

Feature 1
 How Will the Hitachi Construction Machinery Group Respond to Climate Change?

A new era has arrived for the construction machinery industry in response growing climate change issues.

As a construction machinery manufacturer, the Hitachi Construction Machinery Group plans to accelerate its efforts to solve the problems of climate change by leveraging its accumulated technological capabilities and global manufacturing network.

Senior Officer, President, Sustainability Promotion Group
 Hitachi Construction Machinery Co., Ltd.
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Declaring Accelerating Efforts to Achieve Carbon Neutrality

In September 2020, Hitachi, Ltd. announced its intention to become carbon neutral by fiscal 2030. We took this action as more countries and municipalities around the world adopt a carbon-neutral policy to reduce greenhouse gas emissions. Our firm aims to achieve net-zero emissions by 2050 in accord with the Paris Agreement. In May 2019, The Science Based Targets initiative (SBTi) ^{*1} approved Hitachi Construction Machinery Group's CO₂ emission reduction targets as follows: A 33% product CO₂ emissions reduction from our products and a 45% like reduction from our production processes by 2030 (as compared to FY2010). In the future, we will accelerate further energy-saving and reduce carbon emissions to achieve carbon neutrality.

The Sustainability Promotion Committee, chaired by our

president, is held twice a year under the leadership of the Sustainability Promotion Group. Here, we report on the major policies and results of our efforts, social trends, and changes in laws and regulations. We also obtain the approval of the executive officers for the plan we have formulated. With a commitment from top management, our group in Japan and overseas is ready to work together to implement our plan.

Our group continues making efforts to create environmental value by "manufacturing", "using" and "taking on challenges". Towards this end, we have achieved and accumulated a variety of unique technologies. In the "manufacturing" field, we naturally feel responsible for carbon neutrality and will continue to reduce CO₂ by utilizing more carbon-friendly technologies, including electrical cogeneration systems and greater use of renewable energy.

^{*1} SBTi: Science Based Targets initiative was established in September 2014 by CDP, (a non-governmental organization (NGO) which promotes climate change-related disclosure on behalf of institutional investors), the World Resources Institute (WRI), (an international environmental NGO), the World Wide Fund for Nature (WWF) and the United Nations Global Compact (UNGC). Third-party certification is provided for targets determined by companies and organizations based on climate change scientific evidence.

What is the Paris Agreement?

The Paris Agreement is a international framework for reducing greenhouse gas emissions after 2020. It was adopted at the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris, France in 2015. The goal is to reduce global greenhouse gas emissions to near zero in the second half of this century and to limit the temperature increase from pre-industrial revolution levels to less than 2°C (ideally to less than 1.5°C).

Major risks and opportunities due to climate change
 For details, please refer to "Response to Task Force on Climate-Related Financial Disclosures (TCFD) Recommendations" on page 51.

Equipped with CO₂ Reduction Technologies Suitable for Each Product, Utilizing our Expertise in Environmentally Friendly Design

Approximately 90% of the CO₂ emitted by construction machinery over its life cycle is generated through equipment use. Scope 3 (other indirect emissions) for the manufacturer is Scope 1 (direct emissions) for the customer, and we believe that our responsibility in the “using” field is very large.

Looking at market trends, we recognize that electric or zero-emission construction equipment is essential to the construction market in developed countries, such as in Europe and Japan. However, there is a limit to the capacity of batteries, so not all excavators, from mini excavators to ultra-large hydraulic excavators, can be battery-powered. From the Group's accumulated technologies—such as wired electric, fuel cell, and hydrogen engine—we examine the best power source based on the characteristics of each product group. Then we adapt the appropriate technology in order to strengthen our competitiveness



Electric excavator “ZE85” (photo: concept model)

in each global market, after considering the available local supply infrastructure.

In addition, European Application Center GmbH (EAC), a development facility based in Germany which is owned by our European distributor, Kiesel Technologie Entwicklung GmbH (KTEG), a Kiesel group company, develops marketing systems around customer's needs, as they use our products. We develop products which respond closely to the issues and needs on-site. We plan to launch new 5-ton class battery-powered mini excavators in Japan and Europe in fiscal 2021.

Solving Issues in the Mining Field Using IoT and AI, at the Same Time Accelerate the Reduction of CO₂ Emissions

In the mining industry, we will steadily work to comply with exhaust gas regulations and reduce fuel consumption in order to reduce CO₂ emissions in all models. Ultra-large hydraulic excavators utilize wired electric power to reduce fuel consumption in diesel-driven machines and to pull high-voltage wires directly into

vehicles. Our trolley-type dump trucks consume electric power by means of a pantograph which significantly reduces CO₂ emissions. We have a range of solution that can be applied to all models. In addition, we continue to research and develop ways to further reduce CO₂ emissions.

Another pillar is the reduction of CO₂ through improved equipment usage at the construction site. We reduce CO₂ by improving product operating efficiency through our mine operation management systems. For example, ConSite[®] Mine leverages the power of IoT and AI to solve problems which can arise at mining sites. By monitoring construction equipment, it is also possible to predict machine breakdowns so that parts replacement proceeds in advance, maintaining high productivity.

Promoting decarbonization is a major global trend. Hitachi Construction Machinery will continue to focus on “Hard Rock” areas that produce iron ore, copper, nickel, etc. We feel socially responsible for minimizing the CO₂ emissions generated by the machines we manufacture that operate at mining sites. Many of our major mining customers are TCFD*2 supporters aiming to decarbonize. We will work in partnership with them to reduce CO₂ emissions at their mining sites.

*2 Task Force on Climate-Related Financial Disclosures (TCFD)
The TCFD was established by the Financial Stability Board (FSB) at the request of the G20, chaired by Michael Bloomberg, to encourage companies to disclose their climate change-related risks and opportunities.

Rigid dump truck with trolley receiving system

The Development of the Circular Economy Will Lead to Enhanced Corporate Competitiveness in the Long Term

From the perspective of resource recycling, we work on 3R activities in production, parts remanufacturing, milk run (traveling collection) in logistics, introduction of returnable transportation equipment, and used car sales and rental businesses. At a time when the economic outlook remains uncertain due to the global pandemic, more customers are requesting used cars and rental machines.

There is a growing interest in advanced markets to develop the circular economy—to end the cycle of mass production and consumption. This is the unavoidable challenge for companies that sell goods. Realizing resource recycling enhances the sustainability of businesses and can be a source of competitiveness

in the medium to long term. From this perspective, the Group will also strengthen its systems for used car sales, rental, and parts remanufacturing business that contribute to resource recycling, improving the level of value provided to customers.

For example, the Group uses solutions such as ConSite[®] Mine and the Mine Operation Management System to monitor the status of machines operating around the world and to control its parts remanufacturing business in-house. We believe the group can achieve greater operational and cost efficiencies by using such solutions. Our customers will benefit through improved productivity while reducing maintenance costs. These efforts can also differentiate us from our competitors.

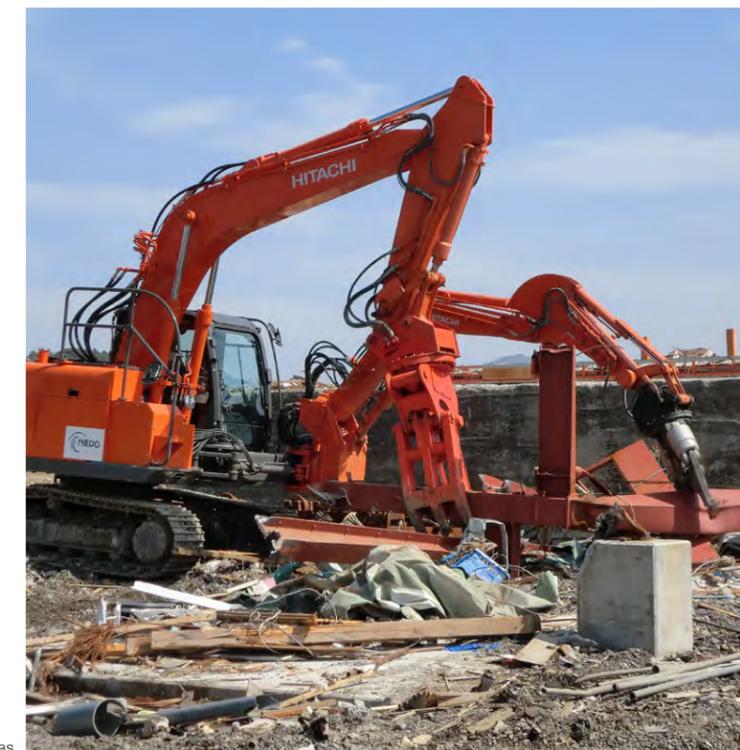
Creating Technology for People and the Environment Looking at the Role of Construction Machinery in Emergencies

In October 2020, Hitachi Construction Machinery announced its endorsement of the TCFD recommendations. In preparation, an internal task force was formed to interview all relevant departments and to identify all climate-related business risks and opportunities. For example, a large typhoon in 2019 damaged one of our parts manufacturers in Nagano Prefecture. Production there ceased for nearly a month and a half. Then, in accordance with our business continuity plan (BCP), we took immediate measures to support production. For example, we diverted parts from stock at Hitachi Construction Machinery (China) to restore production in a short period of time. There are, of course, no guarantees that future like incidents will not occur in the future. The internal task force analyzed not only the direct damage caused by such natural disasters, but also both the risks and opportunities, including changes to behavior and technological trends. Based on this information, we began rebuilding our BCP. We reassessed our risk management plans and started other initiatives. We have already begun to expand our BCP program to encompass the entire group.

During the course of this initiative, the Hitachi Construction Machinery Group recognized that it has a responsibility to bolster countermeasures in all phases of disaster prevention, including mitigation, emergency response, recovery and reconstruction—all essential to ensure business continuity. We believe that we are uniquely positioned to promptly and efficiently supply product and services to disaster sites, utilizing data such as the operating status of our construction equipment. When the company was founded, it started by making and selling construction machinery. With the passage of time, we have combined a variety of digital technologies and are now able to supply our customers with more diverse services. In the future we will have an ever-increas-

ing role to play in society as a supplier of essential products and services.

It will not be easy to achieve carbon neutrality or overcome the severe business environment caused by the pandemic. However, we are not afraid of change. Our business model will evolve to meet the challenges and opportunity of a new era. We will continue to strive, to contribute and solve social issues for everyone's benefit.



Response to recovery in the affected areas