee contract.

If, at the closing date, the credit risk of a financial asset or a financial asset group has not increased significantly since initial recognition, the Group measures the loss allowance for that financial asset at an amount equal to 12-month expected credit losses. However, the Group recognizes the expected credit losses of trade receivables over the remaining period from the initial recognition.

If a credit risk has increased significantly since initial recognition, the Group recognizes an expected credit loss over the remaining period as a loss allowance.

The Group assesses whether the credit risk has increased significantly using the change in the risk of default, and assesses whether the default risk has changed mainly using delinquent (past due information).

The Group measures a credit loss using the discounted present value of the difference between the contractual amount receivable and the estimate amount receivable based on the past credit loss.

(2) Financial Liabilities (Except Derivatives)

(i) Initial Recognition and Measurement

Financial liabilities are classified into financial liabilities measured at fair value through profit or loss and financial liabilities measured at amortized cost. The Group determines classifications at initial recognition.

Although all financial liabilities are measured at fair value at initial recognition, financial liabilities measured at amortized cost are measured at cost after deducting, from the fair value, transaction costs that are directly attributable to the financial

liabilities.

(ii) Subsequent Measurement

After initial recognition, financial liabilities are measured based on classifications as follows:

(a) Financial Liabilities Measured at Fair Value through Profit or Loss

Financial liabilities measured at fair value through profit or loss are measured at fair value. After initial recognition, portions of changes in fair value and interest cost attributed to the change in credit risk of the Group are recognized in other comprehensive income, and the balance is recognized in profit or loss.

(b) Financial Liabilities Measured at Amortized Cost

After initial recognition, financial liabilities measured at amortized cost are measured at amortized cost using the effective interest method. Amortization under the effective interest method and gains or losses on derecognition is recognized in profit or loss.

(iii) Derecognition

Financial liabilities are derecognized when the obligation is discharged, canceled or expired, or when they are exchanged with substantially different terms or their terms are modified substantially.

(3) Complex Financial Instruments

The Group measures and initially recognizes hybrid financial instrument liabilities at the fair value of similar liabilities that do not have equity conversion options. Equity is measured and initially recognized at fair value after deducting the fair value of the liabilities of complex financial instruments overall. Direct transaction costs are allocated according to initial carrying amount ratio of liabilities and equity. After initial recognition, complex financial instruments liabilities are measured at amortized cost using the effective interest method. The Company does not remeasure complex financial instrument equity after initial recognition.

(4) Offsetting of Financial Instruments

Financial assets and financial liabilities are offset and presented as a net amount in the consolidated statement of financial position only when there is a legally enforceable right to set off the recognized amounts and the Group intends either to settle on a net basis or to realize the asset and settle the liability simultaneously.

(5) Derivatives and Hedge Accounting

The Group uses derivatives, including forward foreign exchange contracts and interest rate swap contracts, to hedge foreign exchange and interest rate risks. These derivatives are initially measured at fair value when contracts are entered into and are subsequently remeasured at fair value.

Changes in the fair value of derivatives are recognized in profit or loss, although gains or losses on hedging instruments relating to the effective portions of cash flow hedges and hedges of net investments in foreign operations are recognized in other comprehensive income.

At the inception of hedging relationships, the Group formally designates and documents relationships to which hedge accounting applies and the objectives and strategies of risk management for undertaking the hedges. The documentation includes identifying hedging instruments, the hedged items or transactions, the nature of the risks being hedged and how the hedging instrument effectiveness (including its analysis of the sources of hedge ineffectiveness and how it determines the hedge ratio) is assessed in offsetting the exposure to changes in hedged item fair value or cash flows attributable to hedged risks. When designating a hedging relationship and on an ongoing basis, the Group analyses whether a derivative used to a hedge transaction is effective to offset the change in the fair value or the cash flow of a hedged item. The Group specifically determines that a hedge is effective when the economic relationship between the hedged item and the hedging instrument is offset.

Hedges that meet the requirements for hedge accounting are classified in the following categories and accounted for in accordance with IFRS 9 "Financial Instruments".

(a) Fair Value Hedges

Changes in the fair value of derivatives are recognized in profit or loss. For changes in the fair value of hedged items attributable to the hedged risks, carrying amounts of hedged items are adjusted, with changes recognized in profit or loss.

(b) Cash Flow Hedges

The effective portion of gains or losses on hedging instruments is recognized in other comprehensive income, while the ineffective portion is recognized immediately in profit or loss.

Hedging instrument amounts recognized in other comprehensive income are reclassified to profit or loss when the transactions of the hedged items affect profit or loss. Where hedged items result in the recognition of non-financial assets or liabilities, the amounts recognized in other comprehensive income are accounted for as adjustments to the original carrying amount of non-financial assets or liabilities.

When forecast transactions are no longer expected to occur, any related cumulative gain or loss that has been recognized in equity as other comprehensive income is reclassified to profit or loss. When hedging instruments expire, are sold, terminated or exercised without the replacement or rollover of other hedging instruments, or when the hedge designation is revoked due to change in the risk management objective, accumulated amounts that have been recognized in other comprehensive income continue to be recognized in other comprehensive income until the forecast transactions occur.

(c) Hedges of Net Investments in Foreign Operations

Translation differences resulting from hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. The effective portion of gains or losses on hedging instruments is recognized in other comprehensive income. The ineffective portion is recognized in profit or loss. At the time of the disposal of the foreign operations, any related cumulative gain or loss recognized in equity as other comprehensive income is reclassified to profit or loss.

(6) Fair Value of Financial Instruments

The fair value of financial instruments that are traded in active financial markets at the fiscal year-end refers to quoted prices or dealer quotations.

If there is no active market, the fair value of financial instruments is determined referring to appropriate valuation models or prices presented by related financial institutions.

Note 4

Segment Information

1. Overview of Reporting Segments

The Group's reporting segments are the components for which separate financial information is available, and the Board of Directors regularly assesses this information in deciding how to allocate resources and evaluate results. No operating segments or components have been aggregated in preparing the reporting segment information.

The Group operates in four business areas centered on four operating companies. They are Mitsubishi Chemical Corporation, Mitsubishi Tanabe Pharma Corporation, Life Science Institute, Inc., and Taiyo Nippon Sanso Corporation. The business segments are Performance Products, Chemicals, Industrial Gases, and Health Care.

The businesses in each reporting segment are as follows:

Business Domains	Business Segments	Sub Business Segments		
		Functional Products	Businesses	
Performance Products	Performance Products	Functional Products	Information, Electronics and Displays	Optical films, information and electronics materials, and acetyl
			High Performance Films	Packaging and industrial films
			Environment and Living Solutions	Aqua and separator solutions, infrastructure solutions, and agricultural materials
			Advanced Moldings and Composites	High-performance engineering plastics, fibers and textiles, carbon fiber and composite materials, functional moldings and composites, alumina fibers light and metal products
		Performance Chemicals	Advanced Polymers	Performance and engineering polymers and sustainable resources
			High Performance Chemicals	Performance chemicals and materials and food ingredients
			New energy	Lithium-ion battery materials and energy transduction materials
Industrial Materials	Chemicals	MMA	MMA	MMA
		Petrochemicals	Petrochemicals	Basic petrochemicals, polyolefins, and basic chemical derivatives
		Carbon Products	Carbon Products	Carbon products
	Industrial Gases		Industrial gases	
Health Care	Health Care			Ethical pharmaceuticals
				Life science

Accounting policies for reportable segments are identical to those Group accounting policies stated in Note 3, Significant Accounting Policies. Inter-segment sales and transfers are based mainly on prevailing market prices.

2. Revenues and Operating Results for the Group's Reporting Segments

The Group evaluates results based on segment profits.

Year ended March 31, 2018

Millions of yen

	REPORTING SEGMENT					Others (Note 1)	Subtotal	Adjustments (Note 2)	Consolidated
	Performance Products	Chemicals	Industrial Gases	Health Care	Total				
Sales revenue									
External revenue	¥1,145,932	¥1,177,352	¥638,675	¥ 556,568	¥3,518,527	¥205,879	¥3,724,406	¥ —	¥3,724,406
Inter-segment revenue	65,280	83,720	7,543	2,214	158,757	129,947	288,704	(288,704)	—
Total	¥1,211,212	¥1,261,072	¥646,218	¥ 558,782	¥3,677,284	¥335,826	¥4,013,110	¥ (288,704)	¥3,724,406
Segment profit (loss)									
Core operating income (Note 3)	¥ 93,995	¥ 147,868	¥ 57,467	¥ 81,227	¥ 380,557	¥ 7,119	¥ 387,676	¥ (7,187)	¥ 380,489
Segment assets	1,215,112	1,290,102	1,016,171	1,167,599	4,688,984	961,554	5,650,538	(949,123)	4,701,415
Other items									
Depreciation and amortization	54,861	53,741	45,708	19,049	173,359	3,018	176,377	2,518	178,895
Share of profit of investments accounted for using the equity method	10,865	12,946	3,488	4	27,303	(15)	27,288	—	27,288
Investments accounted for using the equity method	61,459	69,327	28,033	16,595	175,414	491	175,905	—	175,905
Capital expenditures	68,301	61,910	61,549	27,505	219,265	3,535	222,800	2,389	225,189

Notes:

- The Others category consists of businesses not included in reporting segments and mainly includes engineering, transportation, and warehousing operations.
- The segment profit (loss) adjustment includes corporate costs of ¥(7,618) million not allocated to reporting segments and inter-segment eliminations of ¥431 million. Corporate costs include expenditures on basin testing, research, and other activities not allocated to reporting segments. The segment assets adjustment includes corporate assets of ¥104,279 million not allocated to reporting segments and inter-segment eliminations of ¥(1,053,402) million. Corporate assets include financial assets not allocated to reporting segments.
- Segment profit (loss) is Operating profit in accordance with IFRS after excluding earnings from non-recurring factors, such as losses from business withdrawals and downsizings, representing core operating income.

Year ended March 31, 2019

Millions of yen

	REPORTING SEGMENT					Others (Note 1)	Subtotal	Adjustments (Note 2)	Consolidated
	Performance Products	Chemicals	Industrial Gases	Health Care	Total				
Sales revenue									
External revenue	¥1,170,119	¥1,270,750	¥732,837	¥ 545,666	¥3,719,372	¥ 204,072	¥3,923,444	¥ —	¥3,923,444
Inter-segment revenue	59,447	73,301	7,504	3,244	143,496	127,929	271,425	(271,425)	—
Total	¥1,229,566	¥1,344,051	¥740,341	¥ 548,910	¥3,862,868	¥ 332,001	¥4,194,869	¥ (271,425)	¥3,923,444
Segment profit (loss)									
Core operating income (Note 3)	¥ 68,564	¥ 131,132	¥ 63,323	¥ 56,865	¥ 319,884	¥ 7,553	¥ 327,437	¥ (10,250)	¥ 317,187
Segment assets	1,216,636	1,340,129	1,849,857	1,171,411	5,578,033	1,002,178	6,580,211	(1,007,703)	5,572,508
Other items									
Depreciation and amortization	55,661	59,563	58,554	19,549	193,327	3,273	196,600	2,732	199,332
Share of profit of investments accounted for using the equity method	8,189	14,692	3,836	12	26,729	82	26,811	—	26,811
Investments accounted for using the equity method	62,524	68,182	34,318	16,536	181,560	1,507	183,067	—	183,067
Capital expenditures	65,188	70,623	72,056	17,985	225,852	3,729	229,581	2,161	231,742

Notes:

- The Others category consists of businesses not included in reporting segments and mainly includes engineering, transportation, and warehousing operations.
- The segment profit (loss) adjustment includes corporate costs of ¥(10,218) million not allocated to reporting segments and inter-segment eliminations of ¥(32) million. Corporate costs include expenditures on basin testing, research, and other activities not allocated to reporting segments. The segment assets adjustment includes corporate assets of ¥95,968 million not allocated to reporting segments and inter-segment eliminations of ¥(1,103,671) million. Corporate assets include financial assets not allocated to reporting segments.
- Segment profit (loss) is Operating profit in accordance with IFRS after excluding earnings from non-recurring factors, such as losses from business withdrawals and downsizings, representing core operating income.

Adjustments to income before tax from segment operating results are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Segment operating results	¥380,489	¥317,187
Gain on sales of shares of subsidiaries and associates	3,683	7,538
Gain on sales of property, plant and equipment	3,628	2,622
Impairment loss	(9,662)	(11,775)
Loss on sales and disposal of fixed assets	(5,556)	(8,542)
Provision for loss on business liquidation	—	(5,169)
Early retirement program expenses	(2,408)	(931)
Environmental measures costs	(1,001)	(886)
Provision for loss on litigation	(1,170)	(626)
Prior service cost	(4,996)	(177)
Cost related to integration of subsidiaries	(3,774)	—
Others	(3,522)	(1,291)
Operating income	355,711	297,950
Financial income	8,404	10,243
Financial expenses	(20,038)	(20,137)
Income before taxes	¥344,077	¥288,056

3. Geographic Information

The breakdown of external sales revenue and non-current assets is as follows:

External sales revenue

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Japan	¥2,177,346	¥2,258,869
U.S.A.	406,730	453,174
PRC	289,083	292,023
Others	851,247	919,378
Total	¥3,724,406	¥3,923,444

Note: Sales revenue are based on the locations of customers.

Non-current assets

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Japan	¥1,215,479	¥1,219,668
U.S.A.	357,269	432,163
Others	548,882	1,257,299
Total	¥2,121,630	¥2,909,130

Notes:

1. Non-current assets are based on the locations of the assets and do not include financial instruments, deferred tax assets and retirement benefit asset.
2. The Others category mainly encompasses increases in property, plant and equipment, intangible assets, and goodwill from European business acquisitions by consolidated subsidiary Taiyo Nippon Sanso Corporation. Details are per Note 5 Business Combinations.

4. Information about Major Customers

This information has been omitted because no external customers account for more than 10% of sales revenue.

Note 5

Business Combinations

Year ended March 31, 2019

(Completion of provisional business combination accounting)

1. Acquisition of NeuroDerm Ltd. by Mitsubishi Tanabe Pharma Corporation

On October 18, 2017, consolidated subsidiary Mitsubishi Tanabe Pharma Corporation acquired all of the outstanding shares (including shares underlying options) of NeuroDerm Ltd., which researches and develops central nervous system drugs to treat Parkinson's Disease and other illnesses. The latter thereby became a wholly owned subsidiary of Mitsubishi Tanabe Pharma Corporation.

The fair values of assets acquired and liabilities assumed were provisional in the previous fiscal year but were finalized in the second quarter of the year ended March 31, 2019. Provisional amounts were corrected as follows.

Assets acquired, liabilities assumed, and goodwill

	Millions of yen	
	Acquisition date (October 18, 2017)	
Current assets:		
Cash and cash equivalents	¥	4,686
Other financial assets		8,705
Other current assets		303
Non-current assets:		
Intangible assets		136,178
Others		217
Acquired assets		150,089
Current liabilities		4,571
Non-current liabilities:		
Deferred tax liabilities		32,692
Liabilities assumed		37,263
Net assets acquired and liabilities assumed		112,826
Goodwill (Note)		11,584

During the second quarter of the year ended March 31, 2019, current liabilities increased ¥874 million following additional analysis of NeuroDerm's fair value, thereby increasing goodwill by ¥874 million.

In line with the completion of initial business combination accounting, the Consolidated Statement of Financial Position for the previous fiscal year was revised retroactively. Goodwill and current liabilities for the previous fiscal year each increased ¥823 million from before the retroactive adjustment.

Note:

Goodwill

Goodwill mainly comprises anticipated synergies and excess earnings capabilities arising from acquisition that do not match specific recognition criteria. Goodwill is not deductible for tax purposes.

(Significant business combinations in the year ended March 31, 2019)

1. Taiyo Nippon Sanso Corporation acquisition of European business of Plaxair of the United States

Consolidated subsidiary Taiyo Nippon Sanso Corporation acquired the European business of Plaxair, Inc., of the United States on December 3, 2018, through subsidiary Nippon Gases Euro-Holding S.L.U. and other entities.

(1) Overview of business combination

1. Names and business descriptions of acquired companies

Name	: Praxair Espana S.L.U. and 36 other entities
Description of business	: Praxair's European operations, including industrial gas businesses in Germany, Spain, Portugal, Italy, Norway, Denmark, Sweden, Netherlands, and Belgium, carbon dioxide businesses in the United Kingdom, Ireland, Netherlands, and France, and helium-related businesses

2. Main reason for business combination

Taiyo Nippon Sanso Corporation aims to enhance its global competitiveness amid an ongoing industry reorganization and solidify its position by pursuing a long-term business vision of generating ¥1 trillion in sales revenue, an operating margin of 10%, and a return on capital employed of more than 10%, deriving more than half of its sales revenues from overseas markets. The acquisition is a major step toward materializing that vision, and also represents a solid, strategically significant investment opportunity.

Europe's industrial gas market ranks second only to North America's, and features a stable competitive climate. Acquiring businesses with market shares in areas that it had yet to tap enable the company to make strong progress in globalizing. While acquiring highly profitable businesses of a certain scale and network (including manufacturing units), it also secures talented people, including top management, and business platforms. Under such business foundations, Taiyo Nippon Sanso Corporation will cultivate products, including by drawing on offerings that are compatible with environmental regulations, while pursuing a policy of strengthening the Group's cross-functional capabilities, including by expanding marketing to global enterprises.

3. Acquisition date

December 3, 2018

4. Method for gaining control of acquired company

Acquisition of shares for cash

5. Percentage of voting rights acquired

100%

(2) Fair value of consideration transferred

	Millions of yen
	Acquisition date (December 3, 2018)
Cash	¥635,847
Cost of the acquisition	¥635,847

(3) Assets acquired, liabilities assumed, non-controlling interests, and goodwill

	Millions of yen
	Acquisition date (December 3, 2018)
Current assets:	
Cash and cash equivalents	¥ 4,354
Trade receivables	32,664
Inventories	8,368
Others	3,681
Non-current assets:	
Property, plant and equipment (Note 1)	190,561
Intangible assets (Note 1)	208,301
Investments accounted for using the equity method	5,998
Others	4,196
Acquired assets	458,123
Current liabilities:	
Trade payables	23,882
Other financial liabilities	13,593
Others	12,254
Non-current liabilities:	
Retirement benefit liabilities	6,942
Deferred tax liabilities	72,444
Others	1,297
Liabilities assumed	130,412
Net assets acquired and liabilities assumed	327,711
Non-controlling interests	2,265
Goodwill (Note 2)	310,401

Although the Company provisionally accounted for the transaction in the third quarter of the year ended March 31, 2019, it completed accounting for the initial business combination in the fourth quarter.

Notes

- Composition of property, plant and equipment and intangible assets
Property, plant and equipment mainly comprised ¥136,460 million in machinery, equipment, and vehicles. Intangible assets of ¥203,900 million were mainly for customers.
- Goodwill
Goodwill mainly comprises anticipated synergies and excess earnings capabilities arising from acquisition that do not match specific recognition criteria. Goodwill is not deductible for tax purposes.

(4) Acquisition-related expenses

Acquisition-related costs were ¥6,722 million, of which ¥2,695 million in selling, general and administrative expenses and ¥548 million in financial expenses were included in the Consolidated Statement of Income for the year ended March 31, 2019. The Consolidated Statement of Financial Position for the year included ¥(771) million in bonds and borrowings in current liabilities and ¥(2,708) million in bonds and borrowings in non-current liabilities. Acquisition-related expenses in the Consolidated Statement of Financial Position were costs of bond issue expenses and debt origination costs from obtaining to acquisition funds deducted from fair value at the time of initial recognition of the bonds and borrowings during the year ended March 31, 2019 that were not posted as financial expenses at the end of the period.

(5) Impact on Group business results

The Consolidated Statement of Income for the year ended March 31, 2019 included sales revenue of ¥55,101 million and net income of ¥6,167 million that the acquired company generated subsequent to the acquisition date.

If the business combination were on April 1, 2018, the start of the year ended March 31, 2019, the Group's pro forma sales revenue would have been ¥4,040,646 million, with net income of ¥226,781 million. The pro forma information has not been audited.

2. Acquisition of hydrogen and carbon monoxide business and related business assets in United States by Matheson Tri-Gas

Through Matheson Tri-Gas, Inc., a wholly owned subsidiary of consolidated subsidiary Taiyo Nippon Sanso Corporation acquired a portion of the hydrogen and carbon monoxide (HyCO) business and related U.S. assets of Linde Gas North America LLC.

(1) Overview of business combination

1. Name of counterparty company and description of business

Name : Linde Gas North America LLC
Description of business: Portion of HyCO business (see note) of Linde Gas North America LLC in the United States

Note: Large-scale supply of hydrogen and carbon monoxide derived from natural gas and other sources with steam reforming and other apparatuses through pipelines to petroleum refining and petrochemical industries

2. Main reason for business combination

Under the Ortus Stage 2 medium-term management plan, Taiyo Nippon Sanso Corporation aims to strategically expand in the gas technology area through mergers and acquisitions, and explored fully entering the HyCO business from the perspective of bolstering its product lineup to strengthen its proposal capabilities. The acquisition will enable the company to materialize that goal, generating the following envisaged benefits for the Taiyo Nippon Sanso Group.

- Secure stable medium- and long-term earnings from on-site supplies of hydrogen and carbon monoxide
- Secure human and technological resources to streamline HyCO business operations
- Strengthening proposal capabilities for new on-site demand (including oil refining and petrochemicals) in the United States

3. Acquisition date: February 27, 2019

4. Method for gaining control of acquired company

A portion of the HyCO business of Linde Gas North America LLC in the United States and related U.S. business assets was acquired for cash by consolidated subsidiary Matheson Tri-Gas, Inc.

(2) Fair value of consideration transferred

	Millions of yen
	Acquisition date (February 27, 2019)
Cash	¥46,133
Cost of the acquisition	¥46,133

(3) Assets acquired, liabilities assumed, and goodwill

	Millions of yen
	Acquisition date (February 27, 2019)
Current assets	¥ 215
Non-current assets:	
Property, plant and equipment (Note 1)	30,875
Intangible assets (Note 1)	8,356
Acquired assets	39,446
Non-current liabilities	498
Liabilities assumed	498
Net assets acquired and liabilities assumed	38,948
Goodwill (Note 2)	7,185

Since initial accounting for the business combination has yet to be completed, the above amounts are provisional fair values based on best estimates. Once additional information on the facts and circumstances as of the acquisition date are obtained, the above amounts could be revised one year after the acquisition date.

Notes:

- Composition of property, plant and equipment and intangible assets
Property, plant and equipment mainly comprised ¥30,851 million in machinery, equipment and vehicles. Intangible assets of ¥8,356 million were mainly customer-related intangible assets.
- Goodwill
Goodwill mainly comprises anticipated synergies and excess earnings capabilities arising from acquisition that do not match specific recognition criteria. Goodwill is tax deductible for fixed periods.

(4) Acquisition related expenses

Acquisition-related expenses were ¥149 million and were included in selling, general and administrative expenses in the Consolidated Statement of Income for the year ended March 31, 2019.

(5) Impact on Group business results

If the business combination were on April 1, 2018, the start of the year ended March 31, 2019, the Group's pro forma sales revenue would have been ¥3,933,102 million, with net income of ¥219,046 million. The pro forma information has not been audited.

Note 6

Sales Revenue

(1) Disaggregation of sales revenue

The Group operates in four business areas centered on four operating companies. They are Mitsubishi Chemical Corporation, Mitsubishi Tanabe Pharma Corporation, Life Science Institute, Inc., and Taiyo Nippon Sanso Corporation. The business segments are Performance Products, Chemicals, Industrial Gases, and Health Care. Progress reports on enhancing overseas sales ratios as a key operational measure go regularly to the Board of Directors. The relationship between geographic and segment revenue described in Note 4 Segment Information is as follows.

Year ended March 31, 2019

	Millions of yen				
	Japan	U.S.A.	PRC	Others	Total
Performance Products	594,161	154,802	101,209	319,947	1,170,119
Chemicals	767,498	76,215	110,702	316,335	1,270,750
Industrial Gases	369,033	177,941	22,128	163,735	732,837
Health Care	405,679	41,425	7,767	90,795	545,666
Others (Note 2)	122,498	2,791	50,217	28,566	204,072
Total	¥2,258,869	¥453,174	¥292,023	¥919,378	¥3,923,444

Notes

- Amounts are shown as sales revenue from external customers.
- The Others category consists of businesses not included in reporting segments and mainly includes engineering, transportation, and warehousing operations.
- Sales revenue is mostly recognized from contracts with customers. Sales revenue recognized from other sources is immaterial.

Performance Products Segment

This segment encompasses the functional products business (information, electronics and displays, high-performance films, environment and living solutions, and advanced moldings and composites) and the performance chemical business (advanced polymers, high-performance chemicals, and new energy). We sell to domestic and overseas customers.

Once customers gain control over products, when products are delivered to customer-designated locations, the legal title and physical possession of products and significant risks associated with product possession and rewards have been transferred, and we accordingly determine at that stage that we have satisfied our performance obligations and recognize sales revenue. Sales revenue from selling these products is measured at transaction prices relating to agreements with customers.

Sales revenue is measured at the amount of consideration promised in contracts with customers, net of discounts, rebates and returns. Rebates and other estimates use the most frequent techniques based on experience. Sales revenue is recognized only to the extent of no possibility of a significant reversal. Considerations in product sales contracts are generally collected within one year after control of products transfers to customer, and do not include significant financial elements.

Chemicals Segment

In the Chemicals segment, we conduct the MMA, petrochemicals, and carbon products businesses, and sell to domestic and overseas customers.

Upon satisfying performance obligations in selling products in these businesses, calculations of transaction prices and payment terms are identical to those of the Performance Products segment.

Industrial Gases Segment

In this segment, our gas business serves the steel, chemical and electronics industries. We manufacture such household items as stainless steel thermoses. We sell to domestic and overseas customers.

Upon satisfying performance obligations in selling products in these businesses, calculations of transaction prices and payment terms are identical to those of the Performance Products segment.

Health Care Segment

Here, we engage in the ethical pharmaceuticals business (researching and developing and manufacturing ethical pharmaceuticals) and the life science business (undertaking clinical testing, diagnostic reagents and instruments, capsules and pharmaceutical processing equipment, active pharmaceutical ingredients and intermediates), selling to domestic and foreign customers.

Upon fulfilling performance obligations in selling products in these businesses, calculations of transaction prices and payment terms are identical to those of the Performance Products segment.

Royalty income generated in the Health Care business is from contracts in which the Group has permitted third parties to produce or sell products or use technology. One-off contract payments are recognized as sales revenue when performance obligations are met at certain points. If such obligations are not met, the transaction is recorded as deferred sales revenue and recognized as sales revenue over a certain period as obligations are met. Milestone payments are recognized only to the extent that significant returns are unlikely after reaching contractual milestones. Running royalties are measured based on contractor sales calculations, etc., and sales revenue is recognized as sales occur. Royalty income is generally received within one year of establishing contractual rights, and does not include significant financing components.

(2) Contract balance

Receivables from contracts with customers, contract assets, and liabilities are as follows.

	Millions of yen	
	As of April 1, 2018	Year ended March 31, 2019
Receivables arising from contracts with customers	851,576	850,802
Contract assets	7,893	12,562
Contract liabilities	16,582	16,234

The Group mainly posts contract assets for compensation from work in progress and posts contract liabilities for advance payments and for deferred sales revenue from derived transactions with customers.

Of sales revenue recognized in the year ended March 31, 2019, ¥10,674 million was included in contract liabilities at the start of the term. Sales revenue recognized from performance obligations satisfied during the year was ¥63,960 million. There were no significant changes in outstanding contract assets and liabilities.

(3) Transaction price allocated to the remaining performance obligations

Total transaction price allocated to the remaining performance obligations and sales revenue recognition periods were as follows. Transactions with estimated contract terms of less than one year are excluded.

	Millions of yen	
	Year ended March 31, 2019	
Due within one year	15,443	
Due after one year	26,317	
Total	¥41,760	

(4) Assets recognized from costs to obtain or fulfill contracts with customers

In the year ended March 31, 2019, no assets were recognized from the costs to obtain or fulfill contracts with customers. As a practical expedient, costs are recognized as expenses when incurred if the amortization period of the asset to be recognized is one year or less.

Note 7

Employee Benefit Expenses The breakdown of employee benefit expenses is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Wages and salaries	¥563,269	¥580,944
Retirement benefit costs	37,196	31,338
Total	¥600,465	¥612,282

Note: Remuneration for key executives is excluded. Remuneration to major executives is as described in Note 37 Related Parties.

Note 8

Research and Development Expenses Research and development expenses recognized in the years ended March 31, 2018 and 2019 were ¥138,833 million and ¥143,836 million, respectively.

Note 9

Other Operating Income and Other Operating Expenses The breakdown of other operating income is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Gain on sales of shares of subsidiaries and associates	¥ 3,747	¥ 7,546
Gain on sales of property, plant and equipment	4,183	3,839
Rent income	2,639	2,285
Others	9,110	7,792
Total	¥19,679	¥21,462

The breakdown of other operating expenses is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Impairment loss	¥12,062	¥17,340
Loss on sales and disposal of fixed assets	10,414	13,824
Provision for loss on business liquidation	—	5,169
Early retirement program expenses	2,408	931
Environmental measures costs	3,672	886
Provision for loss on litigation	1,170	626
Cost related to integration of subsidiaries	3,712	—
Others	12,912	12,298
Total	¥46,350	¥51,074

The provision for loss on business liquidation is as described in Note 22 Assets Held for Sale.

Note 10

Financial Income and Financial Expenses

The breakdown of financial income is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Financial income		
Interest income		
Financial assets measured at amortized cost	¥3,365	¥4,430
Financial assets at fair value through profit or loss	25	—
Dividend income		
Financial assets measured at fair value through other comprehensive income	4,279	5,197
Foreign exchange gains	—	370
Others	735	246
Total	¥8,404	¥10,243

The breakdown of financial costs is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Financial costs		
Interest expenses		
Financial liabilities measured at amortized cost	¥15,652	¥18,868
Foreign exchange losses	2,960	—
Others	1,426	1,269
Total	¥20,038	¥20,137

Note 11

Income Taxes

1. Deferred Tax Assets and Liabilities

As of March 31, 2018 and 2019, significant components of deferred tax assets and liabilities are as follows:

Year ended March 31, 2018

	Millions of yen				
	April 1, 2017	Amounts recognized in profit or loss	Amounts recognized in other comprehensive income	Others (Note)	March 31, 2018
Deferred tax assets:					
Tax loss carryforwards	¥ 64,364	¥ (6,396)	¥ —	¥ (545)	¥ 57,423
Net defined benefit liabilities	38,137	1,808	(8,876)	61	31,130
Property, plant and equipment	17,161	(1,655)	—	(29)	15,477
Employees' bonuses	13,593	1,574	—	(29)	15,138
Inventory	4,420	2,589	—	(3)	7,006
Employees' paid leave	6,814	(48)	—	121	6,887
Others	55,709	(3,488)	(969)	(271)	50,981
Total	¥ 200,198	¥ (5,616)	¥ (9,845)	¥ (695)	¥ 184,042
Deferred tax liabilities:					
Valuation of assets	¥ (46,197)	¥ 1,916	¥ —	¥(37,409)	¥ (81,690)
Property, plant and equipment	(65,407)	15,617	—	(280)	(50,070)
Securities and other investments	(33,149)	(1)	(4,231)	1,681	(35,700)
Retained earnings of foreign subsidiaries	(12,181)	(1,729)	—	—	(13,910)
Others	(28,788)	(3,120)	(451)	8,813	(23,546)
Total	¥(185,722)	¥12,683	¥ (4,682)	¥(27,195)	¥(204,916)
Net deferred tax assets	¥ 14,476	¥ 7,067	¥(14,527)	¥(27,890)	¥ (20,874)

Year ended March 31, 2019

	Millions of yen				
	April 1, 2018	Amounts recognized in profit or loss	Amounts recognized in other comprehensive income	Others (Note)	March 31, 2019
Deferred tax assets:					
Tax loss carryforwards	¥ 57,423	¥ 6,392	¥ —	¥ 254	¥ 64,069
Net defined benefit liabilities	31,130	(1,741)	1,631	1,842	32,862
Property, plant and equipment	15,477	1,641	—	120	17,238
Employees' bonuses	15,138	(369)	—	46	14,815
Inventory	7,006	3,530	—	57	10,593
Employees' paid leave	6,887	582	—	676	8,145
Others	50,981	5,136	1,383	(708)	56,792
Total	¥ 184,042	¥15,171	¥ 3,014	¥ 2,287	¥ 204,514
Deferred tax liabilities:					
Valuation of assets	(81,690)	4,641	—	(67,737)	(144,786)
Property, plant and equipment	¥ (50,070)	¥(13,697)	¥ —	¥(10,415)	¥ (74,182)
Securities and other investments	(35,700)	—	(2,397)	3,789	(34,308)
Retained earnings of foreign subsidiaries	(13,910)	(4,186)	—	—	(18,096)
Others	(23,546)	(3,717)	(303)	1,523	(26,043)
Total	¥(204,916)	¥(16,959)	¥ (2,700)	¥(72,840)	¥(297,415)
Net deferred tax assets	¥ (20,874)	¥ (1,788)	¥ 314	¥(70,553)	¥ (92,901)

Note: Others include exchange differences on translation of foreign operations and changes owing to business combinations, etc.

In recognizing deferred tax assets, the Group considers whether it can use all or part of future deductible temporary differences or unused tax loss carryforwards with respect to expected future taxable income. In evaluating the recoverability of deferred tax assets, the Group considers the planned reversal of deferred tax liabilities, expected future taxable

income, and tax planning. There is a high probability of collecting recognized deferred tax asset benefits based on historical taxable income levels and on expected future taxable income for the period in which it can recognize deferred tax assets.

Future deductible temporary differences and unused tax loss carryforwards (on an income basis), not recognized as deferred tax assets are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Future deductible temporary differences	125,508	106,112
Unused tax loss carryforwards	447,864	374,604

Unrecognized deferred tax assets corresponding to the above are as follows.

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Future deductible temporary differences	34,273	30,172
Unused tax loss carryforwards	61,412	58,308

The breakdowns of tax loss carryforwards not recognized as deferred tax assets (on an income basis) by expiration date are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Due within one year	116,157	65,918
Due after one year and not later than five years	72,398	51,169
Due after five years and not later than 10 years	112,965	93,829
Due after 10 years and not later than 20 years	85,038	95,568
Indefinite	61,306	68,120
Total	¥447,864	¥374,604

As of March 31, 2018 and March 31, 2019, total temporary differences related to undistributed earnings of subsidiaries for which deferred tax liabilities were not recognized were ¥1,055,342 million and ¥1,142,046 million, respectively.

The Group does not recognize deferred tax liabilities related to temporary differences when it can control the timing of the reversal of the temporary differences and it is highly probable that temporary differences will not be reversed in the foreseeable future.

2. Income Taxes

The breakdown of income taxes is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Income taxes	¥74,782	¥69,539
Deferred income taxes	(7,067)	1,788
Total	¥67,715	¥71,327

The President of the United States signed the Tax Cuts and Jobs Act into law on December 22, 2017, thereby lowering the federal corporate tax rate after January 1, 2018. Therefore, deferred tax assets and liabilities subsequent to the third quarter of the year ended March 31, 2018, are calculated based on the effective revised tax rate corresponding to the consolidated fiscal year in which temporary differences are expected to be resolved.

Consequently, income taxes for the year ended March 31, 2018 decreased by ¥12,494 million.

3. Effective Tax Rate Reconciliation Schedule

The Company is principally subject to corporate taxes, resident taxes and business taxes. The statutory effective tax rates that are the bases for these taxes were 30.8% and 30.6% for the years ended March 31, 2018 and 2019, respectively. For overseas subsidiaries, local corporate income taxes are imposed.

A reconciliation of the statutory tax rates to the effective tax rates for the years ended March 31, 2018 and 2019, was as follows:

	Year ended March 31, 2018	Year ended March 31, 2019
Statutory tax rate	30.8%	30.6%
Difference of statutory tax rate in overseas subsidiaries	(3.3)	(5.1)
Share of profit of investments accounted for using the equity method	(2.4)	(2.8)
Tax credits for research and development costs	(2.2)	(1.9)
Unrecognized deferred tax assets	(1.6)	(0.6)
Permanent differences	0.6	1.8
Foreign taxes	0.5	1.0
Impact of lower U.S. federal corporate tax rate	(3.6)	—
Others	0.9	1.8
Effective tax rate	19.7%	24.8%

Note 12

Per Share Information

The bases for calculating basic and diluted earnings per share attributable to owners of the parent were as follows:

	Year ended March 31, 2018	Year ended March 31, 2019
	(Millions of yen)	
Net income attributable to owners of the parent	¥211,788	¥169,530
Adjustment	283	285
Net income used to calculate diluted earnings per share	212,071	169,815
	(Thousands of shares)	
Average number of ordinary shares during period	1,439,338	1,422,018
Impact of potentially dilutive ordinary shares		
Convertible bond-type bonds with subscription rights to shares	118,388	119,685
Subscription rights to shares	955	1,388
Average number of diluted ordinary shares during period	1,558,681	1,543,091
	(Yen)	
Basic earnings per share attributable to owners of the parent	¥147.14	¥119.22
Diluted earnings per share attributable to owners of the parent	¥136.06	¥110.05

Note: In the calculation of basic and diluted net income per share attributable to owners of the parent, the Company stocks held by Board Incentive Plan trust are included in shares of treasury stock deducted in calculating the average number of shares during the period.

Note 13

Goodwill and Intangible Assets

1. Schedule of Goodwill and Intangible Assets

The acquisition cost, accumulated amortization, accumulated impairment losses and carrying amount of goodwill and intangible assets were as follows:

Year ended March 31, 2018

Acquisition cost

	Intangible assets					
	Goodwill	Technology-related intangible assets	Customer-related intangible assets	Software	Other	Total
Balance as of April 1, 2017	¥312,950	¥138,456	¥115,637	¥70,083	¥52,300	¥376,476
Acquisitions	—	17,792	—	7,013	5,996	30,801
Acquisitions through business combinations	13,358	136,266	—	507	15	136,788
Sale or disposal	—	(1,022)	—	(1,844)	(358)	(3,224)
Transfers	—	103	—	28	6,293	6,424
Exchange differences on translation of foreign operations	(2,107)	(8,797)	(2,795)	627	(1,110)	(12,075)
Balance as of March 31, 2018	¥324,201	¥282,798	¥112,842	¥76,414	¥63,136	¥535,190

Accumulated amortization, accumulated impairment losses

Millions of yen

	Intangible assets					Total
	Goodwill	Technology-related intangible assets	Customer-related intangible assets	Software	Other	
Balance as of April 1, 2017	¥—	¥46,199	¥26,554	¥49,868	¥26,686	¥149,307
Amortization	—	6,973	7,081	7,512	2,622	24,188
Impairment losses	—	3,364	—	218	18	3,600
Sale or disposal	—	(973)	—	(1,780)	(262)	(3,015)
Exchange differences on translation of foreign operations	—	(114)	(414)	1,196	5,291	5,959
Balance as of March 31, 2018	¥—	¥55,449	¥33,221	¥57,014	¥34,355	¥180,039

Carrying amount

Millions of yen

	Intangible assets					Total
	Goodwill	Technology-related intangible assets	Customer-related intangible assets	Software	Other	
Balance as of April 1, 2017	¥312,950	¥92,257	¥89,083	¥20,215	¥25,614	¥227,169
Balance as of March 31, 2018	¥324,201	¥227,349	¥79,621	¥19,400	¥28,781	¥355,151

Year ended March 31, 2019

Acquisition cost

Millions of yen

	Intangible assets					Total
	Goodwill	Technology-related intangible assets	Customer-related intangible assets	Software	Other	
Balance as of April 1, 2018	¥324,201	¥282,798	¥112,842	¥76,414	¥63,136	¥535,190
Acquisitions	—	3,192	7,127	7,922	3,149	21,390
Acquisitions through business combinations	334,121	1,688	216,914	2,470	511	221,583
Sale or disposal	—	(4,061)	(2)	(6,981)	(1,790)	(12,834)
Transfers	—	(14)	—	(3)	9	(8)
Exchange differences on translation of foreign operations	(9,516)	8,010	(4,431)	(311)	1,161	4,429
Balance as of March 31, 2019	¥648,806	¥291,613	¥332,450	¥79,511	¥66,176	¥769,750

Accumulated amortization, accumulated impairment losses

Millions of yen

	Intangible assets					Total
	Goodwill	Technology-related intangible assets	Customer-related intangible assets	Software	Other	
Balance as of April 1, 2018	¥—	¥55,449	¥33,221	¥57,014	¥34,355	¥180,039
Amortization	—	7,422	10,595	7,805	4,012	29,834
Impairment losses	—	383	—	165	63	611
Sale or disposal	—	(3,696)	—	(6,808)	(1,755)	(12,259)
Exchange differences on translation of foreign operations	—	1,728	407	(294)	897	2,738
Balance as of March 31, 2019	¥—	¥61,286	¥44,223	¥57,882	¥37,572	¥200,963

Carrying amount

	Intangible assets					Total
	Goodwill	Technology-related intangible assets	Customer-related intangible assets	Software	Other	
Balance as of April 1, 2018	¥324,201	¥227,349	¥79,621	¥19,400	¥28,781	¥355,151
Balance as of March 31, 2019	¥648,806	¥230,327	¥288,227	¥21,629	¥28,604	¥568,787

There were no material internally generated assets in the years ended March 31, 2018 and 2019.

The amortization of intangible assets is included in Cost of sales and Selling, general and administrative expenses in the Consolidated Statement of Income.

The carrying amounts of intangible assets with indefinite useful lives were ¥183,790 million and ¥192,381 million as of March 31, 2018 and March 31, 2019, respectively. The main items were in-process research and development expenses recognized when Mitsubishi Tanabe Pharma Corporation acquired Medicago Inc. in 2013 and NeuroDerm Ltd. in 2017 (both in the Health Care segment), and which were included in Technology-related intangible assets. Given that the assets are at the research and development stage, have yet to obtain marketing approval from regulatory authorities, and cannot be in use, the period in which they could deliver future economic benefits is unforeseeable, so the assets are classified as intangible assets with indefinite useful lives.

2. Significant Intangible Assets

Significant intangible assets in the Consolidated Statement of Financial Position include technology-related intangible assets that the Company obtained in acquiring Mitsubishi Rayon Co., Ltd. (now Mitsubishi Chemical Corporation), in March 2010. The carrying amounts of these intangible assets were ¥20,891 million as of March 31, 2018 and ¥18,254 million as of March 31, 2019. The remaining amortization periods were 6 to 10 years.

The carrying amounts of technology-related intangible assets of Medicago Inc., which Mitsubishi Tanabe Pharma Corporation acquired in September 2013, were ¥25,885 million as of March 31, 2018 and ¥25,967 million as of March 31, 2019. Impairment tests are conducted every year, as these items are classified as intangible assets with indefinite useful lives.

The carrying amounts of customer-related intangible assets of Taiyo Nippon Sanso Corporation, which the Company acquired in November 2014, were ¥30,291 million as of March 31, 2018, and ¥28,187 million as of March 31, 2019. The remaining amortization periods were 9 to 14 years.

The carrying amounts of technology-related intangible assets of NeuroDerm Ltd. which Mitsubishi Tanabe Pharma Corporation acquired in October 2017, were ¥128,338 million as of March 31, 2018 and ¥134,076 million as of March 31, 2019. This item is classified as intangible assets with indefinite useful lives.

The carrying amount of customer-related intangible assets of European businesses which Taiyo Nippon Sanso Corporation acquired in December 2018, was ¥194,267 million as of March 31, 2019. The remaining amortization periods were mainly 29 years.

3. Impairment Losses

The Group has recognized impairment losses of ¥3,600 million during the year ended March 31, 2018 and ¥611 million during the year ended March 31, 2019, in other operating expenses in the Consolidated Statement of Income.

The Company conducts impairment tests at certain times of the year for intangible assets with indefinite useful lives, regardless of whether there are signs of impairment.

In the impairment tests, the recoverable value of intangible assets is measured based on its value in use.

The Company calculates value in use by using cash flow projections based on management-approved business plans. These plans are based on historical experience and external information. Except on justifiable grounds, the plans are, in principle, for up to five years. The Company uses a pretax weighted average cost of capital (discount rate) of 5.5% to 14.8%.

Note 14

Property, Plant and Equipment

The acquisition cost, accumulated depreciation, accumulated impairment losses and carrying amount of property, plant and equipment were as follows:

1. Schedule of property, plant and equipment

Year ended March 31, 2018

Acquisition cost

	Millions of yen					
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Land	Construction in progress	Total
Balance as of April 1, 2017	¥1,075,780	¥2,908,122	¥314,342	¥286,915	¥141,216	¥4,726,375
Acquisitions	28,141	122,020	21,145	1,764	38,172	211,242
Acquisitions through business combinations	2,222	1,887	4,752	944	66	9,871
Sale or disposal	(21,870)	(69,601)	(13,907)	(8,424)	(670)	(114,472)
Transfers	(1,603)	(2,407)	(263)	(7)	(13,894)	(18,174)
Exchange differences on translation of foreign operations	(167)	(9,860)	(8,801)	2,515	(15,462)	(31,775)
Balance as of March 31, 2018	¥1,082,503	¥2,950,161	¥317,268	¥283,707	¥149,428	¥4,783,067

Accumulated depreciation, accumulated impairment losses

	Millions of yen					
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Land	Construction in progress	Total
Balance as of April 1, 2017	¥739,906	¥2,302,687	¥241,587	¥5,241	¥5,273	¥3,294,694
Depreciation	24,746	112,686	17,275	—	—	154,707
Impairment losses	2,347	4,271	80	1,546	218	8,462
Sale or disposal	(19,767)	(63,920)	(13,113)	(1,650)	—	(98,450)
Transfers	(1,897)	(1,524)	23	—	—	(3,398)
Exchange differences on translation of foreign operations	634	(3,644)	(2,452)	2,754	(3,749)	(6,457)
Balance as of March 31, 2018	¥745,969	¥2,350,556	¥243,400	¥7,891	¥1,742	¥3,349,558

Carrying amount

	Millions of yen					
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Land	Construction in progress	Total
Balance as of April 1, 2017	¥335,874	¥605,435	¥72,755	¥281,674	¥135,943	¥1,431,681
Balance as of March 31, 2018	¥336,534	¥599,605	¥73,868	¥275,816	¥147,686	¥1,433,509

Year ended March 31, 2019

Acquisition cost

	Millions of yen					
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Land	Construction in progress	Total
Balance as of April 1, 2018	¥1,082,503	¥2,950,161	¥317,268	¥283,707	¥149,428	¥4,783,067
Acquisitions	31,620	184,832	23,936	1,992	(11,923)	230,457
Acquisitions through business combinations	12,259	171,121	29,263	9,923	8,451	231,017
Sale or disposal	(16,081)	(71,148)	(12,196)	(2,349)	(913)	(102,687)
Transfers	(2,338)	(2,867)	(1,671)	(482)	(12,894)	(20,252)
Exchange differences on translation of foreign operations	(3,038)	(978)	189	(2,680)	707	(5,800)
Balance as of March 31, 2019	¥1,104,925	¥3,231,121	¥356,789	¥290,111	¥132,856	¥5,115,802

Accumulated depreciation, accumulated impairment losses

	Millions of yen					
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Land	Construction in progress	Total
Balance as of April 1, 2018	¥745,969	¥2,350,556	¥243,400	¥7,891	¥1,742	¥3,349,558
Depreciation	25,906	125,004	18,507	—	—	169,417
Impairment losses	6,958	4,418	415	2,283	2,655	16,729
Sale or disposal	(13,906)	(66,379)	(11,416)	(377)	(219)	(92,297)
Transfers	(1,599)	(4,111)	(1,626)	(6)	281	(7,061)
Exchange differences on translation of foreign operations	(3,555)	123	834	(422)	(878)	(3,898)
Balance as of March 31, 2019	¥759,773	¥2,409,611	¥250,114	¥9,369	¥3,581	¥3,432,448

Carrying amount

	Millions of yen					
	Buildings and structures	Machinery and vehicles	Tools, furniture and fixtures	Land	Construction in progress	Total
Balance as of April 1, 2018	¥336,534	¥599,605	¥73,868	¥275,816	¥147,686	¥1,433,509
Balance as of March 31, 2019	¥345,152	¥821,510	¥106,675	¥280,742	¥129,275	¥1,683,354

Depreciation of property, plant and equipment is included in the Cost of sales and Selling, general and administrative expenses in the Consolidated Statement of Income. Expenditure on construction work in progress for property, plant and equipment is included in construction in progress.

2. Leased Assets

The carrying amounts of leased assets included in property, plant and equipment were as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Buildings and structures	¥1,583	¥1,221
Machinery and vehicles	4,101	3,557
Tools, furniture and fixtures	3,309	3,529
Total	¥8,993	¥8,307

Note 15

Impairment Losses In principle, the Group determines its cash-generating units considering operational, production processes, regions, and other factors based on business units. The Group tests idle assets individually to recognize impairment losses.

Impairment losses recognized in the years ended March 31, 2018 and 2019 are as follows. Impairment losses are included in Other operating expenses in the Consolidated Statement of Income.

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Property, plant and equipment		
Buildings and structures	¥ 2,347	¥ 6,958
Machinery and vehicles	4,271	4,418
Tools, furniture and fixtures	80	415
Land	1,546	2,283
Construction in progress	218	2,655
Total of property, plant and equipment	¥ 8,462	¥16,729
Intangible assets	3,600	611
Total impairment losses	¥12,062	¥17,340

The main assets for which impairment losses were recognized are as follows:

Year ended March 31, 2019

Use	Location	Category	Reporting segment	Impairment loss
Pharmaceuticals research facilities	Mitsubishi Tanabe Pharma Corporation's Toda Office (Toda, Saitama Prefecture)	Buildings and land, etc.	Health Care	¥5,271 million

Composition of Impairment Losses

Pharmaceuticals research facilities

¥5,271 million (including ¥3,537 million in buildings and structures, ¥1,720 million in land, and ¥14 million in others)

Consolidated subsidiary Mitsubishi Tanabe Pharma Corporation decided to close its Toda Office in line with a research bases reorganization. Because of the likelihood of the property, plant and equipment of the office becoming idle owing to the closure, its book value has been reduced to the recoverable value. The recoverable amount is measured at ¥4,062 million, representing the fair value, less disposal costs based on the appraised property value. The fair value hierarchy is Level 3.

The carrying amounts of goodwill allocated to cash-generating units (groups of cash-generating units) are as follows:

Millions of yen			
Reporting segment	Cash-Generating Unit (Groups of Cash-Generating Units)	March 31, 2018	March 31, 2019
Performance Products	High-performance engineering plastics	¥ 21,371	¥ 21,029
	Other	28,069	37,036
	Total	¥ 49,440	¥ 58,065
Chemicals	MMA	¥ 36,813	¥ 36,813
	Other	2,863	2,887
	Total	¥ 39,649	¥ 39,700
Industrial Gases	Industrial gases	¥142,902	¥459,013
Health Care	Ethical Pharmaceuticals	¥ 58,742	¥ 59,246
	Pharmaceutical formulation materials	33,295	32,626
	Other	173	156
	Total	¥ 92,210	¥ 92,028
Total		¥324,201	¥648,806

The recoverable amount of goodwill in cash-generating units and groups of cash generating units is measured by the value in use.

The value in use is based on a management-approved five-year plan reflecting past experience and external source of information. After considering future uncertainties after the five-year period, the Company assumed a zero growth rate, with value equaling cash flows in the fifth year.

The discount rates used for measuring recoverable value are as follows:

Reporting segment	Cash-Generating Unit (Groups of Cash-Generating Units)	March 31, 2018	March 31, 2019
Performance Products	High-performance engineering plastics	7.5%	8.1%
Chemicals	MMA	6.3%	7.7%
Industrial Gases	Industrial gases	6.3%	7.7%
Health Care	Ethical pharmaceuticals	6.1%	5.5%
	Pharmaceutical formulation materials	6.1%	6.5%

It was possible that the recoverable amount of goodwill allocated to pharmaceutical formulation materials would equal the carrying amount if the discount rate rose 0.8% in the previous fiscal year. If the discount rate increased by 1.9% in the year ended March 31, 2019, the recoverable amount could have equaled the carrying amount.

Note 16

Individually Insignificant Investments Accounted for Using Equity Method

The carrying amounts of individually insignificant investments in joint ventures accounted for using the equity method are as follows:

Millions of yen		
	As of March 31, 2018	As of March 31, 2019
Carrying amounts of investments in joint ventures	¥89,109	¥92,615

Equity in earnings of joint ventures accounted for using the equity method for total comprehensive income is as follows:

Millions of yen		
	Year ended March 31, 2018	Year ended March 31, 2019
Share of profit using equity method	¥17,390	¥14,219
Share of other comprehensive income using equity method	507	(1,180)
Share of total shareholders' equity in total comprehensive income	¥17,897	¥13,039

Carrying amounts of individually insignificant investments in associates accounted for using the equity method are as follows:

Millions of yen		
	As of March 31, 2018	As of March 31, 2019
Carrying amounts of investments in associates	¥86,796	¥90,452

Equity in earnings of associates accounted for using the equity method for total comprehensive income is as follows:

Millions of yen		
	Year ended March 31, 2018	Year ended March 31, 2019
Share of profit using equity method	¥9,247	¥12,631
Share of other comprehensive income using equity method	75	(1,009)
Share of total shareholders' equity in total comprehensive income	¥9,322	¥11,622

Note 17

Other Financial Assets

The breakdown of other financial assets is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Stocks and investments	¥200,347	¥192,413
Certificate of deposits	98,000	129,500
Accounts receivable	41,235	41,507
Time deposits	65,563	36,560
Bonds	31,710	30,000
Other	57,047	48,403
Allowance for doubtful accounts	(2,048)	(1,550)
Total	¥491,854	¥476,833
Current assets	¥247,365	¥248,262
Non-current assets	244,489	228,571
Total	¥491,854	¥476,833

Stocks and investments are classified mainly equity financial assets measured at fair value through other comprehensive income. Certificate of deposits, accounts receivable, time deposits and bonds are classified financial assets mainly measured at amortized cost.

The major issues and fair values of equity financial assets measured at fair value through other comprehensive income are as follows:

As of March 31, 2018

Company name	Millions of yen
TOHO HOLDINGS CO., LTD.	¥8,955
SUZUKEN CO., LTD.	6,804
JFE Holdings Corporation	5,515
Alfresa Holdings Corporation	5,271
Mitsubishi UFJ Financial Group, Inc.	4,997
Tosoh Corporation	4,649
MEDIPAL HOLDINGS CORPORATION	4,634
ONO PHARMACEUTICAL CO.,LTD.	3,617
Azbil Corporation	3,469
KOATSU GAS KOGYO CO., LTD.	2,957

As of March 31, 2019

Company name	Millions of yen
SUZUKEN CO., LTD.	¥9,924
TOHO HOLDINGS CO., LTD.	9,873
Alfresa Holdings Corporation	7,011
MEDIPAL HOLDINGS CORPORATION	5,591
JFE Holdings Corporation	4,833
Tosoh Corporation	3,834
Mitsubishi UFJ Financial Group, Inc.	3,481
Daicel Corporation	3,085
KOATSU GAS KOGYO CO., LTD.	2,862
Mitsubishi Research Institute, Inc.	2,790

As well as the assets above, the Group holds financial assets measured at fair value through other comprehensive income for which quoted prices in active markets are unavailable, mainly comprising stocks related to the chemicals and oil refining sectors.

As stocks are held mainly to maintain and strengthen business and collaborative ties and financial transactions, they are designated as equity financial assets measured at fair value through other comprehensive income.

The Company endeavors to enhance the efficiency and effective use of its assets by selling

(derecognizing) equity financial assets measured at fair value through other comprehensive income. Fair values upon sales and cumulative gains or losses on sales are as follows. Cumulative gains or losses (after tax) recognized in other components of equity are transferred to retained earnings at the time of sale.

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Fair value	¥17,801	¥15,148
Cumulative gains or losses	5,254	7,989

Dividend income from equity financial assets measured at fair value through other comprehensive income is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Derecognized financial assets	¥ 110	¥ 287
Financial assets held at year-end	4,169	4,910

Note 18

Other Assets

The breakdown of other assets is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Accrued income tax	¥24,821	¥31,510
Prepaid expenses	23,564	28,318
Net defined benefit assets	27,376	25,390
Advance payment	7,207	7,258
Other	15,227	17,169
Total	¥98,195	¥109,645
Current assets	62,050	76,072
Non-current assets	36,145	33,573
Total	¥98,195	¥109,645

Note 19

Inventory

The breakdown of inventory is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Finished goods	¥354,129	¥365,278
Raw materials and supplies	176,985	177,863
Work in process	76,557	79,908
Total	¥607,671	¥623,049

Inventories measured at net realizable value as of March 31, 2018 and March 31, 2019 were ¥78,463 million and ¥96,463 million, respectively.

In the years ended March 31, 2018 and 2019, write-downs of inventories recognized as expenses were ¥6,687 million and ¥7,483 million, respectively.

Note 20

Trade Receivables The breakdown of trade receivables is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Accounts receivable	¥859,469	¥863,364
Allowance for doubtful accounts	(4,665)	(8,257)
Total	¥854,804	¥855,107

Trade receivables are classified as financial assets measured at amortized cost.

Note 21

Cash and Cash Equivalents The breakdown of cash and cash equivalents is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Cash and deposits	¥205,934	¥219,968
Short-term investments	71,690	101,573
Total	¥277,624	¥321,541

Note 22

Assets Held for Sale The breakdowns of assets held for sale and directly related liabilities are as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Assets held for sale:		
Cash and cash equivalents	¥ 253	¥ 2,152
Trade receivables	353	5,165
Inventories	390	7,359
Property, plant and equipment	693	1,782
Other financial assets	407	532
Others	43	820
Total	¥2,139	¥17,810
Liabilities related directly to assets held for sale:		
Trade payables	¥ 292	¥ 2,090
Other financial liabilities	23	3,563
Provision	—	5,169
Others	49	901
Total	¥ 364	¥ 11,723

Assets held for sale and directly related liabilities as of March 31, 2019, were the recording media and other global businesses of the Verbatim Group, as subsidiary of Mitsubishi Chemical Media Co., Ltd. (MCM), a consolidated subsidiary of the Group in the performance products segment, and covered sales of assets related to those businesses of MCM.

Assets held for sale and liabilities related directly to them are classified as held for sale based on a resolution of the Corporate Executive Officers Committee on March 28, 2019.

On June 14, 2019, MCM entered into a transfer agreement relating to the above business with CMC Magnetics Corporation of Taiwan to strengthen portfolio management. The fair value is based on the price negotiated with the seller. The hierarchy is Level 3.

Of the difference between the fair value (expected selling price) after deducting selling costs and the book value, the estimated loss exceeding the book value of non-current assets is posted as a provision for loss on business liquidation.

As of March 31, 2018 and 2019, the amount of other components of equity relating to assets held for sale was ¥(264) million and ¥(528) million, respectively.

Note 23**Capital****1. Common stock and Treasury Stock**

Number of shares authorized and issued is as follows:

	Thousands of shares	
	Year ended March 31, 2018	Year ended March 31, 2019
Number of shares authorized	6,000,000	6,000,000
Number of shares issued:		
At the beginning of the period	1,506,288	1,506,288
Increase (decrease)	—	—
At the end of the period	1,506,288	1,506,288

The Company's shares are ordinary shares without par value. The shares issued were fully paid.

Changes in the number of shares of treasury stock during the year are as follows:

	Thousands of shares	
	Year ended March 31, 2018	Year ended March 31, 2019
At the beginning of the period	67,025	66,902
Increase (note 1)	57	19,584
Decrease (note 2)	(180)	(84)
At the end of the period	66,902	86,402

Notes:

1. An increase in the number of shares of treasury stock in the year ended March 31, 2018 was due to purchases of shares of less than one unit.

An increase in the number of shares of treasury stock in the year ended March 31, 2019 was due to the acquisition of 19,549,000 shares through a resolution of the Board of Directors and the purchase of 35,000 shares of less than one unit.

2. A decrease in the number of shares of treasury stock in the year ended March 31, 2018 was due to the payment of 179,000 shares through the exercise of stock options and the sale of 1,000 shares of less than one unit.

A decrease in the number of shares of treasury stock in the year ended March 31, 2019 was due to the payment of 71,000 shares through the exercise of stock options, 9,000 shares from the Board Incentive Plan trust, and the sale of 3,000 shares of less than one unit.

3. The Company stocks held by the Board Incentive Plan trust are included.

March 31, 2018 – March 31, 2019 3,285,000 shares

2. Additional paid-in capital and Retained Earnings

Additional paid-in capital comprises amounts arising from capital transactions that are not included in common stock. The main component is legal capital surplus and other capital surplus. Retained earnings comprise legal retained earnings and other retained earnings.

The Japanese Company Law mandates that at least half of paid-in capital be appropriated as common stock and the rest be appropriated as a legal reserve within the legal capital surplus. Under that law, the legal capital surplus can be incorporated in common stock by resolution at a shareholders' meeting.

Amounts classified as equity elements at the time of issuance of convertible bond type bonds with stock acquisition rights are included in other capital surplus as a capital element of compound financial products.

That law requires that 10% of the surplus appropriated for dividends be retained until the total amount of the legal capital surplus and legal retained earnings reaches a quarter of the amount of common stock. The accumulated legal retained earnings can be appropriated for deficit disposition, and legal retained earnings may be available for dividends by resolution at a shareholders' meeting.

3. Other Components of Equity

Other components of equity are as follows:

(Financial Assets Measured at Fair Value through Other Comprehensive Income)
Unrealized gains on financial assets are measured at fair value through other comprehensive income.

(Remeasurement of Defined Benefit Pension Plans)

This remeasurement is for differences between actuarial assumptions at the beginning of the year and actual experience and the effects of changes in actuarial assumptions. This amount is recognized in other comprehensive income when it occurs and is immediately transferred from other components of equity to retained earnings.

(Exchange Differences on Translation of Foreign Operations)

These adjustments result from consolidating the financial statements of foreign operations.

(Effective Portion of Net Change in Fair Value of Cash Flow Hedges)

This is the cumulative amount of effective portions of hedges from gains or losses arising from changes in the fair value of hedging instruments relating to cash flow hedges.

Note 24**Dividends**

Dividends paid to shareholders are as follows:

Year ended March 31, 2018

Date of approval	Resolution approved by	Type of shares	Amount (Millions of yen)	Amount per share (Yen)	Entitlement date	Effective date
May 17, 2017	Board of Directors	Common stock	¥17,271	¥12	March 31, 2017	June 6, 2017
November 2, 2017	Board of Directors	Common stock	¥21,590	¥15	September 30, 2017	December 4, 2017

Year ended March 31, 2019

Date of approval	Resolution approved by	Type of shares	Amount (Millions of yen)	Amount per share (Yen)	Entitlement date	Effective date
May 16, 2018	Board of Directors	Common stock	¥24,470	¥17	March 31, 2018	June 5, 2018
November 1, 2018	Board of Directors	Common stock	¥28,463	¥20	September 30, 2018	December 4, 2018

Note: Total dividends from a resolution of the Board of Directors on November 1, 2018, included ¥66 million in dividends of the Company stock held by the Board Incentive Plan trust.

Dividends with a record date in the year ended March 31, 2019, with an effective date in the following fiscal year are as follows:

Year ended March 31, 2019

Date of approval	Resolution approved by	Type of shares	Amount (Millions of yen)	Paid from	Amount per share (Yen)	Entitlement date	Effective date
May 22, 2019	Board of Directors	Common stock	¥28,463	Retained earnings	¥20	March 31, 2019	June 4, 2019

Note: Total dividends included ¥66 million in dividends of the Company stock held by the Board Incentive Plan trust.

Note 25**Other Comprehensive Income**

Changes in each item of other comprehensive income during the year are as follows:

	Year ended March 31, 2018	Millions of yen Year ended March 31, 2019
Financial assets measured at fair value through other comprehensive income:		
Amounts arising during period	¥ 13,929	¥ 7,629
Tax effects	(4,247)	(2,886)
Net amount	¥ 9,682	¥ 4,743
Remeasurements of defined benefit pension plans:		
Amounts arising during period	¥ 31,452	¥ (6,227)
Tax effects	(9,282)	1,745
Net amount	¥ 22,170	¥ (4,482)
Exchange differences on translation of foreign operations:		
Amounts arising during period	¥ (13,713)	¥ (6,848)
Reclassification adjustments	166	1,032
Tax effects	(51)	65
Net amount	¥ (13,598)	¥ (5,751)
Effective portion of net change in fair value of cash flow hedges:		
Amounts arising during period	¥ 1,157	¥ (3,220)
Reclassification adjustments	2,068	(1,322)
Tax effects	(947)	1,390
Net amount	¥ 2,278	¥ (3,152)
Share of other comprehensive income (loss) of investments accounted for using equity method:		
Amounts arising during period	¥ 596	¥ (2,193)
Reclassification adjustments	(14)	4
Net amount	¥ 582	¥ (2,189)
Total other comprehensive income	¥ 21,114	¥(10,831)

Note 26**Share-based Payment****1. Stock Option System**

(1) Details of Equity-Settled Share-Based Compensation Plan

Based on a resolution of the Remuneration Committee, the Company issues share-based compensation stock options as a form of performance-related payment to its corporate executive officers (directors excluding outside directors until the year ended March 31, 2015. The same shall apply hereinafter) and executive officers who will share with shareholders not only the benefits due to a rise in the Company's stock price but also losses due to a decline in the stock price as an incentive to boost corporate performance and enhance medium- to long-term corporate value taking into consideration the Company's financial results for each fiscal year as well as the status of achieving of business targets by the corporate executive officers or executive officers (including those who have the retired) based on their degree of contribution, etc.

All stock options that the Company issues are equity-settled share-based compensation. There are no vesting conditions. The exercise period is principally 20 years from the date of grant, and is, in principle, effective for 5 years from the day after the first year after recipients lose their status as director, executive officer, executive, or corporate auditor of the Company and/or its subsidiaries.

In line with the deployment of a share-based compensation plan using the Board Incentive Plan trust, there will be no new share-based compensation stock option grants from the fiscal year ending March 2020.

(2) Changes in the Number of Stock Options

	Number of shares	
	Year ended March 31, 2018	Year ended March 31, 2019
Outstanding at the beginning of the period	937,100	921,300
Granted	162,750	178,500
Exercised	(178,550)	(71,300)
Forfeited	—	—
Expired	—	—
Outstanding at the end of the period	921,300	1,028,500
Exercisable at the end of the period	91,550	123,350

The exercise price for all stock options is ¥1 per share.

The weighted average share prices for exercised stock options were ¥1,016.7 and ¥967.8 in the years ended March 31, 2018 and 2019, respectively.

The weighted average remaining contractual years of stock options outstanding at year-end were 13.2 years and 11.4 years as of March 31, 2018 and 2019, respectively.

(3) Fair Value of Stock Options

The weighted average fair value of stock options granted in years ended March 31, 2018 and 2019 as of the measurement date were ¥887 and ¥834, respectively.

The Company employs the Black-Scholes model to calculate the fair value of stock options, using the following assumptions.

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Share price	¥974.2	¥954.7
Share price volatility (note 1)	32.917%	31.808%
Expected period (note 2)	4.52years	3.98years
Expected dividends (note 3)	¥20 per share	¥32 per share
Risk-free interest rate (note 4)	(0.070)%	(0.102)%

Notes: 1. Calculated based on the daily share price over the past 4.52 years and 3.98 years for the fiscal years ended March 31, 2018 and 2019, respectively.

2. Using a period up to the expected average exercise time from the grant date.

3. Based on the latest dividends for each fiscal year.

4. The yield on Japanese government bonds for the expected period.

(4) Share-Based Compensation Expenses

Stock option-related expenses were ¥144 million and ¥149 million in the years ended March 31, 2018 and 2019, respectively, and were posted in Selling, general and administrative expenses in the Consolidated Statement of Income.

For stock options that do not have vesting conditions, bulk expenses are applied at the time of grant.

2. Share-Based Compensation Plans using Board Incentive Plan Trusts of the Company and Mitsubishi Chemical Corporation

(1) Details of Share-Based Compensation Plans

In the year ended March 31, 2019, the Company and Mitsubishi Chemical Corporation began offering performance-based share compensation plans ("the Plans") to executive officers and directors (excluding non-residents of Japan, the same applying hereafter) and the president & CEO of Mitsubishi Chemical Corporation and to directors and executives concurrently serving as executive officers (excluding nonresidents of Japan; executive officers and directors collectively referred to as executive officers below).

The Plans cover five consecutive fiscal years (initially, three through the fiscal year ending March 2021) that correspond to the period covered by the Company's medium-term management plan. Based on assessments of progress toward corporate performance

targets, each executive officer is granted a number of points each year according to that person's position. The Company stocks equivalent to accumulated points calculated after the retirements of executive officers (1 point = 1 share) are provided as executive remuneration.

The Plans employ the Board Incentive Plan trust. The Company and Mitsubishi Chemical Corporation contribute funds to acquire the Company stocks through the trust, which delivers the shares to executive officers.

The Plans are accounted for as equity-settled share-based compensation.

(2) Number of Points Granted during the Period and Weighted Average Fair Value of Points

The number of points granted during the period and weighted average fair value of points are as follows. The fair value on the day points were granted uses the share price on that day since the share price on the day of grant is a close approximation of fair value.

	Year ended March 31, 2018	Year ended March 31, 2019
Number of points granted during the period	—	464,540
Weighted average fair value of points (yen)	—	991

(3) Share-Based Compensation Expenses

Stock option-related expenses were ¥460 million in the year ended March 31, 2019. These expenses were presented within Selling, general and administrative expenses and Cost of sales in the Consolidated Statement of Income.

3. Share-Based Compensation Plan using the Board Incentive Plan Trust of Mitsubishi Tanabe Pharma Corporation

(1) Details of Share-based Compensation Plan

Mitsubishi Tanabe Pharma Corporation (MTPC), a consolidated subsidiary of the Company, has introduced a performance-based share compensation plan (hereinafter, "the plan") from the fiscal year ended March 31, 2018. The plan clarifies the linkage between remuneration of MTPC's board directors and executive officers (excluding non-residents of Japan and outside board directors; hereinafter "MTPC directors and executive officers") and the MTPC group's business performance. The objectives of introducing the plan are to provide incentives to MTPC directors and executive officers to strive for sustained growth of the MTPC group and enhance medium- to long-term corporate value, as well as raise management team morale. These objectives will be achieved by sharing with shareholders not only the benefits of rises in MTPC's share price but also the risk of share price decline.

MTPC has adopted a Board Incentive Plan (BIP) trust as the structure for the plan. Under the plan, MTPC shares are acquired through the trust using money contributed by MTPC as the source of funds. In accordance with "Rules relating to grant of shares" established by MTPC, from the date of commencement of the plan, points (1 point = 1 share) are granted to MTPC directors and executive officers each year on the final day of the fiscal year during the period in which the plan applies. Vesting conditions include the requirement that the recipient is a current office holder as an MTPC director or executive officer, and points are granted according to office held and the degree of achievement of performance targets. In principle, when MTPC directors and executive officers retire from office, by carrying out the prescribed beneficiary vesting procedures, they are able to receive shares of the Company, with the number of shares corresponding to the number of points granted.

The plan is accounted for as equity-settled share-based compensation.

(2) Number of Points Granted during the Period and Weighted Average Fair Value of Points

The number of points granted during the period and weighted average fair value of points are as follows. The fair value on the day points were granted uses the share price on that day since the share price on the day of grant is a close approximation of fair value.

	Year ended March 31, 2018	Year ended March 31, 2019
Number of points granted during the period	15,259	11,975
Weighted average fair value of points (yen)	2,582	2,532

(3) Share-Based Compensation Expenses

Stock option-related expenses were ¥41 million and ¥33 million in the years ended March 31, 2018 and 2019, respectively. These expenses were presented within Selling, general and administrative expenses in the Consolidated Statement of Income.

Note 27

Retirement Benefits The Company's consolidated subsidiaries maintain lump-sum retirement and retirement benefit plans. The retirement benefit plans are defined benefit (fund- and contract-type) and defined contribution plans. Some consolidated subsidiaries also maintain welfare pension plans.

1. Defined Benefit Plans

The defined benefit plans of the Company's consolidated subsidiaries are mainly cash balance pension plans. Benefits under these plans are based on such conditions as years of service, points gained from results and contributions during employment. Investment yields are determined after taking into consideration the yields of 10-year national government bonds.

Cash balance pension plans are managed by corporate pension funds that are legally separated from the consolidated subsidiaries of the Company pursuant to Japan's Defined Benefit Corporate Pension Plan Act. Consolidated subsidiaries, or pension fund directors, and pension investment management institutions are legally required to accord top priority to plan participants, and must manage plan assets based on prescribed policies.

Contract-type cash balance plans are run in line with Bureau of Health and Welfare-approved pension provisions. The management and operation of reserve funds is through contracts with trust banks and other entrusted management institutions on the basis of duty of care and damages stipulations for trustees.

Funded cash balance pension plans are run by corporate pension funds. If fund directors neglect to faithfully discharge their duties concerning reserve management and operations, they assume liability for fund damages.

Defined benefit plan amounts in the Consolidated Statement of Financial Position are as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Present value of the defined benefit obligation	¥613,261	¥617,139
Fair value of the plan assets	(529,998)	(521,713)
Net defined benefit liabilities	¥ 83,263	¥ 95,426
Retirement benefit liabilities	¥110,639	¥120,816
Retirement benefit assets	(27,376)	(25,390)
Net defined benefit liabilities	¥ 83,263	¥ 95,426

For defined benefit plans, amounts recognized as expenses in the Consolidated Statement of Income are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Current service cost	¥18,974	¥19,091
Prior service cost	5,482	31
Interest expense	4,952	4,477
Interest income	(4,254)	(3,913)
Total	¥25,154	¥19,686

Changes in the present value of the defined benefit obligation are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Outstanding at the beginning of the period	¥630,280	¥613,261
Current service cost	18,974	19,091
Interest expense	4,952	4,477
Remeasurements:		
Actuarial gains and losses arising from changes in demographic assumptions	(1,396)	41
Actuarial gains and losses arising from changes in financial assumptions	(2,257)	5,466
Other	(605)	1,349
Benefits paid	(41,913)	(37,797)
Prior service cost	5,482	31
Acquisitions through business combinations	—	12,817
Exchange differences on translation of foreign operations	(256)	(1,597)
Outstanding at the end of the period	¥613,261	¥617,139

Changes in the fair value of plan assets are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Outstanding at the beginning of the period	¥531,840	¥529,998
Interest income	4,254	3,913
Remeasurements:		
Return on plan assets	27,194	629
Contributions by the employer	10,380	13,563
Benefits paid	(38,272)	(32,429)
Acquisitions through business combinations	—	5,275
Exchange differences on translation of foreign operations	(5,398)	764
Outstanding at the end of the period	¥529,998	¥521,713

The principal actuarial assumptions used to calculate present values of defined benefit obligations are as follows:

	As of March 31, 2018	As of March 31, 2019
Discount rate	0.64%	0.57%

In the event of a 0.5% increase or decrease in the discount rate, the principal actuarial assumption, the impact on the present value of defined benefit obligation as of March 31, 2018 and 2019 would be as follows. This sensitivity analysis assumes that all actuarial assumptions other than that subject to analysis are held constant.

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Increase by 0.5%	¥(32,970)	¥(33,558)
Decrease by 0.5%	25,902	21,757

Note: The discount rate is determined by referring to yields on high-quality bonds with maturities similar to periods in which benefits are anticipated. The sensitivity analysis is therefore based on a minimum reasonable discount rate of 0%.

The fair value of plan assets are as follows:

As of March 31, 2018

	Fair value with quoted prices in active markets		Fair value without quoted prices in active markets		Millions of yen
					Total
Cash and cash equivalents	¥ 25,424	¥ —			¥ 25,424
Equity instruments					
Domestic equities	42,568	—			42,568
Foreign equities	31,401	—			31,401
Other	—	76,579			76,579
Debt instruments					
Domestic bonds	9,043	—			9,043
Foreign bonds	39,077	—			39,077
Other	—	167,690			167,690
General accounts of life insurance companies	—	97,564			97,564
Other	—	40,652			40,652
Total	¥147,513	¥382,485			¥529,998

As of March 31, 2019

	Fair value with quoted prices in active markets		Fair value without quoted prices in active markets		Millions of yen
					Total
Cash and cash equivalents	¥ 15,601	¥ —			¥ 15,601
Equity instruments					
Domestic equities	37,550	—			37,550
Foreign equities	33,413	—			33,413
Other	—	101,119			101,119
Debt instruments					
Domestic bonds	8,766	—			8,766
Foreign bonds	25,256	—			25,256
Other	—	168,237			168,237
General accounts of life insurance companies	—	103,260			103,260
Other	—	28,511			28,511
Total	¥120,586	¥401,127			¥521,713

The Company's consolidated subsidiaries secure the total investment returns required within an acceptable range of risk to sufficiently fund payments of pension benefits and lump-sum payments, and endeavor to minimize long-term contributions and amass financing for payments of benefits.

To achieve targeted rates of return, management sets percentages of policy assets based on medium- to long-term perspectives, reviewing them regularly, and endeavors to maximize returns in keeping with risk assumptions.

Standard and special contributions to defined benefit plans cover the expenses necessary to provide benefits.

In keeping with laws and regulations, the Company regularly recalculates pension financing to balance pension funding for the future. The recalculations review basal rates (including projected mortality, withdrawal, and interest rates) related to setting contributions, and validating premiums.

Scheduled contributions to plan assets for the year ending March 31, 2020 are ¥16,200 million.

The Company's consolidated subsidiaries may pay premium benefits to employees on

retirement.

Some domestic consolidated subsidiaries have established retirement benefits trusts.

The weighted average durations of defined benefit plan obligations as of March 31, 2018 and March 31, 2019 were 13.1 years and 10.8 years, respectively.

2. Defined Contribution and Public Plans

Amounts recognized as expenses under defined contribution and public plans are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Defined contribution plan cost	¥ 6,662	¥ 8,451
Public plan cost	20,075	24,821

Note 28

Provisions

The breakdowns and schedule of provisions are as follows:

Year ended March 31, 2018

	Millions of yen				
	Asset retirement obligations	Provision for litigation	Provision for environmental measures	Other	Total
As of April 1, 2017	¥15,584	¥7,961	¥2,425	¥5,105	¥31,075
Arising during the year	1,412	1,401	3,399	7,166	13,378
Interest cost associated with passage of time	201	12	—	—	213
Utilized	(97)	(775)	(2,309)	(911)	(4,092)
Unused amounts reversed	(205)	(28)	(45)	(1,778)	(2,056)
Exchange differences on translation of foreign operations	(24)	—	(4)	(159)	(187)
Other	(168)	—	—	12	(156)
As of March 31, 2018	¥16,703	¥8,571	¥3,466	¥9,435	¥38,175
Current liabilities	¥137	¥ —	¥1,207	¥6,119	¥ 7,463
Non-current liabilities	16,566	8,571	2,259	3,316	30,712
Total	¥16,703	¥8,571	¥3,466	¥9,435	¥38,175

Year ended March 31, 2019

	Millions of yen				
	Asset retirement obligations	Provision for litigation	Provision for environmental measures	Other	Total
As of April 1, 2018	¥16,703	¥8,571	¥3,466	¥9,435	¥38,175
Arising during the year	1,414	992	1,054	7,065	10,525
Interest cost associated with passage of time	557	12	—	57	626
Utilized	(146)	(1,974)	(1,462)	(5,665)	(9,247)
Unused amounts reversed	(139)	—	—	(2,672)	(2,811)
Exchange differences on translation of foreign operations	427	—	3	108	538
Other	(878)	—	—	(338)	(1,216)
As of March 31, 2019	¥17,938	¥7,601	¥3,061	¥7,990	¥36,590
Current liabilities	¥29	¥ —	¥ 841	¥7,426	¥ 8,296
Non-current liabilities	17,909	7,601	2,220	564	28,294
Total	¥17,938	¥7,601	¥3,061	¥7,990	¥36,590

Asset retirement obligations

The Company covers recovery obligations for the rental real estate of the Group by recording projected payments based on historical amounts. These expenses are expected to be paid after one year or more; however, they may be affected by future business plans.

Reserves for Possible Losses in Connection with Litigation

Reserves for possible losses in connection with litigation are set aside for payments to settle lawsuits and in preparation for payments that may arise in the future. The main provisions for loss on litigation are as follows:

(1) Reserve for Health Management Allowances for HIV Compensation

To provide for future payments of health management allowances and settlement payments (including attorney fees) in connection with a lawsuit for damages filed by plaintiffs infected with HIV, the consolidated subsidiary, Mitsubishi Tanabe Pharma Corporation (MTPC) has set aside an estimated amount for such future payments.

In accordance with the finalization of the settlement concluded in March 1996, regarding the health management allowances, the present value of the estimated amounts to be paid in the future calculated based on the actual payment record up to the present time for AIDS patients who have reached a settlement is recognized. Regarding settlements, the corresponding estimated amounts calculated based on the actual settlements record up to the present time for HIV plaintiffs as of March 31, 2019 and HIV-infected patients due to anti-haemophilia preparations (unheated concentrate) who have not filed lawsuits are recognized.

(2) Reserve for Health Management Allowances for Sub-acute Myelo-Optical Neuropathy (SMON) Compensation**Neuropathy (SMON) Compensation**

MTPC has made a provision in the accompanying consolidated financial statements for the estimated future medical treatment payments to be made over the remaining lives of the parties entitled to such payments under the compromise settlement.

(3) Reserve for HCV Litigation

To provide for losses that may arise in the future from a settlement of lawsuits filed by plaintiffs infected with HCV (hepatitis C virus), MTPC has set aside an estimated amount for payments related to such settlement based on estimates of the number of people receiving relief and the amount of relief payments required under a law which stipulates that relief be provided to people who contacted hepatitis C from specific fibrinogen products or specific coagulation factor IX products.

Reserve for environmental measures

The Company records estimated losses to cover future losses from construction and environmental remediation activities. These expenses are expected to be paid after one year or more; however, they may be affected by future business plans.

Note 29**Bonds and Borrowings**

The breakdown of bonds and borrowings is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Short-term borrowings	¥ 349,641	¥ 771,340
Current portion of long-term borrowings	116,025	180,873
Commercial paper	24,000	68,000
Current portion of bonds	65,000	60,000
Loans due to the transfer of trade receivables	22,410	24,322
Loans due to the transfer of trade receivables of subsidiaries	3,778	4,108
Bonds	320,000	392,065
Convertible bond-type bonds with subscription rights to shares	148,027	148,403
Long-term borrowings	557,241	597,640
Total	¥1,606,122	¥2,246,751
Current liabilities	¥580,854	¥1,108,643
Non-current liabilities	1,025,268	1,138,108
Total	¥1,606,122	¥2,246,751

Bonds and borrowings are classified as financial liabilities measured at amortized cost.

The average interest rates for short- and long-term borrowings as of March 31, 2018 were 1.001% and 1.493%, respectively.

The average interest rates for short- and long-term borrowings as of March 31, 2019 were 0.736% and 1.585%, respectively.

Repayment terms for long-term borrowings are from 2019 to 2059.

Loans due to the transfer of trade receivables are liabilities for transfers that do not meet the criteria for derecognition as financial assets.

Borrowings by consolidated subsidiaries from trade receivable transfers are liabilities related to transfers to consolidated subsidiaries.

The breakdown of bonds is as follows:

Millions of yen					
Note	Name of bond	Term	Interest rate	As of March 31, 2018	As of March 31, 2019
1	2nd unsecured bond	2011-2021	1.204%	¥ 10,000	¥ 10,000
1	4th unsecured bond	2012-2019	0.556%	10,000	10,000
1	6th unsecured bond	2012-2019	0.665%	10,000	10,000
1	7th unsecured bond	2013-2018	0.615%	20,000	—
1	8th unsecured bond	2013-2020	0.948%	10,000	10,000
1	9th unsecured bond	2013-2023	1.226%	10,000	10,000
1	10th unsecured bond	2013-2018	0.319%	10,000	—
1	11th unsecured bond	2013-2020	0.604%	15,000	15,000
1	12th unsecured bond	2013-2023	0.918%	15,000	15,000
1	13th unsecured bond	2014-2019	0.319%	25,000	25,000
1	14th unsecured bond	2014-2021	0.482%	15,000	15,000
1	15th unsecured bond	2014-2024	0.800%	15,000	15,000
1	16th unsecured bond	2015-2022	0.433%	10,000	10,000
1	17th unsecured bond	2015-2025	0.755%	10,000	10,000
1	18th unsecured bond	2015-2020	0.281%	20,000	20,000
1	19th unsecured bond	2015-2022	0.476%	10,000	10,000
1	20th unsecured bond	2015-2025	0.711%	10,000	10,000
1	21st unsecured bond	2016-2021	0.120%	10,000	10,000
1	22nd unsecured bond	2016-2026	0.320%	10,000	10,000
1	23rd unsecured bond	2016-2036	0.850%	20,000	20,000
1	24th unsecured bond	2018-2028	0.370%	15,000	15,000
1	25th unsecured bond	2018-2038	0.890%	15,000	15,000
1	26th unsecured bond	2018-2028	0.410%	—	12,000
1	27th unsecured bond	2018-2038	1.000%	—	8,000
1	28th unsecured bond	2008-2048	1.380%	—	5,000
2	37th unsecured bond	2008-2018	2.030%	20,000	—
2	38th unsecured bond	2009-2019	2.020%	10,000	10,000
3	6th unsecured bond	2009-2019	1.940%	5,000	5,000
4	11th unsecured bond	2014-2019	0.319%	15,000	—
4	12th unsecured bond	2014-2021	0.558%	10,000	10,000
4	13th unsecured bond	2016-2021	0.140%	15,000	15,000
4	14th unsecured bond	2016-2026	0.390%	15,000	15,000
5	1st series deferrable interest and callable unsecured subordinated bonds	2019-2054	1.410%	—	99,153
6	2nd series deferrable interest and callable unsecured subordinated bonds	2019-2059	1.870%	—	7,912
	Subtotal			¥385,000	¥452,065
1	Zero coupon convertible bond-type bonds with subscription rights to shares due 2022	2017-2022	0.196%	74,415	74,561
1	Zero coupon convertible bond-type bonds with subscription rights to shares due 2024	2017-2024	0.312%	73,612	73,842
	Subtotal			148,027	148,403
	Total			¥533,027	¥600,468

Notes:

- These corporate bonds are issued by the Company.
- These corporate bonds are issued by Mitsubishi Chemical Corporation, a domestic consolidated subsidiary. As of March 28, 2016, the Company began managing the bonds because the company took over them based on the absorption-type company split.
- This corporate bond is issued by Mitsubishi Plastic, Inc. (now Mitsubishi Chemical Corporation), a domestic consolidated subsidiary. As of March 28, 2016, the Company began managing the bond because the company took over it based on the absorption-type company split.
- These corporate bonds are issued by Taiyo Nippon Sanso Corporation, a domestic consolidated subsidiary.
- These corporate bonds are issued by Taiyo Nippon Sanso Corporation, a domestic consolidated subsidiary. A fixed interest rate from the day following January 29, 2019 to January 29, 2024 and a variable interest rate from the day following January 29, 2024 (with a step-up in the interest rate scheduled for January 30, 2024).
- These corporate bonds are issued by Taiyo Nippon Sanso Corporation, a domestic consolidated subsidiary. A fixed interest rate from the day following January 29, 2019 to January 29, 2029 and a variable interest rate from the day following January 29, 2029 (with a step-up in the interest rate scheduled for January 30, 2029).

Assets pledged as collateral and collateralized obligations are as follows:
Assets pledged as collateral

Assets pledged as collateral and collateralized obligations are as follows:
Assets pledged as collateral

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Buildings and structures	¥ 6,595	¥ 6,248
Machinery and vehicles	9,892	11,979
Land	7,699	6,667
Other	1,402	763
Total	¥25,588	¥25,657

Collateralized obligations

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Trade payables	¥ 1,732	¥ 389
Short-term borrowings	51	49
Current portion of long-term borrowings	1,857	1,486
Long-term borrowings	5,778	6,882
Other	104	50
Total	¥ 9,522	¥ 8,856

Note 30

Changes in Liabilities Relating to Financing Activities

Changes in liabilities relating to financing activities are as follows:

Year ended March 31, 2018

	Millions of yen			
	Short-term borrowings	Commercial paper	Long-term borrowings (Note)	Bonds (Note)
As of April 1, 2017	¥356,713	¥40,000	¥754,377	¥542,652
Cash flows	25,243	(16,000)	(67,378)	(10,172)
Increase (decrease) due to transfer to liabilities related directly associated with assets held for sale	(199)	—	(983)	—
Changes from acquisition or loss of control over subsidiaries or other businesses	(1,480)	—	5	—
Impact of foreign exchange rate fluctuations, etc.	(4,448)	—	(12,755)	547
As of March 31, 2018	¥375,829	¥24,000	¥673,266	¥533,027

Note: Including amounts due or scheduled for redemption within one year.

Year ended March 31, 2019

	Millions of yen			
	Short-term borrowings	Commercial paper	Long-term borrowings (Note)	Bonds (Note)
As of April 1, 2018	¥375,829	¥24,000	¥673,266	¥533,027
Cash flows	428,298	44,000	90,228	67,036
Increase (decrease) due to transfer to liabilities related directly associated with assets held for sale	(400)	—	—	—
Changes from acquisition or loss of control over subsidiaries or other businesses	841	—	5,978	—
Impact of foreign exchange rate fluctuations, etc.	(4,798)	—	9,041	405
As of March 31, 2019	¥799,770	¥68,000	¥778,513	¥600,468

Note: Including amounts due or scheduled for redemption within one year.

Note 31**Other Financial Liabilities**

The breakdown of other financial liabilities is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Accounts payable-other	¥ 115,030	¥ 124,855
Accrued expenses	64,161	75,174
Lease obligations	17,334	16,329
Deposits	8,169	8,699
Other	25,688	24,075
Total	¥230,382	¥249,132
Current liabilities	¥201,208	¥222,377
Non-current liabilities	29,174	26,755
Total	¥230,382	¥249,132

Other financial liabilities are mainly classified as financial liabilities measured at amortized cost.

Note 32**Lease Transactions****1. Finance Leases (Lessee)**

Future minimum lease payments and the present value of future minimum lease payments are as follows:

	Millions of yen					
	As of March 31, 2018			As of March 31, 2019		
	Total future minimum lease payments	Future finance costs	Present value	Total future minimum lease payments	Future finance costs	Present value
Due within one year	¥ 3,741	¥ (205)	¥ 3,536	¥ 3,849	¥ (184)	¥ 3,665
Due after one year and not later than five years	8,782	(621)	8,161	7,711	(403)	7,308
Later than five years	5,795	(158)	5,637	5,444	(88)	5,356
Total	¥18,318	¥ (984)	¥17,334	¥17,004	¥ (675)	¥16,329

2. Operating Lease (Lessee)

Future minimum lease payments under noncancellable operating lease contracts are as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Due within one year	¥11,795	¥14,638
Due after one year and not later than five years	18,788	24,504
Later than five years	8,526	9,578
Total	¥39,109	¥48,720

In the years ended March 31, 2018 and 2019, lease fees recognized as expenses were ¥18,318 million and ¥22,154 million, respectively.

Note 33**Other Liabilities**

The breakdown of other liabilities is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Employees' bonuses	¥ 48,778	¥ 48,537
Employees' paid leave related obligations	31,753	35,646
Advances received	12,806	14,243
Accrued consumption taxes	15,163	12,319
Deferred income from out-licensing agreements	4,464	3,777
Social insurance premiums received	4,918	6,199
Other	47,240	59,339
Total	¥165,122	¥180,060
Current liabilities	¥127,108	¥138,089
Non-current liabilities	38,014	41,971
Total	¥165,122	¥180,060

Note 34**Trade Payables**

Trade payables are as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Accounts payable	¥488,592	¥492,404

Trade payables are classified as financial liabilities measured at amortized cost.

Note 35

Financial Instruments

1. Capital Management

Under the APTSIS 20 medium-term management plan (fiscal 2016 to 2020), which commenced from the year ended March 31, 2017, the Group aims to become a fast-growing, highly profitable corporate entity through its business domains in Performance Products, Health Care and Industrial Materials. The Company aims to balance efforts to invest in growth business, bolster shareholder returns, and reinforce its financial position and thereby enhance enterprise value. Key benchmarks are core operating income, core operating income return on sales, net income attributable to owners of the parent, return on equity, and the net debt-to-equity ratio.

	As of or year ended March 31, 2018	As of or year ended March 31, 2019
Return on Equity (ROE) (Note 1)	17.8%	12.7%
Net D/E ratio (Note 2)	0.89	1.26

Notes:

- Net income attributable to owners of the parent / equity attributable to owners of the parent (averages of beginning and end of fiscal years)
- Net interest-bearing debt*1 / equity attributable to owners of the parent (end of fiscal years)
*1 Net interest-bearing debt = Interest-bearing debt - (cash and cash equivalents + cash reserves*2)
*2 Cash reserves comprise certificates of deposits, securities, and other instruments other than cash equivalents that the Group holds to manage surplus funds.

2. Financial Risk Management

The Group is exposed to financial risks in the course of doing business in an array of fields around the world. It manages risks based on certain policies to reduce or avoid such risks. The policy with derivatives transactions is to restrict their use to actual demand. The Group does not enter into derivative transactions for speculative purposes. The relevant officers are informed about contract balances, fair value, and other elements of these transactions based on internal regulations for transaction authority and limits.

3. Credit Risk

The Group is exposed to customer credit risk for trade and other receivables acquired in the course of business. The securities that the Group holds are exposed to the credit risk of issuers. Derivatives transactions that the Group conducts to hedge financial risks are exposed to the credit risks of counterparty financial institutions.

In keeping with its credit management rules, the Group regularly monitors the trade receivables and long-term loans of major customers, oversees due dates and balances for each counterparty, and endeavors to swiftly identify and mitigate collections concerns arising from deteriorating financial positions. The Group only invests in bonds with high ratings, so credit risk is inconsequential. Derivatives transactions are only entered into with financial institutions with high credit ratings to minimize credit risk from nonperformance by counterparties. The Group prevents excessive concentrations of credit risk through special management procedures.

At the end of the fiscal year, the Group recognizes impairment losses based on historical rates to the Allowance for doubtful accounts, for significant uncollectible financial assets, and for insignificant financial assets. The Allowance for doubtful accounts relating to such assets is included in Trade receivables and Other financial assets in the Consolidated Statement of Financial Position.

Changes in the Allowance for doubtful accounts, measured at amounts equivalent to projected losses for the entire period, are as follows.

There were no significant differences between projected 12-month credit losses on loans and the projected credit losses for the entire period.

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Outstanding at the beginning of the period	¥5,811	¥6,713
Addition	2,277	5,465
Decrease (intended use)	(434)	(1,462)
Decrease (reversal)	(818)	(699)
Other	(123)	(210)
Outstanding at the end of the period	¥6,713	¥9,807

The maximum exposure to the credit risks of financial assets is the carrying amount after impairment presented in the Consolidated Statement of Financial Position.

The Group holds real estate, securities, etc. as collateral for receivables against certain customers.

Maximum exposure on credit risk of financial guarantee contracts is the amount of guarantee obligations etc. described in "Note 39 Contingent Liabilities".

4. Liquidity Risk

The Group's trade payables obligations and borrowings are exposed to liquidity risk. The Group manages this risk by producing cash plan and ensuring liquidity by maintaining commitment lines with several financial institutions.

Outstanding financial liabilities (including derivative financial instruments) by fiscal year are as follows:

As of March 31, 2018

	Millions of yen								
	Carrying amount	Contractual cash flow	Due within one year	Due after one year through two years	Due after two years through three years	Due after three years through four years	Due after four years through five years	Due after five years	
Non-derivative financial liabilities:									
Trade payables	¥488,592	¥488,592	¥488,592	¥ —	¥ —	¥ —	¥ —	¥ —	¥ —
Short-term borrowings	375,829	375,829	375,829	—	—	—	—	—	—
Commercial paper	24,000	24,000	24,000	—	—	—	—	—	—
Bonds	533,027	535,000	65,000	60,000	55,000	125,000	20,000	210,000	
Long-term borrowings	673,266	673,523	116,542	174,551	108,564	68,883	54,454	150,529	
Accounts payable-other	115,030	115,030	115,030	—	—	—	—	—	—
Accrued expenses	64,161	64,161	64,161	—	—	—	—	—	—
Others	50,830	51,557	23,139	4,951	3,222	2,314	1,269	16,662	
Derivative liabilities:									
Foreign exchange forward contracts	¥ 105	¥ 105	¥ 105	¥ —	¥ —	¥ —	¥ —	¥ —	¥ —
Currency swaps	24	24	4	4	4	4	2	6	
Interest rate swaps	232	238	153	72	7	—	—	6	

As of March 31, 2019

	Millions of yen								
	Carrying amount	Contractual cash flow	Due within one year	Due after one year through two years	Due after two years through three years	Due after three years through four years	Due after four years through five years	Due after five years	
Non-derivative financial liabilities:									
Trade payables	¥492,404	¥492,404	¥492,404	¥ —	¥ —	¥ —	¥ —	¥ —	¥ —
Short-term borrowings	799,770	799,770	799,770	—	—	—	—	—	—
Commercial paper	68,000	68,000	68,000	—	—	—	—	—	—
Bonds	600,468	603,000	60,000	55,000	125,000	20,000	100,000	243,000	
Long-term borrowings	778,513	780,598	181,298	114,325	84,036	64,495	96,187	240,257	
Accounts payable-other	124,855	124,855	124,855	—	—	—	—	—	—
Accrued expenses	75,174	75,174	75,174	—	—	—	—	—	—
Others	48,964	49,638	23,715	4,253	2,447	1,626	1,215	16,382	
Derivative liabilities:									
Foreign exchange forward contracts									
Currency swaps	¥ 38	¥ 38	¥ 38	¥ —	¥ —	¥ —	¥ —	¥ —	¥ —
Interest rate swaps	89	84	75	9	—	—	—	—	—
Others	8	8	8	—	—	—	—	—	—

For financial guarantee agreements, maximum amounts based on performance requests are the outstanding guaranteed liabilities described in Note 39 Contingent Liabilities.

The total commitment line and borrowing balance is as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Total commitment line	¥131,162	¥131,589
Borrowing balance	7,437	7,769
Unused balance	¥123,725	¥123,820

We are also diversifying funding, notably by obtaining uncommitment-based overdraft facilities with several financial institutions and by securing frameworks to issue commercial paper or register corporate bond issues.

5. Foreign Exchange Risk

Foreign currency denominated receivables and payables from the Group's global operations are exposed to foreign exchange fluctuation risk. The Group uses foreign exchange forward contracts and currency swaps as needed to hedge against the foreign currency risk associated with such receivables and payables.

Foreign Exchange Sensitivity Analysis

If the yen at the end of the fiscal year was 1% higher against the U.S. dollar and the euro for the foreign currency denominated financial instruments that the Group held at the year end, the impact on income before taxes in the Consolidated Statement of Income would be as follows.

This analysis is based on multiplying each currency risk exposure by 1%, based on the assumption that other variables (including other foreign exchange rates and interest rates) are held constant.

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
U.S. dollar (1% appreciation of yen)	¥(100)	¥(388)
Euro (1% appreciation of yen)	(30)	118

6. Interest Rate Risk

Interest rate risk within the Group arises from interest-bearing debt net of cash equivalents. The Group raises funds needed to do business and make capital investments through borrowings and the issuance of corporate bonds. Borrowings and corporate bonds with floating rates are exposed to interest rate fluctuation risk.

The Group uses derivatives transactions (interest rate swaps) to hedge against interest rate fluctuation risk.

Interest Rate Sensitivity Analysis

In the event the interest rate on financial instruments that the Group holds at the end of each fiscal year increases by 100 basis points, the impact on income before taxes in the Consolidated Statement of Income would be as follows:

The analysis is for financial instruments affected by interest rate fluctuations and assumes that other factors, including the impacts of foreign exchange fluctuations, are held constant.

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Income before taxes	¥(1,607)	¥(3,300)

7. Market Price Fluctuation Risk

The Group's securities holdings are exposed to market price fluctuation risk.

With respect to securities, the Group regularly reviews the fair value and financial positions of issuers (business partners), and constantly reviews holdings by taking into account its relationships with business partners.

8. Fair Value of Financial Instruments

Financial instruments are classified into the following three-level fair value hierarchy:

- Level 1: Unadjusted quoted prices for identical assets or liabilities in active markets
- Level 2: Valuations measured by direct or indirect observable inputs other than Level 1
- Level 3: Valuations measured by significant unobservable inputs

Whether any financial instruments are determined to have been transferred between levels is considered at year-end. There were no significant transfers between levels in the years ended March 31, 2018 and 2019.

(1) Financial instruments measured at fair value on a recurring basis

Financial assets and liabilities measured at fair value on a recurring basis were as follows:

	As of March 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Stocks and investments	¥127,192	¥ —	¥73,155	¥200,347
Stocks and investments held for sale	317	—	89	406
Derivatives	—	1,618	—	1,618
Total	¥127,509	¥1,618	¥73,244	¥202,371
Liabilities				
Derivatives	¥ —	¥ 361	¥ —	¥ 361
Total	¥ —	¥ 361	¥ —	¥ 361

As of March 31, 2019

	Millions of yen			
	Level 1	Level 2	Level 3	Total
Assets				
Stocks and investments	¥108,249	¥ —	¥84,164	¥192,413
Stocks and investments held for sale	449	—	9	458
Derivatives	—	258	—	258
Total	¥108,698	¥ 258	¥84,173	¥193,129
Liabilities				
Derivatives	¥ —	¥ 139	¥ —	¥ 139
Total	¥ —	¥ 139	¥ —	¥ 139

Stocks and investments

The fair value of marketable shares classified as Level 1 is based on unadjusted quoted prices in active markets for identical assets or liabilities.

The fair value of Level 3 unlisted shares and investments for which quoted prices in active markets are unavailable is calculated by using reasonably available inputs through similar company comparisons or other appropriate valuation techniques. Illiquidity discounts are added as needed.

Derivative assets and liabilities

The fair value of Level 2 derivative assets and liabilities is based on such observable inputs as prices provided by counterparty financial institutions or exchange and interest rates and such like.

The fair value of Level 3 financial instruments is calculated by valuation specialists determining valuation methods for each relevant financial instrument in accordance with valuation policies and procedures that include valuation methods for fair value calculations approved by suitably authorized personnel

Changes in Level 3 financial instruments are as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Balance at beginning of period	¥81,875	¥73,244
Other comprehensive income (Note)	(1,346)	13,354
Purchases	1,345	1,794
Sales or redemptions	(4,379)	(3,582)
Others	(4,251)	(637)
Balance at end of period	¥73,244	¥84,173

Note: Included in "Financial assets measured at fair value through other comprehensive income" in the Consolidated Statement of Comprehensive Income

(2) Financial instruments measured at amortized cost

The carrying amounts and estimated fair values of the financial instruments measured at amortized cost are as follows:

As of March 31, 2018

	Millions of yen				
	Carrying amounts	Fair value			Total
		Level 1	Level 2	Level 3	
Assets:					
Debt securities	¥ 31,710	¥ —	¥ 702	¥30,960	¥ 31,662
Total	¥ 31,710	¥ —	¥ 702	¥30,960	¥ 31,662
Liabilities:					
Long-term borrowings	¥ 673,266	¥ —	¥ 672,380	¥ —	¥ 672,380
Bonds	533,027	—	539,649	—	539,649
Total	¥1,206,293	¥ —	¥1,212,029	¥ —	¥1,212,029

As of March 31, 2019

	Millions of yen				
	Carrying amounts	Fair value			Total
		Level 1	Level 2	Level 3	
Assets:					
Debt securities	¥ 30,000	¥ —	¥ —	¥29,982	¥ 29,982
Total	¥ 30,000	¥ —	¥ —	¥29,982	¥ 29,982
Liabilities:					
Long-term borrowings	¥ 778,513	¥ —	¥ 793,472	¥ —	¥ 793,472
Bonds	600,468	—	609,081	—	609,081
Total	¥1,378,981	¥ —	¥1,402,553	¥ —	¥1,402,553

The carrying amounts of financial assets and liabilities measured at amortized cost, other than debt securities, long-term borrowings and bonds presented in the tables above, are approximately the same as the fair values of such financial assets and liabilities.

Debt securities

The fair value of Level 1 bonds is based on the market price.

The fair value of Level 2 bonds is based on prices provided by counterparty financial institutions.

The fair value of Level 3 subordinated and other bonds is calculated with reference to prices provided by counterparty financial institutions.

Long-term borrowings

The fair value of Level 2 long-term loans is based on the present value, calculated by discounting the total principal and interest by the interest rate assumed for similar new borrowings.

Bonds

The fair value of Level 2 corporate bonds is based on the market price.

9. Transfers of Financial Assets

The Group transfers some operating receivables to a business entity comprising third-party financial institutions. The entity operates as part of these institutions and purchases a large amount of assets from customers other than those of the Group, so trade receivables that the Group transferred constitute a small proportion of the entity's total assets. The relevance of the Group to the assessment of exposure to the risks of this entity is therefore low.

(1) Transfers of financial assets that are not derecognized overall

As of March 31, 2018 and 2019, Trade receivables included ¥19,337 million and ¥20,097 million, respectively, of trade receivables that were transferred without satisfying financial asset derecognition requirements. Bonds and borrowings included ¥22,410 million and ¥24,322 million in transfers. These fair values approximate their carrying values. The net positions mainly stem from differences in periods for retained portions relating to sales of trade receivables and deposits of trade receivables and repayments of borrowings.

If debtors defaulted on these trade receivables, the Group would be deemed to hold most of the risks and economic value of ownership of the transferred assets, as payment obligations would revert to the Group.

(2) Transfers of financial assets that are derecognized overall

In the years ended March 31, 2018 and 2019, expenses arising from transfers of trade receivables that were derecognized in their entirety were ¥156 million and ¥224 million, respectively.

10. Derivative Transactions

(1) Derivative transactions to which hedge accounting is applied

The analysis of contract amounts of derivative transactions by due dates is as follows:

As of March 31, 2018

Millions of yen							
	Contract amount	Due within one year	Due after one year through two years	Due after two years through three years	Due after three years through four years	Due after four years through five years	Due after five years
Cash flow hedges							
Foreign exchange risk:							
Foreign exchange forward contracts	¥11,888	¥11,849	¥ 39	¥ —	¥ —	¥ —	¥ —
Interest rate risk:							
Interest rate swaps	81,166	18,509	58,352	2,272	272	272	1,489
Interest rate currency swaps	14,000	14,000	—	—	—	—	—
Others	221	221	—	—	—	—	—

As of March 31, 2019

Millions of yen							
	Contract amount	Due within one year	Due after one year through two years	Due after two years through three years	Due after three years through four years	Due after four years through five years	Due after five years
Cash flow hedges							
Foreign exchange risk:							
Foreign exchange forward contracts	¥5,436	¥4,766	¥ 670	¥ —	¥ —	¥ —	¥ —
Interest rate risk:							
Interest rate swaps	63,893	60,332	2,284	284	284	284	425
Others	292	292	—	—	—	—	—

The principal rates on forward exchange contracts and currency swap transactions and the principal rates on payments under interest rate swaps are as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Cash flow hedges		
Foreign exchange risk:		
Foreign exchange forward contracts		
U.S. dollars	¥103.36-112.13	¥107.13-111.82
Euros	¥130.41-132.96	¥124.43-131.48
Interest rate risk		
Interest rate swaps		
Pay fixed rate, receive floating rate	0.23%-2.30%	0.23%-2.30%
Interest rate currency swaps		
Pay fixed rate, receive floating rate	0.59%	—

Amounts for derivatives designated as hedges are as follows:

As of March 31, 2018

	Contract amount	Carrying amount		Items in Consolidated Statement of Financial Position	Change in fair value of hedged item used as the basis for recognizing hedge ineffectiveness
		Assets	Liabilities		
Cash flow hedges					
Foreign exchange risk:					
Foreign exchange forward contracts	¥ 11,888	¥ 146	¥ 99	Other financial assets Other financial liabilities	¥ 894
Interest rate risk:					
Interest rate swaps	81,166	248	232	Other financial assets Other financial liabilities	805
Interest rate currency swaps	14,000	1,180	—	Other financial assets	(761)
Others	221	15	—	Other financial assets	22

As of March 31, 2019

	Contract amount	Carrying amount		Items in Consolidated Statement of Financial Position	Change in fair value of hedged item used as the basis for recognizing hedge ineffectiveness
		Assets	Liabilities		
Cash flow hedges					
Foreign exchange risk:					
Foreign exchange forward contracts	¥ 5,436	¥ 46	¥ 27	Other financial assets Other financial liabilities	¥ (28)
Interest rate risk:					
Interest rate swaps	63,893	158	89	Other financial assets Other financial liabilities	53
Interest rate currency swaps	—	—	—	Other financial assets	(1,180)
Others	292	—	8	Other financial assets	(23)

Amounts for items designated as hedges are as follows:

	Millions of yen			
	As of March 31, 2018		As of March 31, 2019	
	Change in fair value of hedged item used as the basis for recognizing hedge ineffectiveness	Cash flow hedge reserve	Change in fair value of hedged item used as the basis for recognizing hedge ineffectiveness	Cash flow hedge reserve
Cash flow hedges				
Foreign exchange risk:				
Planned to purchase	¥ (894)	¥ 55	¥ 28	¥ 54
Interest rate risk:				
Interest on borrowings	(44)	87	1,127	95
Others	(22)	31	23	38

The breakdown of cash flow hedges is as follows:

Year ended March 31, 2018

	Millions of yen				
	Changes in fair value of hedges recognized in other comprehensive income	Ineffective portions of hedges recognized in profit or loss	Consolidated Statement of Income items in which ineffective portions of hedges are included in profit or loss	Reclassification adjustments from cash flow hedge reserve to profit or loss	Consolidated Statement of Income items including profit from reclassification adjustments
Cash flow hedges					
Foreign exchange risk:					
Foreign exchange forward contracts	¥ 594	¥—	¥—	¥611	Financial expenses
Currency options	1,033	—	—	—	—
Interest rate risk:					
Interest rate swaps	557	—	—	433	Financial expenses
Interest rate currency swaps	65	—	—	475	Financial expenses
Others	29	—	—	—	—

Year ended March 31, 2019

	Millions of yen				
	Changes in fair value of hedges recognized in other comprehensive income	Ineffective portions of hedges recognized in profit or loss	Consolidated Statement of Income items in which ineffective portions of hedges are included in profit or loss	Reclassification adjustments from cash flow hedge reserve to profit or loss	Consolidated Statement of Income items including profit from reclassification adjustments
Cash flow hedges					
Foreign exchange risk:					
Foreign exchange forward contracts	¥(2,960)	¥—	¥—	¥(124)	Financial expenses
Others	(199)	—	—	—	—
Interest rate risk:					
Interest rate swaps	48	—	—	61	Financial expenses
Interest rate currency swaps	(24)	—	—	(832)	Financial expenses
Others	(17)	—	—	—	—

(2) Derivative transactions to which hedge accounting is not applied

Amounts relating to items not designated as hedges are as follows:

	As of March 31, 2018			As of March 31, 2019		
	Contract amount	Over one year	Fair value	Contract amount	Over one year	Fair value
Foreign exchange forward contracts	¥ 5,075	¥—	¥ (6)	¥ 7,250	¥ —	¥ 1
Currency swaps	795	623	5	626	458	38
Total	¥ 5,870	¥623	¥ (1)	¥ 7,876	¥458	¥ 39

Note 36

Subsidiaries

Subsidiaries with significant non-controlling interests are as follows:

Name of subsidiary	Location	Percentage of non-controlling interest	
		As of March 31, 2018	As of March 31, 2019
Mitsubishi Tanabe Pharma Corporation	Japan, others	43.6%	43.6%
Taiyo Nippon Sanso Corporation	Japan, others	49.4%	49.4%

Net income attributable to non-controlling interests of relevant subsidiaries and dividends paid to non-controlling interests are as follows:

	Year ended March 31, 2018		Year ended March 31, 2019	
	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation
Net income attributable to non-controlling interests	¥21,335	¥24,793	¥10,714	¥21,528
Dividends paid to non-controlling interests	16,277	5,285	13,982	5,735

Cumulative non-controlling interests of relevant subsidiaries are as follows:

	As of March 31, 2018		As of March 31, 2019	
	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation
Cumulative non-controlling interests amounts	¥362,174	¥208,239	¥369,091	¥ 219,605

Summary financial information on relevant subsidiaries is as follows. Summary financial information below is calculated based on the amounts before elimination in consolidation, adjusting goodwill and other items recognized at the time of a business combination.

Summary Consolidated Statements of Financial Position

	As of March 31, 2018		As of March 31, 2019	
	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation
Current assets	¥ 585,525	¥ 278,302	¥ 588,433	¥ 347,143
Non-current assets	433,672	742,942	438,606	1,508,420
Total	¥1,019,197	¥1,021,244	¥1,027,039	¥1,855,563
Current liabilities	98,193	221,087	91,699	719,177
Non-current liabilities	56,575	308,878	55,406	626,225
Total	¥ 154,768	¥ 529,965	¥ 147,105	¥1,345,402
Equity	864,429	491,279	879,934	510,161
Total	¥1,019,197	¥1,021,244	¥1,027,039	¥1,855,563

Summary Consolidated Statements of Income and Consolidated Statements of Comprehensive Income

	Year ended March 31, 2018		Year ended March 31, 2019	
	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation
Sales revenue	¥433,855	¥646,218	¥424,767	¥740,341
Net income	53,992	49,062	32,216	42,017
Total comprehensive income	56,620	44,908	40,894	26,161

Summary Consolidated Statements of Cash Flows

	Year ended March 31, 2018		Year ended March 31, 2019	
	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation	Mitsubishi Tanabe Pharma Corporation	Taiyo Nippon Sanso Corporation
Cash flows from operating activities	¥66,943	¥ 83,199	¥41,460	¥ 98,686
Cash flows from investing activities	(19,178)	(52,088)	(31,212)	(754,969)
Cash flows from financing activities	(32,501)	(39,859)	(25,869)	664,925
Effect of exchange rate changes on cash and cash equivalents	(1,457)	1,841	531	3,128
Net increase (decrease) in cash and cash equivalents	¥13,807	¥(6,907)	¥(15,090)	¥ 11,770

Note 37

Related Parties

1. Related Party Transactions

Transactions with major related parties are as follows. For sales of goods and services, the principal transactions are product sales, while the main transactions for goods purchases are purchases of raw materials. The terms for transactions with related parties are similar to those of independent third-party transactions.

	Year ended March 31, 2018		Year ended March 31, 2019	
	Joint venture	Associates	Joint venture	Associates
Sales of goods and services	¥63,690	¥27,081	¥64,441	¥37,058
Purchases of goods and services	22,978	41,068	23,138	45,824

Receivables and obligations to major related parties as a result of the above transactions are as follows:

	Millions of yen			
	As of March 31, 2018		As of March 31, 2019	
	Joint venture	Associates	Joint venture	Associates
Receivables				
Accounts receivable	¥12,054	¥8,734	¥12,538	¥ 9,658
Others	2,501	507	509	2,145
Total	¥14,555	¥9,241	¥13,047	¥11,803
Obligations				
Accounts payable	¥ 4,265	¥4,073	¥3,467	¥4,516
Others	7	102	2	841
Total	¥ 4,272	¥4,175	¥ 3,469	¥5,357

Remuneration for key Group executives is as follows:

	Millions of yen	
	Year ended March 31, 2018	Year ended March 31, 2019
Remuneration and bonuses	¥2,149	¥1,952
Share-based compensation	87	237
Total	¥2,236	¥2,189

Note 38

Commitments Commitments relating to acquisitions of property, plant and equipment and intangible assets are as follows:

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Acquisitions of property, plant and equipment and intangible assets	¥143,540	¥152,883

Note 39

Contingent Liabilities

Guarantee Obligations

Guarantees and similar undertakings for borrowings from joint ventures, associates and financial institutions of general business partners are as follows.

	Millions of yen	
	As of March 31, 2018	As of March 31, 2019
Joint ventures	¥9,400	¥8,201
Associates	421	372
General business partners	641	361
Others	1,445	1,262
Total	¥11,907	¥10,196

Note 40

Subsequent event **Strategic Capital Partnership for Health Care-Related Businesses by Life Science Institute, Inc.**

On May 14, 2019, consolidated subsidiary Life Science Institute, Inc., agreed to form a strategic capital partnership with PHC Holdings Corporation, which engages in the health care business in Japan and overseas. Life Science Institute, Inc., will further expand its health care-related businesses exchanging all of its shares in LSI Medience Corporation with PHC Holdings Corporation to acquire a 13.72% stake in PHC Holdings Corporation.

PHC Holdings Corporation and Life Science Institute, Inc., will plan to complete this share exchange, subject to competition law-related regulatory approval.

Note 41 (Unaudited)

Litigation

Court action for compensation by patients infected with HCV (hepatitis C virus)

Consolidated subsidiary Mitsubishi Tanabe Pharma Corporation was a codefendant with the Japanese government in damages lawsuits over blood products tainted with hepatitis C virus. In September 2008, the defendants concluded a basic agreement with nationwide plaintiff groups and their attorneys to resolve this case in response to the Act on Special Measures concerning the Payment of Benefits to Relieve the Victims of Hepatitis C Infected through Specified Fibrinogen Concentrates and Specified Coagulation Factor XI Concentrates. The plaintiffs began dropping litigation against the company, and in April 2009 the company decided to pay costs to the hepatitis C sufferers according to the payment apportionment standards of the above act.

Arbitration regarding GILENYA, the treatment for multiple sclerosis

Consolidated subsidiary Mitsubishi Tanabe Pharma Corporation (MTPC) has received a notice of request for arbitration from Novartis in February 2019. Novartis has asked the arbitral tribunal to rule that Novartis has no obligation to pay certain royalties, because some terms of the license agreement entered into with MTPC in 1997 are allegedly invalid. MTPC maintains it is entitled to receive the full royalty amounts due according to the license agreement with Novartis, and MTPC will rigorously pursue its rights in the arbitration.

Besides, given the arbitration proceeding, as for the part of "GILENYA Royalty" amounts that was not recognized as sales revenue in accordance with IFRS 15, those will be recognized as revenue at the end of the arbitration, depending on the outcome of the arbitration.



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Independent Auditor's Report

The Board of Directors
Mitsubishi Chemical Holdings Corporation

We have audited the accompanying consolidated financial statements of Mitsubishi Chemical Holdings Corporation and its consolidated subsidiaries, which comprise the consolidated statement of financial position as at March 31, 2019, and the consolidated statements of income, comprehensive income, changes in equity, and cash flows for the year then ended and a summary of significant accounting policies and other explanatory information, all expressed in Japanese yen.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards, and for designing and operating such internal control as management determines is necessary to enable the preparation and fair presentation of the consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in Japan. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. The purpose of an audit of the consolidated financial statements is not to express an opinion on the effectiveness of the entity's internal control, but in making these risk assessments the auditor considers internal controls relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of Mitsubishi Chemical Holdings Corporation and its consolidated subsidiaries as at March 31, 2019, and their consolidated financial performance and cash flows for the year then ended in conformity with International Financial Reporting Standards.

Ernst & Young ShinNihon LLC

June 25, 2019
Tokyo, Japan



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Report on Matters Equivalent to Key Audit Matters

The Board of Directors
Mitsubishi Chemical Holdings Corporation

We issued our independent auditor's report dated June 25, 2019 in relation to the audit of the consolidated financial statements of Mitsubishi Chemical Holdings Corporation and its consolidated subsidiaries, which comprise the consolidated statement of financial position as at March 31, 2019, and the consolidated statements of income, comprehensive income, changes in equity, and cash flows for the year then ended and a summary of significant accounting policies and other explanatory information. Our report is included in the Company's KAITEKI Report 2019. Matters equivalent to key audit matters in the audit of the consolidated financial statements are as follows:

Matters Equivalent to Key Audit Matters

Matters equivalent to key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Acquisition of industrial gas business	
Description and reasons for determination of a matter equivalent to a key audit matter	Auditor's response
<p>As described in note 5 to the consolidated financial statements, on December 3, 2018, Taiyo Nippon Sanso Corporation, a consolidated subsidiary of the Company, acquired from Praxair, Inc. its industrial gas business in Europe.</p> <p>The consideration transferred was ¥635,847 million. The Company consulted with external experts to recognize and measure the identifiable assets acquired and liabilities assumed and, as a result, it recognized intangible assets and goodwill of ¥208,301 million and ¥310,401 million, respectively.</p> <p>Identified intangible assets are primarily customer-related intangible assets. The significant assumptions for measurements of the customer-related intangible assets are the revenue projections, the attrition rates of existing customers and the discount rates.</p> <p>As measuring the customer-related intangible assets in the business combination is complex and requires management to apply judgment, we determined it to be a matter equivalent to a key audit matter.</p>	<p>We performed the following procedures to assess measurements of the customer-related intangible assets, among others:</p> <ul style="list-style-type: none"> - We examined the related agreements to gain an understanding of the transaction to acquire the business. We also discussed with management and reviewed related management presentation materials to the Board of Directors. - We assessed the competence, capabilities and objectivity of the external experts engaged by management, and made inquiries of the external experts throughout our audit procedures. - With the involvement of the valuation specialists of our network firm, we assessed measurement methodologies of the customer-related intangible assets and evaluated the significant assumptions used by management. - We assessed the revenue projections through discussion with management and persons responsible for business planning and by comparing the projections with historical data and data from similar industrial gas companies. In addition, considering estimation uncertainties, we compared the projections with estimates of future revenues using publicly available data. - We assessed the attrition rates of existing customers by obtaining and examining historical attrition rates with major customers and the supply agreements with those customers. We also performed sensitivity analysis considering risks of changes in attrition rates. - We assessed the discount rates by comparing the ones used by management with the estimates made by the valuation specialists of our network firm using available external data.

Valuation of goodwill	
Description and reasons for determination of a matter equivalent to a key audit matter	Auditor's response
<p>As described in note 13 to the consolidated financial statements, goodwill is valued at ¥648,806 million (11.6% of total assets) on March 31, 2019. Assumptions used in impairment tests of goodwill are disclosed in note 15 to the consolidated financial statements.</p> <p>In the impairment tests, the recoverable amount of cash generating units including goodwill is measured based on value in use. The value in use is measured using discounted cash flow projections. The cash flow projections are based on the medium-term management plan for a five-year period approved by management. After the five-year plan, the Company estimates growth rates considering future uncertainties.</p> <p>The significant assumptions in estimating the value in use are the cash flow projections based on the medium-term management plan for a five-year period, the growth rates for subsequent periods and the discount rates. The medium-term management plan is affected primarily by the sales volume developments and the market growth rates.</p> <p>As the impairment test of goodwill is complex and requires management to apply judgment, and the assumptions in the future cash flows, growth rates and discount rates involve uncertainties, we determined it to be a matter equivalent to a key audit matter.</p>	<p>We performed the following procedures to assess valuation of goodwill, among others:</p> <ul style="list-style-type: none"> - With the involvement of the valuation specialists of our network firm, we assessed valuation methodologies for calculation of the value in use and evaluated the discount rates used. - We assessed the future cash flows for the five-year period by evaluating consistency of the underlying business plan with the budget for the next year and the medium-term management plan approved by management. In addition, we assessed the degree of accuracy of estimation for the business plan by comparing the budgets and medium-term management plans in the prior years with actual results. - We assessed the key inputs included in the estimation for the business plan such as the sales volume developments and the market growth rates by discussing with management, comparing the relevant assumptions with market forecasts and publicly available data, performing comparisons with similar companies, and analyzing trends using actual results. - We assessed the growth rates for the periods following the five-year medium-term management plan by evaluating management's assessment of estimation uncertainties related to long-term market growth rates. - We assessed the discount rates by comparing the ones used by management with the estimates made by the valuation specialists of our network firm using available external data.

Valuation of intangible assets with indefinite useful lives	
Description and reasons for determination of a matter equivalent to a key audit matter	Auditor's response
<p>As described in note 13 to the consolidated financial statements, intangible assets with indefinite useful lives are valued at ¥192,381 million on March 31, 2019. Intangible assets with indefinite useful lives mostly consist of in-process research and development expenses recognized when Mitsubishi Tanabe Pharma Corporation, a consolidated subsidiary of the Company, acquired Medicago Inc. in September 2013 and NeuroDerm Ltd. in October 2017. These carrying amounts are ¥25,967 million and ¥134,076 million, respectively.</p> <p>Because the in-process research and development expenses are at the research and development stage, have yet to obtain marketing approval from regulatory authorities, and are not available for use, the period during which the future economic benefits embodied in the assets are consumed is unforeseeable and therefore, the assets are classified as intangible assets with indefinite useful lives. The Company does not amortize intangible assets with indefinite useful lives and conducts impairment tests annually and whenever there are indications of impairment.</p> <p>In the impairment tests, the recoverable amount of the in-process research and development expenses is measured based on value in use. The value in use is measured using discounted cash flow projections, and the significant assumptions thereof are the probability of obtaining marketing approval from regulatory authorities, the projected revenues after launch of products and the discount rates.</p> <p>The research and development processes involve inherent uncertainties. Further, the impairment tests of in-process research and development expenses require management to apply judgment on the assumptions in the future cash flows and discount rates; and therefore we determined it to be a matter equivalent to a key audit matter.</p>	<p>We performed the following procedures to assess valuation of the in-process research and development expenses, among others:</p> <ul style="list-style-type: none"> - With the involvement of the valuation specialists of our network firm, we assessed valuation methodologies for calculation of the value in use and evaluated the discount rates used. - We assessed the probability of obtaining marketing approval from regulatory authorities by considering publicly available and observable success ratios for each stage of research and development. We also discussed the current development status of the products and the probability of approval with management and the persons responsible for the products. - We assessed the key inputs such as projected sales prices and volumes, and market share of the products to evaluate the projected revenues after launch of the products. We compared the relevant assumptions with market forecasts from external institutions and examined changes from the projections in the previous year. We compared management's assumptions with external data where it was available. We also discussed with management and reviewed management presentation materials to the Board of Directors. - We assessed the discount rates by comparing the ones used by management with the estimates made by the valuation specialists of our network firm using available external data. - We evaluated management's assessment of estimation uncertainties related to the assumptions with high sensitivity resulting in the outcome of value in use calculation.

Valuation of deferred tax assets	
Description and reasons for determination of a matter equivalent to a key audit matter	Auditor's response
<p>On March 31, 2019, deferred tax assets are valued at ¥84,509 million in the consolidated statement of financial position. The related disclosure of income taxes is made in note 11 to the consolidated financial statements.</p> <p>The Company recognizes deferred tax assets for future deductible temporary differences and unused tax loss carryforwards, considering the planned reversal of deferred tax liabilities, expected future taxable income and tax planning. In particular, the Company has unused tax loss carryforwards incurred in the prior years, and recognizes the deferred tax assets of ¥64,069 million for unused tax loss carryforwards considering estimates of the expected future taxable income.</p> <p>The estimates of future taxable income are based on the Company's business plan, and the significant assumptions thereof are primarily the projected revenue growth and the forecasted market prices of raw materials.</p> <p>As the valuation of deferred tax assets is based on primarily management's estimates of future taxable income, and the underlying business plan is affected by significant assumptions involving management's judgment, we determined it to be a matter equivalent to a key audit matter.</p>	<p>We performed the following procedures to assess valuation of the deferred tax assets, among others:</p> <ul style="list-style-type: none"> - With the involvement of the tax specialists of our network firm, we assessed balances of temporary differences and unused tax loss carryforwards. We also assessed the scheduling of the reversals of existing temporary differences and the utilizations of unused tax loss carryforwards. - We assessed the future taxable income estimated by management by evaluating the underlying business plan. We also assessed consistency of the business plan with the budget for the next year approved by management, and evaluated the degree of accuracy of estimation for the business plan by comparing past business plans with historical results. - We assessed the significant assumptions included in the business plan such as the projected revenue growth and the forecasted market prices of raw materials by discussing with management, performing trend analysis considering actual results and performing comparisons with publicly available data. - We evaluated management's assessment of estimation uncertainties related to the business plan.

Ernst & Young ShinWhon LLC

June 25, 2019
Tokyo Japan

Indicators with this icon have been assured by KPMG AZSA Sustainability Co., Ltd. for FY2018.

Environmental Data

Scope of data aggregation:

The data for FY2015 covers the three operating companies (MCC, MTPC, and LSII), TNSC and their domestic Group companies. The data from FY2016 to FY2018 covers these four operating companies and their domestic and overseas Group companies. (Group companies are directly-owned consolidated subsidiaries.)

Energy Consumption/ Greenhouse Gasses (GHG) *1	FY2015	FY2016	FY2017	FY2018
<input checked="" type="checkbox"/> Greenhouse gas emissions (Scope 1 + Scope 2) (1,000 t-CO ₂ e)*2	12,054*3	14,269	14,815	14,187
<input checked="" type="checkbox"/> Scope 1	7,771	7,223	7,470	6,787
<input checked="" type="checkbox"/> Scope 2	4,283*3	7,046	7,345	7,400
<input checked="" type="checkbox"/> Scope 3*4	43,240	54,370	49,640	49,260
<input checked="" type="checkbox"/> Energy consumption (GWh) *5	34,935*3	38,950	40,977	39,126

*1 Energy used to produce electricity and steam sold externally and the resulting CO₂ emissions were excluded from figures for FY2015 (CO₂ emissions were excluded from Scope 2 emissions), but in conformity with the GHG protocol, they are not excluded starting in FY2016.
 *2 The emission factors specified in the Act on Promotion of Global Warming Countermeasures are used for the calculation of emissions in Japan. GHG emissions that are not subject to reporting under the Act are mostly calculated based on the mass balance of chemical reactions. Overseas Scope 1 emissions are calculated with the emission factors specified in the Act on Promotion of Global Warming Countermeasures or by the IPCC, and overseas Scope 2 emissions are calculated with power company-specific emission factors or country level emission factors for electricity published by the IEA.
 *3 The FY2015 results include GHG emissions of 1.65 million tons and energy consumption of 1,942 GWh by affiliate companies that are closely associated in terms of energy management, but the FY2016 results and thereafter exclude GHG emissions and energy consumption of these companies.
 *4 For the calculation method for Scope 3 GHG emissions, see page 3 of the non-financial data sheet on the MCHC website.
 *5 The unit higher heating values for fuels specified in the Act on the Rational Use of Energy or by the IPCC are used.

Environmental Impact	FY2015	FY2016	FY2017	FY2018
<input checked="" type="checkbox"/> NOx emissions (1,000 tons)	8.04	8.96	8.12	7.54
<input checked="" type="checkbox"/> SOx emissions (1,000 tons)	3.08	4.77	4.42	3.81
<input checked="" type="checkbox"/> COD emissions (1,000 tons) *6	1.74	2.00	2.08	1.84
<input checked="" type="checkbox"/> Total nitrogen emissions in water discharged (1,000 tons) *6	5.53	6.06	6.04	5.64
<input checked="" type="checkbox"/> Total phosphorous emissions (1,000 tons) *6	0.05	0.09	0.07	0.10

*6 Total COD emissions, total nitrogen emissions and total phosphorous emissions each show total volume of emissions discharged into rivers, lakes and oceans. Emissions into sewage systems are excluded.

Water Use	FY2015	FY2016	FY2017	FY2018
<input checked="" type="checkbox"/> water withdrawal (Million m ³) (excluding seawater)	171	189	193	189

Social Data

Constitution of Employees (MCHC Group)	FY2015	FY2016	FY2017	FY2018
Number of consolidated employees	68,988	69,291	69,230	72,020
Number of employees by district In Japan	44,858	44,034	43,406	43,709
Outside Japan	24,130	25,257	25,824	28,311

Aggregation period:

Each fiscal year from April 1 to March 31, or as of March 31

Scope of data aggregation:

The figures show those employed by MCC, MTPC, TNSC and LSII (including those seconded to other companies but excluding those seconded from other companies).

Diversity / Work-Life Balance / Occupational Safety	FY2015	FY2016	FY2017	FY2018
<input checked="" type="checkbox"/> Number of employees	22,508	21,736	21,770	22,064
<input checked="" type="checkbox"/> Number of employees by gender Male	19,194	18,459	18,440	18,578
<input checked="" type="checkbox"/> Female	3,314	3,277	3,330	3,486
<input checked="" type="checkbox"/> Percentage of females (%)	14.7	15.1	15.3	15.8
<input checked="" type="checkbox"/> Percentage of female managers (%) *7	7.1	7.7	8.0	8.6
<input checked="" type="checkbox"/> Paid leave utilization rate (%)	66.8	67.6	65.4	71.1
<input checked="" type="checkbox"/> Lost-time injuries frequency rate (LTIFR) *8,*9	0.48	0.30	0.26	0.99

*7 Percentage of female employees out of all employees at assistant manager level and above. *8 Scope of data aggregation: The data from FY2015 to FY2017 covers the figures from domestic operations of the four operating companies (MCC, MTPC, LSII and TNSC) and their Group companies with operating divisions active within Japan. The data for FY2018 covers these four operating companies and their domestic and overseas Group companies with operating divisions active. *9 The LTIFR is the number of lost-time injuries, illnesses and fatalities per million hours worked.



Independent Assurance Report

To the President and CEO of Mitsubishi Chemical Holdings Corporation

We were engaged by Mitsubishi Chemical Holdings Corporation (the "Company") to undertake a limited assurance engagement of the environmental and social performance indicators marked with (the "Indicators") for the period from April 1, 2018 to March 31, 2019 included in its KAITTEKI REPORT 2019 (the "Report") for the fiscal year ended March 31, 2019.

The Company's Responsibility

The Company is responsible for the preparation of the Indicators in accordance with its own reporting criteria (the "Company's reporting criteria"), as described in the Report.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Indicators based on the procedures we have performed. We conducted our engagement in accordance with the 'International Standard on Assurance Engagements (ISAE) 3000, Assurance Engagements other than Audits or Reviews of Historical Financial Information' and the 'ISAE 3410, Assurance Engagements on Greenhouse Gas Statements', issued by the International Auditing and Assurance Standards Board. The limited assurance engagement consisted of making inquiries, primarily of persons responsible for the preparation of information presented in the Report, and applying analytical and other procedures, and the procedures performed vary in nature from, and are less in extent than for, a reasonable assurance engagement. The level of assurance provided is thus not as high as that provided by a reasonable assurance engagement. Our assurance procedures included:

- Interviewing the Company's responsible personnel to obtain an understanding of its policy for preparing the Report and reviewing the Company's reporting criteria.
- Inquiring about the design of the systems and methods used to collect and process the Indicators.
- Performing analytical procedures on the Indicators.
- Examining, on a test basis, evidence supporting the generation, aggregation and reporting of the Indicators in conformity with the Company's reporting criteria, and recalculating the Indicators.
- Visiting the Fukuoka Plant of Mitsubishi Chemical Corporation and Lucite International Singapore Pte. Ltd. selected on the basis of a risk analysis.
- Evaluating the overall presentation of the Indicators.

Conclusion

Based on the procedures performed, as described above, nothing has come to our attention that causes us to believe that the Indicators in the Report are not prepared, in all material respects, in accordance with the Company's reporting criteria as described in the Report.

Our Independence and Quality Control

We have complied with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. In accordance with International Standard on Quality Control 1, we maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

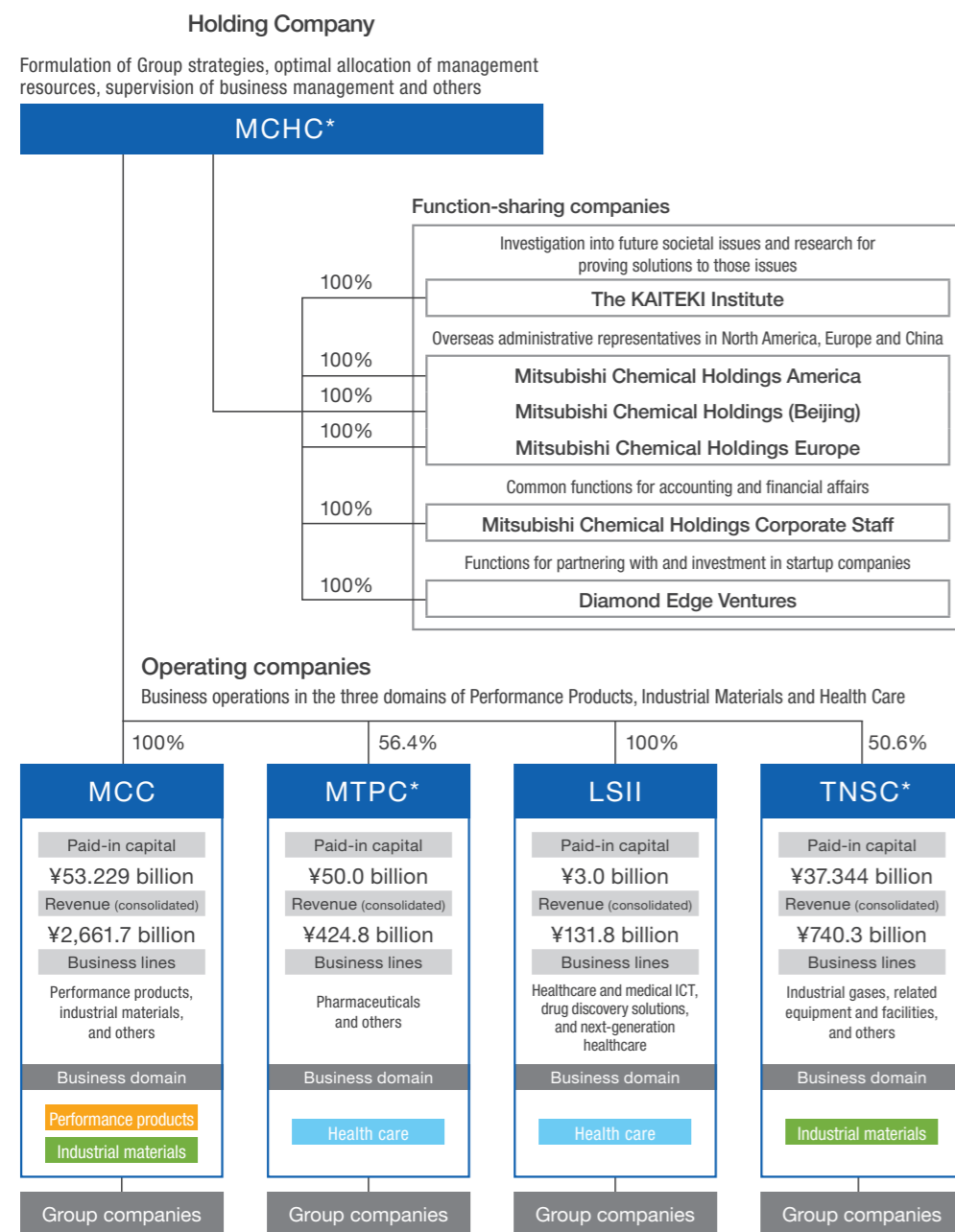
KPMG AZSA Sustainability Co., Ltd.

KPMG AZSA Sustainability Co., Ltd.
 Tokyo, Japan
 September 4, 2019

(As of March 31, 2019)

Mitsubishi Chemical Holdings Corporation (As of March 31, 2019)

Address of the head office	1-1 Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8251
Establishment	October 3, 2005
Paid-in capital	¥50.0 billion
Revenue (consolidated)	¥3,923.4 billion (FY2018)
Number of employees (consolidated)	72,020

Organizational Structure**Direct Investees**

Company Name	Principal Businesses	Paid-in Capital	Equity Participation(%)
Mitsubishi Chemical Corporation	Manufacture and marketing of chemical products	¥53.2 billion	100.0
Mitsubishi Tanabe Pharma Corporation	Manufacture and marketing of pharmaceuticals	¥50.0 billion	56.4
Life Science Institute, Inc.	Healthcare solutions business and holding shares of companies that manage the said businesses, etc.	¥3.0 billion	100.0
Taiyo Nippon Sanso Corporation	Manufacture and marketing of industrial gases	¥37.3 billion	50.6

Indirect Investees

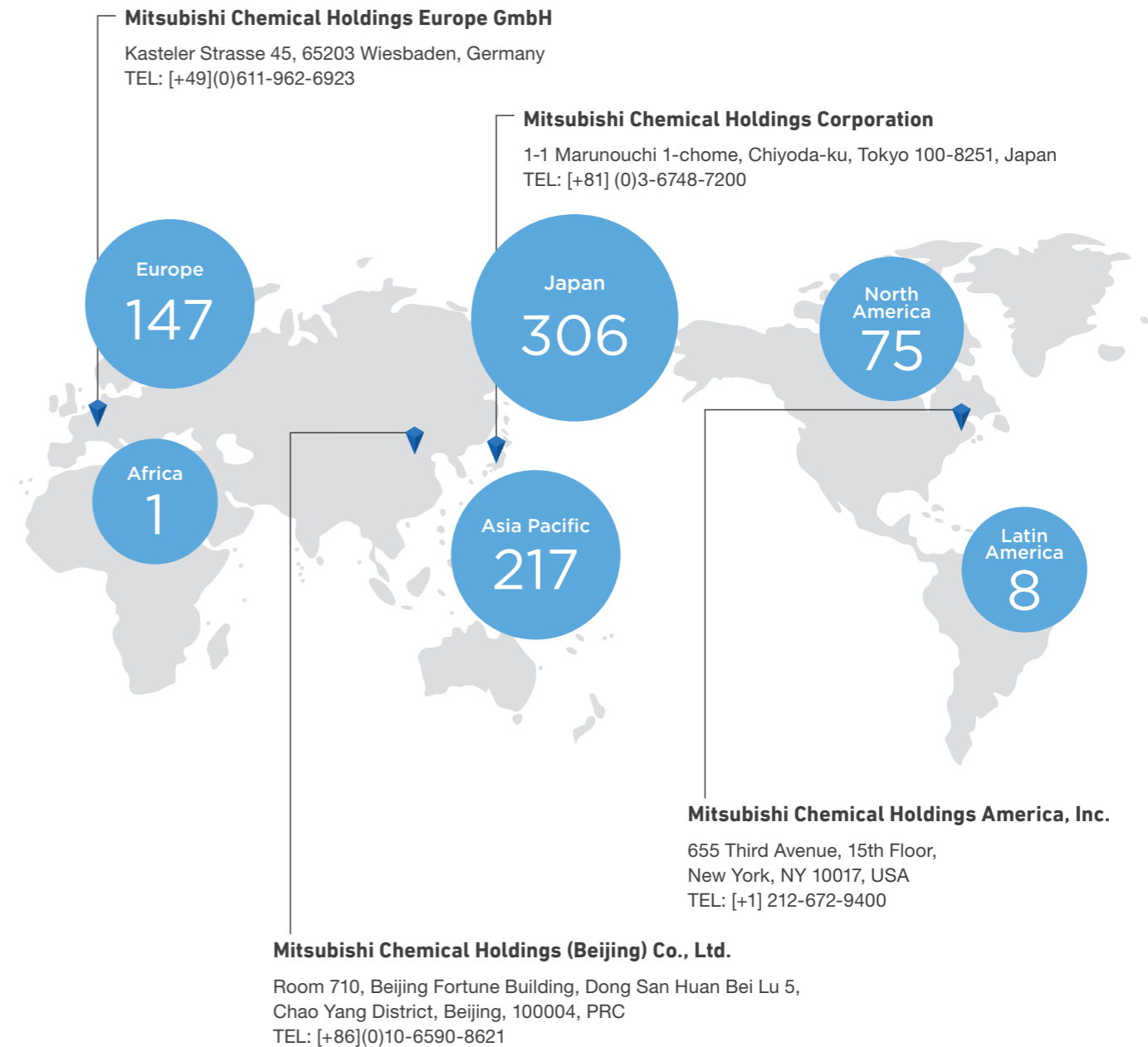
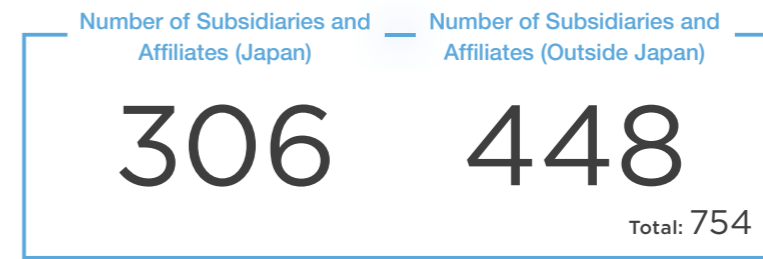
	Company Name	Principal Business	Paid-in Capital	Equity Participation(%)
Performance Products Domain	Performance Products Segment			
	J-Film Corporation	Manufacture and marketing of plastic films	¥1.2 billion	100.0
	Mitsubishi Chemical Infratec Co., Ltd.	Manufacture and marketing of house and building materials and infrastructure materials	¥0.4 billion	100.0
	Mitsubishi-Chemical Foods Corporation	Manufacture and marketing of food and pharmaceutical ingredients	¥0.5 billion	100.0
	Mitsubishi Chemical Media Co., Ltd.	Marketing of recording media and computer peripheral equipment	¥4.1 billion	100.0
	MC Ionic Solutions US, Inc.	Manufacture and marketing of electrolytes for lithium-ion batteries	U.S. \$100	100.0
	Mitsubishi Chemical Advanced Materials AG	Management of subsidiaries that engage in the engineering plastic business	CHF28 million	100.0
	Mitsubishi Chemical Performance Polymers, Inc.	Manufacture and marketing of thermoplastic compounds and functional polyolefins	U.S. \$100	100.0
	Mitsubishi Polyester Film, Inc.	Manufacture and marketing of polyester film	U.S. \$100	100.0
	Industrial Materials Domain	Chemicals Segment		
Kansai Coke and Chemicals Co., Ltd.		Manufacture and marketing of coke	¥6.0 billion	51.0
Japan Polyethylene Corporation		Manufacture and marketing of polyethylene	¥7.5 billion	58.0
Japan Polypropylene Corporation		Manufacture and marketing of polypropylene	¥11.8 billion	65.0
Mitsubishi Chemical Lucite Group Limited		Management of subsidiaries that engage in the MMA business	£111 million	100.0
Industrial Gases Segment				
JFE Sanso Center Corporation		Manufacture and sale of industrial gases	¥0.09 billion	60.0
NIPPON EKITAN Corporation		Manufacture and marketing of industrial gases	¥0.6 billion	84.2
Nippon Gases Euro-Holdings S.L.U.		Management of subsidiaries that engage in the industrial gases business	€100 million	100.0
Matheson Tri-Gas, Inc.		Manufacture and marketing of industrial gases	U.S. \$56	100.0
Health Care Domain	Health Care Segment			
	Qualicaps Co., Ltd.	Manufacture and marketing of capsules for pharmaceuticals, health and nutrition foods, and pharmaceutical processing equipment	¥2.9 billion	100.0
	LSI Medience Corporation	Clinical testing, manufacture and marketing of diagnostic reagents and instruments, and drug discovery solutions	¥3.0 billion	100.0
	Mitsubishi Tanabe Pharma Factory Ltd.	Manufacture and marketing of pharmaceuticals	¥1.1 billion	100.0
	Mitsubishi Tanabe Pharma Holdings America, Inc.	Planning and execution of targets and strategies relating to development of the pharmaceutical business in the U.S. and management of U.S. subsidiaries	U.S. \$167	100.0
Others	Mitsubishi Chemical Engineering Corporation	Engineering and construction services	¥1.4 billion	100.0
	Mitsubishi Chemical Logistics Corporation	Logistics and warehouse services	¥1.5 billion	100.0

(Quadrant AG changed corporate name to Mitsubishi Chemical Advanced Materials AG as of April 1, 2019)

● MCC Group ● MTPC Group ● LSII Group ● TNSC Group

Main Businesses, Products and Services			Main Uses
Information, Electronics and Displays			Display businesses ● Optical films ● Color resist Semiconductor businesses ● High purity chemicals, High-performance cleaning agents ● Solution service
High Performance Films			● Food packaging materials ● Industrial-use films ● Medical and sanitary films
Environment and Living Solutions			● Aqua solutions ● Ion-exchange resins ● Separator and aqua chemicals ● Agricultural solutions ● Infrastructure solutions
Advanced Moldings and Composites			● High-performance engineering plastics ● Carbon fiber and composite materials ● Alumina fibers ● Functional moldings and composites ● Fibers and textiles
Advanced Polymers			● Performance polymers ● Phenol and polycarbonate ● PBT* ³ ● Sustainable polymers
High Performance Chemicals			● Coating materials ● Epoxy resins ● Resin additives ● Inorganic chemicals ● Food ingredients
New Energy			● Lithium-ion battery materials ● LED materials ● Scintillator
MMA			● MMA and PMMA
Petrochemicals			● Basic petrochemicals and basic chemical derivatives ● Polyolefins
Carbon Products			● Coke ● Carbon materials ● Carbon black ● Synthetic rubber
Industrial Gases			● Industrial gases ● Industrial gas-related equipment and facilities
Pharmaceuticals			● Ethical pharmaceuticals
Life Science			● Capsules and pharmaceutical processing equipment ● Active pharmaceutical ingredients and intermediates

*1 Polyvinyl alcohol *2 Fiber reinforced plastic *3 Polybutylene terephthalate



Disclaimer: This report contains forward-looking statements that reflect MCHC's assumptions and beliefs based on currently available information. Actual results may differ materially from forecasts due to various risk factors and uncertainties. They include, but are not limited to, demand in Japan and overseas, exchange rates, price and procurement volume of crude oil and naphtha, market trends, technological innovation, National Health Insurance drug price revisions, product liabilities, lawsuits, laws and regulations, as the MCHC Group is engaged in a wide range of businesses, including Information, electronics and displays, Advanced moldings and composites, Advanced polymers, MMA, Petrochemicals, Carbon products, Industrial gases and Pharmaceuticals.

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