

## Sustainability

# Message from the Officer Supervising Corporate Sustainability Management



**We will aim for innovative business growth that balances market needs with the environmental and social impacts while delivering superior value to our stakeholders.**

## Joseph Rinaldi

Vice President  
Chief Strategy Officer

### Aiming for a balanced growth

For any company to be successful, it must make sustainable management one of its top priorities. It is no longer a question of whether a company's growth should be oriented toward environmental and social sustainability but how it should be put into practice. There is no doubt that sustainability has been a hallmark of the Mitsubishi Chemical Group for a long time and this will not change. Sustainability management will remain a critical issue under the new management structure and will continue to be housed within the strategy office to ensure its undiluted attention.

In line with the new management policy, "Forging the future" our objective is innovative business growth that balances market needs with the environmental and social impacts while delivering superior value to our stakeholders.

### Progress on our material issues

The MCG Group has identified material issues, including perspectives from business foundations and environmental and social impacts. We have also set KPIs and targets to measure the progress of these issues (▶ Page 70). Under the "One Company, One Team" culture and flat organization, each corporate function division, business group, and strategy will work as one to accelerate initiatives, achieve targets, and strengthen our sustainability management. In addition, we aim for an operation that enables us to monitor progress easily and engage more actively with our stakeholders.

In fiscal 2021, we announced our policy to achieve carbon neutrality. In line with this, we are making progress in developing an LCA calculation system that will serve as a management tool for shifting our corporate activities toward

carbon neutrality and a circular economy (▶ Page 76). We have also reaffirmed our commitment by earmarking significant investment capital yearly to make the policy a reality.

Regarding employee engagement and diversity, we have increased opportunities for dialogue between management and employees to deepen our mutual understanding. Also, the increasing diversity among leadership will lay the groundwork for enhancing diversity and inclusion.

Superior safety and compliance are at the core of a company's existence. Therefore, we will place greater emphasis and work as one team to improve our performance in these areas.

### Meeting the expectation of our stakeholders

Even though the future of the socio-economic situation is challenging to predict, the movement for building a standard framework for sustainability information disclosure is accelerating. We interpret this acceleration as a clear indication of our stakeholders and society's high expectations toward sustainability. Therefore, we will push for growth and value creation that meets those expectations. Furthermore, we will fulfill our accountability by disclosing our process and results and being transparent in our corporate activities.

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# Implementing Sustainability

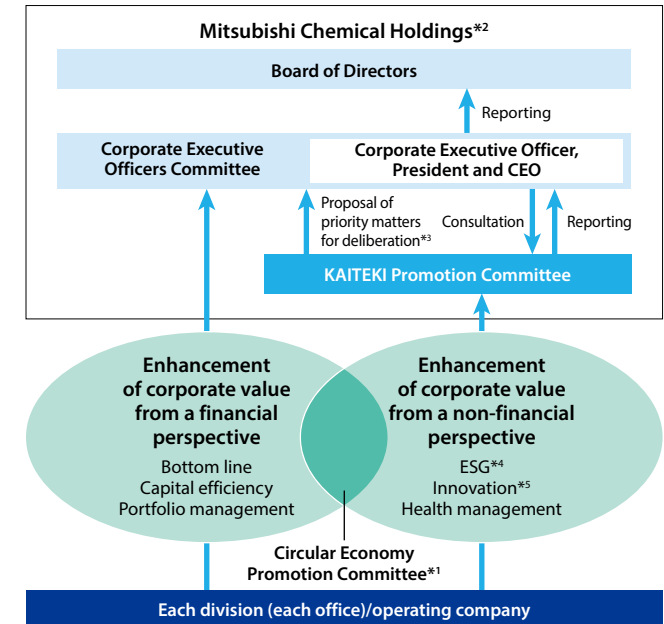
The Mitsubishi Chemical Group recognizes sustainability as an important management theme and is addressing the material issues identified in the formulation of the medium-term management plan by working to fulfill the targets set in connection with the issues.

Under the new management policy, "Forging the future," the Group will target sustainable growth by further strengthening the business foundation, working to improve environmental and social sustainability, including in the area of carbon neutrality, and nurturing businesses that support the portfolio strategy.

## Structure for implementing sustainability

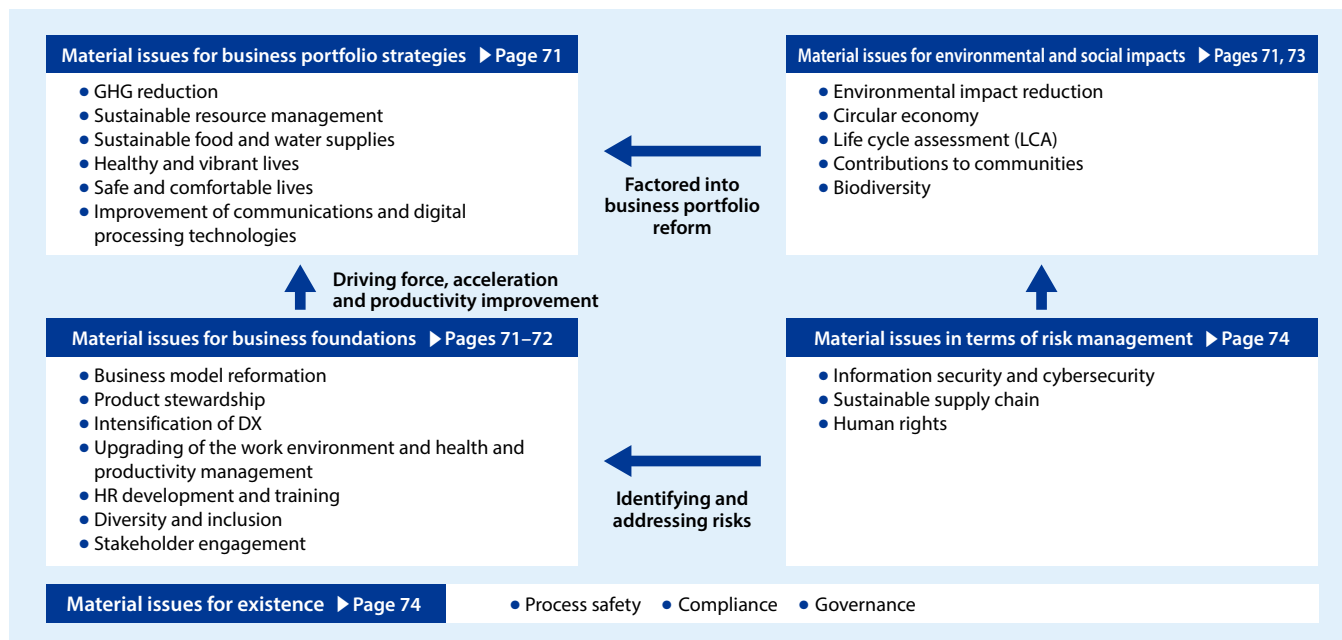
The MCG Group is taking measures to increase long-term corporate value and has established the KAITEKI Promotion Committee to coordinate the increase in corporate value from a non-financial perspective. Meanwhile, as a crossover between social and economic value, the Circular Economy Promotion Committee\*1 has implemented Group-wide measures to advance the circular economy. Going forward, MCG will continue to steadily implement sustainability initiatives based on a structure aligned with the new management policy.

## Structure for implementing sustainability in fiscal 2021



\*1 Changed in 2022 to Green Transformation Promotion Committee  
 \*2 Currently Mitsubishi Chemical Group Corporation  
 \*3 Where necessary  
 \*4 Governance issues are mainly addressed by committees such as the Nominating Committee.  
 \*5 Determination of the direction of technologies, etc.

## Overview of material issues [Identification process of material issues and related activities](#)



➡ For the material issues identified, a strategic response is formulated and indices (MOS Indices) and targets are set to measure progress (▶ Pages 71-74).

## Discussions by the KAITEKI Promotion Committee

July 2021	<ul style="list-style-type: none"> <li>• Progress of MOS activities</li> <li>• Exploring the path to carbon neutrality</li> <li>• Activities for KAITEKI Health and Productivity Management</li> <li>• Progress of MOT activities</li> </ul>
February 2022	<ul style="list-style-type: none"> <li>• Sustainability-related information disclosure</li> <li>• Activities related to MOS and human resources and work styles</li> </ul>

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# Sustainability Indices

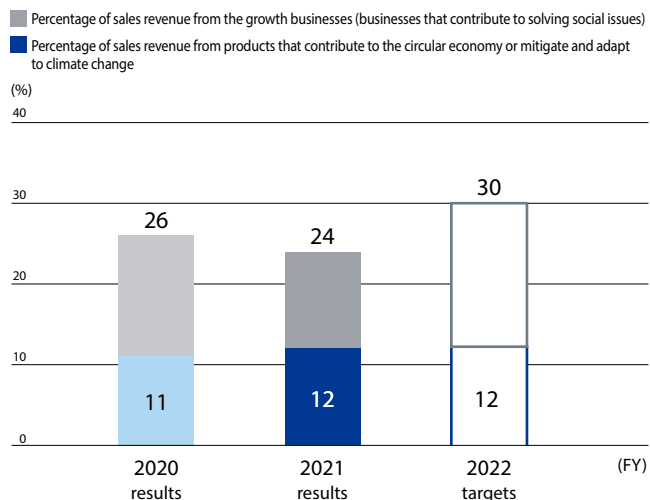
For the material issues identified by the Mitsubishi Chemical Group, targets are set and progress is measured with the Management of Sustainability (MOS) Indices.

We will proceed steadily with initiatives on material issues by monitoring the yearly progress of each index.

Material issues for business portfolio strategies / Material issues for environmental and social impacts / Material issues for business foundation

**Index**

**Percentage of sales revenue from the growth businesses (businesses that contribute to solving social issues)/ Percentage of sales revenue from products that contribute to the circular economy or mitigate and adapt to climate change\***



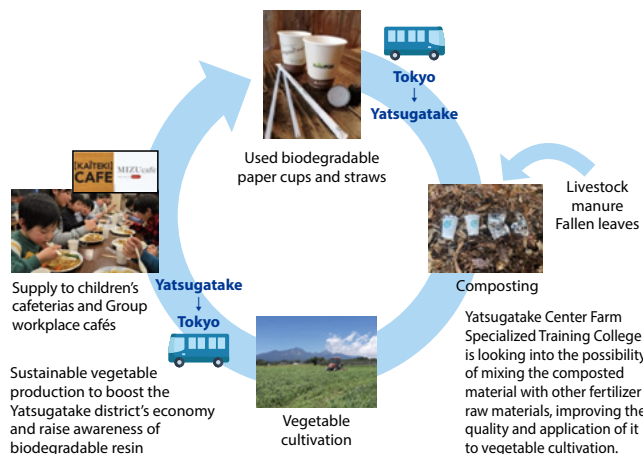
\* Products from growth businesses (businesses that contribute to solving social issues) that contribute specifically to the circular economy or mitigate and adapt to climate change.

We will work steadily to achieve business growth by continuing to concentrate efforts on strategic focus markets where we have product strengths as a Group. Among these are products that contribute to wider use of EVs, products such as bioplastics that contribute to the circular economy, semiconductor materials, and healthcare products.

**Finding solutions for a sustainable future**

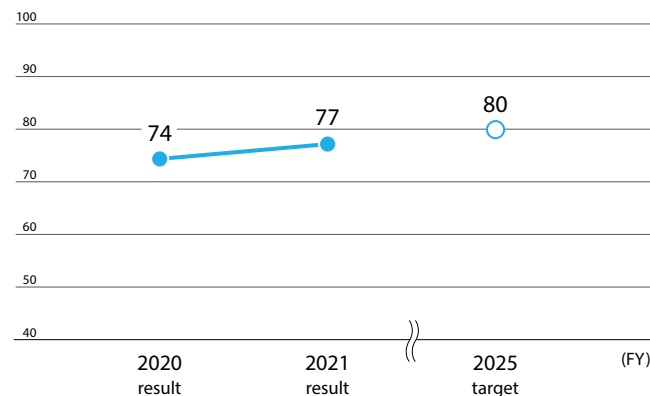
## Building a recycling-oriented society through use of the biodegradable resin *BioPBS* and local resources

*BioPBS* is made with plant-based raw materials and can be fully biodegraded by soil microorganisms into water and CO<sub>2</sub>. As a result, this material can contribute to reducing plastic waste and CO<sub>2</sub> emissions. Since 2020, Mitsubishi Chemical Corporation (MCC) has been engaged in a pilot study in the Yatsugatake district that takes *BioPBS* as the starting point for development toward a recycling-oriented society. In the study, paper cups and other items made with *BioPBS* are processed at Yatsugatake Center Farm Specialized Training College into compost for use by partner farms in the cultivation of vegetables.



**Index**

## Level of customer satisfaction



The MCG Group is committed to showing respect for and maintaining close communication with customers and other stakeholders in order to build a better society together. The Group carries out a survey of customer satisfaction every year and analyzes the results as the basis for the PDCA cycle. This helps us to provide better services and improve customer satisfaction. In addition to satisfaction with services and products, the survey covers customer awareness of our sustainability initiatives and other items that allow us to track customer evaluation of the Group from multiple perspectives. Going forward, we will continue to strengthen relationships with customers by listening carefully to their voices, thereby promoting sustainable growth.

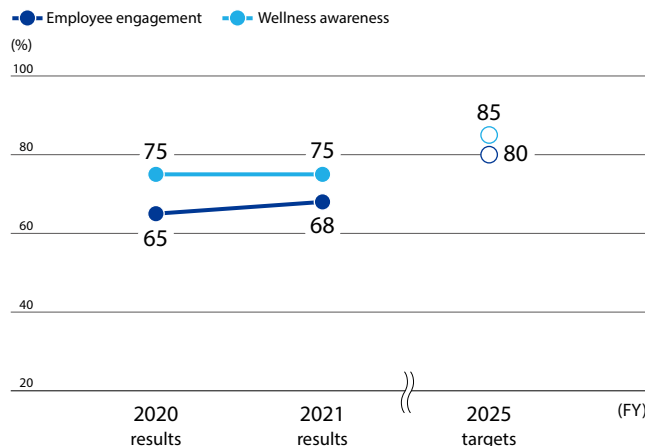
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Sustainability Indices

Material issues for business foundations

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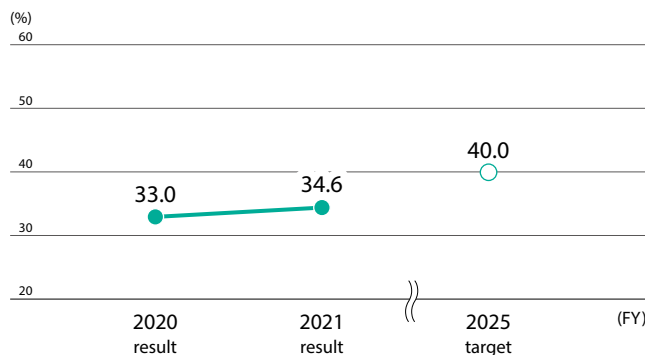
Employee engagement / Wellness awareness



The MCG Group attaches importance to creating an environment where employees are empowered to maximize their individual strengths and abilities. We believe that this results in high levels of creativity and productivity, which in turn strengthens the business foundation. The graph above shows the proportion of employees giving a favorable response under the items “Employee engagement” and “Wellness awareness” in the employee awareness survey. To reach the target for employee engagement, we have been holding town-hall meetings and creating opportunities for dialogue between management and employees to deepen mutual understanding. To raise wellness awareness, we provide an environment that enables diverse and flexible work styles and take measures to support employee health.

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Diversity among management



Diversity among management means the proportion of managerial staff with a diversity attribute. Increasing diversity among management will result in management decision-making by human resources with wide-ranging experience.

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Evaluation related to the ESG stock index

In recognition of the MCG Group’s initiatives, we have been included continuously in the ESG stock indices indicated below (as of June 30, 2022).

**Dow Jones Sustainability Indices**  
Member of Dow Jones Sustainability Indices  
Powered by the S&P Global CSI

**MSCI Japan ESG Select Leaders Index\***  
2022 CONSTITUENT MSCI JAPAN ESG SELECT LEADERS INDEX  
**MSCI Japan Empowering Women Index\***  
2022 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN)

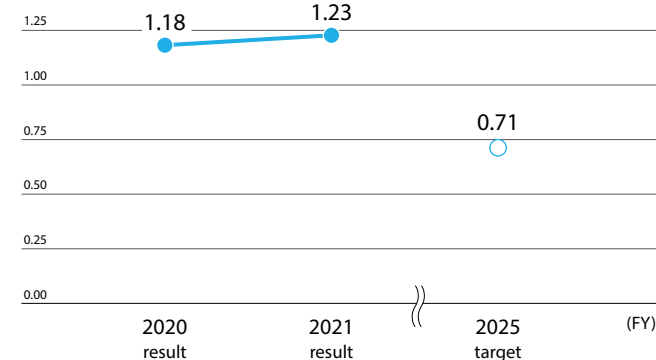
**FTSE4Good Index Series**  
FTSE4Good

**FTSE Blossom Japan Index**  
FTSE Blossom Japan Index

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

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Lost-time injury frequency rate (LTIFR)



LTIFR, including overseas business sites, remains low. We will continue working to meet our target by strengthening measures to prevent occupational accidents, including ensuring strict compliance with basic safety practice and procedures, providing training, and conducting risk assessments.

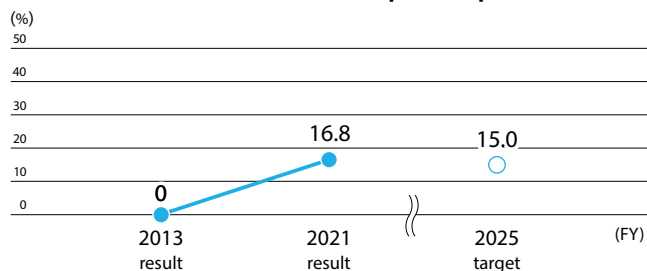
Sustainability

Sustainability Indices

Material issues for environmental and social impacts

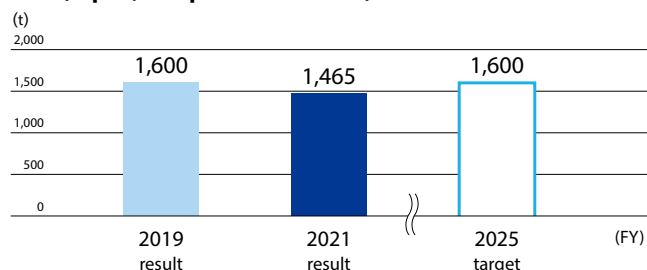
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Rate of reduction of GHG emissions (Japan, compared to FY2013)



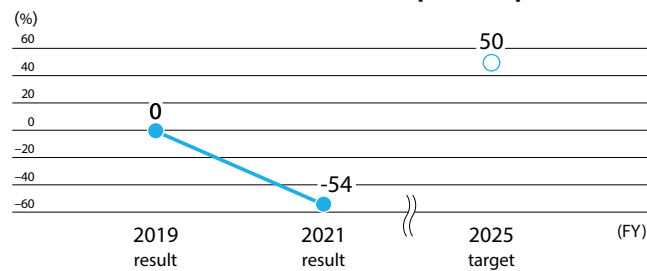
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COD (Japan, compared to FY2019)



Index

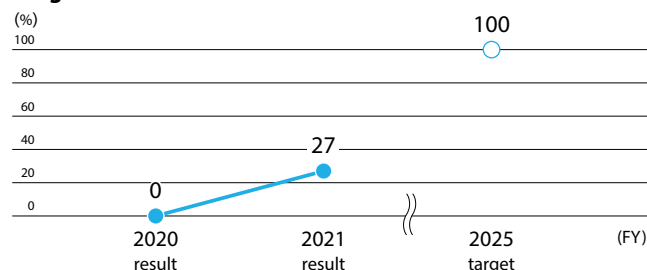
Rate of reduction of landfill waste\* (Japan, compared to FY2019)



\* Amount of landfill waste regularly generated in the Company's routine production and logistics activity

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Progress of LCA activities



Finding solutions for a sustainable future

Investment in GHG reduction

At the MCC Ogaki Plant, we installed a solar power generation facility in 2017. We plan to expand the facility and use the generated electric power within the plant to achieve an annual reduction of 40 to 50 tons in CO<sub>2</sub> emissions. Meanwhile, in March 2022 we purchased 20,000 kWh of environmental value (green power) from Ogaki City and received a Green Power Certificate from the city authorities.

Going forward, the MCG Group will promote wider use of solar power generation across its operations and drive global initiatives to realize carbon neutrality by 2050.



As a step toward reducing negative impacts on the global environment, resolving the issues of climate change and water resources, and building a recycling-oriented society, we have set indices to measure impact reduction in the atmosphere, water, and waste.

In fiscal 2021, due to increased production efficiency and facility upgrades, we achieved a 16.8% reduction in domestic GHG emissions compared to fiscal 2013 and a reduction in COD compared to fiscal 2019. To reduce the amount of landfill waste, we are working to improve production yield and boost the recycling rate. To continue reducing the environmental impact going forward, we will push ahead with reduction measures and consider setting new GHG and global targets for fiscal 2025.

Concurrently, we are progressing with an initiative to use LCA as a management tool and in fiscal 2021 we established a standard method for calculating the product carbon footprint (▶ Page 76).

## Sustainability

## Sustainability Indices

## Material issues for existence / Material issues in terms of risk management

## Index

## Number of serious compliance violations

3

(Fiscal 2025 target: 0)

We take a serious view of the outcome in fiscal 2021 and are taking far-reaching corrective action and measures to prevent a recurrence under the guidance and supervision of the Chief Compliance Officer. Under the "One Company, One Team" approach, we will roll out a compliance implementation program on a shared global platform and provide regular education and training for all employees, with ongoing monitoring of the progress in instilling a culture of compliance awareness.

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## Number of accidents

Process safety accidents

17

(Fiscal 2025 target: 16)

Environmental accidents

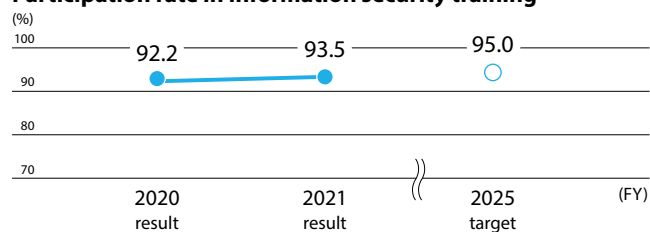
0

(Fiscal 2025 target: 0)

There were 17 process safety accidents in fiscal 2021. Recognizing safety assurance as a corporate social responsibility, we undertake risk assessment to prevent accidents and support ongoing stable operations. As in fiscal 2020, there were no environmental accidents in fiscal 2021.

## Index

## Participation rate in information security training



To cultivate in all staff members an awareness of the importance of protecting information assets as an employee responsibility, we work through annual training to enhance awareness of information security. Employees who have not yet undergone the training receive repeated invitations to participate in order to underline its importance. As a result, the participation rate for fiscal 2021 increased over the previous fiscal year.



## Finding solutions for a sustainable future

## Strengthening sustainable supply chains

We support our business partners to help them understand the MCG Group's corporate mission and work with them to address environmental and social issues in order to build and strengthen the sustainability of our supply chain.

We distribute to our business partners a guidebook entitled *Developing Cooperative Business Practices with Suppliers and Business Partners*, which summarizes our standards across a wide range of areas including respect for human rights, employment, environmental protection, and ensuring occupational health and safety. We use a questionnaire to check the status of related activities. By presenting the results of the questionnaire as feedback to business partners, we engage in dialogue to better identify risks and improve response to individual issues. In this way, we aim to cultivate healthy relationships that promote mutual growth.



## Finding solutions for a sustainable future

## Fostering a safety culture

Safety is the foremost priority of the MCG Group's business activities. An example of our activities in this area was the safety culture assessment carried out by a third-party organization at the MCC Toyama Plant. A questionnaire survey of all plant employees was conducted, with the results analyzed to identify issues. Addressing the issues head-on, we have discussed improvement strategies, put safety systems in place, worked to reform awareness, and enhanced educational facilities as part of wide-ranging measures to foster a safety culture. This initiative was recognized by the Japan Chemical Industry Association with the Jury's Special Award in the fiscal 2021 Responsible Care Awards.



Recital of safety guidelines at the morning meeting

Sustainability

# Promoting a Circular Economy

In 2022, Mitsubishi Chemical Group Corporation expanded the mission of the Circular Economy Promotion Committee, established in 2019, to create the Green Transformation Promotion Committee. The committee promotes the circular economy on a Group-wide basis through a fusion of social and economic value. The main strands of this initiative are the cyclical use of carbon (CO<sub>2</sub>), plastics and water resources, and the evolution of LCA tools.

## Action rollout through alliances

One of Mitsubishi Chemical Corporation (MCC)'s activities to reduce pollution, waste emissions, and resource consumption throughout the supply chain is its participation in the Japan Clean Ocean Material Alliance (CLOMA\*4).

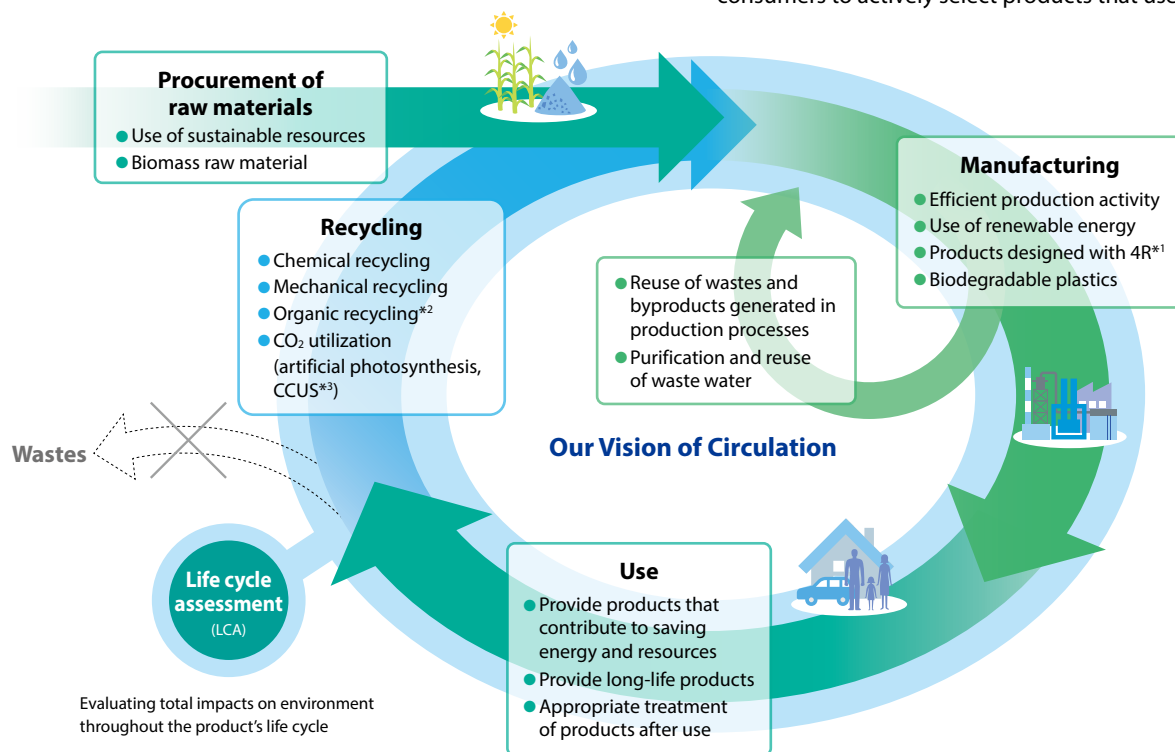
At the CLOMA Forum 2021, we gave a presentation on the development and utilization of biodegradable plastics such as biodegradable barrier packaging. We will continue working to promote the adoption of biodegradable plastics that contribute to environmental impact reduction and to expand their applications. We will also create an environment that encourages consumers to actively select products that use these materials.

## Realizing sustainability throughout the life cycle: Utilization of biomass materials

MCC is working with Toyota Tsusho Corporation on a commercialization project with the aim of launching production and sales in fiscal 2025 of plant-based ethylene, propylene, and derivative products produced from bioethanol made with sugarcane or other source materials. We envisage their use across a wide range of sectors, including in products that are normally difficult to collect and recycle. The use of plant-based raw materials will enable us to contribute to realizing a sustainable life cycle.

## Design of pilot plant for MMA monomers using plant-derived materials has begun

MMA is a raw material for acrylic resins, which are used in a wide range of products from automotive lamp covers, signs, and aquarium tanks to paint and construction materials. Global demand is expected to show solid growth. MCC has developed a manufacturing technology to produce MMA monomers from plant-derived materials and begun designing a pilot plant. The plant is due to begin operations in fiscal 2023. After demonstrating the technology's viability, we aim to apply it to a commercial-scale plant in 2026. We are also looking into the possibility of molecular recycling to reutilize acrylic resins through processing back into MMA monomer. In this way, we will continue working for environmental impact reduction across the supply chain (▶ Page 91).



\*1 4R: Reuse, Reduce, Recycle, Renewable  
 \*2 Technology to produce valuable products through composting and methane fermentation  
 \*3 Carbon capture, utilization, and storage, a technology for capturing CO<sub>2</sub> and using or storing it to prevent its release into the atmosphere  
 \*4 An organization set up within the Japan Environmental Management Association for Industry in 2019 to accelerate innovation to resolve the issue of marine plastic waste through cross-industry collaboration

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# Evolving LCA Systems Further

To achieve carbon neutrality by 2050, we will use life cycle assessment (LCA) systems to determine our priorities when selecting focus markets.

In order to use LCA systems as an advanced management tool in the chemicals industry, Mitsubishi Chemical Group Corporation is (1) laying foundations for the systems, (2) broadening the scope of calculation, and (3) developing new uses. By taking these steps, we will be able to make accurate comparisons not just at the product and service level, but also across the entire product value chain including businesses and manufacturing sites, which will inform our “selection and focus” efforts for businesses, investment, and R&D as we work to become carbon neutral.

### (1) Standardizing methods to lay the foundations

We have standardized the methods we use to calculate product carbon footprints. This information allows us to appropriately quantify and report the environmental and social impact of our products and services, as well as how our products and services contribute to reduced environmental impacts.

### (2) Broadening the scope of calculation to include Scope 3 emissions

As well as calculating carbon footprints for each product and service, we are applying these calculations to quantify how far we have reduced the environmental impact across the product and service life cycle and to specify GHG emissions (Scopes 1, 2, and 3) for each business, process, and manufacturing site.

By continuing these efforts to accurately evaluate business activities using such LCA systems, we will build up expertise and regularly review and improve the systems to further evolve our LCA tools and expand their scope.

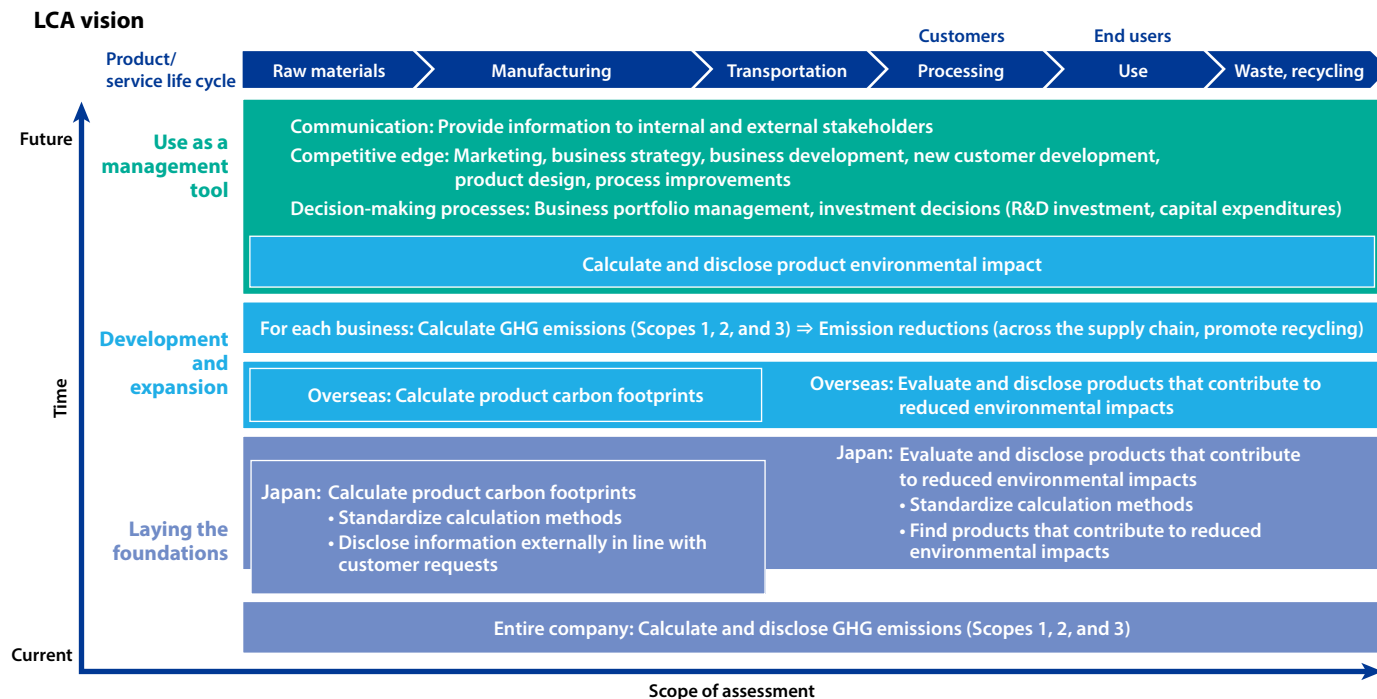
### (3) Use as a management tool

In the future, we will use the results from these LCA calculations as an advanced management tool in the following three ways:

- **Fostering communication:** Provide information to internal and external stakeholders and gather feedback from these stakeholders
- **Improving our competitive edge:** Use as evidence to support accurate marketing, product design, and process improvements

- **Rationalizing decision-making processes:** Apply to decision-making processes for business portfolio management and investment programs

Through the comprehensive implementation of these systems, we aim to quantify the social contributions made by the MCG Group and achieve the new management policy, “Forging the future.”





## Sustainability

# Reporting in Line with the TCFD Recommendations

In October 2018, Mitsubishi Chemical Group Corporation announced its support for the final recommendations prepared by the Task Force on Climate-related Financial Disclosures (TCFD)\*.

The Mitsubishi Chemical Group is working to enhance its climate change-related measures in areas such as environmental impact reduction, driving energy-saving activities, promoting renewable energy use, and adding to the range of products that contribute to GHG emissions reduction. Through these measures and progressive enhancement of information disclosure, we are targeting increase in our corporate value.

\* The TCFD is a body established by the Financial Stability Board in 2015. In June 2017, it announced the final recommendations concerning disclosure of information to encourage companies to voluntarily disclose to investors the impacts of climate change-related risks and business opportunities on corporate finances.

[🔗 The report in line with the TCFD recommendations](#)

## Governance

At MCG, we have identified GHG reduction, environmental impact reduction, and circular economy as the material issues (▶ Page 70) to be addressed in our medium-term management plan, *APTSIS 25*. In parallel, we have set management indicators and targets (▶ Page 79) to measure progress with these initiatives to mitigate and adapt to climate change. Monitoring of progress toward the target values takes place with the involvement of the MCG president and other members of the management team.

## Director remuneration

The performance-based evaluation of the remuneration of corporate executive officers and executive officers is determined based on the degree of achievement of the targets for each fiscal year. In addition to economic benefit and capital efficiency, the evaluation considers indices relating to improvement in sustainability and other factors, including GHG emissions reduction. For detailed information, please see the Securities Report.

### For reference:

Corporate Governance: Director remuneration (▶ Pages 58–61)

## Strategy and risk management

### Transition plan

In December 2021, MCG announced a new management policy entitled “Forging the future.” The policy includes a plan for the transition to carbon neutrality in line with the basic policy for the realization of carbon neutrality that had been announced in October of the same year.

The plan sets the new targets of a 29% reduction in GHG emissions by fiscal 2030 compared to fiscal 2019, and a further reduction to net zero in 2050 to achieve carbon neutrality. It also sets out a concrete roadmap. Going forward, our portfolio management will include a carbon-neutral perspective, which will enable us to remain competitive in a society that is in transition to carbon neutrality.

### For reference:

New Management Policy, “Forging the future” (▶ Pages 23–29)

## Business opportunities and risks from perceived social issues

In the formulation of its medium- to long-term basic management strategy KAITEKI Vision 30 (KV30), the MCG Group identified the business opportunities and risks arising from the challenges facing society in the period up to 2030. As part of this, KV30 gives a quantitative evaluation of the risks envisaged if the social issues are left unmanaged (▶ Page 78).

A climate change-related risk that we recognize as having a particularly large impact is a decrease in product demand and profitability due to factors such as an increased carbon tax burden and regulation of the usage of plastic products.

Meanwhile, to prepare for major natural disasters, in addition to taking steps to minimize damage and ensure business continuity, we will work to realize a safe and secure society by presenting solutions that contribute to disaster prevention and mitigation.

### For reference:

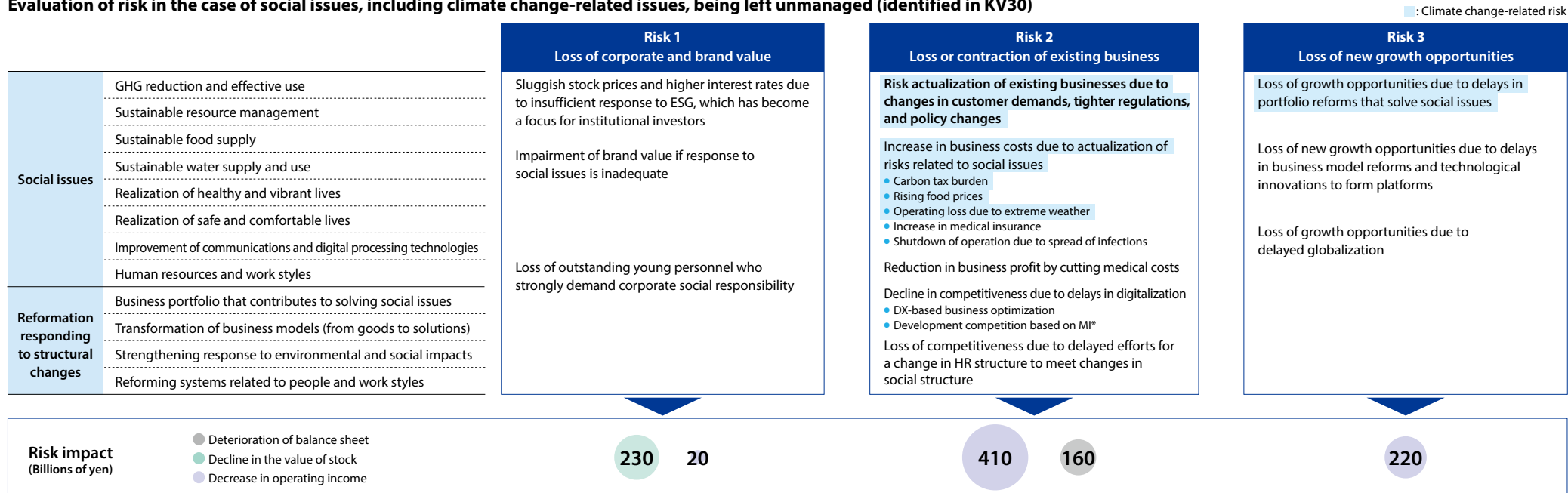
Sustainability: Overview of material issues (▶ Page 70)

Risk management: Measures against major risks (▶ Page 66)

Sustainability

Reporting in Line with the TCFD Recommendations

Evaluation of risk in the case of social issues, including climate change-related issues, being left unmanaged (identified in KV30)



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

Overview of risk based on scenario analysis (focusing on risks with a heavy impact)

Risks recognized	Outline of risk based on the scenario*	Impact on MCG	Response to potential risk
Regulation of usage of plastic-products	Decreased demand for virgin petrochemical products due to an increase in the plastic collection rate	Reduced demand for petrochemical products	Focus on businesses that contribute to achieving carbon neutrality
Rise in carbon price	Increase in operating costs due to a carbon price rise	Rise in operating costs	GHG emissions reduction in line with the basic policy for realizing carbon neutrality
Operating loss due to extreme weather	Increased impact on manufacturing sites due to increased flood risk in Asia	Shut-down of plant operations in coastal areas due to disaster	Measures to prepare for major natural disasters to minimize damage and ensure business continuity

\* Based on the World Energy Outlook (WEO) Sustainable Development Scenario (SDS) and other sources: The SDS scenario is one outlined by the International Energy Agency (IEA) in line with the Paris Agreement target, where the global mean temperature rise compared to pre-industrial levels is kept to well below 2°C, with efforts to reduce it to 1.5°C.

## Sustainability

# Reporting in Line with the TCFD Recommendations

### Business opportunities

As set out in our new management policy, we will also devote resources to businesses that contribute to realizing carbon neutrality based on portfolio management with a focus on growth, performance, and sustainability.

We will progressively expand the business scale and strengthen the profitability of specific focus businesses that offer climate change-related business opportunities, including lighter mobility materials, vehicle-mounted battery materials, bioplastics, and carbon fiber and composite materials.

### Impact of business opportunities and risks from perceived social issues

- In fiscal 2022, the target year of *Step 1* of the medium-term management plan *APTSIS 25*, we aim to raise to 12% the proportion of sales revenue from products that contribute to the circular economy or mitigate and adapt to climate change.
- We estimate risk associated with social issues and structural change in 2030 at around ¥1 trillion.

#### For reference:

New Management Policy, "Forging the future" (▶ Pages 23–29)  
Overview of Business Domains (Performance Products Domain) (▶ Pages 87–89)

### Process of risk identification, evaluation, and management

#### Portfolio management

As announced in the new management policy, MCG has designated carbon neutrality as a selection criterion for its focus businesses. Incorporating a carbon-neutral perspective, our portfolio management will focus on growth markets where we have a competitive advantage.

#### For reference:

Portfolio for the New Management Policy "Forging the future" (▶ Pages 24–26)

#### Risk management

We will strive to avoid the occurrence of major risks and minimize losses when they occur under our risk management system.

In addition, we have begun studying the introduction of Enterprise Risk Management (ERM), which comprehensively manages risk relating to Group business activities that are linked to significant issues identified from the perspective of material issues, and promotes minimization of loss and appropriate risk acceptance from a Company-wide standpoint.

#### For reference:

Risk Management (▶ Pages 65–67)

### Metrics and targets

#### Metrics and targets to assess risks and opportunities

The management indices (MOS Indices) set to measure progress with material issues include the GHG emissions reduction rate and the percentage of sales revenue from products that contribute to the circular economy or mitigate and adapt to climate change.

We have also established medium-term targets and will measure progress year by year (▶ Page 77, "Strategy and risk management"). As indicated under Strategy, the GHG emissions reduction targets have been changed to targets for the realization of carbon neutrality.

#### For reference:

Risk Management (▶ Pages 65–67)  
Sustainability Indices (▶ Pages 71–74)

#### Scope 1, 2, 3 GHG emissions

Please see GHG emissions in "Non-Financial Highlights" for the performance in fiscal 2021. We have received independent assurance for GHG emissions, and are working to disclose highly reliable information.

#### For reference:

Non-Financial Highlights (▶ Page 97)  
Environmental Data / Independent Assurance Report (▶ Pages 107, 109)