

Feature: Driving Innovation with MGC's Unique Characteristics

The MGC Group has always remained true to its distinctive character. Its DNA has been passed down through the generations to realize value creation based on unique technologies. MGC's distinctive character is underpinned by a technological foundation that has been built up over more than half a century, a corporate culture that supports it, strategic partnerships, and a culture of safety that is fundamental to the manufacturing industry. We will drive continuous innovation by fully utilizing these management resources.

Management Resources Supporting MGC's Distinctive Character



Technological Foundation

Features

We possess broad foundation technologies capable of expanding our business domain from upstream to downstream. Diverse original technologies are the primary source of our competitive advantage, and there is limitless potential in their combinations. Starting with our own technologies that have an unrivaled advantage over those of other companies, we will focus on developing them to a deeper level and on expanding their applications.

Enhancement

Intellectual capital

- Creation of new businesses for entering new growth markets
- Visualization of shortfalls in technology, human capital, and IP

Natural capital

- Application of natural gas exploration and development technology to other businesses
- Promotion of businesses that contribute to reducing environmental impact



Corporate Culture

Features

MGC has been promoting management with the view that people are the most important capital for value creation. This historical approach has led to the creation of a healthy corporate culture in which individuals are given discretion and matters are discussed openly on a daily basis.

Enhancement

Human capital

- Career development through various experiences
- Further increase in job satisfaction

Intellectual capital

- Development of DX human resources and enhanced use of DX in R&D
- Research theme scoring and internal visualization of research information



Partnerships

Features

Frameworks for coordination and co-creation with various partners are a unique management resource found only in the MGC Group. Strong partnerships with overseas local subsidiaries and companies from other industries not only help to save time and funding, but also lead to the creation of innovation in the chemistry field and the provision of growth opportunities for employees.

Enhancement

Social and relationship capital

- Promotion of cross-industry cooperation through Carbopath™
- Actualization of businesses that contribute to carbon neutrality by the GEC Business Planning Division

Intellectual capital

- Promotion of open innovation with universities and companies
- Creation of business schemes in collaboration with local governments



A Culture of Safety

Features

In the manufacturing industry, developing a culture of safety is a social mission. Upholding the philosophy that ensuring safety is the top priority of our business activities, we have established safety guidelines, and we are promoting responsible care (RC) activities aimed at achieving zero accidents and zero disasters. All of our employees participate in activities to identify risks and prevent accidents and disasters.

Enhancement

Manufactured capital

- Promotion of the SMART-FACTORY
- Expansion of manufacturing bases rooted in differentiating factors (consumption location, raw material location)

Human capital

- Enhanced group management of RC activities
- Continuous production of key personnel who can transform change into opportunity

1 Maximizing the Potential of Optical Materials

—Providing Materials that Help Customers' Business Growth by Taking a Market-Out Approach



Noriyuki Kato

General Manager, Optical Materials Division,
Specialty Chemicals Business Sector

Joined MGC in 2000. Recipient of the Technology Award's Grand Prize from the Japan Chemical Industry Association, the Chemical Technology Award from the Chemical Society of Japan, and the Ichimura Prize in Industry for Outstanding Achievement for the development of a special polycarbonate resin with a high refractive index and low birefringence.

Takamasa Fukushima

Division Director, Optical Materials Division,
Specialty Chemicals Business Sector

Joined MGC in 1990. After a position in research, worked in quality assurance-related operations at the Kashima Plant. Subsequently responsible for EP business at the head office, before being appointed Division Director with oversight of the Optical Materials Division in July 2024.

To actualize our Vision of “an excellent company with uniqueness and presence built on chemistry,” it is essential to promote innovation that leverages MGC’s distinctive character. In this section, we will introduce lupizeta™ EP optical polymer as an example, sharing events that occurred during its development and measures taken to overcome difficulties. We will also focus on the organizational characteristics and strengths that drive innovation.

Free and Open Activities of Researchers and Sales Personnel Break Down Barriers

Today, lupizeta™ EP has grown to become a core product, but I hear that the journey was not smooth sailing by any means. Could you look back and tell us why it was well received by the market?

Kato: It was in the late 1990s that we really stepped up development of materials for various lenses, including spectacle lenses. At the time, we were aiming to commercialize a product for a pick-up lens for Blu-ray Discs. We had a number of hurdles to overcome, including exacting requirements regarding optical characteristics and the price level. Finally, in 2004, we completed the development of lupizeta™ EP-4000 with zero birefringence. At the same time, however, technological innovation in devices rendered high-functionality optical materials unnecessary, and we were not able to achieve commercialization. The “zeta” part of lupizeta™ actually derives from the last letter of the alphabet, Z. This resonated with our sense of having

“reached the end of the line,” but rather than give up, we set our sights on digital camera lenses as a new source of demand for EP-4000. In 2006, the product was first adopted by a major camera manufacturer.

Fukushima: Unfortunately, demand for use in digital camera lenses was short lived. The reason for this was the emergence of mobile phones with cameras.

Kato: That’s right. We immediately shifted our target to mobile phone cameras, and soon made progress on commercialization of EP-5000, utilizing our technological foundation in digital camera lenses. However, there were competing materials ahead of us, and our customers’ reaction was harsh. When customers told us that the main obstacle was the price, we showed them clearly how our materials were competitive when considered on a total cost basis, including aspects such as ease of processing

and yield. We also continued to promote the product's characteristics by backcasting from the near future to anticipate changes in the level of customers' requirements. It was at that point that we saw unexpectedly rapid progress in the development of thinner profiles for mobile devices and lenses. This resulted in EP-5000 being the only material capable of maintaining high fluidity during injection molding of the lenses, and manufacturers rushed to adopt it.

Fukushima: After that, from the 2010s, the smartphone camera lens market expanded.

Kato: We intuited that this would become a new market, and in 2012, launched EP-6000 with a higher refractive

index and better molding characteristics.

Fukushima: In the development of EP-6000, to minimize the occurrence of defects during molding as much as possible, we even visited dryer manufacturers to develop a system for drying the materials. Teaming up with other industries to create new markets together is actually very typical of Mr. Kato. In the development process for MGC's unique product lines, there are generally some surprising episodes involving unique team members. I think a corporate culture that encourages free and open activities combining the capabilities of those in our research and sales groups has been one of the driving forces for overcoming difficulties.

Focus on Development of Engineers Who Diversify Revenue Sources

What would you like to do to further promote innovation that leverages MGC's distinctive character?

Fukushima: I want to build a business portfolio that spans multiple markets and fields. Even if some businesses experience a temporary downturn, if other businesses are innovating and growing, then we can stay balanced. In the case of the optical materials business, optical polymers such as the lupizeta™ EP series and spectacle lens monomers are currently revenue pillars, but I would like to establish a further pillar to help effectively diversify our markets and sales areas.

Kato: That is another reason why it is important to develop our ability to envisage the future. For example, as long as there is an instinctive human desire to record our memories in data, the tools for doing this will continue to advance and diversify. When we imagine how these tools, such as cameras and lenses, will evolve, we can envisage a limitless number of needs. Therefore, we are promoting initiatives to equip young researchers with the power to think about the process of market evolution and consider how they might improve on a device if they were its designer.

Fukushima: In the EP team at the Tokyo Research Laboratory, we have dismantled smartphones from all manufacturers, and these often draw visitors from other divisions, such as the Electronics Materials Division.

Kato: Customers tend to tell us only about problems they are facing in the present. To develop a business with a competitive advantage, it is important to exercise your imagination and prepare before a clear need has emerged in the market. In doing so, we will be able to surprise customers by quickly producing samples when they share their needs in the near future. This will lead to growth for both the customer and the Company.

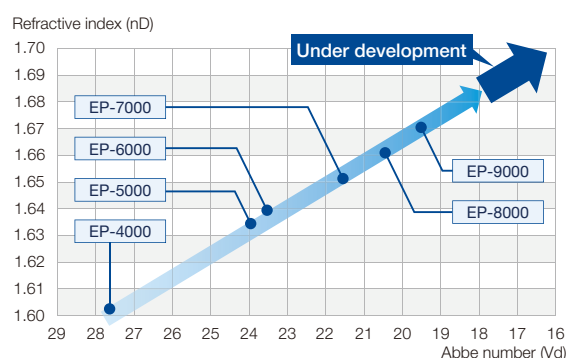
Fukushima: Anticipating new markets at an early stage and creating them together with customers and business partners is really what the market-out approach is all about.

Kato: Everything we do is built on the knowledge accumulated by our predecessors about how to manage



the essential characteristics of transparent plastic, and their knowledge of peripheral fields such as injection molding. I think that this knowledge gives us an advantage in our ability to judge in an instant whether we can respond to identified needs. In the future, I would like to develop engineers who can engage in all aspects of developing transparent plastics.

Evolution of lupizeta™ EP



Glossary

[Refraction]

Refers to the property of light traveling at different speeds in substances, causing it to bend. Materials with a high refractive index can be used to realize thinner lenses.

[Low birefringence]

Birefringence refers to the splitting of light into two directions when it passes through a substance, causing an image to lose focus. Low birefringence contributes to clearer images.

[Abbe number]

An indicator of the degree of light dispersion. EP is a material with a low Abbe number, making it suitable for use in concave lenses that correct focal point deviation caused by light dispersion. It is typically used in combination with materials that have a high Abbe number, such as convex lenses that converge light.

2 Toward Social Implementation of Carbon-Neutral Technologies

—Pursuing a Business Model That Can Secure Appropriate Profits



Shoji Matsukawa

General Manager, Carbon Neutral Project Department, C1 Chemicals Division, Green Energy & Chemicals Business Sector

Joined MGC in 2003. Worked in research on manufacture and use of methanol and its derivatives and on business development in Japan and overseas. Currently working to promote Carbopath™.

Takashi Fujii

Senior Manager, Engineering Plastics Division, Specialty Chemicals Business Sector

Joined MGC in 1991. Many years of experience in exploratory research, worked on development of polycarbonate sheet and film, before his current role leading "CO₂ to PC."

Tatsuro Mochinaga

General Manager, Energy Resources & CCS Department, Energy Resources & Environmental Business Division, Green Energy & Chemicals Business Sector

Joined MGC in 1999. Many years of experience in gas field exploration, working in exploration and development in Japan and overseas. Currently promoting commercialization of CCS.

The Group has articulated its Mission as “creating value to share with society,” and is working to enhance the ability of management overall to adapt to changes in the social environment while aiming to create a business that can lead a new era. Here, three people who play central roles in our carbon neutrality strategy talk about the status of progress toward commercialization, issues to be addressed, and the possibilities that lie ahead.

Consolidating the Business Direction with the Japanese Government's 2050 Carbon Neutral Declaration

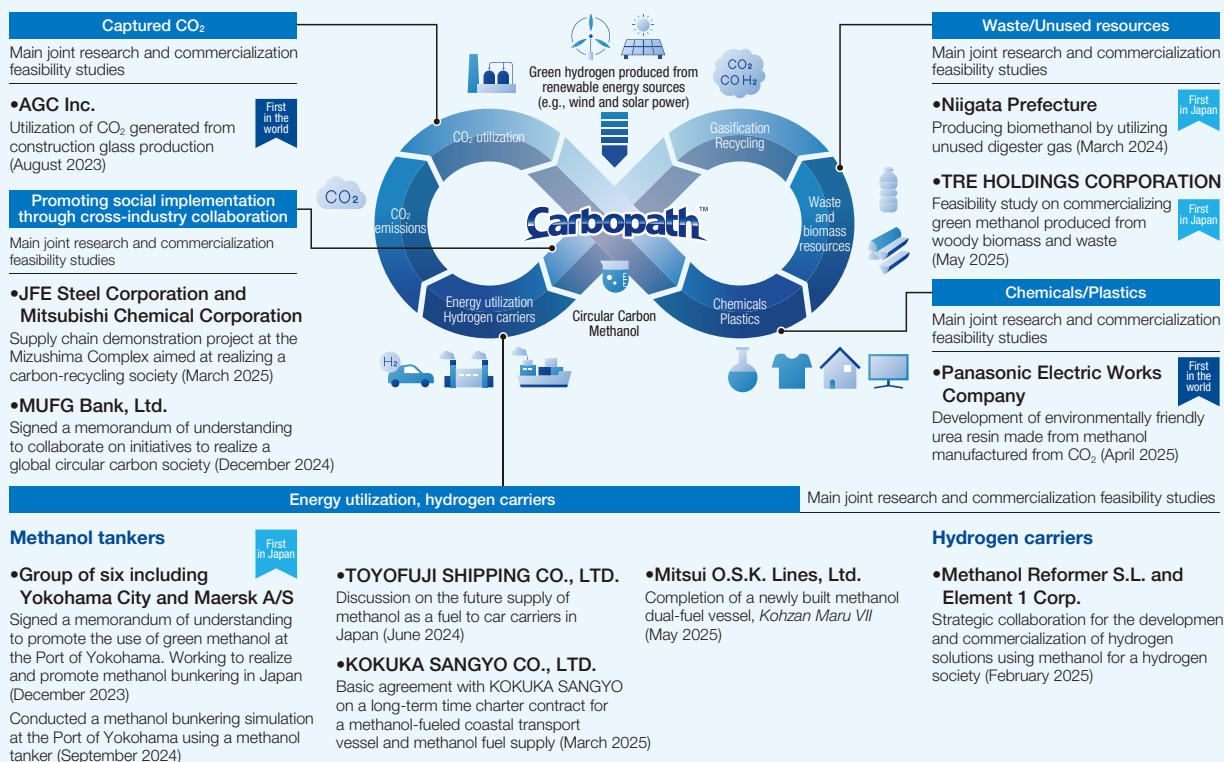
To start off, please talk about the events that led to the commercialization of carbon-neutral technologies and provide an outline of the projects that you are each involved in.

Fujii: In October 2020, then Prime Minister Suga gave an address in which he laid out the government's policy of realizing carbon neutrality by 2050. However, the Engineering Plastics Division had already started work to address this, anticipating a global shift toward confronting the issue of climate change. One example of this is research into manufacturing diphenyl carbonate (DPC), the main raw material in polycarbonate (PC), from CO₂, a project that started around 2014 and has been carried out by a research group at the Tokyo Research Laboratory since then. In fiscal 2020, the project was selected for a NEDO*¹ exploratory research program. In the same year, came the Japanese government's 2050

Carbon Neutral Declaration I mentioned earlier. In part due to this backdrop, we applied to one of NEDO's Green Innovation Fund Projects, “Development of Technology for Manufacturing Functional Plastic Materials Using CO₂ as Raw Material,” in 2021. Our project was selected the following year, in 2022.

Mochinaga: The Energy Resources & Environmental Business Division, where I work, also decided on its business direction with the government's carbon-neutral declaration. The MGC Group has been involved in natural gas exploration and development in its own gas field in Niigata Prefecture since its foundation. Despite being a chemical manufacturer, we have accumulated extensive experience in independent development. Overseas, we have acquired interests and conducted exploration in oil and gas fields in Australia, Southeast Asia, China, and North America. The refinement of our exploration and

Circular Carbon Methanol Carbopath™



development technologies for evaluating the potential of natural gas deposits and the efficiency and stability of gas extraction has led to our current geothermal electricity generation business and carbon capture and storage (CCS) technologies. Currently, the division is focusing on monetizing the reservoir storage capacity of its non-associated gas field and water-dissolved gas field in Niigata Prefecture. We started preparation for a CCS feasibility study in 2022 in response to a public call for proposals by JOGMEC^{*2}. In 2024, JOGMEC selected nine advanced CCS projects, and we participate in both Higashi-Niigata Area CCS and Offshore Sarawak CCS in Malaysia.

Matsukawa: The Group is the world's only methanol manufacturer using the integrated methanol business model, with operations spanning from resource development to manufacturing technology development, sales, and derivative products business. The technology and expertise we have cultivated at each stage of the value

chain can be fully deployed to create a circular carbon society. In 2021, we started working in earnest on a new methanol business to help realize a carbon-neutral society, and today, we are working on social implementation of this business in collaboration with various partners. I myself have been working on the full-scale roll-out of Carbopath™^{*3} since 2024. I have experience in pursuing the best way to promote products in the methanol value chain that bring new value to society, and I think this can also be used to promote this platform. The product price is high, but this is related to value for protecting future generations. I consider my role to be that of practicing our Mission of "creating value to share with society" while exploring ways to gain society's acceptance of Carbopath™.

^{*1} New Energy and Industrial Technology Development Organization

^{*2} Japan Organization for Metals and Energy Security

^{*3} A circular carbon platform that aims to generate energy and materials through methanol produced using CO₂ and waste

Stimulating Discussion through the Group's Internal Technology Council

In 2021, the Group established a council for sharing technologies related to carbon neutrality. What kind of impact has it had on your projects?

Matsukawa: The council's name has been changed to the Carbon Neutrality Technology Council, and it is currently being run as a forum for discussing methods for reducing the Company's GHG emissions, mainly through R&D collaboration, and initiatives to provide new technologies to society as we work toward the 2050 goal set by the government. In addition to technical discussions, the council is also a space for sharing legal and regulatory trends, and there is a flow of feedback to the business divisions.

Mochinaga: Recently, discussion has also started to focus on the area of direct air capture^{*4}, and I have felt a similarity to my own work. There are many possible approaches, such as employing unique technologies using MXDA, and I would like to keep a close eye on this theme without narrowing the scope.

Fujii: We can reduce GHG emissions to some degree by improving the emissions intensity at the manufacturing bases of chemical companies and improving processes, such as streamlining. However, there is a limit to what can be achieved with this approach. So within the council, we are discussing using CO₂ and biomass-derived materials and employing measures to reduce GHG emitted from

energy consumption in our processes (Scopes 1 and 2). As part of their sustainability activities, the Company's PC business and Group companies have acquired ISCC PLUS certification^{*5} throughout their supply chains, from materials manufacturing to compound sheet film formation and sales operations. Going forward, we are thinking to

discuss more future-oriented themes, such as expanding revenue models that utilize the Carbopath™ framework.

^{*4} A technology for capturing CO₂ in the atmosphere through direct adsorption and absorption

^{*5} A certification system for internationally proving the use of sustainable raw materials and the transparency of the manufacturing process

Overcoming Various Issues in the Value Chain

Please talk about your future aspirations for social implementation of carbon-neutral technologies.

Matsukawa: Launching a new supply chain using CO₂ and waste as raw materials still faces significant cost challenges, and overcoming a range of issues across the entire chain — not just in sales — is also essential. For example, in the shipping industry, there is no existing supply infrastructure for methanol fuel, and establishing such systems also presented issues. However, in September 2024, the Company and six others, including KOKUKA SANGYO CO., LTD., worked together to carry out a bunkering simulation^{*6} to determine the feasibility of using existing infrastructure. This exercise helped to accelerate the development of systems at the government level, as well as stimulating private sector activity. In

April 2025, we partnered with Panasonic Electric Works Company to jointly develop an environmentally friendly urea resin using methanol produced from CO₂. Awareness-raising activities to communicate environmental value throughout the process up to the final product and development of technologies to make widespread use of methanol to help achieve carbon neutrality are also important aspects of this project. I would like to make further contributions to increasing the competitiveness of derivative products handled by our associate companies as well.

Mochinaga: In my division, we are also looking to contribute to increasing the Group's competitive advantage through carbon credits and so forth. In the area of CCS, as the Act on Carbon Dioxide Storage Business is gradually phased in, the government and private sector will need to work closely on issues such as establishing suitable monitoring methods for Japan's geological formations. For the medium to long term, I think we want to have options that are resilient to change to ensure our survival if a major upset occurs in the industry from 2030 onward. We find ourselves in an urgent situation facing an unpredictable future. I want to take all possible proactive steps to ensure we do not regret measures we could have taken.

Fujii: First, I imagine we will use the mass production technologies accumulated through the Green Innovation Fund Projects to achieve social implementation, and another step would be to draw inspiration from the C1 Chemicals Division's Carbopath™ concept to integrate polycarbonate product processes into the system for a new chemical industry that uses CO₂ and waste as raw materials.

^{*6} Conducted a mock operation check as a preparatory step for actually supplying methanol fuel to vessels

Progress of Green Innovation Fund Projects

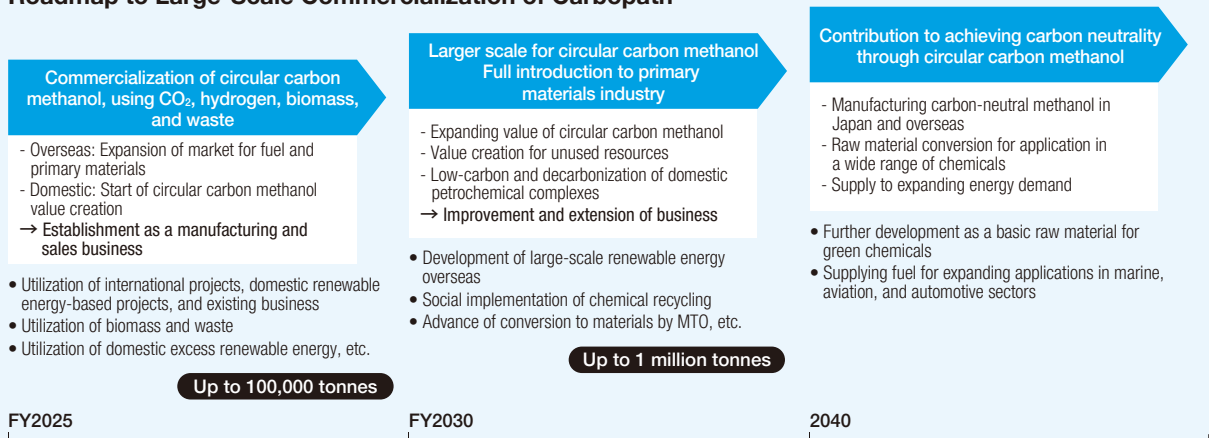
Synthesis of Methanol from CO₂

We are jointly developing a methanol synthesis process utilizing a separation membrane with Mitsubishi Chemical Corporation. We conducted acquisition of basic data using compact testing equipment, as well as process evaluation and cost and GHG emission estimations based on simulations. At the same time, we are proceeding with installation of benchmarking equipment.

Manufacturing Polycarbonates from CO₂

We achieved our target for GHG emissions reduction at the laboratory research stage and proceeded with work to install bench plant equipment to verify laboratory test results on a larger scale. In early November 2023, construction was completed at MGC's Tokyo Research Laboratory, and test operations were performed through the subsequent evaluation period. Currently, we are compiling and confirming results of bench plant verification in order to proceed to the next step of pilot testing.

Roadmap to Large-Scale Commercialization of Carbopath™



Carbon Neutrality Strategy

Solutions to Social Issues that Leverage MGC's Unique Management Resources

Responding to climate change and transitioning to sustainable energy are common issues for all of humanity. Countries and regions throughout the world are now testing social implementation of new technologies, such as the use of hydrogen, which does not emit CO₂ on combustion, and CCS.

The MGC Group is a manufacturer with over 70 years of accumulated technologies and production expertise for methanol, which is drawing attention as a fuel for ships and fuel cells. In addition, as the Company holds its own natural

gas fields, highly suitable for CCS, it has the physical resources, people, and technologies to demonstrate the means of realizing carbon neutrality. By strategically developing businesses using these resources, we aim to become a major leading player in resolving social issues.

In fiscal 2024, we changed the name of the Basic Chemicals Business Sector to the Green Energy & Chemicals Business Sector and established dedicated organizations for promoting this business to prepare for the expansion of markets involving carbon neutrality.

Main Products and Technologies Contributing to Carbon Neutrality

Managing department

	Green energy, raw materials for green materials	Promotion of circular carbon methanol Carbopath™	Green Energy & Chemicals
		Procurement of clean ammonia (fuel and raw material for green hydrogen)	
	Green fuel	Production and sale of ISCC PLUS-certified rDME*1	Green Energy & Chemicals
	Power generation business	Geothermal power generation	Green Energy & Chemicals
		High-efficiency LNG (gas turbine combined cycle) power generation	Green Energy & Chemicals
	Use of CO ₂ as a raw material	Development of technologies for manufacturing polycarbonates from CO ₂	Specialty Chemicals
	Improving operational efficiency	Development of optical polymer for use in sensing cameras for automobiles	Specialty Chemicals
	Research and development	Development of chemical recycling technology	Specialty Chemicals
		Solid-state battery (for EVs), fuel cell battery (for FCVs*2)	Research & Development
		Development of direct air capture (DAC) technology using special amines	Research & Development

*1 An abbreviation for “renewable DME,” referring to dimethyl ether produced using raw materials such as biomass and industrial waste

*2 Fuel cell vehicle

Focused Strategy

Establishment of a Dedicated Organization to Create Partnerships with Governments and the Private Sector and Promotion of Three Key Projects

Akio Hashimoto

Senior Executive Officer, Division Director of GEC Business Planning Division, Green Energy & Chemicals Business Sector



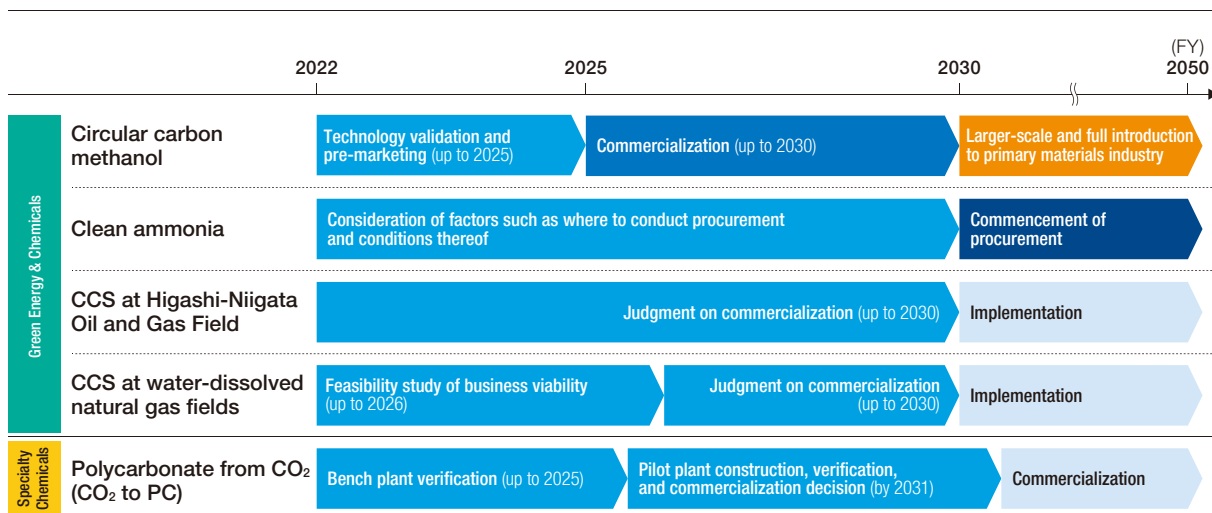
Carbon neutrality is a tremendous challenge that will not be achieved through the efforts of one company working alone. To begin with, compared with existing businesses that use fossil fuels, carbon-neutral products incur several times the cost during the manufacturing process. The market does not tolerate high-priced products, and there are no established numerical standards to indicate the value provided to customers. Therefore, we must work closely with government organizations, relevant local governments, and other companies. Moreover, within our business sector, it is also necessary to effectively manage the businesses that have been developed by each group and project, and ensure consistency in their strategies.

In light of this, the GEC Business Planning Division was newly established in fiscal 2024. The division makes

decisions regarding the direction of carbon neutrality-related businesses and allocation of relevant resources within business divisions, and also serves as a central contact point for both inside and outside the Company. Currently, the three core pillars for our business sector are building the Carbopath™ circular carbon platform, introducing clean ammonia, and implementing CCS. Multiple simultaneous projects are currently in progress for each pillar.

The government is also fully aware of the factors hindering the spread of these products, and has started designing frameworks and systems to support business. As one of the main players in this field, we are actively involved in the creation of these systems, resolving the issues before us and expanding business opportunities.

Roadmap for Implementing Carbon Neutrality Initiatives



Carbopath™ Initiatives

Progress and Outlook

The Carbopath™ circular carbon platform is making steady progress along its roadmap toward commercialization. In fiscal 2024, we started producing biomethanol using digester gas from sewage treatment plants. In fiscal 2026, we plan to start verification of methanol production using byproduct gases from steel manufacturing processes.

These initiatives entail several challenges: securing stable supplies of biomass-derived raw materials and renewable energy, enhancing public understanding, including among general consumers, and establishing related systems. However, over the medium to long term, we expect applications of Carbopath™ to expand steadily, making a significant contribution to the supply of green materials and carbon-neutral fuels.

Near-Term Demand and Specific Initiatives

In the near term, demand for Carbopath™ is expected to increase for marine fuel applications. In addition, for primary material applications, we are collaborating with companies in various industries that are leaders in GX*³ on efforts to create added value for products made from CO₂ and waste, and stimulate demand for them in the market. At the same time, we are also proceeding with verification of technologies for producing olefins, aromatic compounds, and aviation fuels from methanol.

Methanol is gaining increased attention as an efficient carrier for hydrogen transportation. Hydrogen has historically been widely used as a secondary raw material. At the same time, its potential for energy applications is increasingly being recognized, with demand expected to expand as the world moves toward realizing a hydrogen-based society. To establish a robust hydrogen supply system, various hydrogen carriers are being actively explored globally. MGC aims to leverage its accumulated technologies and expertise in hydrogen production from methanol and further enhance efforts to develop and create markets for hydrogen solutions utilizing methanol, which excels in both transportability and storability.

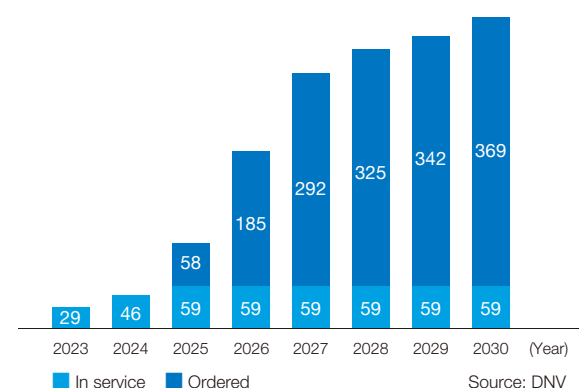
These initiatives are being strengthened through strategic collaborations with leading international companies, as announced in February 2025.

*3 An abbreviation for "green transformation," which refers to initiatives to reduce the environmental impact of business activities and realize a sustainable society

Creating a Market for Marine Methanol

In the shipping industry, the use of alternative fuels is gaining attention as a strategy to address growing demand for decarbonization. In response, the MGC Group is promoting the construction of a supply system for methanol as a fuel for ships. In September 2024, seven partners including MGC and Yokohama City conducted a bunkering simulation at the Port of Yokohama. The simulation confirmed the operations needed for ship-to-ship supply of methanol, and yielded various insights. These findings will serve as an important reference for building a methanol bunkering system in Japan. Using MGC's existing infrastructure and partnerships with fuel companies, we will strengthen market creation.

Number of Methanol-Fueled Ships



Examining Commercialization of CCS

The MGC Group has been examining options for commercialization of CCS, which is highly compatible with the natural gas exploration and development technologies that it has cultivated since its foundation. We have also participated in large-scale demonstration tests.

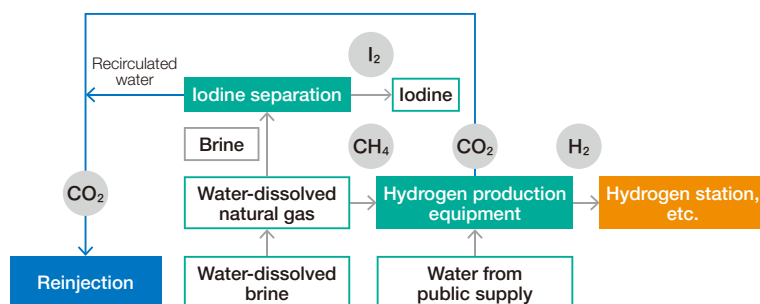
In 2024, we participated in advanced CCS projects selected by JOGMEC in Higashi-Niigata and offshore Sarawak in Malaysia. There is a water-dissolved natural gas field in the Higashi-Niigata area, and we are examining CCS and the production of blue hydrogen. CCS is usually carried out by compressing and injecting CO₂ underground in a supercritical state. However, in this project, the CO₂ is dissolved in water before injection. When operating in a

water-dissolved gas field, we prevent ground subsidence by pumping up formation water, separating natural gas and iodine from it, and then injecting it back under the ground. By dissolving CO₂ into this water, we can store it at low cost without the need for any new power for injection.

CCS is an essential technology for achieving carbon neutrality, and it has the potential for future expansion into a business such as a negative credit business^{*4}. MGC is currently working to develop CO₂ absorbents, and synergies can be expected.

^{*4} A business that captures CO₂ directly from the atmosphere or from biomass and injects it underground, then converts the amount of carbon reduction into credits.

Examination of CCS at Water-Dissolved Natural Gas Fields



Response to Climate Change Risks and Opportunities (Disclosure Based on TCFD Recommendations)

In May 2019, MGC announced its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We recognize that solving energy and climate change problems is an important challenge, and we are working to solve these issues from the perspectives of both climate change mitigation and adaptation. In March 2021, MGC announced a new objective for achieving carbon neutrality by 2050 with the goal of limiting the increase in average temperature to below 2°C. MGC encourages the development of energy systems to achieve carbon neutrality, while aiming to expand the range of products conducive to carbon neutrality.

Governance

Structure for Promoting Response to Climate Change

MGC deliberates and makes decisions on addressing climate change risks and other key sustainability issues through the Sustainability Promotion Council, chaired by the President and made up of directors. Important matters deliberated upon in the Sustainability Promotion Council are decided by the Board of Directors.

The participation of corporate sector heads in the Sustainability Promotion Committee, an advisory body to the Sustainability Promotion Council, ensures key sustainability issues are adequately deliberated and escalated to the Sustainability Promotion Council. Furthermore, to develop a response to climate change, MGC has established the Carbon Neutrality Promotion Technical Committee as an advisory body to the Sustainability Promotion Committee. Long-term objectives for reducing GHG emissions have been incorporated into the medium-term management plan, with management taking a leading role in their implementation.

Newly Incorporating Non-Financial (ESG) Indicators in the Director Compensation System

Annual compensation for the Company's directors includes performance-based compensation, which is decided based on factors such as actual results and degree of achievement in financial indicators (ordinary profit, ROE, ROIC, etc.). From fiscal 2025, however, non-financial environmental, social, and governance (ESG) indicators were also included as factors for consideration as an incentive to address key ESG issues.

Among the non-financial indicators, those related to climate change included "reduction rate of GHG emissions," encouraging directors to be more proactively involved in the materiality issue of "proactive response to environmental problems," and helping to promote sustainable management in response to stakeholders' expectations.

☞ For details, please refer to "Corporate Governance" on page 76.

Strategies

Physical Risks (River Flooding and Storm Surges)

Assumptions behind Scenario Analysis

- Evaluation points: 2030, 2050
- Scenario: Increased temperature 2°C scenario (global decarbonization proceeds, and the average temperature in 2100 rises 1.5–1.8°C above pre-industrial revolution average) 4°C scenario (the entire world does not introduce climate countermeasures, and the average temperature in 2100 rises 4.4°C above pre-industrial revolution average)
- Analysis subjects: 52 MGC Group sites in Japan and overseas

- The increased risk of weather disaster due to climate change is evaluated as the potential for damage to the Company's business sites based on published hazard information and material provided by external experts.
- Weather disasters subject to evaluation: river flooding and storm surges
- Main information used in screening evaluation to ascertain the potential for damage to business sites: Ministry of Land, Infrastructure, Transport and Tourism's "Web-Based Flood Simulation

Search System" and Fathom Global Flood Map

- Main information used for quantitative evaluation of companywide financial impact amount of climate change for business sites evaluated to have a high level of hazard under the screening results: evaluating organization's flood damage calculation model and the Ministry of Land, Infrastructure, Transport and Tourism's "Flood Control Economic Survey Manual (Draft)"

Impact of Increasing Weather Disasters Due to Global Warming on the Company's Business Sites

Type of weather disaster	Number of business sites evaluated as highly hazardous ^{*5}					Economic impact amount (Millions of yen) ^{*6}			
	Under current climate (Baseline)	2°C scenario		4°C scenario		2°C scenario		4°C scenario	
		2030	2050	2030	2050	2030	2050	2030	2050
River flooding	12	12	12	12	13	10	130	30	300
Storm surge	2	3	3	3	3	10	60	10	70

*5 Determination standard = Ministry of Land, Infrastructure, Transport and Tourism standard grade B and above

*6 Financial impact amount = Cumulative value of the sum of physical damage amount and opportunity loss amount from 2024 to the time of evaluation

Risk Management

Strengthening Business Continuity Plans for Physical Risks

The Company has identified priority issues (materiality) with regard to its environmental, social, and governance aspects. We are implementing risk management through companywide materiality management. We have identified one of the materiality issues, "proactive response to environmental problems," as having extremely high importance both to stakeholders and to the Company, and we are committed to addressing it proactively.

Under this scenario analysis, the result showed that the financial impact of climate change on the MGC Group is limited. Analyzing this result, we found that the reason is that the Group's business sites are generally not subject to high hazard risk due to the characteristics of their locations. However, we will conduct a more detailed analysis on the sites evaluated as highly hazardous as necessary going

forward, and also strengthen our business continuity planning (BCP), while proceeding with measures such as developing multiple manufacturing sites, optimizing raw material and product inventories throughout the supply chain, and reducing equipment stoppage risk.

To gain a quantitative understanding of climate change risks, in April 2021, MGC introduced an internal carbon pricing system. In capital investment plans involving an increase or decrease in CO₂ emissions, the cost or effect of applying and converting the internal carbon price (10,000 yen/Mt-CO₂ equivalent) will be used to help make investment decisions, and encourage the creation of technologies and products that promote CO₂ emissions reductions and contribute to building a low-carbon society.

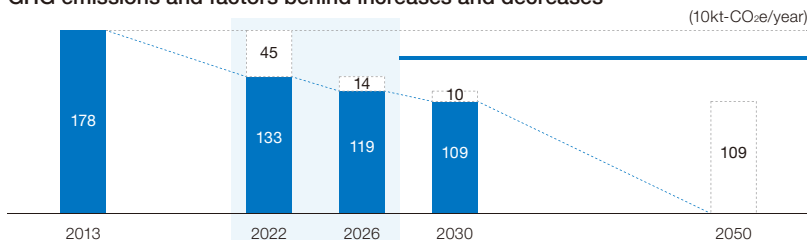
Metrics and Targets

Progress on MGC's Roadmap to Carbon Neutrality

The Group has set long-term targets for reducing GHG emissions with a view to achieving carbon neutrality in 2050. To achieve these targets, we have set GHG emissions as a KPI, and we will promote short-, medium-, and long-term measures to reduce emissions, including promotion of energy-saving activities, introduction of renewable energy, and the circular carbon methanol concept.

MGC's Roadmap to Carbon Neutrality (Entire MGC Group)

GHG emissions and factors behind increases and decreases



Period	2013-2022	2023-2026	2027-2030	2031-2050
Increase due to new manufacturing base construction and expansion		-13.6		
Decrease due to consolidation and elimination of manufacturing bases, suspension of facilities, etc.		23.0	2.6	46.9
Reduction in emissions due to R&D collaboration ^{*7}				
Reduction of emissions (Scope 1)	45.0	1.9	2.6	10.0
Reduction of emissions (Scope 2)		1.1	0.2	
Introduction of renewables and use of transitional energy		1.5	2.3	30.5
Collaboration with energy supply companies			2.4	21.6

*7 Deploy new energy systems/CCUS, etc.

Changes in emissions due to business portfolio reforms from 2022 to 2026

