Mitsubishi Materials Group's Business Activities and the SDGs

Universal Long-Term Goals for the International Community

In September 2015, the UN unanimously adopted the 2030 Agenda, a plan to eliminate poverty, unfairness and injustice wherever possible, protect the environment, and create a better future. One of the key features of the agenda was the Sustainable Development Goals (SDGs), which set out a vision for how the world should be by the year 2030. Following on from the Millennium Development Goals (MDGs), which the international community had been working on for 15 years since 2001, the SDGs are positioned as universal goals applicable to all countries. Rather than relying solely on national governments, the SDGs also require companies and members of the public to take action all over the world. The SDG Compass is a guide to show companies how they should be utilizing the SDGs, published jointly by the Global Reporting Initiative (GRI), UN Global Compact, and the World Business Council for Sustainable Development (WBCSD). It provides the following explanation. “Unlike their predecessor, the Millennium Development Goals, the SDGs explicitly call on all businesses to apply their creativity and innovation to solve sustainable development challenges. The SDGs have been agreed by all governments, yet their success relies heavily on action and collaboration by all actors. The SDGs present an opportunity for business-led solutions and technologies to be developed and implemented to address the world’s biggest sustainable development challenges.”

The Group’s Business Activities and the SDGs

We intend to incorporate the SDGs into our strategies from the point of view of both comprehensive efforts to increase business competitiveness, and the creation of new products and businesses. We will also be actively working with a wide range of outside partners as we strive to achieve a balance between social value and economic value.
Of the 17 goals set out under the SDGs, numbers 7 (energy), 8 (growth and employment), 9 (innovation), 11 (cities), 12 (production and consumption) and 13 (climate change) in particular tie in with areas in which we are implementing priority initiatives.
The adoption of the SDGs by the UN has reaffirmed that we are going in the right direction with our business activities as a group, and provided us with a springboard from which to assess critical long-term risks and opportunities, in terms of issues that we need to address and the path we need to take in the future.
Based on its Corporate Philosophy of "For People, Society and the Earth," the Mitsubishi Materials Group has declared the vision of “Circulating resources for a sustainable future,” and we are committed to achieve this vision through our adopted mission of “Create a sustainable future (a prosperous, recycling-oriented and decarbonized society).”

1. Participation in the 30by30 Alliance for Biodiversity - We Will Make Use of Our Company-Owned Forests to Contribute to Conservation of Biodiversity -

(Goal 14) (Goal 15)
(Announced on April 8, 2022)

We have been registered as a participating company in the 30by30 Alliance for Biodiversity, at the initiative of the Ministry of the Environment.
This Alliance is a coalition of the willing established for the achievement of the nature-positive global goal to halt and reverse biodiversity loss by 2030.
To accomplish this goal, Japan, with the aim of achieving the conservation and protection of at least 30% of the country's lands and waters by 2030 (30by30), has committed not only to expanding protected areas such as national parks, but also to designating as OECMs (other effective area-based conservation measures) areas other than protected areas, such as company forests, conducive to the conservation of biodiversity.

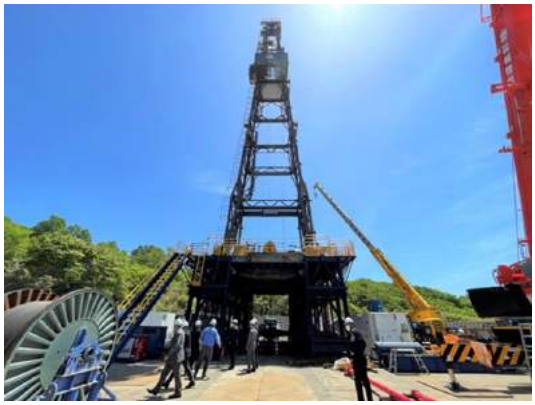
We own 14,000 ha of forest across Japan and practice forest management and control in consideration of the habitats of animals and plants living there. We also carry out wildlife monitoring and include rare species confirmed to be living in the areas on our red list. In addition, our nine forests in Hokkaido have obtained SGEC certifications for sustainable forest management with consideration for biodiversity.
The Group will contribute to the realization of a sustainable society by supporting the purpose of the Alliance's establishment and striving to obtain OECM designation in the future with company-owned forests.

▸ Participation in the 30by30 Alliance for Biodiversity

2. Participation in a New Geothermal Development Project in the Esan Area, Hakodate City, Hokkaido - MMC's First Geothermal Power Generation Development in Hokkaido -

(Goal 7) (Goal 13)
(Announced on June 6, 2022)

Mitsubishi Materials Corporation (MMC) has invested in Hakodate Esan Geothermal LLC as a new business partner of RENOVA, Inc. and Daiwa Energy & Infrastructure Co. Ltd. Since its establishment in 2016, Esan Geothermal has moved ahead with business development with the aim of developing a new geothermal power plant in the Esan area of Hakodate City, Hokkaido.
Utilizing the wealth of experience and advanced technological capabilities acquired through the development and management of coal and metal mines over many years, since the Onuma Geothermal Power Plant (Akita Prefecture) began operation in 1974, Mitsubishi Materials Corporation has played a core role in the construction and operation of the Sumikawa Geothermal Power Plant (Akita Prefecture, start of operation in 1995), the Wasabizawa Geothermal Power Plant (Akita Prefecture, start of operation in 2019) and the Appi Geothermal Power Plant (Iwate Prefecture, scheduled start of operation in 2024).



Conducting drilling survey

- **〈Fiscal 2023 survey plan overview〉**

  With the aim of developing a geothermal power plant in the future, Hakodate Esan Geothermal has started a geothermal resource survey for fiscal 2023 as follows.
  Survey site: Esan area, Hakodate City, Hokkaido
  Survey description: Drilling survey with large-diameter survey well (well drilling and ancillary works)*
  Survey period: April 2022 to fiscal 2024

  * This survey has been selected as a "project granted a subsidy for resource survey of geothermal power generation in fiscal 2023" sponsored by the Japan Oil, Gas and Metals National Corporation (JOGMEC).

Participation in a New Geothermal Development Project in the Esan Area, Hakodate City, Hokkaido

3. Mitsubishi Materials and Tokyo Institute of Technology established Mitsubishi Materials Sustainability Innovation Collaborative Research Cluster

(Goal 9) (Goal 12) (Goal 13)
(Announced on September 7, 2022)

Mitsubishi Materials and the National University Corporation Tokyo Institute of Technology have established the Mitsubishi Materials Sustainability Innovation Collaborative Research Cluster with the support of the Tokyo Institute of Technology Open Innovation Platform to conduct research on innovative materials and processes that contribute to a sustainable society.

The Collaborative Research Cluster will conduct joint research on composite materials, next-generation batteries, CO_2 utilization and so on by combining the extensive and advanced knowledge of materials possessed by Tokyo Institute of Technology with our accumulated materials technology and know-how on recycling and other processes relating to non-ferrous metals, particularly copper. By tackling issues that would have been difficult to address in independent research, the Collaborative Research Cluster aims to create innovative materials and processes, etc. based on the keyword Green Transformation (GX), which contributes to a sustainable society.
We have so far conducted joint research in various fields and, in conjunction with the establishment of the Collaborative Research Cluster, Mitsubishi Materials will participate in the Green Transformation Initiative at Tokyo Tech (Tokyo Tech GXI)* to accelerate GX research and further strengthen collaboration for social implementation.

* Fiscal 2023 Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT) Project for Education and Research Organization Reform (Organization Improvement) to promote open innovation activities for Green Transformation.

- Mitsubishi Materials and Tokyo Institute of Technology established Mitsubishi Materials Sustainability Innovation Collaborative Research Cluster

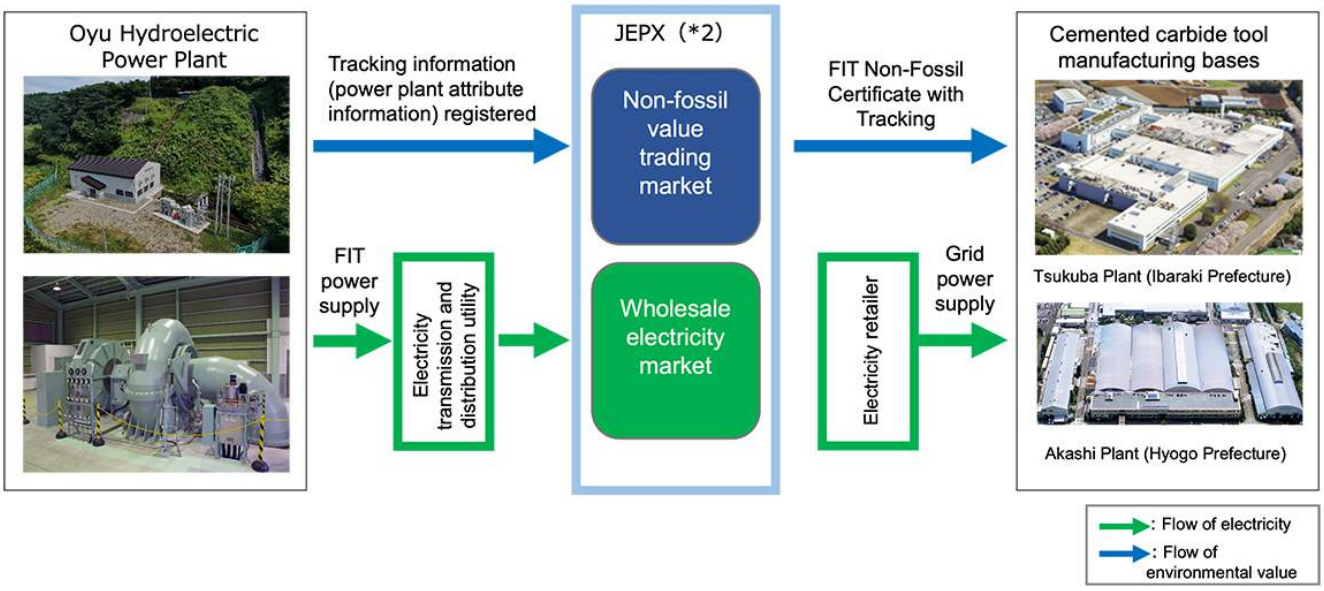
4. Use of Power Derived from Renewable Energy via In-house Hydropower Generation for the Company's Own Plants - Accelerating Efforts to Reduce GHG Emissions by Utilizing Renewable Energy -

(Goal 7) (Goal 13)
(Announced on September 13, 2022)

We procured 3,835 MWh of tracked FIT non-fossil certificates*1 derived from the Oyu Hydroelectric Power Plant and applied them to part of the electricity used at our carbide tool manufacturing sites, Tsukuba and Akashi Plants, in the fiscal 2023, making it effectively renewable electricity. As a result, the Group's annual GHG emissions reduction fiscal 2023 is expected to be approximately 1,575t of CO_2 equivalent (based on fiscal 2022 emission factors). We plan to continue this initiative in the fiscal 2024 and beyond.

Our Group aims to achieve a 45% reduction in GHG emissions by fiscal 2031 (compared to fiscal 2021, equivalent to a 53% reduction compared to fiscal 2014) and virtually zero, or carbon neutrality by fiscal 2046. We are working to further promote energy conservation and improve technology through fuel conversion and other means. We also plan to gradually introduce electricity from renewable energy sources, with a plan to switch about 60% of the electricity used in our Group by fiscal 2031.

Toward achieving carbon neutrality by fiscal 2046, Mitsubishi Materials Group will continue to further contribute to the building of a decarbonized society by ensuring to consider the reduction of environmental impact in manufacturing and by promoting aggressive reduction of GHG emissions.



*1 Regarding renewable energy electricity under FIT (Feed-in Tariff Scheme for Renewable Energy), a FIT Non-Fossil Certificate certifies the "non-fossil value" of electricity generated from a non-fossil power source separate from the electricity. In addition, a FIT Non-Fossil Certificate with Tracking is a certificate to which attribute information is added that shows which power plant generated the electricity.

*2 JEPX (Japan Electric Power Exchange)
The only wholesale electricity trading market in Japan where electricity can be traded, which was established following the liberalization of the electricity market.
Non-Fossil Certificates can be purchased through an auction format on the exchange sponsored by JEPX.

- Use of Power Derived from Renewable Energy via In-house Hydropower Generation for the Company's Own Plants

5. Selected for CDP2022 "A List," the Highest Rank, for the First Time in the "Water Security" Category

(Goal 6)
(Announced on December 24, 2022)

We selected by CDP, an international NGO promoting environmental information disclosure, for the Water Security A List, which is the highest rating in the category of water security, in recognition of the Group's initiatives and information disclosure regarding water resources.

Established in the United Kingdom in 2000, CDP is an international environmental non-governmental organization that runs a global environmental information disclosure system for companies and local governments. The organization evaluates the activities and information disclosure of major companies around the world annually in the three categories of "climate change," "water security" and "forests," and selects the best companies as "A list" companies.

One of the Group's environmental policies is "Effectively Use and Conserve Water Resources." We are working to reduce the risks related to the water used in all aspects of our business activities, including cooling water and cleaning water, at our business sites in Japan and overseas. To secure water resources, we are striving to conserve water by monitoring water consumption, recycling water, installing new water efficient equipment, replacing old equipment with water efficient equipment, etc. As flood measures, we are mainly elevating buildings, pumps, electrical equipment, and so on, installing drainage pumps and conducting training under the assumption of a rising water level. In order to prevent water quality accidents at our business sites, we are also working to establish voluntary management criteria and introduce sensors and automatic drainage stop systems capable of detecting water abnormalities.
We regularly disclose these activities in Integrated Reports, Sustainability Reports, etc.

- Selected for CDP's 2022 "A List," the Highest Rank, for the First Time in the Water Security Category

6. Commencement of Commercial Operation of the Komatagawa New Power Plant - Akita Prefecture's First New Hydroelectric Power Plant in 69 Years Now in Operation -

(Goal 7) (Goal 13)
(Announced on December 23, 2022)

We commenced commercial operation of the Komatagawa New Power Plant in December 2022.
The Komatagawa New Power Plant was planned and constructed in order to increase the power supply through efficient operation of the Komatagawa No.1, No.2 and No.4 Power Plants*1 in the Komata river water system centered on Moriyoshi Dam. By efficiently taking in water previously released as unused energy, the power generation capacity of the Komata river water system is increased by 2,860 kW, enabling an increase in annually generated power of approximately 13,400 MWh.

The Komatagawa New Power Plant takes water directly from the outlet of the Komatagawa No.4 Power Plant directly under Moriyoshi Dam (water intake: 13.0 m^3/s) and leads water about 8.5 km downstream through a headrace tunnel to secure an effective head of about 90 m and generate 10,326 kW of power. All generated electricity will be supplied to society using the feed-in tariff (FIT) scheme for renewable energy. Efficient utilization of water resources can be realized by long-term, stable provision of renewable energy using the hydropower of the Komata river water system while preserving the river environment.

The power plant was constructed using the electricity (renewable energy) from the existing hydroelectric power plants to minimize the environmental impact. The CO_2 reduction*2 resulting from the operation of the Komatagawa New Power Plant is approximately 9,800 tons, which is equivalent to the amount of CO_2 absorption by approximately 1,100 hectares of 40-year-old Japanese cedar plantation*3.
MMC's hydropower business has a history of more than 100 years, and of the various renewable energy sources, provides an indispensable base load power supply to local communities. We will continue to contribute to the building of a recycling-oriented society by supplying stable power to local communities as an environmentally-friendly power supply.

*1 With the completion of the Komatagawa New Power Plant, use of the Komatagawa No.1 and No.2 Power Plants were discontinued in October 2022.
*2 Annual CO_2 reduction from operation of the new plant: Calculated by MMC using the 2009 data sited in "Imamura & Nagano (2010). Comprehensive Assessment of Life Cycle CO_2 Emissions of Power Generation Technologies in Japan, Central Research Institute of Electric Power Industry Report (Research Report)."
*3 Calculated by MMC based on the information on the Forestry Agency website

Overall view of the Komatagawa New Power Plant

Inside of the Komatagawa New Power Plant building (water turbines and generators)

▸ Commencement of Commercial Operation of the Komatagawa New Power Plant

7. Acquisition of the International Initiative Science Based Targets (SBT) Certification

(Goal 13)
(Announced on March 24, 2023)

We received SBT certification from the SBT Initiative[*1], an international organization that certifies Science Based Targets (SBT) that are greenhouse gas emission reduction targets scientifically consistent with the goals set forth in the Paris Agreement[*2].

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Based on the Corporate Philosophy "For People, Society and the Earth," our Group plans and promotes strategic initiatives to address the risks and opportunities associated with global warming in conjunction with the Company-wide management strategy. With the goal of achieving carbon neutrality by fiscal 2046, we are working to develop and expand the use of renewable energy, including geothermal power generation, which is one of our strengths, while conserving energy at our manufacturing sites and improving technology and equipment to reduce greenhouse gas (GHG) emissions. We aim to use renewable energy for 100% of our electricity needs in fiscal 2036 and to achieve the generation of as much electricity as we consume from renewable sources in fiscal 2051.

SBT-certified GHG emission reduction targets (submitted in July 2022 based on the business categories as of April 2022)

Scope 1 + 2 reduction target [*3]: 42% reduction in fiscal 2031 from the fiscal 2021 level
Scope 3 reduction target [*4]: 13% reduction of emissions for Categories 1, 3 and 15 (*5) in fiscal 2031 from the fiscal2021 level

The current GHG reduction targets are shown below, as announced on July 26, 2023.

Scope 1 + 2 reduction target: 45% or more reduction in fiscal 2031 from the fiscal 2021 level
Scope 3 reduction target: 22% or more reduction of emissions for Categories 1, 3 and 15 in fiscal 2031 from the fiscal 2021 level

To achieve this target, we will invest 10.5 billion yen by fiscal 2031, mainly in energy saving and facility improvement at manufacturing sites.
Furthermore, in order to achieve carbon neutrality in fiscal 2046, we will further develop and expand the use of renewable energy, including geothermal power generation, which is one of our strengths, and have set a target of 100% usage rate of renewable energy by fiscal 2036, 66% of which would be derived from our own renewable energy sources. Accordingly, we will invest 30 billion yen in the renewable energy business by fiscal 2031.

In addition, we reviewed the scenario analysis based on recommendations from the Task Force on Climate-related Financial Disclosures (TCFD), analyzed the potential risks and opportunities inherent in our company's climate change response, and have established indicators and targets for our business.

*1 The SBT Initiative is an international initiative that encourages companies to set science-based GHG emission reduction targets to achieve the Paris Agreement targets. Established in 2015 jointly by four organizations: CDP, which is an NGO involved in environmental information disclosure, United Nations Global Compact, World Resources Institute (WRI) and World Wide Fund for Nature (WWF)
*2 Aim to limit global temperature increase to well below 2℃ above pre-industrial levels, and also to 1.5℃.

*3 Scope 1 is direct GHG emissions by the business operator, Scope 2 is indirect GHG emissions resulting from the use of energy supplied by other companies.
*4 GHG emissions of the entire supply chain excluding Scope 1 and 2.
*5 Category 1: Purchased goods and services, Category 3: Fuel and energy-related activities not covered by Scope 1 and 2, Category 15: GHG emissions associated with investments

- Acquisition of the International Initiative Science Based Targets (SBT) Certification
- Notice Concerning Revision of Greenhouse Gas Emissions Reduction Target and Scenario Analysis of Climate-Related Risks and Opportunities