Mitsui Chemicals



Mitsui Chemicals Report

2019

Year Ended March 31, 2019

From One to Infinity

Creating a brighter future through chemistry.

Four Strengths of the Mitsui Chemicals Group

100 years of technological know-how	Diverse range of products & services	Global platform & diverse human resources	Strong customer base



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Editorial Policy

In compiling this Mitsui Chemicals Report 2019, we sought to present a comprehensive overview of our various strategies and performance from both the financial and non-financial perspectives with the ultimate goal of creating a platform for meaningful dialogue with all stakeholders. While we have drawn on the disclosure framework for integrated reports issued by the International Integrated Reporting Council (IIRC) and the Ministry of the Economy, Trade and Industry's Guidance for Collaborative Value Creation, we have tried to avoid a rigid format. Our goal has been to provide a useful document that allows readers to gain a deeper understanding of our efforts toward the creation of value through innovation over the medium- to long-term.

Environment Social Governance
Guidance for Collaborative Value Creation

Scope and Principles

- Period: April 1, 2018 to March 31, 2019 (FY2018). Please note some data may postdate April 2019.
- Scope: Mitsui Chemicals, Inc. and the Mitsui Chemicals Group (Other entities, if included, are identified in the text.)
- Accounting principles: Japanese Generally Accepted Accounting Principles (JGAAP)

Forward-Looking Statements

This report contains forward-looking statements about future plans and strategies as well as forecasts and expectations regarding the performance of the Mitsui Chemicals Group. Actual results may differ materially from those projected due to a variety of factors, and the Mitsui Chemicals Group cannot guarantee that any forward-looking statements herein are accurate or that targets will be achieved. (Planned figures are as of May 15, 2019.)

Inclusion in ESG investment indices

MEMBER OF Dow Jones Sustainability Indices
In collaboration with SAM
FTSE4Good
FTSE Blossom Japan
MSCI 2019 Constituent MSCI ESG Leaders Indexes
MSCI MSCI Japan ESG Select Leaders Index
MSCI MSCI Japan Empowering Women Index (WIN)
Member of SNAM Sustainability Index 2019

As of September 2019

Corporate Vision

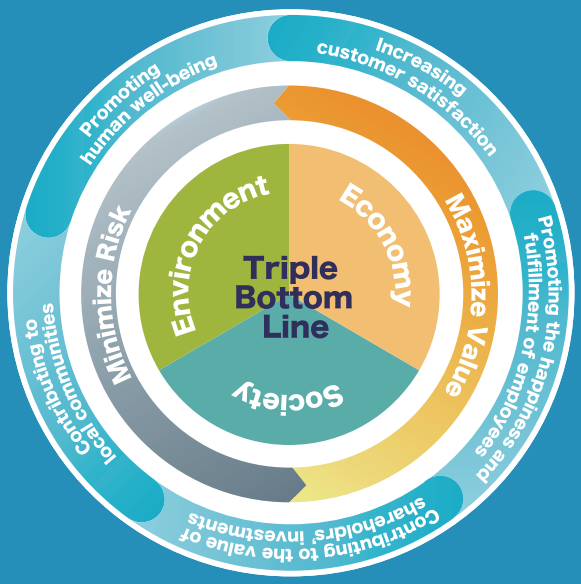
Corporate Mission

Contribute broadly to society by providing high-quality products and services to customers through innovation and the creation of materials, while keeping in harmony with the global environment.

Corporate Target

Constantly pursuing innovation and growth to become a chemical group with an undisputed global presence.

Triple Bottom Line Management



Together with society we aim to achieve sustainable growth and development by deepening our triple bottom line management approach based on the three axes of economy, environment, and society. We also seek to engage in management from a long-term perspective and implement initiatives aimed at solving the challenges faced by society.

Mitsui Chemicals Group's Future Vision
https://www.mitsuichem.com/en/corporate/management/

Value Creation Process

Social trends

Changes in global environment
- Climate change and frequent occurrence of natural disasters
- Stricter environmental regulations

Population increase
- Issues concerning resources, energy, water, and food

Maturation of developed nations and rise of emerging countries
- Declining birth rate and aging population (developed nations)
- Growing need for improved QOL (emerging countries)

Advancements in technology
- Increasingly information-based society (IoT, big data, AI, etc.)
- Industrial and social paradigm shifts

Input*

Injection of resources

Global human resources
17,743 employees

Percentage of overseas employees
43%

Capital expenditure
¥**61.9**bn

R&D expenses
¥**35.8**bn

Financial position

Consolidated total assets
¥**1,501.1**bn

Net D/E ratio
0.68

Shareholders' equity ratio
36.8%

Credit ratings

Japan Credit Rating Agency (JCR)
A+

Rating and Investment Information (R&I)
A

We believe that broadly helping to solve various issues faced by society through our business activities based on our Corporate Mission is the Mitsui Chemicals Group's reason for existence. Moreover, in recognizing the importance of finding the right balance between the three dimensions (i.e., economy, environment, and society) in order to realize sustainable development of society and the Group, we will continue to propel our triple bottom line management approach. With these ideas in mind and in light of social trends and our Group strengths, we aim to realize a future cohesive society in harmony with the environment, health and well-being in an aging society, and industrial platforms in harmony with local communities. We will continue to create new customer value and help build a better future society through our business activities.

Four strengths

▶ P4

1. 100 years of technological know-how
2. Diverse range of products & services
3. Global platform & diverse human resources
4. Strong customer base

Creating new customer value and solving social challenges through our business activities

Five business activities

- Mobility ▶ P36
- Health Care ▶ P40
- Food & Packaging ▶ P44
- Basic Materials ▶ P48
- Next Generation Business ▶ P51

Foundations for growth ▶ P60

Output*/Outcome

Helping build a better future society

Net sales
¥1,482.9bn

Operating income
¥93.4bn

Profit attributable to owners of parent
¥76.1bn

ROE
14.3%

ROIC
6.0%

Blue Value™ sales
¥231.1bn

Rose Value™ sales
¥194.0bn

▶ P27

Dividends
¥100/share

Acquisition of treasury stock
¥10.0bn

Total return ratio
39.0%

Cohesive society in harmony with the environment

Health and well-being in an aging society

Industrial platforms in harmony with local communities

*Actual results as of FY2018

Four strengths of the Mitsui Chemicals Group

100 years of technological know-how + Diverse range of products & services

Ever since we started up our coal chemical business in 1912 in Omuta (Fukuoka), the Mitsui Chemicals Group has continued to produce numerous different products. And after operations at Japan's first ethylene plant came online in 1958, we started to accumulate state-of-the-art technologies in the petrochemicals field. The accumulation of precision synthesis technologies derived from coal chemicals and polymer science-based technologies mainly rooted in petrochemicals is without doubt the driving force behind our current lineup of competitive products that serve to underpin our growth today and going forward.

Precision synthesis technology

derived from coal chemicals

- 1912 Started operations at Mitsui Mining's Omuta Works
- 1915 Industrialized synthetic dye alizarin (First in Japan)
- 1932 Started production of synthetic dye indigo
- 1963 Polyurethane material TDI

Making fertilizer from exhaust gas produced as a byproduct of the coal business was our starting point. Since then, we have honed our precision synthesis technology in the course of creating various products.

Polymer science

to meet varied customer needs

- 1958 Ethylene plant operations came online (Japan's first petrochemical complex) (First in Japan)
- 1975 TAFMER™ (alpha-olefin copolymer)

We have cultivated our polymer science by developing resins to meet various needs, mainly with our cutting-edge polyolefin technology.



Manufacturing process technology

The bedrock of our strong competitive advantage

Through a process of developing and improving various methods over the course of our long history, we have continued to raise the level of our technology so that we can stably manufacture high-quality products at low cost.

1 100 years of technological know-how

2 Diverse range of products & services

Our History
https://www.mitsuichem.com/en/corporate/history/index.htm

1987
TREBON™ (insecticide)



1987
MR™ (plastic ophthalmic lens materials)



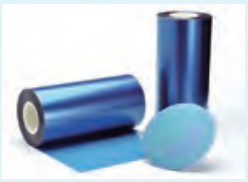
2001
STARKLE™ (insecticide)



1986
Established Advanced Composites, Inc. (polypropylene compounds)



1987
ICROS™ Tape (semiconductor manufacturing process tapes)



1995
APEL™ (cyclic olefin copolymer)



1998 World's first
EVOLUE™ (metallocene linear low density polyethylene (gas-phase process))



Four strengths of the Mitsui Chemicals Group

Strong customer base + Global platform & diverse human resources

We aim to achieve growth as well as strive to solve the challenges of society with a lineup of high added-value, high-performance products mainly in the three targeted business domains of Mobility, Health Care, and Food & Packaging. The backbone of these products is the technology we have honed over our 100-year history. They are rated highly from our leading customers worldwide, so much so that we boast a number one or number two share in certain markets.

Business segments	Main products	Main applications
Mobility	polypropylene compounds	Auto bumper and instrument panel materials
	TAFMER™ (alpha-olefin copolymer)	Auto bumper and instrument panel materials
	APEL™ (cyclic olefin copolymer)	Smartphone camera lens materials
Health Care	MR™ (ophthalmic lens materials)	Plastic ophthalmic lens materials
Food & Packaging	TREBON™ (etofenprox) STARKLE™ (dinotefuran)	Insecticide
	ICROS™ Tape	Semiconductor manufacturing process tapes
Basic Materials	EVOLUE™ (metallocene linear low density polyethylene)	High-performance packaging materials

Global platform & diverse human resources

We are continuing to actively expand our global operations—overseas sales currently account for 45% of total sales. Globalization of our business is accelerating with more than 40% of employees now based overseas.

Overseas sales ratio

1997 → 2018

16% → 45%

1 100 years of technological know-how

2 Diverse range of products & services

3 Global platform & diverse human resources

4 Strong customer base

100 years of technological know-how		Manufacturing process technology	Strong customer base <Market share>
	Polymer science		Global No.2 (Share: 21%) Asia No.1
	Polymer science		Global No.2 Asia No.1
	Polymer science		Global No.1 (Share: over 50%)
	Precision synthesis technology		Global No.1 (Share: 45%)
	Precision synthesis technology		Japan No.2
	Polymer science		Global No.1
	Polymer science		Asia No.1



Employees
17,743
Percentage of overseas employees
43%

Consolidated companies
155
Overseas-based
107

Economy, Environment, and Society: Targets and Progress

In aiming to realize a future cohesive society in harmony with the environment, health and well-being in an aging society, and industrial platforms in harmony with local communities, as set forth in our 2025 Long-Term Business Plan, the Mitsui Chemicals Group has established respective targets for economy, environment, and society, the three dimensions of our management approach. Drawing on the strengths we have accumulated over our 100-year history, we will take on the challenge of achieving these goals as a highly profitable, growing, and sustainable company that contributes to society.

2025 Long-Term Business Plan Targets and KPIs

Economy

Accelerating our business portfolio transformation (shifting to a customer-driven business model)
- Expand three targeted business domains
- Develop next generation businesses
- Strengthen competitiveness of the Basic Materials domain

Enhancing cash generation capabilities
- Conduct active investments while maintaining fiscal discipline
- Improve capital efficiency

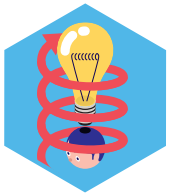
Boosting shareholder returns
- Stable and continuous dividend increase
- Flexible acquisition of treasury stock

Operating income	¥**200**bn
Net sales	¥**2,000**bn
ROS	**10**%
ROE	**10**% or more
ROIC	**8**% or more
Net D/E	**0.8** or less
Shareholder returns	Total return ratio **30**% or more
Growth investment	¥**1,000**bn of which ¥400bn is earmarked for strategic investments (total amount for 10 years, excl. maintenance investments)
R&D expenses	¥**70**bn

Environment and Society

Maximize products and services to achieve a low-carbon, recycling-oriented, and cohesive society in harmony with the environment	Expand sales of environmentally oriented products and services ▶ Expand products and services that help realize a low-carbon, recycling-oriented, and cohesive society in harmony with the environment across the entire value chain.	• Blue Value™ products sales ratio: 30% or more
	Reduce environmental impact in production and logistics ▶ Reduce Greenhouse Gas (GHG) and environmentally harmful substance emissions and efficiently utilize resources throughout the Group as a whole.	• GHG emissions reduction rate[*1]: 25.4% or more compared with FY2005 (FY2030) • Energy intensity reduction[*2]: Continue at 1% or above (5-year annual reduction rate)
Maximize products and services to achieve better quality of life (QOL) and a smart society	Expand sales of products and services that contribute to a healthy and happy society ▶ Expand products and services that can improve QOL by addressing such issues as the declining birth rate and aging population, extending healthy life expectancy, and the food problem.	• Rose Value™ products sales ratio: 30% or more
Pursue thorough safety, high quality, and fairness across the entire supply chain	Ensure safety ▶ Maintain high levels of safety even in the face of diversifying human resources, facilities, and technologies associated with ongoing global growth and business portfolio transformation.	• Incidence of major accidents: Continue at zero • Significant occupational injury frequency: Continue at or below 0.15
	Provide high-quality products and services ▶ Ensure the stable supply of products that satisfy customers' requirements at a high level.	• Incidence of customer non-conformance: 10 ppm or less
	Implement product stewardship ▶ Implement risk management across the supply chain through the risk assessment of products and provision of safety information to customers and other stakeholders.	• Product risk assessment implementation rate: 99% or more (FY2020) • Provision of latest product safety information: Continue at 100%
	Continue as a company that is fair and trusted by society ▶ Thoroughly comply with all statutory and regulatory requirements and prevent misconduct in all global business activities.	• Incidence of major legal and regulatory violations: Continue at zero
	▶ Encourage sustainability initiatives of business partners.	• Supplier sustainability assessments and improvement support (sustainable procurement ratio of 70% or more).
	▶ Enable Group employees to thrive at work and make the most of their potential.	• Ratio of women in management positions (manager-level or above)[*3]: 10% or more • Increase employee engagement

Three basic strategies to provide value to society



1 Pursue innovation

- Promote customer-driven innovation
- Strengthen our ability to propose solutions through R&D and by acquiring peripheral technologies and products



2 Accelerate global expansion

- Aim to grow the Group globally and reinforce overseas production and sales channels mainly through our own regional expansion and business alliances



3 Strengthen existing businesses

- Build next-generation plants with the use of IoT, AI, and other cutting-edge technologies
- All-out streamlining, including supply chains

	FY2018 Results	FY2019 Targets
	¥**93.4**bn	¥105bn
	¥**1,482.9**bn	¥1,540bn
	6.3%	6.8%
	14.3%	13.1%
	6.0%	6.4%
	0.68	0.65
	Dividends ¥**100**/share Acquisition of treasury stock ¥**10**bn (Total return ratio **39**%)	Dividends ¥100/share (Total return ratio 30% or more)
	Capital expenditure ¥**61.9**bn (incl. maintenance investments)	Capital expenditure ¥105bn (incl. maintenance investments)
	¥**35.8**bn	¥38bn
	• **16**%	• New Blue Value™ and Rose Value™ certifications: 15 or more
	• **27.2**% • **-0.3**%	• GHG emissions reduction: 30 thousand tons or more compared with the previous fiscal year • Energy intensity reduction: 1% or more (5-year annual reduction rate), or 1% or more (annual reduction rate with FY2009 as base year)
	• **13**%	• New Blue Value™ and Rose Value™ certifications: 15 or more
	• **1** • **0.33**	• 0 • 0.15 or less
	• Number of complaints (Company-responsible): Increased (compared with the previous fiscal year, Mitsui Chemicals, Inc.)	• Number of complaints (Company-responsible): Reduce by 10% or more (compared with FY2017, Mitsui Chemicals, Inc.)
	• Completed assessment of all products • **100**%	• Formulate new medium- to long-term goal • 100%
	• **0**	• 0
	• **44**%*2	• Conduct supplier sustainability assessment in collaboration with business divisions and domestic affiliated companies. • Raise awareness of Purchasing Policy revision and Sustainable Procurement Guidelines both within and outside the Group
	• **2.9**% • Conducted surveys and measured engagement levels	• 4.0% • Formulate action plans

8 PRIORITIES for FY2019

Business strategies

1. **Expand the three targeted business domains**
   - Expand investments and businesses mainly by making inroads into peripheral fields
   - Ensure production capacity to meet demand
2. **Develop new businesses of the next generation and accelerate new product development**
3. **Further strengthen competitiveness of the Basic Materials domain**

Manufacturing

4. **Bolster manufacturing productivity with the use of IoT, AI, and other cutting-edge technologies**
5. **Thoroughly ensure safety and globally expand safety culture**

Management

6. **Steadily recover investments and strengthen inventory management**
7. **Strengthen the Group's global management platform**
8. **Promote sustainability management with ESG elements at its core**

Related SDGs and Key Issues



- Climate change responses (reduction of GHG emissions)
- Air environment preservation
- Water resource protection and control
- Biodiversity
- Industrial waste control
- Efficient use of resources
- Low environmental footprint products and services
- Development of renewable energy



- Shift to urbanization and smart cities
- Declining birth rate and aging population
- Advancement of medical and pharmaceutical fields
- Food problem



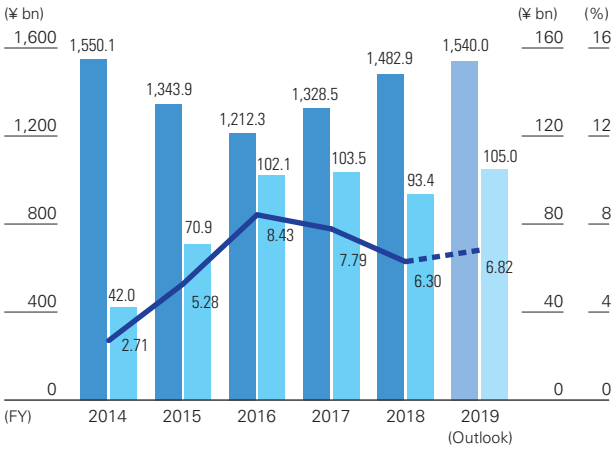
- Safety and prevention
- Product stewardship
- Quality of products and services
- Employment and human resources
- Labor conditions
- Sustainable procurement
- Compliance

*1 Mitsui Chemicals, Inc. and consolidated subsidiaries in Japan *2 Mitsui Chemicals, Inc. only *3 Mitsui Chemicals, Inc. registered employees

VISION 2025
https://www.mitsuichem.com/en/corporate/vision/index.htm

Financial Highlights

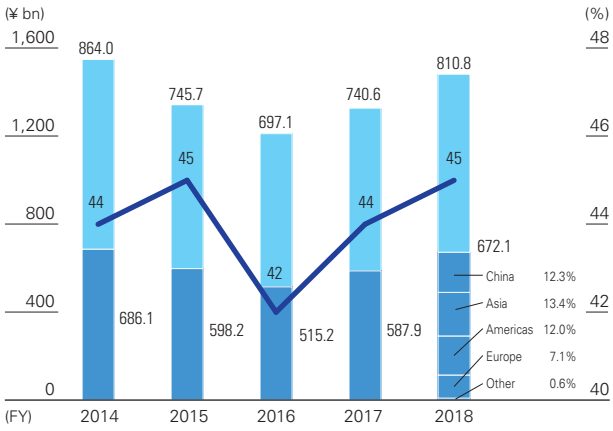
Net sales/Operating income/ROS



Net sales (left scale) Operating income (right scale)
ROS (right scale)

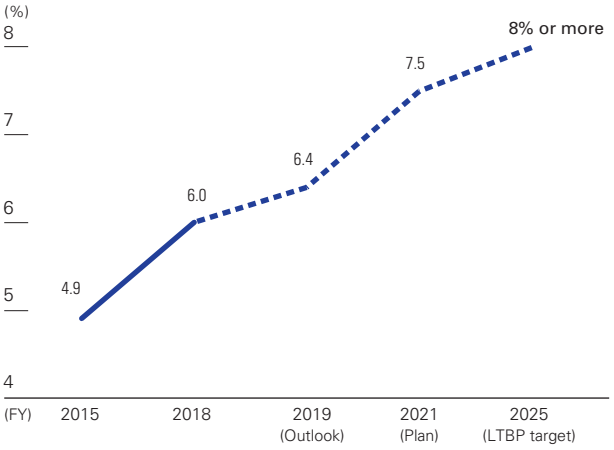
* ROS: Return on sales

Overseas sales/Overseas sales ratio



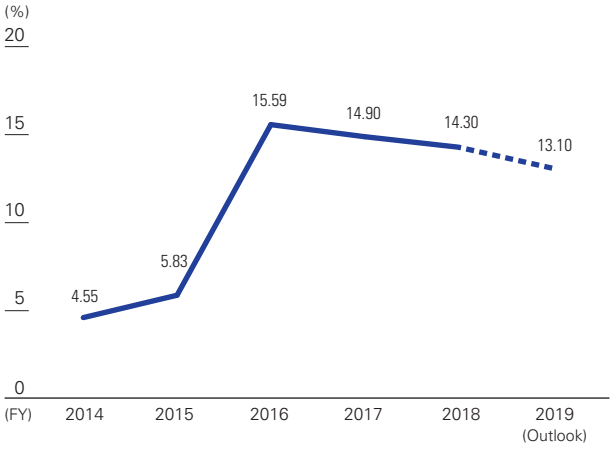
Overseas (left scale) Japan (left scale)
Overseas sales ratio to total sales (right scale)

ROIC



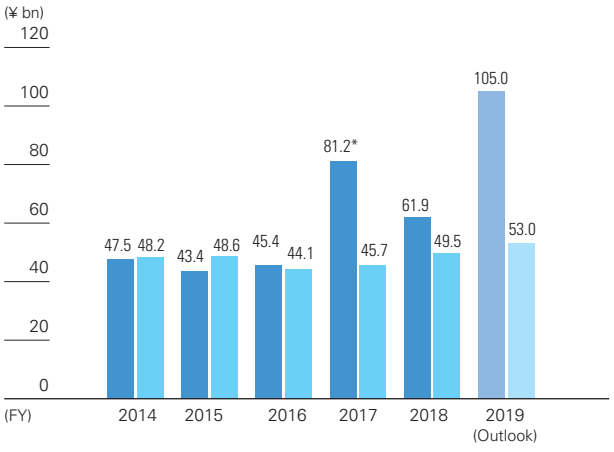
* ROIC: Return on invested capital=NOPAT/Invested capital

ROE



* ROE: Return on equity

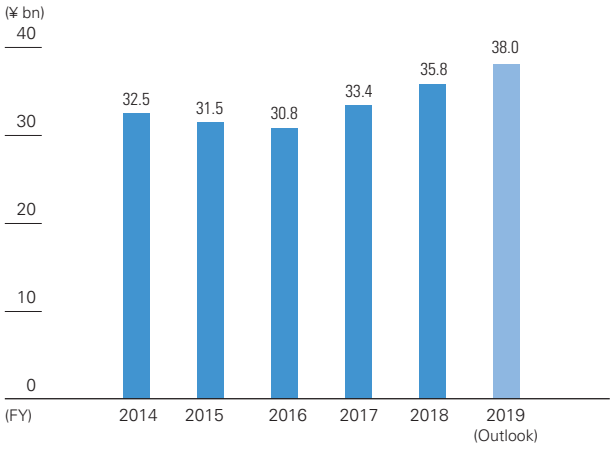
Capital expenditure/Depreciation & amortization



Capital expenditure Depreciation & amortization

* This figure includes acquisition of shares of ARRK Corporation ¥23.9 billion.

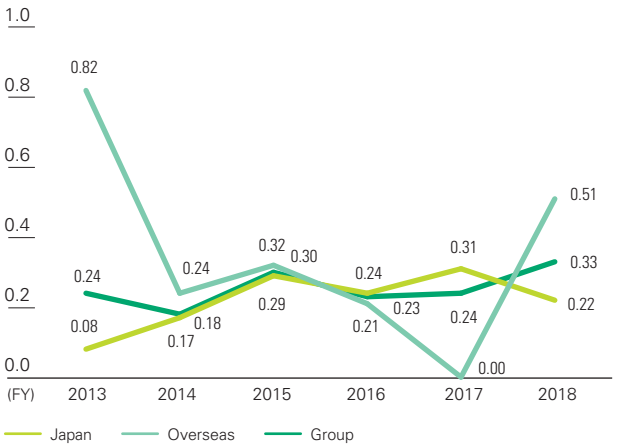
R&D expenses



Fact Book
https://www.mitsuichem.com/en/ir/fact_book/index.htm

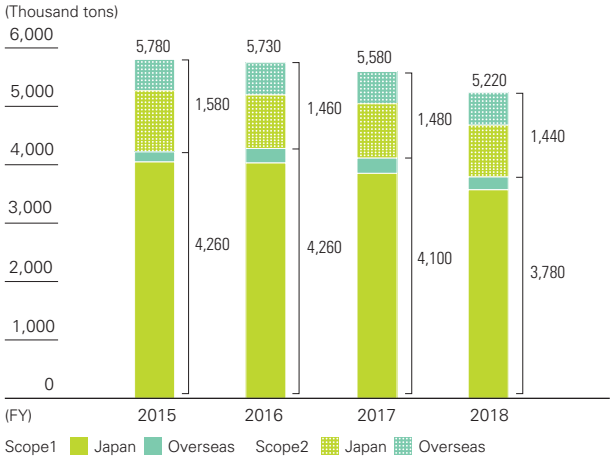
Non-Financial Highlights

Significant occupational injury* frequency



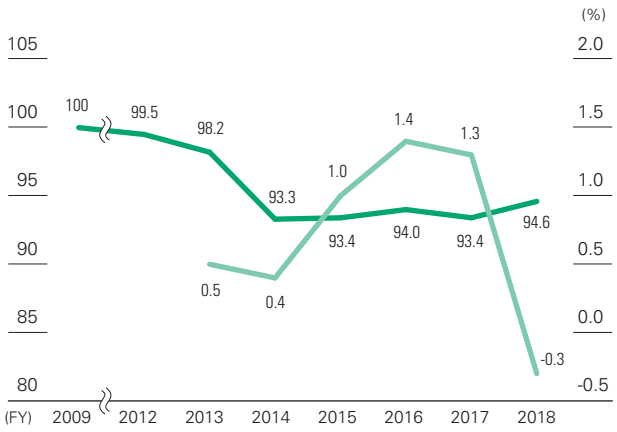
* "Significant Occupational Injuries (SOIs)" refer to occupational injuries that resulted in absence from work or death. SOIs also include lighter occupational injuries that, due to the potential danger in the cause of the injury, could have led to absence from work or death. SOIs do not include those injuries that are not directly related to operations.

GHG emissions



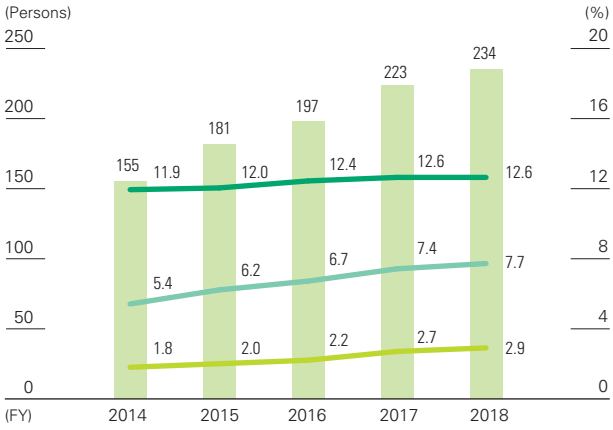
* We previously disclosed our GHG emissions as a combination of both Scope 1 and Scope 2 less the amount of electricity and steam sold, but we now disclose the sum of Scope 1 and Scope 2.

Energy intensity



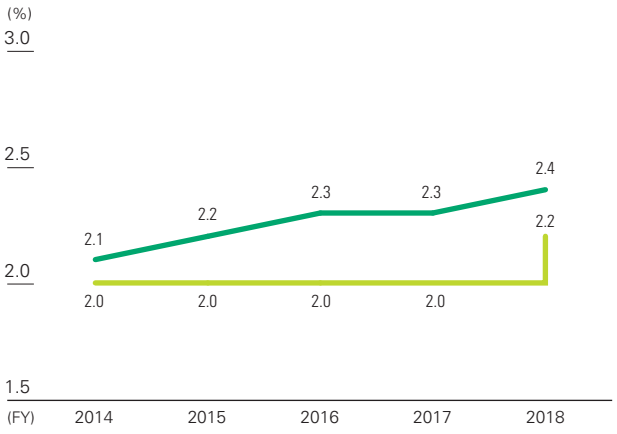
* Mitsui Chemicals, Inc.

Ratio of female employees



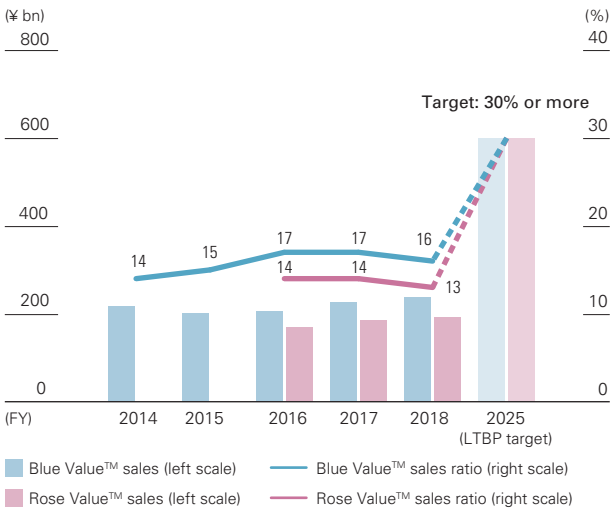
* Mitsui Chemicals, Inc. registered employees

Ratio of employees with disabilities



* Mitsui Chemicals, Inc. registered employees

Blue Value™ and Rose Value™ products sales ratios



CEO Message



Pursuing sustainable growth as a

Tsutomu Tannowa
Representative Director,
President & CEO

Progress on our Long-Term Business Plan

As we flexibly respond to changes in society, I can sense we are making steady progress under our Long-Term Business Plan

Guided by the formulation of our 2025 Long-Term Business Plan, the Mitsui Chemicals Group continues to implement initiatives aimed at solving the challenges faced by society. Fiscal 2018 was the second year of this plan. In looking back on that 12-month period, the environment surrounding the global economy changed significantly mainly because of trade friction involving the US, a Chinese economic slowdown, and heightened geopolitical risks. And the pace of this change continues to accelerate. At the same time, it is becoming increasingly clear what issues the chemical industry and society at large must address; namely, climate change and problems pertaining to plastic waste.

That said, looking at the megatrends from a higher perspective, I feel there to be no major differences compared to our outlook as of the time we put together our long-term plan. We originally formulated it in order to swiftly respond to these kinds of changes in the business environment and we initially assumed that would involve taking such changes in our stride and moving forward by flexibly responding on a rolling basis.

“strong” and “good” company

Fiscal 2018 operating income regrettably declined year on year owing partly to one-off negative factors, but net income reached a record high. We have implemented structural reforms and other measures thus far and they are starting to yield results. I can sense that we are making steady progress under our Long-Term Business Plan.

Initiatives in three targeted business domains

Expansion in Mobility and Health Care domains drove YoY growth in operating income in the three targeted business domains
Aiming to strengthen ability to propose solutions

We continue to see solid growth in the **Mobility domain** despite a slight slowdown in the pace of increase in global automobile production volume. The automotive industry is currently in the midst of a major once-in-a-century period of transformation, as symbolized by the key acronyms CASE and MaaS.

Regardless of how this transformation proceeds, the need for lighter weight, safety, and greater comfort will only continue to increase up ahead. In line with this trend, I think the fields in which we can leverage our strengths—namely, our broad lineup of functional polymeric materials, advanced technological capabilities, and product quality—will further expand.

Moreover, the ability to propose solutions to our customers even in the area of manufacturing will be crucial in the future. In 2017 we incorporated ARRK



Corporation into the Group through an M&A deal and integrated their design, prototyping, and analytical functions. Furthermore, in March 2019 we set up a Design & Solution Center with the aim of strengthening our product development capabilities and we are continuing to beef up our ability to propose total solutions to customers with a view to utilizing it in the three targeted business domains.

In the **Health Care domain**, sales are increasing steadily for vision care materials, an area in which we possess considerable expertise in terms of technological capabilities and customer base. Going forward, we will step up our efforts in developing materials that offer added value not only in terms of performance, but also functionality. While our TouchFocus™ next-generation eyewear is a BtoC product, a field that we have little experience in, market recognition is growing steadily, so I think there are prospects for taking this product to overseas markets.

In addition to premium disposable diapers, for which we have boosted sales thus far, we continue to expand applications for our high-performance nonwovens in automotive, healthcare, and other industrial materials fields. In April 2019 we established our Industrial Materials Development Department for the purpose of advancing such developments.

And even though reorganizing our dental materials business presented a challenge, we continue to put in place a platform for expanding sales by wasting no time in implementing initiatives such as bolstering our sales framework and launching digital-related products.

In the **Food & Packaging domain**, sales of industrial films are currently at somewhat of a standstill largely as a result of the downturn in the semiconductor market caused by the impact of the US-China trade conflict. From a longer-term perspective, however, we expect demand to be driven mainly by further developments in AI and IoT and the rollout of 5G networks, and we are continuing to push ahead with strategies such as strengthening our operations in Taiwan. We also expect demand for packaging film for food products to increase in line with the need to reduce food loss, which is why we intend to work hard on developing products that offer new features.

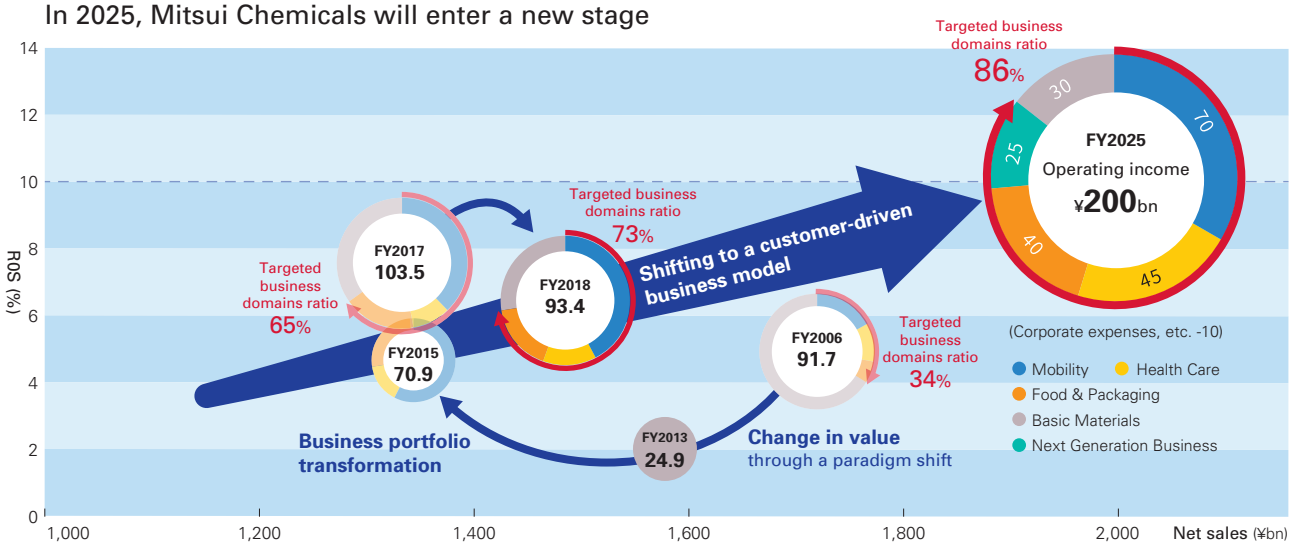
In our agrochemicals business, we are making steady progress on developing new pipelines. We have concluded a global license agreement with an influential agrochemical manufacturer in Europe for our new mainstay insecticide as we aim to expand into global markets.

Next Generation Business and Basic Materials domains

The Next Generation Business steadily coming to fruition Structural reforms in the Basic Materials domain to continue

We are currently addressing the **Next Generation Business domain** in order to create new solution businesses with an eye to the next 10 or 20 years. In the energy field, we are making progress in our power generation and solar power diagnosis businesses. In the latter, we plan to launch a certification

In 2025, Mitsui Chemicals will enter a new stage



business in India in fiscal 2019. In the medical field, our rapid bacteriological identification system has reached the clinical trial stage. Given that this system helps to quickly diagnose sepsis, an infectious disease with a particularly high mortality rate, I think the technology is quite valuable from the viewpoint of solving social challenges.

We are also aggressively pursuing open innovation and corporate venture capital projects through partnerships with start-up firms and pushing ahead with the development of models for physicians to practice surgery on and improve their skill sets.

All of these businesses will play a part in solving the challenges faced by society, and although we still have hurdles to overcome before they can start contributing to profits, we hope to steadily nurture them one by one going forward.

In the **Basic Materials domain**, we will continue to implement the structural reforms we have carried out thus far. I believe structural reforms to be a never-ending topic. As its name suggests, the basic materials business is the cornerstone of our Company's growth domains and underpins the foundation of our society. In order to shore up our long-term competitiveness as a chemical corporation, we will constantly endeavor to streamline our production activities and work even harder to improve quality.

Linking greater investments to business results

Earmarking ¥430 billion for investment over next three years Carefully selecting projects that deliver ample returns

Under our Long-Term Business Plan, we intend to actively pump managerial resources into growth investments.

It is important that these investments are linked steadily to growth and our basic policy is to ensure enough production capacity to meet demand. Accordingly, we will carefully select projects from which we expect to generate ample returns on investment.

Another key strategy for expanding business is the use of M&As. However, M&As with the simple aim of expansion do not lead to sustained growth. As a general rule, I believe we should avoid engaging in M&As in business domains isolated from our own. In other words, we should target areas in which there is potential for synergies with our existing businesses. The incorporation into the Group of technologies and know-how we currently do not possess should serve as new powers for further growth.

In undertaking these growth investments, we give due consideration to the cost of capital and endeavor to strike the right balance between return on investment and growth taking ROIC as an indicator. We will continue to concentrate our investments in the three targeted business domains and at the same time aim to steadily improve ROIC in the future.

▶ See CFO Message on page 18.

Sustainability management

Incorporating sustainability into management, dealing with risks, and aptly seizing growth opportunities

As symbolized by the spread of the SDGs, sustainability has taken hold as a keyword and calls for companies to address ESG issues are mounting. In looking back on fiscal 2018, I think this trend gained even more momentum. Stakeholders are increasingly focusing on the business strategies of companies with regard to how they accurately gauge risks and opportunities and incorporate them into management, as well as how quickly they can transform their business models. From now on, creating social value will be crucial to enhancing corporate value.

As such, we established our Corporate Sustainability Division in 2018 in order to engage in sustainability management with ESG elements at its core. More than a year has passed since then and sustainability continues to steadily take root in our Company's management. It is already an inseparable point of view when management considers an investment or puts together a budget. Sustainability topics are even routinely discussed at Company-wide Strategy Committee meetings and Board of Directors meetings and we are making every effort to sensitively reflect the needs of society.

The disclosure of ESG-related information is also a critical component for management, hence our proactive efforts to engage in dialogue with investors and various other stakeholders. Unlike results shown in financial statements and the like, ESG initiatives are much harder to express on paper because they are conceptual and not easily represented with figures. In this regard, our Blue Value™ and Rose Value™ have been well received as unique indices to help visualize our Company's initiatives to address social challenges. We intend to steadily expand our Blue Value™ and Rose Value™ product lineups going forward.

For our employees too, identifying the value of addressing sustainability issues in day-to-day operations is not easy. That is why I am creating more opportunities to speak directly with employees. I use my own choice of words to ensure that they gain an easy understanding of the significance of our sustainability management. By continuing to implement these kinds of activities step-by-step, we are fostering a climate conducive to tackling sustainability issues on a Group-wide basis and leveraging that momentum to keep moving forward.

▶ See Sustainability Management on page 25.

CEO Message



Plastic waste and climate change

Promoting a circular economy model for the entire value chain and advancing global partnerships

Of the challenges facing society today, the problems of plastics and how to tackle climate change are gaining prominent attention. The Mitsui Chemicals Group is deeply implicated in these issues as a chemical company that emits large volumes of greenhouse gases and manufactures plastics. Although these issues pose risks, they also afford us business opportunities. From a long-term perspective, I believe the execution of appropriate and swift business decisions will be key.

We cannot prescind the two issues of plastics and climate change. The Group's basic approach is to implement initiatives from both perspectives to encourage a switch to a circular economy across the entire value chain.

The three Rs (reuse, reduce, and recycle) for plastics is an initiative that Japan has continued to pioneer. The Group intends to promote a circular economy model by expanding the use of biomass plastics as well as strengthening its recycling initiatives. Marine plastic waste is a problem concerning trash that has escaped this cycle and cooperation on a global level will be essential if a solution is to be found. As such, we are addressing this issue by participating in the Alliance to End Plastic Waste (AEPW) and other global alliances.

As for climate change, we formulated a long-term policy with a view to the year 2050. In addition, we support the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and we are striving to actively disclose information about how climate change affects our businesses.

▶ See Climate Change and Problems with Plastic on page 30.

Global human resources development

Creating an environment where a diverse workforce can thrive is key to also accelerating our global strategy

At any point in history, human resources will always be one of our most important management resources. We are proceeding with the creation of a workplace environment where employees of all walks of life can thrive irrespective of gender, nationality, or other factors.

Globalization is the major keyword when it comes to human resources. The Mitsui Chemicals Group currently has 170 business sites in 30 countries and regions, while 43% of all our employees are based overseas. I think entrusting management to employees who best understand local issues will be essential to further business expansion up ahead. To that end, hiring and nurturing local employees is a challenge we must concentrate our efforts on going forward. In April 2019 we established our Global Human Resources Division in order to strengthen global human resources management and governance. The acceleration of our global expansion is also a key strategy in our Long-Term Business Plan. We therefore intend to keep strengthening the platform on which this strategy is based.

▶ See Human Resources Strategy on page 57.

Safety initiatives

"Safety is our top priority" All employees recognize anew this uncompromising policy and ensure safety

I believe that safety is, more than anything else, the most important commitment for management to make. Whenever I get the chance, I tell our employees that safety is our top priority. And one of the stated goals in our Long-Term Business Plan is to pursue thorough safety, high quality, and fairness across the entire supply chain.

To ensure safety in our operations, we must never forget the explosion and fire that occurred in 2012 at our resorcinol production facility at the Iwakuni-Ohtake Works. We have been extremely diligent about safety and repeatedly made improvements by working together with production sites. Nevertheless, a fire broke out again at the Osaka Works in fiscal 2018. I took this matter very seriously to heart and personally talked with employees at the worksite to check whether the safety initiatives there might have turned into mere formalities and whether or not each and every employee was facing up to the situation earnestly.

We hope to continue steadily implementing activities aimed at thoroughly ensuring a Group-wide safety awareness once again. At the same time, we will look to establish a framework and introduce technology aimed at making our prevention measures more sophisticated and fulfill our social responsibilities by seeking guaranteed safety across all processes of the supply chain.

▶ See Safety & Prevention on page 75.

To our stakeholders

Channeling the collective strengths of all employees to achieve sustainable growth

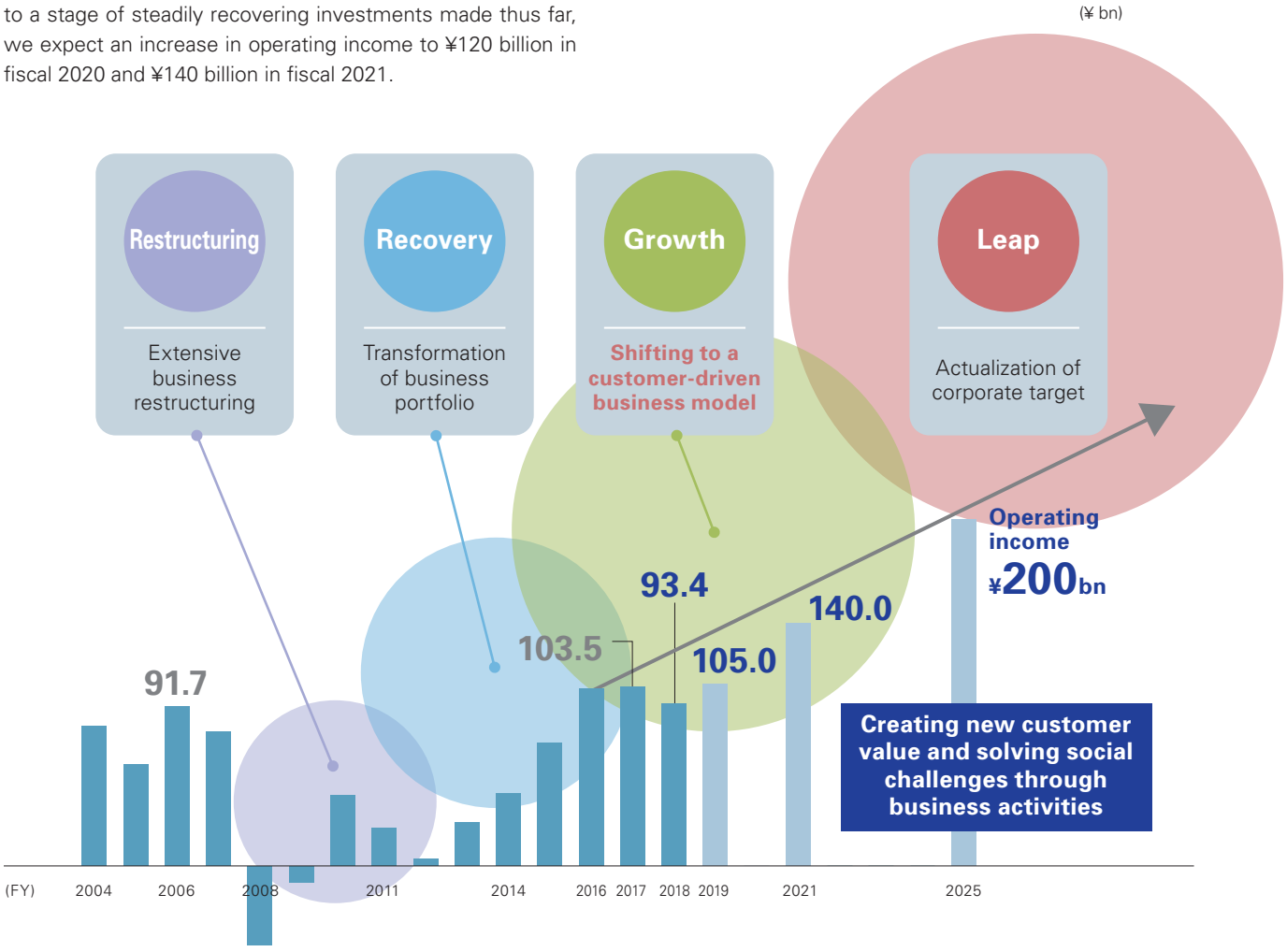
We will continue to forge ahead towards our 2025 goals in our Long-Term Business Plan by flexibly responding to changes on a rolling basis. Our activities will mainly revolve around the expansion of the three targeted business domains, but we also intend to keep securing stable earnings in the Basic Materials domain.

In fiscal 2019 we are forecasting growth in both sales and profit; our operating income target is ¥105 billion. As we shift to a stage of steadily recovering investments made thus far, we expect an increase in operating income to ¥120 billion in fiscal 2020 and ¥140 billion in fiscal 2021.

Recently, in order to convey to employees our Group's approach to sustainability in an easy-to-understand way, I have been using the words "strong company" and "good company." A strong company is one that has earnings power, which materializes in its financial results. I believe that a good company, on the other hand, is one whose management platform is based on the intangible value like a vibrant corporate culture.

Companies that are not strong cannot survive, but companies that are not good have no point in surviving. By channeling the collective strengths of all employees, we will aim to be a sustainable corporate group that takes pride in being a "company not merely strong but also good."

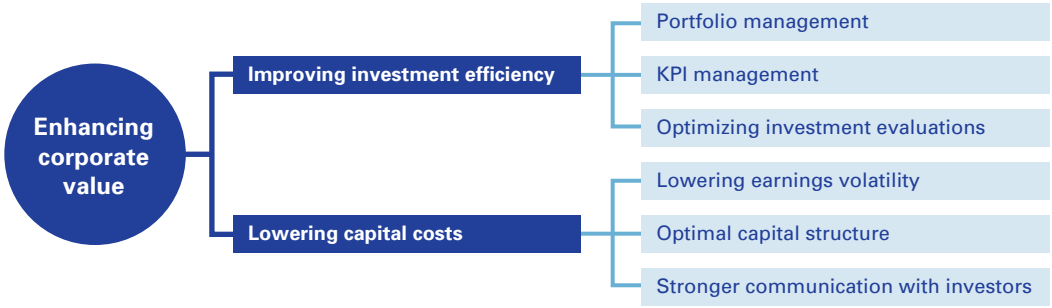
Chemistry underpins the foundation of society and is an industry that harbors considerable potential—so much so that it may well be the source of innovation in various forms in the future. In meeting the expectations of all our stakeholders, we will continue to generate new value and aim to achieve sustainable growth for both society and the Mitsui Chemicals Group.



CFO Message



1. Initiatives for improving investment efficiency and lowering capital costs



Improving investment efficiency

At Mitsui Chemicals, we make use of portfolio management, KPI management, and the optimization of investment evaluations to improve investment efficiency.

As part of portfolio management, we assess all our businesses based on ROIC* and profit growth rate and identify issues in each business. If ROIC is lower than the WACC in a particular business, we implement measures aimed at transforming its portfolio, for example, by formulating a remodeling strategy in the three-year rolling plan we execute annually to discuss among management.

In KPI management, we break down ROIC into indicators that can be managed at the business division level; they include profit-and-loss statement-related metrics such as net sales and operating income, as well as balance sheet metrics like the cash conversion cycle. We will then expedite the actions required for improvement by monitoring each indicator. We intend to deepen our KPI management activities up ahead by more closely linking each indicator to employee evaluations.

As for initiatives to optimize our investment evaluations, IRR is the main criterion on which we base our investment decision-making. We evaluate investment projects with reference to our hurdle rate, which is based on capital costs and takes into account risk factors. We also make efforts to improve our investment evaluation process by annually reviewing past projects and analyzing the factors why the results of some investments diverged considerably from plan. We are currently examining a number of investments centering on production capacity expansion for products whose demand is expected to rise up ahead. We intend to carefully select projects for investment by first making fully sure of their economic viability.

*ROIC: Return on invested capital

In recognizing the importance of management that is always conscious of capital costs, we aim to maximize corporate value with measures that improve investment efficiency and lower capital costs

Masaharu Kubo
Representative Director,
Executive Vice President & CFO

Lowering capital costs

In aiming to lower capital costs, we are working to lower earnings volatility, achieve an optimal capital structure, and strengthen communication with investors.

First of all, let me please go through our initiative for lowering earnings volatility. In the past, we experienced a slump in Company-wide earnings when those products such as phenol, purified terephthalic acid, and polyurethane materials sank deep into the red. At the time, these products commanded a high export ratio to China and other Asian markets, but margins on exports deteriorated sharply when supply-demand conditions worsened as Chinese manufacturers expanded or built new plants. In response, we made the decision to embark on structural reforms accompanying large extraordinary losses in fiscal 2013. Since then, we have retired our production facilities, which included the closure of production sites, based on the principle of local production for local consumption. Accordingly, we have been successful in downgrading the size of our production capacity to meet domestic demand. As a result, the ratio of local production for local consumption for the aforementioned three products now stands at 80%. At the same time, we have introduced a formula method to link product prices to raw material costs in an effort to minimize the impact from fluctuations in market prices. The price formula ratio for our mainstay products in the Basic Materials domain has now improved to 70%. These initiatives have been the catalyst behind our successful switch to a stable earnings structure even for the Basic Materials domain, which includes products generally regarded as being susceptible to earnings volatility. Going forward, we will look to further stabilize earnings by reinforcing the competitiveness of crackers and other products.

We are pursuing an optimal capital structure through which we can balance financial soundness and minimizing capital costs. Owing to the aforementioned slump in Company-wide earnings, the net D/E ratio at one time deteriorated as far as 1.44, but thanks to the benefits of subsequent structural reforms, it has now improved to around the 0.70 level. Our credit rating has also been upgraded from A to A+ by Japan Credit Rating Agency, Ltd. (JCR) and from A– to A by Rating and Investment Information, Inc. (R&I). While we expect to see an increase in interest-bearing debt as we step up the pace of investments, we will endeavor to keep the net D/E ratio and our credit ratings at current levels and find the right balance between financial soundness and minimizing capital costs.

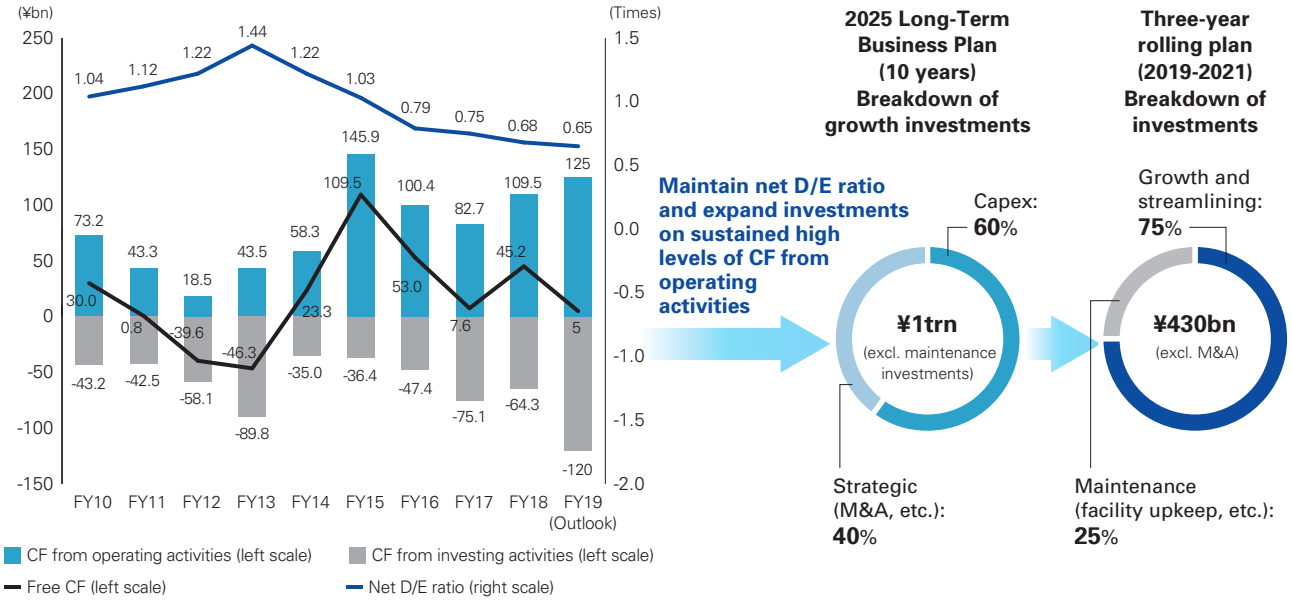
In order to strengthen communication with investors, we have continuously engaged in dialogue to ensure they have a solid understanding of our Company's management circumstances, including the aforementioned initiatives implemented thus far. Many of the investors we have met with in person have mentioned that they gained a good understanding about our earnings stability and future growth prospect. Meanwhile, in terms of the broader stock market's perception, I get the feeling that market participants have yet to erase the image that our earnings are highly volatile. For this reason, we will continue to provide more opportunities to engage in dialogue.

2. Investment plan

Over a three-year period from 2014 to 2016, we took steps to improve the Company's financial structure. As a result, the net D/E ratio has improved to around 0.70 as already mentioned, but at the same time, cutting back on investments has limited our capacity to expand sales of mainstay products. That is why our 2025 Long-Term Business Plan formulated in fiscal 2016 calls for growth investments to the tune of ¥1 trillion over a 10-year period. Roughly 90% of this figure will be spent on our three targeted business domains and we plan to allocate ¥600 billion to capital expenditure aimed at expanding production capacity and strengthening competitiveness, while ¥400 billion will fund M&As and other strategic investments. That said, our basic approach to investment is that the amount we have earmarked is not our only concern. We will continue to carefully select projects with a strong likelihood of ample returns on investment.

Also, with the aim of achieving the objectives set out in the 2025 Long-Term Business Plan, every year we put in motion a strategic and numerical three-year rolling plan. For 2019–2021 we have earmarked ¥430 billion for investments and 75% of this, or just over ¥300 billion, will be allocated to investments for growth and streamlining, while the remaining ¥100 billion or so will be directed towards maintenance investments, including facility upkeep. The investments for growth and streamlining will center on new installation or upgrading of facilities in the three targeted business domains because of the many products that require greater production capacity to meet growing demand, particularly in the Mobility domain. We will also invest in the Basic Materials domain with the aim of strengthening our competitive edge mainly by diversifying the raw materials for our cracker and installing new gas turbines for utility plants. Even though funds for M&A are not included in the figure mentioned above, in the event that we do consider an M&A deal, we will scrutinize the Company's financial standing and strategic compatibility.

Cash flows and net D/E ratio



3. Management targets

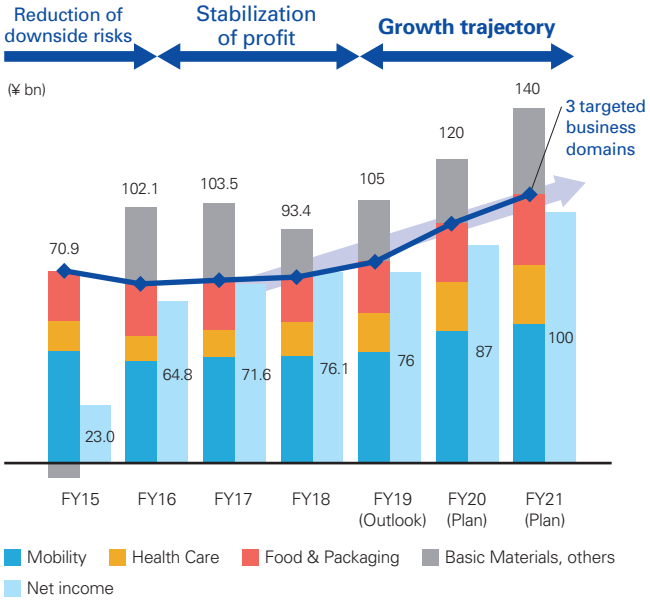
Our 2025 Long-Term Business Plan sets out the following numerical targets: net sales of ¥2 trillion, operating income of ¥200 billion, ROE of 10% or more, and a net D/E ratio no higher than 0.8. We also recently set a new ROIC target of 8% or higher. We intend to ramp up the pace of our initiatives going forward with the aim of achieving these targets.

Our three-year rolling plan for 2019–2021 calls for operating income of ¥140 billion and net income of ¥100 billion in 2021. Restricting our investments caused earnings to plateau over the last few years, but we think benefits from various investment projects will begin to materialize from around 2021 and beyond.

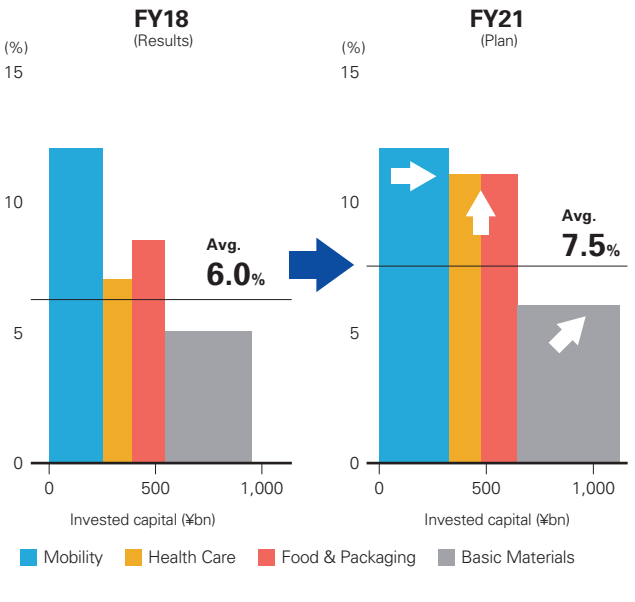
We also recently disclosed ROIC for each of our business segments to serve as a yardstick to quantitatively measure the transformation of our business portfolio. We forecast an improvement in Company-wide ROIC from 6.0% in 2018 to 7.5% by 2021. By business segment, ROIC for the Mobility segment currently hovers at a high level. Invested capital will increase up ahead as we expand our capital expenditure, but we aim to keep ROIC at a high level, buoyed by profit growth.

In the Health Care segment, invested capital will increase to a certain extent, but we anticipate an improvement in ROIC on the back of profit growth driven by greater sales of vision care materials and an earnings recovery in nonwoven fabrics and dental materials, both of which remained sluggish in 2018. In the Food & Packaging segment, we aim to improve ROIC by expanding sales of agrochemicals, turning around sales of ICROS™ Tape, which were tempered by a slowing semiconductor market from the second half of 2018, and bringing the new Taiwan plant on stream. In the Basic Materials segment, even though invested capital is going to rise due to higher capital expenditure, we forecast an improvement in ROIC along with increased profitability mainly from stronger competitiveness.

Operating income and net income



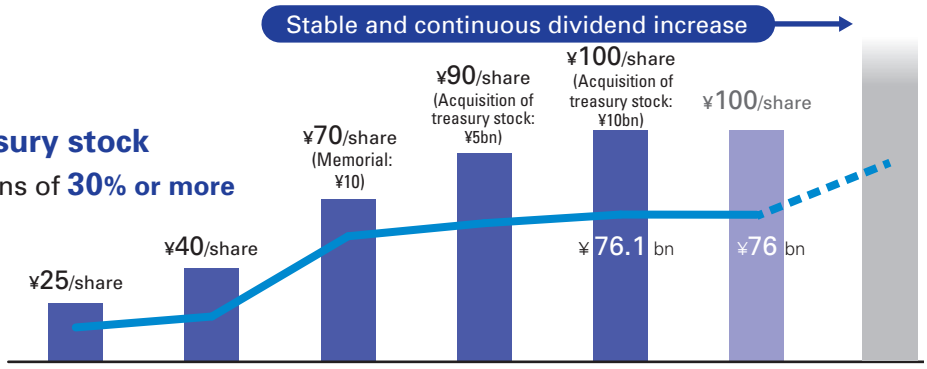
ROIC



4. Shareholder returns

While our top priority is the enhancement of corporate value through business growth and expansion, we also see the return of profits to our shareholders as a key management priority. Our policy on shareholder returns is to continuously increase dividends in line with performance trends and aim to achieve a total return ratio of 30% or more by flexibly acquiring treasury stock depending on the share price and market conditions.

Flexible acquisition of **treasury stock**
Targeting shareholder returns of **30% or more**



	FY14	FY15	FY16	FY17	FY18	FY19 (Outlook)
Annual dividend per share (Yen)	25*	40*	70*	90*	100	100
Profit attributable to owners of parent (¥bn)	17.3	23.0	64.8	71.6	76.1	76
Total return ratio (%)	29.0	34.9	21.6	32.1	39.0	30% or more

*On October 1, 2017, Mitsui Chemicals conducted a 5-to-1 share consolidation. All dividends are re-calculated based on this share consolidation.

Discussion on Sustainability



Looking ahead to the future and working towards our goals

Top management leadership is essential

—The Company has thus far deepened its triple bottom line management approach and is working to engage in management with ESG elements at its core. Mr. Tase, you have a wealth of knowledge about sustainability. What do you think are the key elements required for a company to promote sustainability strategy?

Tase I think top management must show leadership by fully understanding and identifying with the significance of promoting sustainability strategy. If they don't, employees are unlikely to follow suit. In the case of Mitsui Chemicals, I get the feeling that the president understands the essence of sustainability and executes business decisions accordingly.

Tannowa I too agree with your opinion that top management's comprehension of sustainability is a prerequisite. Also important I think is how top management can communicate its ideas to employees. We established the Corporate Sustainability Division in 2018 and one of its objectives is to ensure that employees understand and make sense of sustainability management. We also wanted to externally demonstrate how serious Mitsui Chemicals is about addressing ESG issues. We want to place pressure on ourselves, in a positive way, as we take steps towards promoting sustainability strategy.

Tase Is there anything you keep in mind in terms of employees' understanding of sustainability?

Tannowa I usually explain the significance of sustainability management to employees by using the expression "a company not merely strong but also good." A company must have financial strength, as demonstrated in earnings results and the like, but at the same time, if it isn't a "good company," so to speak, by possessing non-financial intangible value, then there is really no point in surviving.

Tase I tend to liken financial and non-financial factors to the muscle strength and internal organs of an athlete. Even with muscle strength and skills an athlete can't keep winning without healthy internal organs. In business, companies with an uneven balance of financial and non-financial strengths have little prospect for sustainable growth, in my opinion.

Conceiving our future targets from a long-term perspective and working towards them

—The Group has formulated its Long-Term Business Plan. What are your thoughts on the importance of a long-term perspective?

Tase Recently when talking with the younger generation of company executives, the importance of a long-term perspective is often raised. Many of them think that medium-term business plans might as well be laid to rest. Mitsui Chemicals has already switched from medium-term plan to long-term plan, which I think was a very forward-thinking approach. What were the reasons behind that decision?

Tannowa While I personally strongly pushed for it, we realized that in these times of such volatile change in the business environment, a pre-established plan would be meaningless. We decided to go with a long-term plan because even if it's a bit vague, for example, we would still be better off framing our future targets and working towards them. The idea behind this is that if conditions change, implementing a rolling plan to flexibly factor in those changes is a more realistic approach.

Tase I'm sure it was a big decision to make, but were there any concerns voiced within the Company?

Tannowa I think there were some concerns among employees who were used to a rigid management system of preparing a budget based on a medium-term plan. However, things do not always proceed as pre-established under a medium-term plan. We decided it would be better to shift to long-term goals in the sense that it would encourage a change in mindset among employees.

Tase I think it's very important to steer the Company toward a goal that is slightly further away. This approach also applies to how we should address social challenges. For example, providing food to impoverished and hungry children will satisfy their hunger at that moment, but it doesn't solve the underlying problem. It goes without saying that tackling poverty itself is crucial. I want companies to have an awareness of whether their approaches will really lead to their long-term goals. It's important that companies employ a combination of inductive short-and-medium term perspectives with a deductive long-term outlook.

Management must look ahead to the future and change accordingly

—Mr. Tase, you have also said that the process for reflecting current trends into management is essential to promoting sustainability strategy.

Tase In a way, ESG approaches can be said as a function to foresee outlook for the future. Discussing matters that management needs to know about at the right time is the key. My guess is that you intentionally positioned the Corporate Sustainability Division under the direct control of the president as a way to reflect important topics concerning the future into management.

Tannowa As you say, I frequently engage in discussion with the Corporate Sustainability Division. Those discussions are then brought to the table at the meetings of the Corporate Sustainability Committee and the Board of Directors. At Board meetings in the past, most agenda items concerned recent business matters or investments, but there have been more signs recently that Board members want to discuss matters from an ESG perspective. Social challenges are characterized by the trends of the times and differ in significance and impact. We must be sure to engage in deductive arguments and ask ourselves what we should do now by considering the influences these issues may have in 20–30 years' time. Through these discussions, I think the measures we take and our management priorities will change.

Tase Management anticipates the future and makes changes accordingly. That is what sustainability management is all about. For example, a scenario where people use self-driving cars on a daily basis is no longer a pipe dream in 10 years' time. If it does happen, the notion of distance will lose all meaning and land prices and urban living will change dramatically. I think it is vital for management to always be attentive to such changes in society and acutely decipher what those trends mean. When looking ahead of the situation of chemical industry in 10 years' time, how do you analyze the current state of the industry?

Tannowa I feel that the potential of chemistry is growing. There is always a role that chemistry can play in sparking innovation. Not surprisingly, the biggest issues for the chemical industry and Mitsui Chemicals are climate change and plastic waste. These problems are expected to become even more severe in 10 years' time, so I think we need to draw up a major framework in which we outline the scenarios and examine what measures we can implement.

Tase General consumers tend to forget about the life cycle assessment point of view when considering the problem of plastic waste. Simply saying that we have to reduce plastic because it ends up as waste fails to address the essence of the problem, I think.

Tannowa Appropriate treatment and disposal of plastic products after use would be ideal. However, the situation is that the environment is suffering as a result of inappropriate waste management. It is important that we use scientific data to confirm environmental impacts at each stage of a product's life cycle before making comprehensive assessments. Naturally it is our responsibility as a company that manufactures plastic to consider what we can do and how we should take action. At the same time, problems need to be solved in cooperation with various parties across the entire supply chain, for example, the local governments and administrations that are tasked with collecting and processing waste. We must realize that the problem of plastic is not something that can be dealt with shortsightedly in a certain way. I am personally aware of this and I intend to make my thoughts known from both a Company and industry point of view.

Tase I would certainly like to see a company with thorough knowledge of plastics, like Mitsui Chemicals, taking a leading role and engaging in fundamental debate. I also think general consumers struggle to understand the whole picture of this problem. I hope that you can provide consumers with easy-to-understand information and develop superior products that help find a solution.

Discussion on Sustainability



Putting in place a scheme under which diverse human resources can thrive

—Mr. Tase, in addition to the environment, what other issues do you attach importance to?

Tase I have an impression that diversity and inclusion such as SDG's gender equality and women's empowerment are where Japanese companies' efforts are most needed. What's the situation at Mitsui Chemicals?

Tannowa In the past it was normal for production sites of chemical companies to have few female workers, but we are placing as many women as possible into the three rotating shifts. While we need to improve our facilities and systems to facilitate this, the very idea of what our worksites should be like continues to change. In management as well, two of our three outside directors are female as of this year. Our challenge is that we have few female employees to begin with, so if we can steadily increase the ratio of female recruits going forward, we should be able to have more women in managerial positions or key postings in the future. We think this will set in motion a virtuous cycle.

Tase What about diversity from a broader point of view?

Tannowa We are actively appointing staff hired overseas to key positions. And we established our Global Human Resources Division with the aim of making active use of talented human resources.

Tase Nurturing employees who are capable of flexible thinking as the next-generation of managers is a really important initiative, I think.

Tannowa At Mitsui Chemicals we have established a Key Talent Management (KTM) system based on which we create succession plans and assign roles in a series of distinct stages to nurture employees right through to senior management. We have a Human Resource Advisory Committee to discuss on the assignments of our top management. The Committee hears the opinions of outside directors and assumes accountability. In other words, we have a very strong awareness of responsibility to make discussions in an open and transparent manner.

Need to also demonstrate social impact, a leading indicator of profit

—How have the Company's unique Blue Value™ and Rose Value™ indices and products been received?

Tase I think society calls for various solutions from Mitsui Chemicals as an industry leader. Your Blue Value™ and Rose Value™ indices and products seem to represent a suitable response to those requests.

Tannowa Our Blue Value™ and Rose Value™ visualize our contributions to solving social challenges as environmental contribution value and QOL improvement contribution value respectively. We started disclosing this information in 2015 because these initiatives became able to deliver objectivity and benefits for all our stakeholders to evaluate.

Tase In addition to simply selling products that contribute to society, it also seems that your initiatives are financially viable. Is this true?

Tannowa It would be meaningless to just promote our products without a goal, which is why we are committed to increasing the sales ratios of Blue Value™ and Rose Value™ products as a KPI in our Long-Term Business Plan. We believe growth in these products can also help achieve sustainable economic growth. This is why we now focus on the value of contributions to the environment or improvements to quality of life when assessing investment projects.

Tase Investors are becoming increasingly interested in how much a certain product or service impacts society. In other words, whether it changes society for the better or whether it reduces a negative impact. They think social impact is a leading indicator of profit and a company's contribution to society will be returned in the form of profits over the medium- to long-term. I think it would be wonderful if your products could also demonstrate their impact on society in the future.

Fulfilling major social responsibilities but also seeking profitability

—Finally, please describe your expectations for the Mitsui Chemicals Group.

Tase My assessment of Mitsui Chemicals so far is that it has upheld some major social responsibilities. Even if society is transformed in the future, I'd like to see the Company continue to fulfill its core social responsibilities and be even more profitable through those efforts. I expect it to maintain the right balance between contributing to society and growing as a company.

Tannowa Mr. Tase, your job involves tackling social challenges from various approaches in different parts of the world. We kindly ask that you cast a strict but warm eye over our Group's initiatives on addressing social challenges and sustainability management. Please let us know if we appear to be veering off track.



Mr. Kazuo Tase
President & CEO
SDG Partners, Inc.

Graduated from School of Nuclear Engineering, Faculty of Engineering, University of Tokyo; Visiting Professor at New York University School of Law.
2017 Established SDG Partners, Inc.
2014 Assumed the office of Director, Global Management Institute at Deloitte Tohmatsu Consulting, Japan.
2005-2014 Worked at the United Nations; served as Chief of Human Security Unit in UN Office for Coordination of Humanitarian Affairs, and later Acting Director of UN Information Center in Pakistan.
1992-2005 Worked at Japan's Ministry of Foreign Affairs

Interviewer: Ken Migita,
Senior Director and General Manager of Corporate Sustainability Division

Sustainability Management

The SDGs and other initiatives that aim to solve the challenges faced by society continue to gain momentum worldwide and companies are increasingly being asked to take action. For a sustainable society to be realized, it is essential that companies themselves must achieve growth, but at the same time create social value by providing solutions. To this end, it is now even more important that companies accurately identify opportunities and risks from an ESG perspective and reflect them into management.

Sustainability in the Mitsui Chemicals Group

In addressing global social challenges highlighted in the SDGs and other initiatives, we aim to achieve sustainable development in society and the Group by implementing the following:

- Seek business opportunities and strive to solve challenges through business activities
- Recognize future risks for the Group and uphold our corporate social responsibility

In deepening our triple bottom line (economy, environment, and society) management approach and committing to a management that places ESG elements at its core, the Group established the Corporate Sustainability Division in April 2018. We are now working to incorporate ESG elements into management/strategies and improve how we disclose ESG information to our stakeholders.

Challenges

Incorporation of ESG elements into management/strategies

- Reflect ESG considerations in management and strategy discussions at Board meetings and Company-wide Strategy Committee meetings
- Generate business involving business and R&D divisions and promote innovation

Improvement of ESG information disclosure

- Boost appeal to institutional investors, customers, and sustainability rating agencies
- Strengthen ESG dialogue

Incorporation of ESG elements into management/strategies

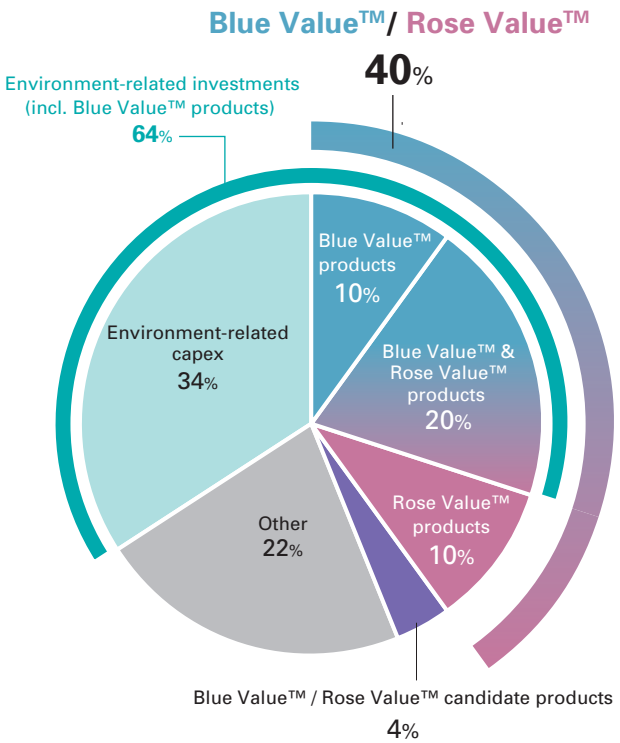
To engage in sustainable management, it is key that we view the social challenges for SDGs and other initiatives as business opportunities, promote innovation, minimize future risks, and reinforce management resilience. The Group's management periodically meet to discuss strategies in order to accurately grasp changes in social demands from the international community and reflect them into management from a long-term perspective. In fiscal 2018 we formulated policies on the SDGs and ESG and integrated ESG elements into our budget-drafting process.

One of KPIs that we set for the Group in our 2025 Long-Term Business Plan is to expand sales of our Blue Value™ and Rose Value™ products that contribute to the environment and society. In aiming to achieve this goal, we are taking steps to specifically incorporate them into business plans and targets. In addition, we are encouraging each and every employee to change their ways of thinking by organizing social challenge workshops to brainstorm the creation of new businesses and new products that are driven by the need to solve social issues. We are also deepening discussions with business and R&D divisions.

Moreover, from fiscal 2019 we started utilizing a system that reflects long-term views of new target investments into our investment plan. The system helps us visualize mainly investments related to Blue Value™ and Rose Value™, contributions to the SDGs, and changes in GHG emissions. These matters are then discussed at investment deliberation meetings.

We have predominantly focused our strategy discussions on climate change and plastic waste—two serious issues for chemical companies—because we consider it very important to demonstrate concrete measures as soon as possible. We support the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and took the decision to participate in the Alliance to End Plastic Waste (AEPW). We have also formulated and publicly released policies stating our commitment to these causes.

Breakdown of new large-scale target investments decided in fiscal 2019 (for FY2019-2021)

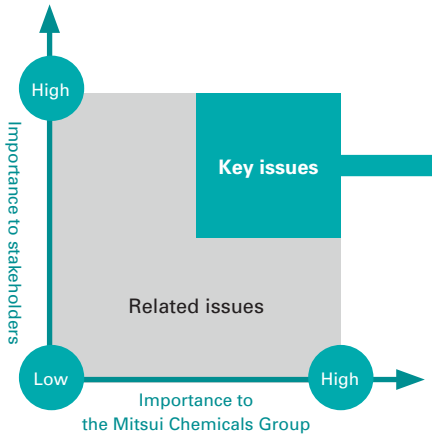


Sustainability Management
https://www.mitsuichem.com/en/sustainability/mci_sustainability/management/index.htm

Key Issues (Materiality)

Selection of key issues

In aiming to realize a future cohesive society in harmony with the environment, health and well-being in an aging society, and industrial platforms in harmony with local communities, we have clearly defined our commitment to developing society and the Group through our business activities. Based on this approach, we have selected key issues mainly with reference to the UN Global Compact, to which we became a signatory in 2008, international guidelines, and the opinions of stakeholders. We also referred to the characteristics of our businesses and the regions in which we operate to identify issues from two angles: (1) the contributions our business activities make to society; and (2) the various impacts they have on society.



Issues for which the Group's business has an impact on society	Issues for which the Group's business can contribute to society
Climate change responses (reduction of GHG emissions)	Low environmental footprint products and services
Air environment preservation	Development of renewable energy
Water resource protection and control	Shift to urbanization and smart cities
Biodiversity	Declining birth rate and aging population
Industrial waste control	Advancement of medical and pharmaceutical fields
Efficient use of resources	Food problem
Stable supply of industrial materials	**Underlying issues**
Optimization of production	Sustainable procurement
Safety and prevention	Compliance
Product stewardship	
Quality of products and services	
Employment and human resources	
Labor conditions	
Stakeholder engagement	

Step 1: Identification
Pick out issues from the requirements of ISO 26000, the GRI, and other international guidelines, as well as through engagement with various stakeholders. Identify environmental and social issues the chemical industry must help resolve from the standpoint of contributing to society through business activities.

Step 2: Prioritization
For each issue, assess the degree of importance to both stakeholders and the Group. Itemize common items so that the perspectives of stakeholders can be cross-referenced with the level of importance to the Group, and consider what measures the Group needs to implement. Assess the degree of importance to the Group in light of the Group's Corporate Mission, Action Guidelines, and business strategies. Determine priority with a quantitative assessment and then identify the key issues.

Step 3: Validation
Solicit opinions from external experts and have the Corporate Sustainability Committee confirm the completeness that all the particular items are covered and the validity of the identified issues.

Step 4: Review
Have the Corporate Sustainability Committee periodically review the process for identifying key issues.

Periodic reviews

Review of key issues

We are currently conducting a review of the key issues based on the recognition that making progress toward resolving the key issues will help us achieve the targets of our 2025 Long-Term Business Plan and contribute to solving the challenges of society. We intend to once again identify issues in consideration of how important the SDGs and other social initiatives are to stakeholders.

We will also examine their importance from our point of view with regard to executing strategies aimed at realizing the Group's Corporate Mission and our long-term business plan. We will then combine these two perspectives to reselect key issues. We also plan to hold internal and external hearings and have the Corporate Sustainability Committee confirm their validity.

Key Issues (Materiality)
https://www.mitsuichem.com/en/sustainability/mci_sustainability/materiality/index.htm

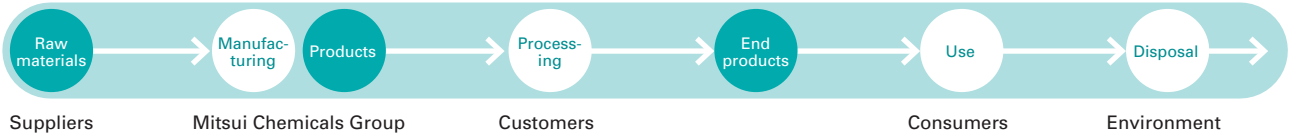
Blue Value™ and Rose Value™ — Visualizing Contributions to the Environment and Society

Our Blue Value™ and Rose Value™ help visualize the contributions our products and services make to the environment and society and enable us to share those values with stakeholders so we can realize a future cohesive society in harmony with the environment and health and well-being in an aging society. We evaluate our products and services according to application using our own distinctive yardsticks: the Blue Value™ Index for assessing environmental impacts and the Rose Value™ Index for assessing improvement in quality of life (QOL). Those that make significant contributions to the environment or improvements to QOL are certified as Blue Value™ and Rose Value™ products, respectively.

Features

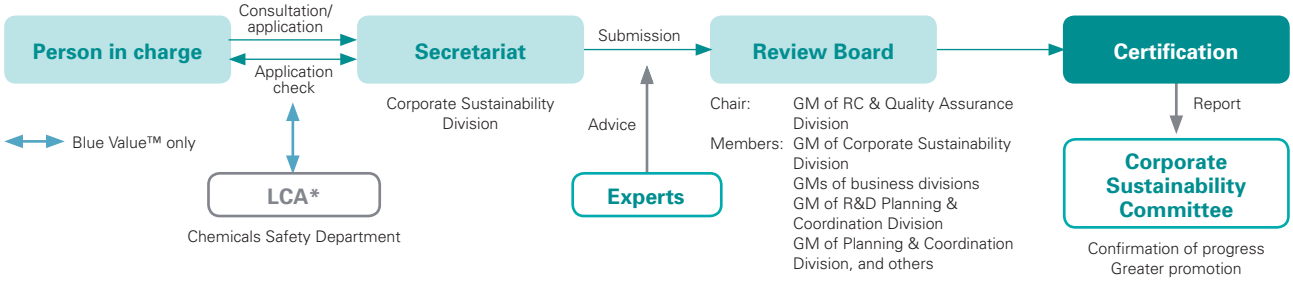
- Visualization of contributions to the environment and society through our business activities
- Ability to check application-specific contributions at each stage of the product life cycle
- Developing and providing products and services with high contribution value and sharing it with stakeholders
- Aim to realize our ideal future society by building a Blue Value™ and Rose Value™ chain

Providing value through the Blue Value™ and Rose Value™ chain



Screening and certification process

The person in charge of sales and marketing first assesses the potential Blue Value™ or Rose Value™ product or service using the aforementioned indices and then consults with and submits an application to the secretariat. The review board deliberates on the supporting evidence and certifies the product or service if it satisfies the criteria. The deliberations focus on whether the product's concept and selling point are consistent with the area in which it offers contributions, as well as to check the level of those contributions. In order to certify products and services with an emphasis on appropriateness and objectivity, our assessment methods and screening criteria have been designed based on the advice of external experts. We also ask these experts to present their opinions prior to the review board regarding the candidate product's level of contribution.

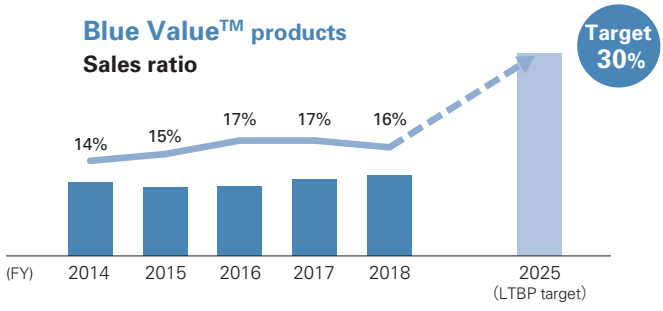


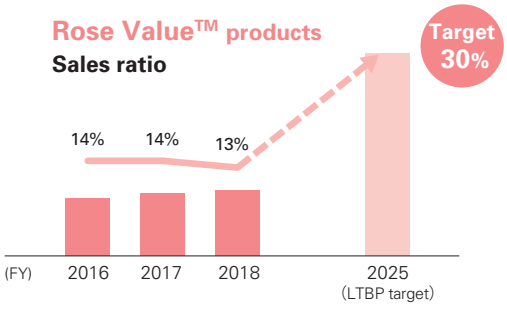
* Life cycle assessment: A technique to quantitatively assess environmental impacts associated with all the stages of a product's life, such as development, manufacture, distribution, use, and disposal.

Setting KPIs and initiatives for expanding Blue Value™ and Rose Value™ products

The sales ratio of Blue Value™ and Rose Value™ products is set as one of our KPIs in our 2025 Long-Term Business Plan. Growth in the sales ratio for certified products demonstrates that we are making steady progress toward achieving our ideal future society. As an initiative for expanding sales, we have continued to reflect them into our long-term business strategies and investment plans. In fiscal 2019 we plan to incorporate Blue Value™, Rose Value™, and SDG perspectives into our Stage Gate System for the development of new products with the aim of recording steady growth from the initial stages of creating new businesses and new product ideas.

By bringing to bear Blue Value™ and Rose Value™ initiatives, we hope to offer solutions for the SDGs and other social challenges and contribute to the sustainable development of both the Group and society.





Blue Value™ / Rose Value™
https://www.mitsuichem.com/en/sustainability/mci_sustainability/contribution_value/

Blue Value™ and Rose Value™ — Visualizing Contributions to the Environment and Society

Earth blue

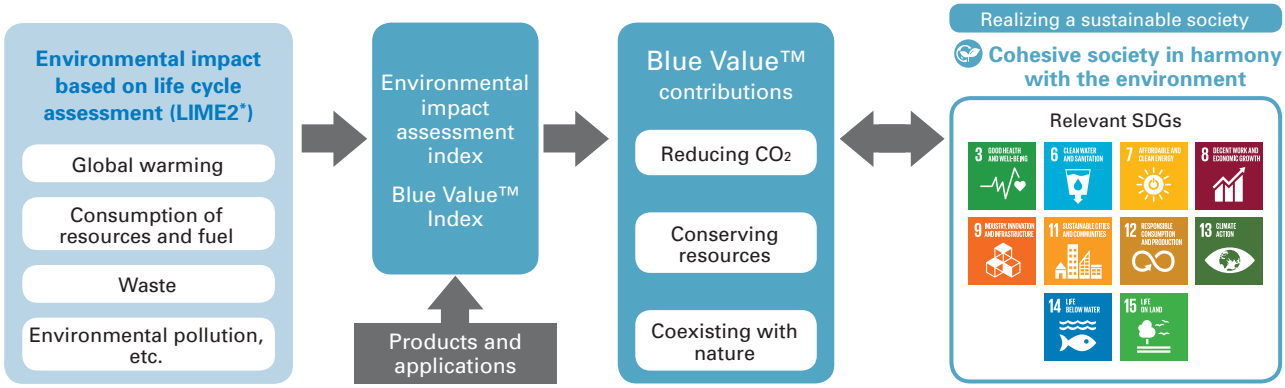
Instead of green, which is associated with nature and ecology, blue represents something much bigger—the earth.
It is also our corporate color and signifies harmony with the global environment and our contributions to society.

Blue Value™ — Environmental contribution value

Many chemical products pass through various stages; for example, they are manufactured and processed into end products and then disposed of after use. We visualize from a product stewardship perspective how we could reduce a product's impact on the environment at each stage of its life cycle. By sharing this information with various stakeholders, we believe we can further contribute to environmental protection. With this idea in mind, we devised the Blue Value™ standard for environmentally friendly products in 2015 with the aim of achieving a future cohesive society in harmony with the environment.

We use the Blue Value™ Index—our own LCA-based environmental impact assessment index—to evaluate products and services depending on their application and certify them as Blue Value™ if they significantly contribute to protecting the environment in the following three categories: (1) reducing CO_2; (2) conserving resources; and (3) coexisting with nature.

We carry out comparative assessments against market-standard products and our existing product lineup because a requirement for Blue Value™ certification is that not only must the product have a higher score in either of the evaluation categories, it must not be inferior in all categories for each stage of its life cycle. Moreover, the use of qualitative and semi-quantitative assessments means products can be easily evaluated, but whenever required, the department responsible for LCAs can technically and quantitatively assess the superiority of a product's environmental contributions.



*LIME2 (Life-cycle Impact assessment Method based on Endpoint modeling): Damage assessment-type life cycle environmental impact assessment method based on environmental conditions in Japan.

Contributions	Environmental impact assessment index — Blue Value™ Index	
	Evaluation categories	Related assessment items
Reducing CO_2	• Reduction of GHG emissions • Saving of energy, electricity, fuel	• Lighter weight and volume reduction • Long service life • Natural energy sources • Non-fossil raw materials • Environmental cleanup The above items are assessed for their contributions to any of the evaluation categories
Conserving resources	• 3Rs, ease of sorting, conservation of resources	
Coexisting with nature	• Ecosystem conservation (human health) • Ecosystem conservation (environmental organisms) • Prevention of environmental contamination	

*GHG emission-related global warming substances, chemical substances harmful to ecosystems, and environmental pollutants are all substances for which characterization factors have been calculated in LIME2.

MESSAGE **Expectations from Blue Value™ advisor**

Environmental problems, social issues, and technological change are some of the challenges we now face as we enter an unchartered era of major transformation. I believe companies that can depict the future with an indefinite number of scenarios will adapt to a truly sustainable society and be the driving force behind it. By taking these problems into consideration, the Blue Value™ and Rose Value™ initiatives can be placed at the core of business and are groundbreaking at the forefront of ESG thanks to their active contributions to solving contemporary issues. I hope they will further grow in intensity, evolve, and demonstrate a new approach for Japanese companies.



Dr. Norihiro Itsubo

Professor, Faculty of Environmental Studies
Dean, Graduate School of Environmental and Information Studies
Tokyo City University

La Vie en rose

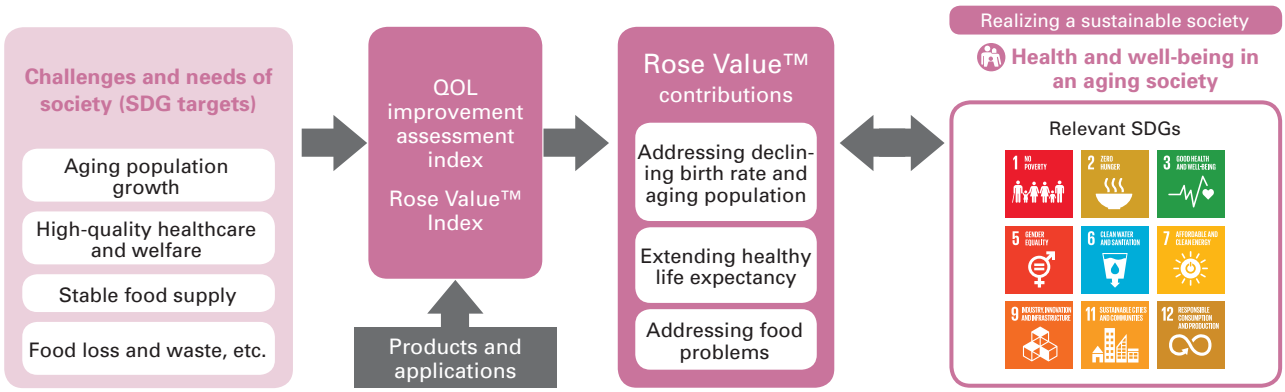
Days brimming with happiness and hope for people from all walks of life.

Rose Value™ — QOL improvement contribution value

In 2016 we devised the Rose Value™ for products and services that help improve QOL in order to demonstrate the kind of value our Group can provide in aiming to realize health and well-being in an aging society in the future.

We use the Rose Value™ Index—our own QOL improvement assessment indicator developed in accordance with the targets of the SDGs and other needs of society—to evaluate products and services in consideration of sustainable procurement and certify them as Rose Value™ if they significantly contribute to improving QOL in the following three categories: (1) addressing declining birth rate and aging population; (2) extending healthy life expectancy; and (3) addressing food problems.

We use qualitative and easy-to-understand evaluation criteria incorporating mainly universal design, universal health coverage, and food security perspectives to carefully examine whether the value of the functions and concept of a potential Rose Value™ product or service contributes to improving QOL in the evaluation categories.



Contributions	QOL improvement assessment index — Rose Value™ Index evaluation categories	
Addressing declining birth rate and aging population	Improving products, buildings, and spaces in the lives of a broad range of people, including infants, children, expectant mothers, the elderly, and the disabled	• Improving comfort in people's lives • Enhancing nursing care
Extending healthy life expectancy	Extending independent living during which people can maintain their own physical and mental well-being without relying on daily or ongoing medical or nursing care	• Supporting physical well-being • Advancing medical care and pharmaceuticals • Preventing and taking action against infectious diseases • Improving accessibility to nutrition and water
Addressing food problems	Improving food productivity, consumption without waste, and ensuring reliable, safe, and stable food supply	• Improving food productivity • Guaranteeing safe and stable food distribution • Reducing food loss and food waste

MESSAGE Expectations from Rose Value™ advisor

In the past, companies were allowed to think that they were contributing to society by developing technologies and manufacturing products that serve a useful purpose. However, a once-in-a-century dramatic paradigm shift of seismic proportions is now taking place in numerous industries. I would like to see companies that engage exclusively in business-to-business operations once again reflect on what kinds of needs their own technologies, products, and services are addressing from the viewpoint of people's livelihoods. Having an exceptional level of sensitivity regarding society serves as a source of competitiveness. I believe that assessing products and services with the Rose Value™ Index for improving QOL will provide an important clue on how to go about this.



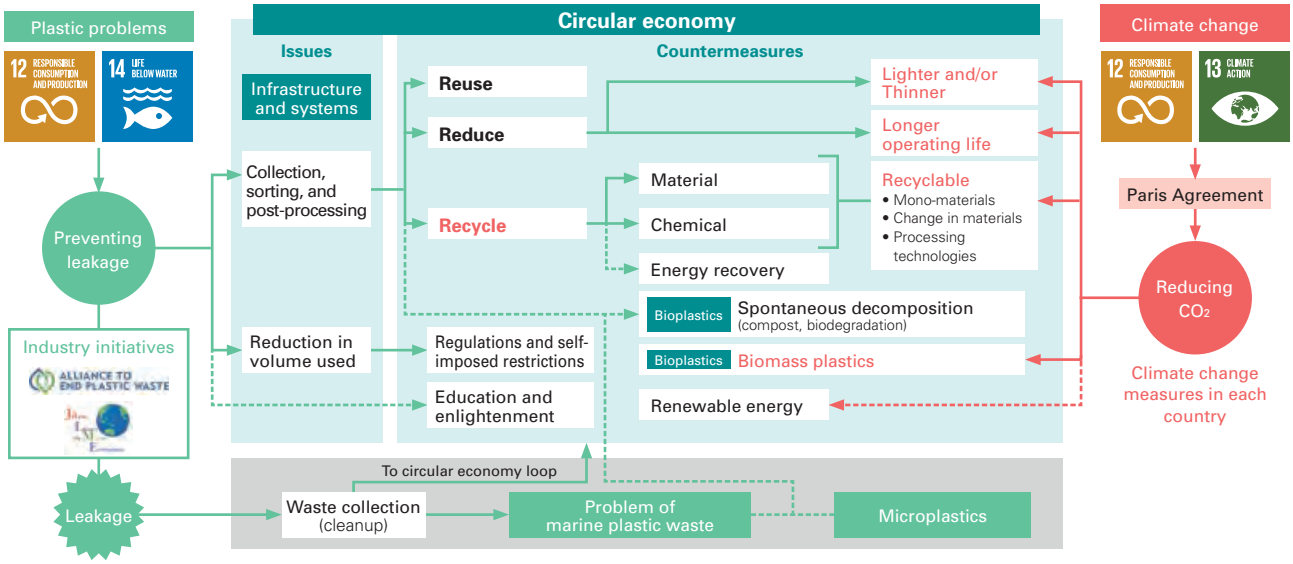
Mr. Eiichiro Adachi

Counselor, Japan Research Institute, Limited

Climate Change and Problems with Plastic

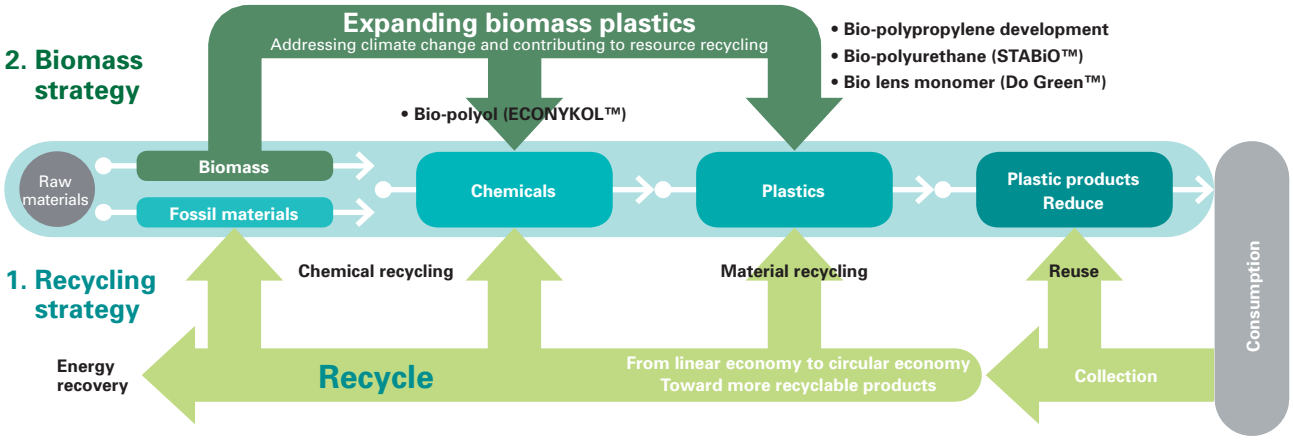
Plastics are a material that brings convenience to our lives and have also helped solve challenges in society by, for example, reducing food loss and improving energy efficiency thanks to its advanced functionality. At the same time, its impact on climate change is considerable because the manufacturing of plastic requires the use of fossil resources and energy, which emits large volumes of GHGs. Moreover, marine plastic waste has also become a major problem in recent times.

As a chemical company whose products and services are mainly based on plastics, the Mitsui Chemicals Group is keenly aware that climate change and the problems pertaining to plastic waste are serious issues for society that must be earnestly addressed. To resolve these issues, a transition is needed from a so-called one-way economy of consuming resources and disposing of products to a circular economy whereby resources are collected and products are recycled and reused. To that end, we believe an integrated approach is key to addressing climate change and the problems with plastic together. We intend to introduce an LCA perspective and work towards realizing a circular economy from both angles.



Plastic strategies

In addressing issues concerning plastic waste, the Mitsui Chemicals Group focuses on the following two strategies with a view to the entire value chain. By implementing these strategies and measures to address the problem of marine plastic waste, we aim to encourage the recycling of resources and promote a circular economy model.

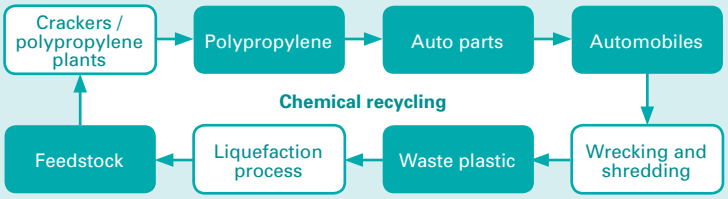


1. Recycling strategy　Recycling of plastic resources

Our Group has thus far provided highly functional plastic products that contribute to reducing weight and volume. In addition, we intend to actively participate in the recycling of used plastic. We aim to make use of open innovation by examining a broad range of possibilities, including the use of recycled raw materials, chemical recycling of plastic from automotive scrap, and the design of products that consider recycling such as packaging made with a single material (to create mono-materials).

Car-to-car recycling with technology to turn auto scrap plastic into oil

In Japan, pursuant to the Automobile Recycling Law, metal is recovered from discarded automobiles and then waste plastic is recovered from shredder dust. Waste plastic accounts for around 30% of shredder dust, most of which is used as a fuel. We are working together with automotive companies and the like to develop chemical recycling technology so as to break down waste plastic contained in shredder dust and turn it into chemical raw materials (feedstock recovery).



Pursuing ease of recycling with packaging materials made from mono-materials

Packaging film for food products poses the problem of being difficult to recycle because it is made by pasting together multiple materials with different characteristics in order to create a highly functional product that is hard to break and suitable for long-term storage. We are currently developing and proposing films and sheets made from mono-materials with the aim of realizing an easier recycling process.



2. Biomass strategy — Expanding lineup of biomass plastic products

Plastics are usually manufactured from petroleum, which means the consumption of fossil resources is inevitable. In comparison, biomass plastics made from plants—which grow by absorbing carbon dioxide—can curtail carbon dioxide emitted during the manufacturing process. We believe that a shift to biomass materials encourages the recycling of resources, curbs the use of new fossil resources, and helps mitigate climate change.

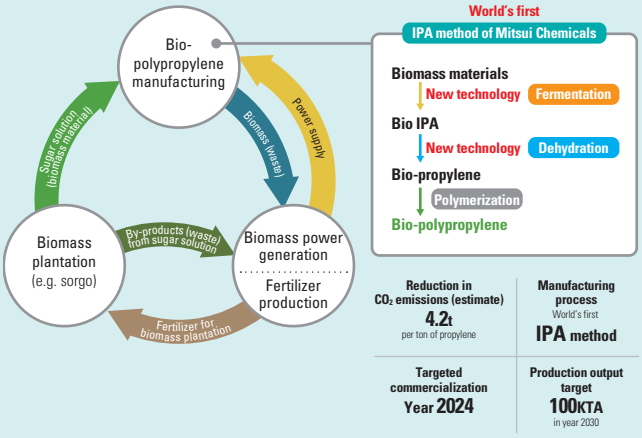
We possess a number of biomass plastic products, including ECONYKOL™ (bio-polyol), STABiO™ (bio-polyurethane), and Do Green™ (bio lens monomer). We will strive to expand this lineup by mainly aiming to establish bio-polypropylene manufacturing technology.

Sights set on world's first bio-polypropylene commercial application

There are significant hurdles associated with manufacturing polypropylene from biomass materials and the technology has yet to be demonstrated on an industrial level. We are taking on the challenge of conducting world-first bio-polypropylene manufacturing trials by harnessing our new proprietary technology in which fermentation is a key reaction. By mainly using non-edible plants as the biomass raw material and converting the raw material residue to electricity, we aim to establish a sustainable technology that can be put to effective use.

Polypropylene

- Accounts for roughly 20% of global plastic production output. Demand expected to grow up ahead.
- Used for a broad range of applications, such as auto parts, consumer electronics, medical equipment, housing, and food packaging.



Problem of marine plastic waste

The problem of marine plastic waste owes to plastics that have escaped the process for recycling resources. Stopping waste from flowing into rivers and the sea is of utmost importance. Given that waste management and collection requires the development of social infrastructure—an issue much too big for companies to address single-handedly—we aim to tackle the issue of marine plastic waste by participating in the Alliance to End Plastic Waste (AEPW) and other global alliances.

Signatories to the AEPW include global companies involved in the plastic value chain, such as P&G, Dow, and PepsiCo. The initiative aims to reduce plastic waste and contribute to a sustainable society by investing a total of US$1.5 billion over the next five years. As of July 2019, the AEPW has 39 corporations actively participating.

ALLIANCE TO END PLASTIC WASTE

Climate Change and Problems with Plastic

Climate change policy

We believe that priority must be afforded to solving climate change-related issues in order to realize an ideal future society.

The Mitsui Chemicals Group takes into account foreseeable opportunities and risks from a long-term perspective with a view to the year 2050 and tackles climate change issues with two approaches: mitigation and adaptation. With this in mind, we formulated a policy on addressing climate change that covers the entire global value chain.

Mitigation

Realizing a low-carbon society by reducing GHG emissions

Opportunities and risks

Low-carbon manufacturing
- Energy conservation and renewable energy
- Switching to alternative raw materials and fuels

Product-driven GHG reductions
- Blue Value™ products

Improved recycling technology
- Innovation in materials and design

Maximization of value chain contributions

Adaptation

Realizing a healthy and sound society resistant to climate change risks

Opportunities and risks

Improving water security
- Risk management at production sites
- Effective use of water resources

Expanding lineup of adaptable products
- Rose Value™ products
- Disaster prevention/mitigation products

Strengthening of value chain resilience

Realizing a low-carbon society by reducing GHG emissions

Low-carbon manufacturing

Chemical products use raw materials derived from fossil resources. And they are manufactured through a number of processes in which fossil fuels are converted to steam or electricity. For these reasons, the chemical industry emits far more GHGs than other industries. We believe we can contribute to greatly reducing GHG emissions in the manufacturing of our chemical products up ahead by implementing various measures. For example, switching to low-carbon raw materials and fuels, cutting down on energy used in manufacturing by mainly using high-performance catalysts and installing energy-efficient equipment, and making active use of renewable energy.

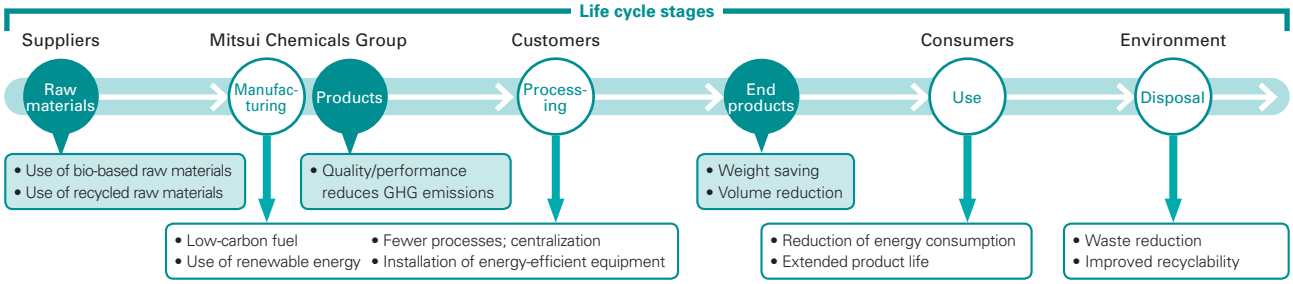
GHG reduction contributions by products

Chemical products are used in a broad range of end products and can contribute to reducing GHGs at each stage of the product life cycle. Within the Mitsui Chemicals Group, we certify those products that are environmentally friendly as Blue Value™ products. One of the contribution categories used in our certification assessment is CO_2 reduction—we therefore evaluate how much a product reduces GHGs at each stage of its life cycle. Furthermore, the sales ratio of Blue Value™ products is one KPI set in our 2025 Long-Term Business Plan. We intend to accelerate the development of products that fully reflect our Blue Value™ perspectives.

Improved recycling technology

We think promoting the recycling of resources is also an important challenge both in terms of reducing the use of fossil fuels and lowering GHG emissions. As outlined in our plastic strategies, we intend to work on designing products that can be easily recycled.

Contribution example of reduced GHG emissions throughout the life cycle of chemical products



Realizing a healthy and sound society resistant to climate change risks

Improved water security

Damage from wind, floods, and drought are expected to increase as unrelenting global warming causes major changes in climate phenomena. Population increase and economic development are also expected to trigger large-scale water shortages. Owing to the fact that a lot of water is required in the manufacturing of chemical products—for example, for heating/cooling and product purification—changes in the available water supply or its quality could have a negative impact on our business activities. Given that the Mitsui Chemicals Group maintains production sites in multiple regions around the world, we believe that it is necessary to conduct risk assessments and take measures in accordance with local conditions.

Expanding lineup of adaptable products

It is expected that the rise in temperature increase associated with climate change will have a serious impact on health and the basic needs of humans, i.e., food, clothing, and shelter, as well as agricultural produce and ecosystems. Within the Mitsui Chemicals Group, we certify those products that help improve QOL, mainly in regards to extending healthy life expectancy and addressing food problems, as Rose Value™ products. As part of the certification process, we evaluate a product's contributions to preventing infectious diseases or minimizing food loss, for example. Moreover, the sales ratio of Rose Value™ products is one KPI set in our 2025 Long-Term Business Plan. We intend to accelerate development and expand our lineup of adaptable products that fully reflect our Rose Value™ perspectives.

Supporting the recommendations of the TCFD

In January 2019, the Mitsui Chemicals Group announced its support of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). As a chemical company, we intend to earnestly tackle climate change, deepen our understanding of the opportunities and risks that affect our businesses, and endeavor to actively disclose our initiatives. The recommendations of the TCFD urge companies to disclose information about climate change-related governance, business strategies, risk management, indicators, and targets. In line with the TCFD's recommendations, the Group will take the following approach.

The TCFD was set up by the Financial Stability Board. In June 2017 it announced recommendations calling for financial institutions, corporations, and governments to disclose the business impacts of climate change in their financial reports. According to the TCFD, 792 institutions worldwide have expressed their support for the recommendations (as of June 2019).

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

1. Materiality assessment of climate change-related risks
Qualitatively analyze risks and opportunities concerning climate change in our key businesses

2. Identification and determination of scope of scenarios
Forecast the changes in our business environment concerning climate change (scenarios) and examine their impacts

3.Quantification of business impacts
Quantify impacts on future business strategies and financials based on our scenarios and reflect them in strategies

4. Identification of potential measures
Determine the measures for climate change strategy and select management control indicators

Materiality assessment of climate change-related risks

As a first step, we assessed the impacts of climate change on the Group's businesses. Going forward, we plan to use this information to perform a scenario analysis of the climate change impacts on our businesses and disclose the results.

1) Assessment scope

Selected key business domains in the Group susceptible to the impacts of climate change.
(1) Mobility, (2) Petrochemical feedstocks, (3) Agriculture, (4) Health Care, (5) Electricals and electronics, (6) Packaging, (7) Energy solutions

2) Assessment method

1. Identification of climate change risks and opportunities
   Identify risks (both physical and those pertaining to the transition to a low-carbon society) and opportunities based on the information disclosure framework presented in the TCFD's Final Report.
2. Picking out major risks and opportunities
   Pick out the particularly major risks and opportunities from those identified above in light of their potential occurrence and impact on business (human loss, financial impacts, etc.). When doing so, take into account factors such as trends in international discussions, the Group's business regions, and case examples at other companies.

3) Assessment results

Assessment items		Group-wide	Specific business domains
Physical risks/ opportunities	Acute	● Heightened risk of wind or rain damage (floods/storms)	
	Chronic	● Heightened risk of rising sea levels (high tides) ● Heightened risk of freshwater scarcity	●○ Changes in arable land and development of new agricultural technology (3) ●○ Wider distribution of pests, weeds, and bacteria (3) ●○ Wider prevalence of infectious diseases caused by climate change (4)
Risks and opportunities pertaining to shift to low-carbon society	Policies and legislation	● Risks from introduction of, and increases in, carbon pricing ● Increase in litigation risks	●○ Impacts on business from shift to EVs (1) (5) ● Restrictions on use of synthetic chemical fertilizers (3)
	Technologies	●○ Uptake of renewable energies ●○ Accelerated development of CCU technology and advanced recycling technology	● Uptake of biomass plastics (1) (2) (6) ● Faster transition to low-GHG emissions technology (2) (5) (6)
	Markets	●○ Spread of circular economy ●○ Transition to renewable raw materials ● Calls for manufacturers to use renewable energy ● Higher prices for scarce resources due to shift to EVs and transition to a hydrogen-fueled low-carbon society	● Decrease in auto manufacturing and sales volume owing mainly to increase in ridesharing and carsharing (1) ● Shortage of naphtha due to decline in oil production output (2) ●○ Increased demand for renewable energy (7)
	Reputation	● Increased investor approaches	

*External data used include IPCC RCP2.6, RCP8.5, IEA B2DS, and SDS.

(● denotes risks; ○ denotes opportunities)

Climate Change and Problems with Plastic
https://www.mitsuichem.com/en/sustainability/mci_sustainability/climate_change/