

Our Approach to Climate Change

Realizing Carbon Neutrality

The Hitachi Construction Machinery Group is working to reduce its CO₂ emissions to net zero throughout the entire value chain by 2050. To this end, we have formulated a roadmap for reduction measures to be undertaken with regard to the two aspects of product development and production processes.

With regard to product development, we have set and are promoting the goal of reducing CO₂ emissions by 22% and 33% by FY2025 and FY2030, respectively, from the FY2010 level (Diagram 1). This will serve as an indicator of our ability to provide our customers and society with environmentally friendly products that contribute to the reduction of CO₂ emissions. To achieve this goal, we are promoting the development of an entire product range—from compact equipment to ultra-large mining machines. In addition to reducing fuel consumption, we are also working on the early market launch of electrified construction equipment and identifying hydrogen-fueled products from a technological perspective. Furthermore, we are striving to provide solutions that enable our customers to reduce CO₂ while equipment is in use (Diagram 2).

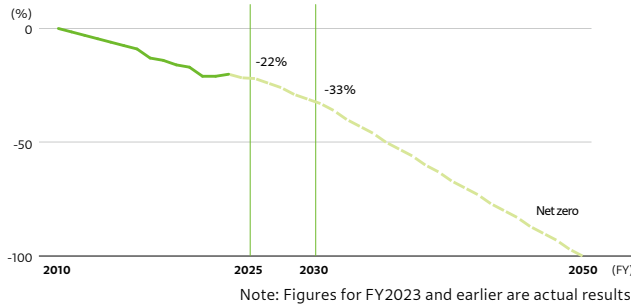
Meanwhile, as for the production process, we have set and are promoting the goal of reducing CO₂ emissions by 40% and 45% by FY2025 and FY2030, respectively, from the FY2010 level (Diagram 3). Our methods for reducing CO₂ emissions include energy conservation, conversion to renewable energy (in-house power generation through capital investment, introduction of renewable energy electricity), electrification, and fuel conversion (Diagram 4).

These initiatives aimed at realizing carbon neutrality throughout the entire supply chain are also consistent with the spirit of “GX League,”^{*1} which launched full-scale activities in Japan in FY2023. Hitachi Construction Machinery became a member of “GX League” in May 2023. With our membership in this league helping us facilitate carbon neutrality initiatives, we will work in collaboration with other

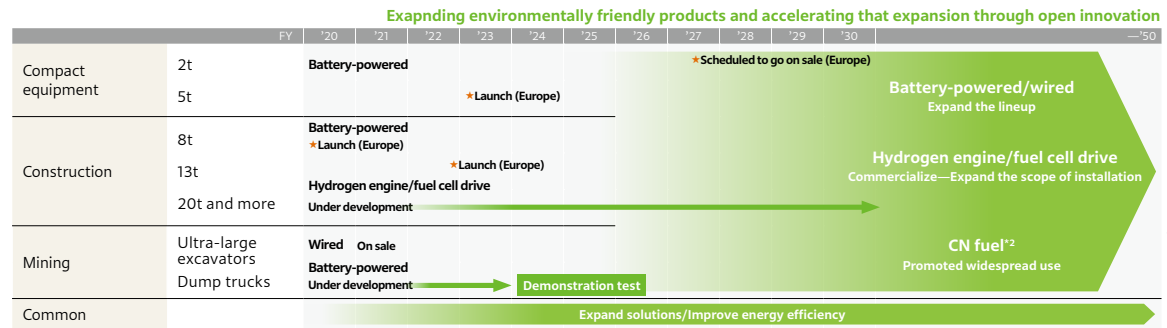
members and organizations while playing our part in the transition of Japan’s socio-economic system as a whole.

*1 Green Transformation (GX) League: An initiative established by Japan’s Ministry of Economy, Trade and Industry to provide a place for collaboration among business corporations, government agencies, financial institutions and universities to take on the challenges of GX and transform economic and social systems, with an eye to achieving carbon neutrality in 2050

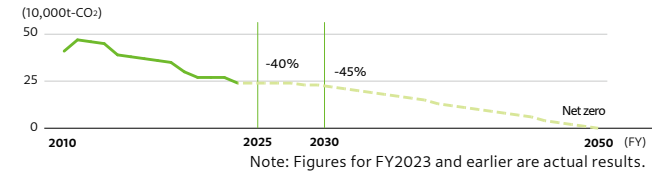
Products: Targets for the Reduction of CO₂ Emissions Volume (from the FY2010 level) (Diagram 1)



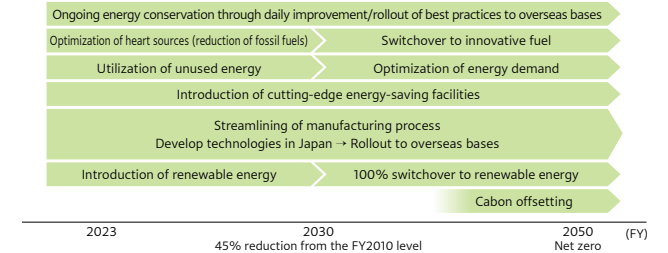
Roadmap for the Development of Environmentally Friendly Products and Solutions toward Net Zero Greenhouse Gas Emissions by 2050 (Diagram 2)



Production Process: Targets for the Reduction of CO₂ Emission Volume (from the FY2010 level) (Diagram 3)



Roadmap for Carbon Neutrality in Production Process (Diagram 4)



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Response to TCFD Recommendations



In recognition of climate change action as a key issue, we have been carrying out initiatives and disclosures based on the recommendations issued by the Task Force on Climate-related Financial Disclosures (TCFD). In July 2020, we established an internal task force consisting of group managers and key personnel from corporate and business groups across the company. In October of the same year, we expressed our support for the TCFD recommendations. In 2023, our internal task force updated scenario analysis for both 1.5°C and 4°C increases in temperature, assessing the likelihood of climate change risks and financial impacts. Based on the TCFD Framework, we disclose the risks and opportunities posed by climate change and our corresponding strategies. We strive to strengthen our initiatives in accordance with these recommendations for sustainable business development.

Governance

Important issues related to climate change are discussed at the CSR Promotion Managers Meeting and the Environmental Promotion Managers Meeting, and then deliberated on by the Sustainability Promotion Committee (which meets twice a year) comprising executive officers and presidents of key Group companies. The President and COO, who has the highest responsibility and authority for climate-related issues, chairs the Sustainability Promotion Committee, which deliberates and approves important management matters, including responses to climate change. Important matters are then discussed and approved by the Executive Committee and the Board of Directors, and are appropriately monitored and supervised. These deliberations and approvals are also shared with the Global Sustainability Promotion Managers Meeting, attended by representatives of overseas Group companies, and its subordinate organization the Global Sustainability Working Group.

History of Climate-Related Activities

FY	Activities
1991	• Established Environmental Group
2005	• Established CSR Promotion Dept. • Published <i>Environmental Report</i>
2011	• Published <i>CSR & Financial Report</i>
2015	• Positioned climate change as a materiality
2016	• Published <i>Long-Term Environmental Goals for 2030</i>
2019	• Established Sustainability Promotion Group • Established Sustainability Promotion Committee • Obtained SBT certification
2020	• Published four management indicators (ESG indicators) • Announced endorsement of the TCFD Recommendations
2021	• Disclosed information in the Integrated Report in accordance with the TCFD Framework • Re-positioned climate change as a materiality • Made first TCFD-based disclosure in Corporate Governance Report
2022	• Established Enterprise Risk Management (ERM) Committee • Conducted stakeholder dialogues on TCFD • Adopted ESG evaluation ^{*3} as one of the evaluation indicators used to determine performance-linked compensation for executives • Declared intent to aim for carbon neutrality by 2050 • Introduced sustainable financing for the first time
2023	• Became a member of the GX League • Expanded collaboration on portable charging equipment for construction sites • Issued green bonds
2024	• Opened "ZERO EMISSION EV-LAB" research facility

^{*3} ESG evaluation is conducted via the comprehensive assessment of ratings given by the CDP regarding the company's response to climate change and water security, its inclusion in the Dow Jones Sustainability Indices, and the progress made in reducing CO₂ emissions from products and production processes.

Sustainability Meetings and Deliberations

Meeting structure	Chairman	Members	Principal roles	Key agenda items for FY2023
Sustainability Promotion Committee	President and COO	Executive officers (including CEO, COO, CSO, CFO, CHRO, CTO, CDIO, and CMO), presidents of major group companies	Consideration and approval of the Hitachi Construction Machinery Group's sustainability promotion policies, inclusive of climate change policies, as well as key measures and KPIs	Consideration and approval of policies to promote overall sustainability, including those addressing carbon neutrality, circular economy, TCFD, TNFD, and ESG assessments
Environmental Promotion Managers Meeting	President, Sustainability Promotion Group	President of domestic and overseas group companies, General managers of business divisions	Discussion and approval of environmental policies in accordance with the Action Guidelines for Environmental Conservation, management of KPI progress toward maintaining and improving environmental conservation activities, sharing of key measures and requests for cooperation	Examination of approaches to promoting carbon neutrality and a circular economy
CSR Promotion Managers Meeting	President, Sustainability Promotion Group	General managers of corporate and business divisions, presidents of Group companies in Japan	Group's efforts to promote sustainability, progress management of non-financial medium-term targets, sharing of priority measures and requests for cooperation	Sharing information, policies, etc., pertaining to the promotion of sustainability in general, including TCFD, TNFD, and ESG assessments
Global Sustainability Meeting	President, Sustainability Promotion Group	Presidents of overseas Group companies	Sharing of deliberations and decisions by the Sustainability Promotion Committee and the CSR Promotion Managers Meeting	Sharing of the Group's approaches to promoting sustainability globally
Global Sustainability Working Group	President, Sustainability Promotion Group	Sustainability officers at overseas Group companies	Sharing of the Group's global sustainability policies and measures	Sharing of case studies from overseas Group companies and formulation of social contribution policies

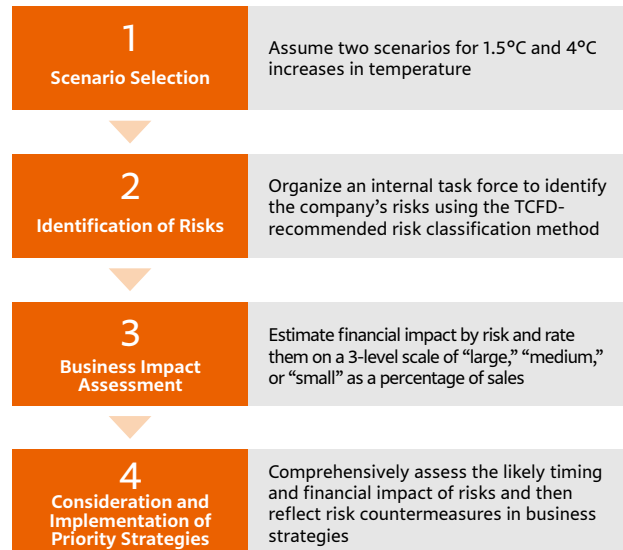
See "Sustainability Promotion System" on [page 65](#).

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Strategies

Looking ahead to an uncertain future, companies must analyze scenarios in terms of the risks and opportunities they face and then develop their own countermeasures and strategies. The Hitachi Construction Machinery Group formed an internal task force in 2020 that has updated scenario analyses for 1.5°C and 4°C increases in temperature through the following four processes.

Scenario Analysis Processes



Assessment Results Based on Scenario Analysis

We have listed the climate-related risks and opportunities we face in terms of products, services, solutions and supply chains under the 1.5°C and 4°C scenarios.

Climate-related risks and opportunities were evaluated at three levels in terms of their likely timing and financial impact, and a comprehensive assessment of overall significance was then carried out. We are working with internal task force members to reorganize climate-related business strategies for items that we believe are of high importance within each scenario.

Our scenario analyses helped us identify risks and opportunities in both the 1.5°C and 4°C climate change scenarios, and we are working to achieve carbon neutrality with strategies to address these risks and opportunities. We will strengthen the resilience of the Hitachi Construction Machinery Group by developing flexible and strategic businesses aimed at minimizing risks and maximizing opportunities.

See "Assessment results based on scenario analysis" on p. 69.

Risk Management

New risks such as climate change, geopolitical risks, and human rights issues in supply chains have emerged that could shake the very foundations of our business, and managing these risks is becoming increasingly important. Accordingly, we designated new risks that require company-wide response policies and management decisions as "company-wide risks," and established the Enterprise Risk Management (ERM) Committee in April 2022 as a forum to manage these risks. Under the leadership of the Chief Strategy Officer (CSO) and other members of management, we have

established a system for the overall management of and prompt response to company-wide risks. The ERM Committee reports to the Executive Committee and the Board of Directors on important matters such as company-wide risk management policies.

See "More Robust Global Risk Management" on p. 74.

Indicators and Targets

We are working to reduce CO₂ emissions in both product development and production processes with the aim of becoming to achieve carbon neutral throughout the entire value chain by 2050.

Interim targets for 2030

Reduction of CO ₂ emissions (total volume)	Production (Scope 1+2)	45% reduction (from the FY2010 level)
	Products (Scope 3)	33% reduction (from the FY2010 level)

Target for 2050

Achieve carbon neutrality throughout the entire value chain

Our Approach to Climate Change

Assessment results based on scenario analysis

Time of manifestation	Short-term: Medium-term management plan (2023 to 2025) Medium-term: 2026 to 2030 Long-term: 2031 to 2050
Financial impact	Small: 1 billion yen or less Medium: 1-10 billion yen Large: Over 10 billion yen

Scenario	Type	Risk	Opportunity	Manifestation timing	Financial impact	Countermeasures
1.5°C scenario	Transition to a decarbonized society	Possible changes in investment/lending behavior due to tighter decarbonization regulations and increased decarbonization awareness	Establishment of a competitive advantage by developing decarbonization technologies ahead of competitors	Medium to long term	Small	<ul style="list-style-type: none"> Aim to accelerate development by nearly tripling R&D investment from FY2017 levels in advanced development areas of decarbonization and productivity improvement (automation/autonomization, driving assistance, etc.) by FY2025 Increase production facility capacity by approximately 1.3 times from its FY2021 level by FY2025 to meet growing demand for compact products in the North American and European markets Expand the functions of Hitachi Construction Machinery Tierra's development and testing facility to accommodate more sophisticated testing of electrified construction machinery and other equipment Conduct user tests with an eye to commercializing medium and large hydraulic excavators powered by hydrogen engine & fuel cell drive technologies Signed a joint development agreement with ABB for an engine-less, fully electric rigid dump truck for achieving net-zero emissions from mining machinery in 2021, with proof-of-concept (PoC) starting in 2024 Expand sales of trolley-powered dump trucks Consider the development of stationary rechargeable EVs and fuel cell EVs/hydrogen batteries to improve dump truck user-friendliness Contribute to the longevity of our products by reintroducing used machines that have been serviced and are covered by warranty as "PREMIUM USED" vehicles Establish ZERO EMISSION EV-LAB, a research center for the collaborative creation of zero-emission construction sites; pursue development of new solutions such as visualizing the cycle from recharging to use and matching power management to customers' construction sites by utilizing the electric construction equipment/devices being used on-site Aim to extend the operating life of machinery from 10 to 15 years by utilizing ConSite, parts recycling, and body remanufacturing
		Decline in coal demand	Increasing demand for hard rock	Medium to long term	Medium	<ul style="list-style-type: none"> The all-electric power system is an indispensable technological element supporting our customers' efforts to achieve net-zero emissions by 2050, and we will expand our solutions business and deploy decarbonization technologies and other new technologies, including electric-powered ultra-large hydraulic excavators, trolley-powered dump trucks, the Autonomous Haulage System (AHS), an autonomous driving system for dump trucks used in mining, and the Fleet Management System (FMS), a mine operation management system. We will strengthen our mining sales and service system in cooperation with the Marubeni Group in Latin America, and seek closer ties with the ITOCHU Corporation Group in North America.
	Supply chains	Growing pressure to decarbonize, reputation damage	Carbon tax savings	Medium to long-term	Large	<ul style="list-style-type: none"> We introduced an internal carbon pricing system in 2019 that takes carbon price into account in investment decisions. We raised our carbon price from 5,000 yen/t-CO₂ to 14,000 yen/t-CO₂ to promote investment in energy-saving facilities and the introduction of renewable energy. Planning to invest around 10 billion yen in measures aimed at reducing CO₂ emissions from production processes as well as a similar amount in measures aimed at reducing emissions from products themselves over the course of the current medium-term management plan period Hitachi Construction Machinery Energy Management System, which utilizes IoT technology, has been introduced at six plants in Japan to reduce peak power consumption and standby power consumption based on visualized data. We are promoting the use of IoT for factory production equipment to monitor equipment operating conditions, thereby helping to improve productivity and reduce CO₂. Renewable power is being introduced at Tsuchiura Works, Kasumigaura Works, Hitachinaka Works, Banshu Works, Hitachi Construction Machinery Tierra, Hitachi Construction Machinery Camino, Tada Kiko, Tata Hitachi Construction Machinery Company, and Bradken. Bradken has increased the percentage of renewable energy used at its Coimbatore Plant in India to reduce CO₂ emissions. We promote the optimization of global production and procurement, including the optimization of product inventory and transportation. We provide support for major procurement partners so they can save electricity and improve energy productivity at their production facilities.
4°C Scenario	Rapid increase in natural disasters and extreme weather events	Rapid increase in the frequency and intensity of such natural disasters as typhoons and floods due to climate change	Increased demand for products, services, and solutions that can contribute to disaster prevention and mitigation	Short- to long-term	Small	<ul style="list-style-type: none"> Providing construction equipment products and rental products (light dump trucks, small general-purpose products and attachments such as fork grapples, etc.) that contribute to infrastructure resilience measures related to disaster prevention and disaster mitigation Providing optimal solutions to meet demand at disaster sites through technologies such as the Solution Linkage series Hitachi Construction Machinery Japan prioritizes the provision of construction equipment and materials to disaster-stricken areas based on agreements concluded with local governments and other parties.
		Production stoppage due to the suspension of parts supply or the disruption of logistics networks	Establishment of a stable production system through emergency measures	Short- to long-term	Large	<ul style="list-style-type: none"> Ensuring timely restoration support to procurement partners whose facilities are affected by disasters and executing production adjustments within the Group to avoid shipment delays Securing multiple suppliers for critical parts and establishing systems to avoid delays in parts supply We implemented flooding countermeasures, including the installation of drainage channels and defense walls around key facilities, to safeguard our own plants located in areas with high flooding risks. We take into account natural disaster risks, including those arising from climate change, when building/relocating factories and offices. We plan to introduce a system that bolsters supply chain BCPs.
	Risk of heat stroke due to rising temperatures	Establishment of a stable production system through emergency measures	Short- to long-term	Small	<ul style="list-style-type: none"> WBGT (heat index) meters evaluate the level of heat stress in hot environments at manufacturing sites and send out early alerts to warn of heat stroke if dangerously hot conditions are expected. We are seeking to automate and robotize production to avoid heat stroke risk and other personal injuries. 	