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Resolution of ESG issues through growth strategies

Based on its Sustainability Policy, Komatsu strives to contribute to society through its business in the next 100 years. The Company has defined six material issues (materiality)—environment, customers, employees, ethics and governance, human rights, and communities—that were deemed to have material importance in terms of their impact on sustainability and their business importance. By addressing these material issues, we aim to generate a positive cycle for resolving ESG issues and improving earnings to achieve sustainable growth by creating value for customers.

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Climate change response initiatives

(Disclosure based on TCFD recommendations)

Komatsu established the Komatsu Earth Environment Charter (currently known as the Komatsu Earth and Environment Policy) in 1992, launching proactive initiatives for addressing climate change and other environmental issues a step ahead of its peers. In April 2019, Komatsu announced its endorsement of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Through climate change risk and opportunity assessments and scenario analyses based on these recommendations, we will pursue increases in our resilience toward climate change impacts. At the same time, we will advance climate change response measures through a healthy dialogue with stakeholders.

At the 26th United Nations Climate Change Conference held in the United Kingdom (COP26), an agreement was reached to work toward limiting the average rise in global temperatures to 1.5°C above pre-industrial levels in November 2021. In the past, scenario analyses have only been based on scenarios projecting average rises of 2°C or 4°C. However, based on this agreement and following discussions by the Sustainability Promotion Committee and the Strategy Review Committee, with reports to the Board of Directors, it was decided to also select a scenario projecting rises of 1.5°C for analyses beginning in 2022.

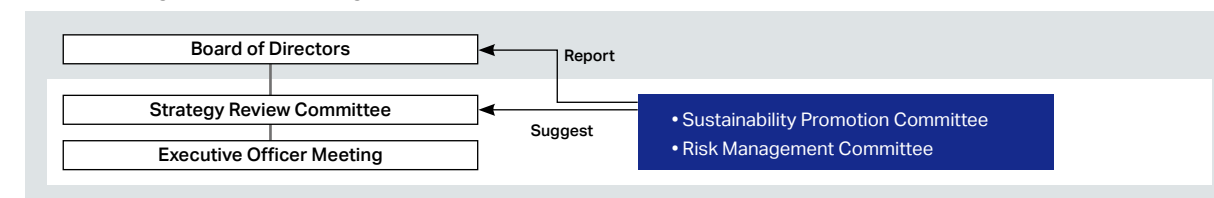
1 Governance

Komatsu views climate change as an important management issue, and targets for combating climate change have been incorporated into its business strategies.

Discussions regarding climate change are held at meetings of the following committees, and these committees report to the Board of Directors, thereby furnishing a system of appropriate oversight.

- The Sustainability Promotion Committee and the Risk Management Committee discuss climate change-related matters and make suggestions to the Strategy Review Committee.
- The Strategy Review Committee discusses policies, plans, and strategies for priority measures related to climate change.
- The Executive Officer Meeting fulfills the function of managing progress toward targets.

Climate change-related reporting and deliberation system



Major discussion items related to climate change

Body	Chairperson	Major discussion items related to climate change	
Board of Directors	Chairman of the Board	<ul style="list-style-type: none"> Discussions regarding goal of achieving carbon neutrality by 2050 Establishment of Sustainability Policy Formulation of new mid-term management plan Reports from the Sustainability Promotion Committee 	<ul style="list-style-type: none"> Reports from research, development, and product planning divisions and the Chief Technology Officer Reports from production and procurement divisions Mid-term management plan progress report
Strategy Review Committee	President	<ul style="list-style-type: none"> Low-carbon product development strategies Mining business growth strategies Forestry machinery business growth strategies Smart Construction growth strategies 	<ul style="list-style-type: none"> Growth strategies for major production bases Reports from the Sustainability Promotion Committee Reports from the Risk Management Committee
The Executive Officer Meeting	President	<ul style="list-style-type: none"> Progress in product development (including climate change-related KPIs) 	
Body	Chairperson	Major discussion items related to climate change	
Sustainability Promotion Committee	President	<ul style="list-style-type: none"> Initiatives for addressing ESG issues CSR activity reports 	<ul style="list-style-type: none"> Deliberations and reports regarding important environmental matters and key performance indicators (KPIs) Revision of environmental policies
Risk Management Committee	Executive officer supervising general affairs	<ul style="list-style-type: none"> Reports on responses to natural disaster risks 	

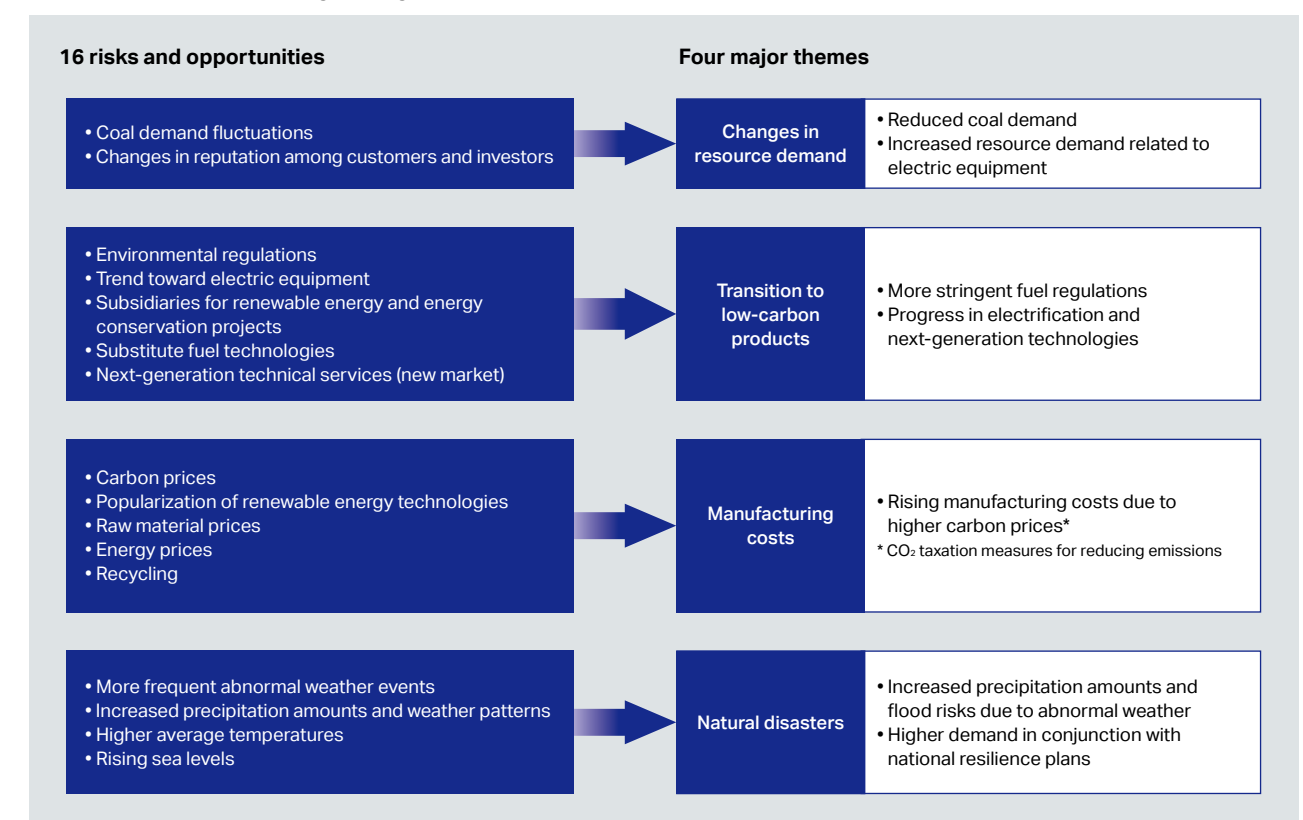
2 Strategies

Risk and opportunity identification

A total of 16 climate change-related risks and opportunities were identified for Komatsu, primarily in relation to construction and mining equipment business, based on the examples of risks and opportunities included in the final report by the TCFD.

We then assessed internal factors, which impact sales and earnings, and external factors, which are projected by the selected scenarios. Through this process, the 16 risks and opportunities were grouped into four major themes.

Risks and opportunities and groupings



Business risks and opportunities based on climate change scenarios

To gauge the potential impacts of climate change-related risks and opportunities on Komatsu's business, we performed scenario analyses of the Company's four major risk and opportunity themes.

For these scenario analyses, we selected a 1.5°C scenario, a 2°C scenario, and a 4°C scenario based on the Fifth Assessment Report (Representative Concentration Pathways 2.6 and 8.5) and the Sixth Assessment Report (Shared Socioeconomic Pathways 5-8.5) of the Intergovernmental Panel on Climate Change, and the Sustainable Development Scenario, the Stated Policies Scenario, and the Net Zero by 2050 scenario of the International Energy Agency (IEA).

The risks and opportunities associated with changes in resource demand, the transition to low-carbon products, and manufacturing costs were the greatest in the 1.5°C and 2°C scenarios whereas the risks and opportunities associated with natural disasters were the greatest in the 4°C scenario. Information on the risks and opportunities related to each of the four major themes, as well as Komatsu's response to these risks and opportunities, is displayed on the following page. The 1.5°C scenario projects particularly large fluctuations in resource demand. Accordingly, we have chosen to quantify resource demand as it relates to Komatsu's business.

2 Strategies

Four major themes

1. Changes in resource demand

Risks	Opportunities
<ul style="list-style-type: none">Regulation of power generation using fossil fuelsMassive reductions in coal production volumesReduced sales to coal-related customers by KomatsuReduced appetite for investment in coal mines	<ul style="list-style-type: none">Rapid transition from fossil fuel-powered equipment to electric equipmentHigher demand for copper and other resources necessary for electric equipment (motors, batteries, fuel cells, etc.)Increased sales to copper and other relevant mining-related customers by Komatsu in conjunction with trend toward electric equipmentIncreased investment for improving the efficiency of mining operations

Strategies

By advancing initiatives based on the three pillars of growth strategies of the mid-term management plan—accelerate growth by means of innovation, maximize earnings power, and enhance corporate resilience—Komatsu will capitalize on opportunities created by changes in resource demand to achieve sustainable growth.

Priority initiatives

- Expand underground hard rock mining equipment business for excavating the metals needed for electrifying equipment
- Promote mining equipment automation and remote operation and open technology platforms

Expansion of hard rock mining equipment business

Komatsu concluded an agreement with CODELCO (Corporacion Nacional del Cobre de Chile) to conduct a trial for promoting the Company's Mining Tunnel Boring Machine (TBM) for use in a new tunnel excavation method for hard rock mining (announced in July 2022). Komatsu will propose this product together with new excavation method, aims to realize the transforming customers' operations.

In addition, in July 2022 the Company acquired Australia-based Mine Site Technologies Pty Ltd, a provider of operational optimization platforms for underground mining that leverage communication devices and position tracking systems. Together with this company, we will promote the automation and remote operation of mining equipment for underground mining.

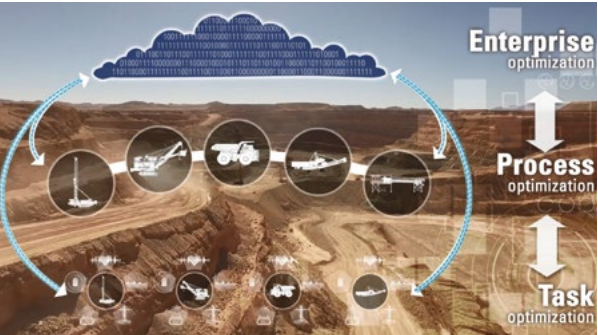


Mining TBM was developed based on the slogan of "No Blasting, No Batch, No Diesel."

Promotion of mining equipment automation and remote operation and open technology platforms

Komatsu seeks to promote optimized, high-productivity operations through the automation and remote operation of mining equipment.

By developing open technology platforms for this purpose, we aim to boost productivity by linking all of our customers' processes. This heightened productivity is anticipated to contribute to reductions in fuel use and CO₂ emissions and subsequently to the realization of carbon neutrality.

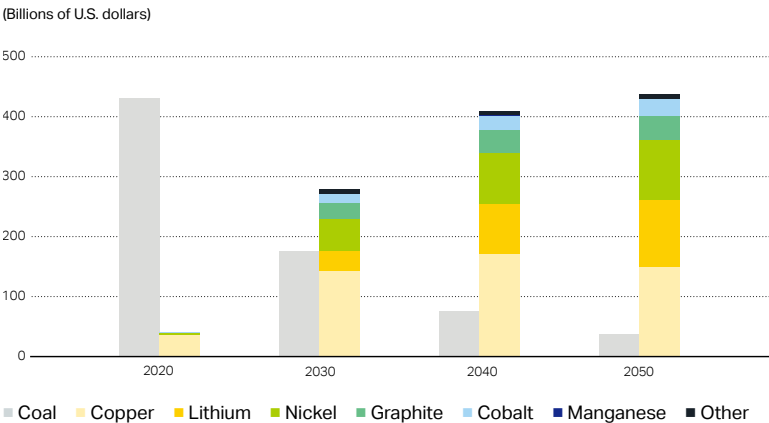


Resource demand forecast based on 1.5°C scenario

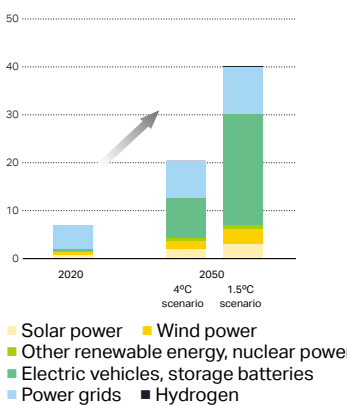
Under the Net Zero by 2050 scenario (1.5°C scenario) of the International Energy Agency (IEA) it is projected that, as a result of the decarbonization trend, demand for coal, a soft rock resource, will decline to an even greater degree than predicted by the 2°C scenario. Conversely, demand is expected to grow for the critical minerals that are indispensable to clean energy technologies. In addition, demand for iron, copper, gold, and other hard rock resources is anticipated to remain strong due to

increased demand related to the global trend toward electrified equipment. There may be temporary fluctuations in mineral demand due to global conditions, but the aforementioned trend is expected to be a more or less consistent fixture under the 1.5°C scenario. It can therefore be projected that the sales of Komatsu mining equipment to mining companies excavating mineral resources will mirror this trend.

Resource demand projections of IEA's 1.5°C scenario (Monetary value basis)*1



(Reference) Critical chemical demand by application*2 (Mt)

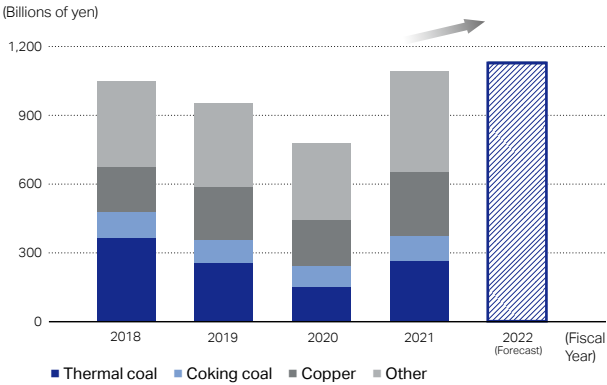


Revisions to business portfolio (Changes to ratios of sales by mineral)

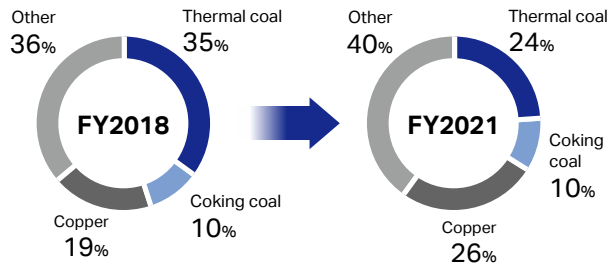
Komatsu has continued to flexibly revise its business portfolio in response to changes in the external environment and in markets. Reorganizations to our coal mining equipment production and support operations over the years have resulted in a gradual decrease in the ratio of sales from thermal coal.

We are committed to taking advantage of the changes to mineral demand spurred by the trend toward electrified equipment in order to expand our hard rock mining business and achieve ongoing growth in our overall mining equipment business.

Growth of Komatsu's mining equipment business



Ratio of sales of Komatsu mining equipment business by target mineral (FY2018 vs. FY2021)



2 Strategies

2. Transition to low-carbon products

Risks	Opportunities
<ul style="list-style-type: none">Higher development and capital investment costs due to emissions restrictionsReduced sales due to inability to cater to customer electrification demandsSubstantial changes in technology development and competitive climate including market entry by new competitorsLong-term diminishment of technological edge as customers begin leading the drive in component development and manufacturing projects	<ul style="list-style-type: none">Rising demand for electrified equipment, fuel-efficient equipment, and biomass fuel-powered equipment; ability to respond swiftly to impending changes in strategic markets fostered through adaptation in traditional marketsGrowth of equipment restoration (Reman) operations driven by transition to circular economyIncreased demand for solutions businesses with emissions-reducing benefitsIncreased product reliability due to securing stable supply sources for high-quality components for storage batteries and others

Strategies

Komatsu is advancing initiatives aimed at achieving carbon neutrality while facilitating the transition to the low-carbon products the world demands.

Priority initiatives

- Develop electrification systems for construction equipment
- Develop power sources and high-efficiency components compatible with carbon neutral fuels
- Develop high-energy-efficiency equipment
- Deploy Smart Construction and other solutions on a global scale
- Contribute to cyclical businesses through forestry machinery and Reman businesses

Development of construction and mining equipment using various power sources together with partners

- Together with mining company customers, Komatsu founded the Komatsu GHG Alliance and is promoting the development of power agnostic trucks that can run on a variety of power sources (please see page 54).
- In addition, we have signed a memorandum of understanding to collaborate on the development of zero-emissions power sources for haulage equipment, an undertaking that will include hydrogen fuel cell solutions.
- We are also moving forward with the development of electrified equipment for underground hard rock mining together with Proterra Inc. of the United States.



Cyclical businesses—Forestry machinery and reman businesses

- Komatsu is providing machines and solutions to forestry operation processes, including planting, cultivating, and harvesting trees. We thereby aim to develop a business that helps combat climate change while also being resilient to fluctuations in resource demand.
- In July 2022, the Company acquired Bracke Forest AB, a manufacturer of application-specific attachments for silviculture. Komatsu will continue to incorporate Bracke's technologies and expertise in the field of planting in order to accelerate its pace of mechanization.
- Meanwhile, our Reman business is based on the principles of the 3Rs (reduce, reuse, and recycle) as it helps cut back on waste by restoring and reusing components and thereby contributing to reductions in CO₂ emissions.



 Komatsu is conducting investments that are appropriate for accomplishing the aforementioned objectives. Please refer to the following website for information on environmental investments in FY2021.
<https://komatsu.disclosure.site/en/themes/143>



3. Manufacturing costs

Risks	Opportunities
<ul style="list-style-type: none">Taxation of fossil fuels and CO₂ emissionsTransfer of higher product purchase prices to KomatsuRising power fees and energy costs following investment in power generation facilities with low CO₂ emissions	<ul style="list-style-type: none">Increased competitiveness through production technologies that reduce CO₂ emissions

Strategies

Komatsu will work to mitigate cost increases by achieving its CO₂ reduction and renewable energy targets while developing production bases with low environmental impacts.

Priority initiatives

- Receive Gold certification under LEED v4 Reference Guide for Building Design and Construction from U.S. Green Building Council for Komatsu Mining Corp.'s new factory*¹
- Build new seal ring factory at Himi Plant, use AI technologies to massively lower labor requirements and improve productivity, and reduce CO₂ emissions through installation of eco-friendly equipment
- Promote environmental investments through existing internal carbon pricing system*²

^{*1} Green building certification program for evaluating strategies and approaches for creating outstanding building environments developed by NPO U.S. Green Building Council with certification screening performed by Green Business Certification Inc.
^{*2} Framework for increasing the priority of environmental investments through assessments of capital investment returns that position CO₂ reduction benefits as a value similar to cost reduction benefits

New Komatsu mining factory

- In June 2022, Komatsu Mining opened a new factory in Milwaukee in the U.S. state of Wisconsin. The transfer of production operations to this factory is moving ahead sequentially. Machinery for production of the applicable models is scheduled to be fully transferred to this factory, and mass production commenced, within 2022.



4. Natural disasters

Risks	Opportunities
<ul style="list-style-type: none">Increased frequency of heavy rain and floods due to abnormal weatherRisks of disaster damages to Komatsu plants at high risk of floodingComponent supply delays following damages to suppliers from disasters	<ul style="list-style-type: none">Increased demand for flood-control works

Strategies

Komatsu will implement countermeasures against heavy rains and flooding across the value chain (response to physical risks).

Priority initiatives

Build production and procurement systems that are resilient to changes in the operating environment (expand ratio of items procured from multiple sources)

3 Risk management

Please refer to page 74 for information on the Company's risk management systems.

4 Indicators and targets

Climate change-related indicators and targets

Management indicators	Management targets	
Reduction of environmental impact	CO ₂ emissions	Decrease by 50% by 2030 from 2010 Become carbon neutral by 2050 (challenging goal)
	Renewable energy use	Increase to 50% of total energy use by 2030

Message from President, Mining Business Division



**Komatsu will lead the mining
equipment industry by creating the safe,
highly productive,
smart and clean workplaces of the future**

Masayuki Moriyama

Representative Director
Senior Executive Officer
President, Mining Business Division



The recent rise in concern for climate change is inspiring global change in pursuit of carbon neutrality. This is also true for the mining companies we serve, which are faced with the important management issue of working toward zero emissions in mining operations. At the same time, global resource demand is growing. We therefore anticipate increased demand for hard rock mining of copper, nickel, and other resources in conjunction with population growth, urbanization, and the trend toward electrified equipment as part of decarbonization efforts. Demand for soft rock mining of coal, meanwhile, is projected to decline.

Komatsu has continued to adjust its business portfolio flexibly in response to such changes in the operating environment and market trends. For example, we reorganized our production and support systems for mining equipment used for underground mining of coal. We are also supplying new equipment and solutions for mining of copper, iron ore, and nickel.

Customers are currently faced with the need to address two tasks that seem to be in opposition to one another: catering to higher demand and achieving zero-emissions operations.

The robust resource demand is prompting deeper and deeper drilling at existing mines. Meanwhile, concern for environmental issues and impacts on communities are expected to lengthen the amount of time required to get permits for developing new mines. Customers are thus being forced to mine in increasingly remote locations and at even greater depths. This situation is creating new issues for customers, issues that Komatsu, as a partner, will need to help resolve through innovations in the automation, remote operation, and electrification of equipment.

The new mid-term management plan launched in 2022 calls on us to promote mine-wide optimization through digital linkage of Komatsu mining equipment to address the operation needs of more remote and deeper mines. Measures toward this goal include enhancing our Autonomous Haulage System for operating unmanned dump trucks; producing drills, hydraulic excavators, bulldozers, and other equipment compatible with remote and automatic operation; and developing and launching our open mining technology platform. At the same time, we will be expanding our range of hard rock mining equipment products and

businesses in light of the changing trends in underground mining.

Moreover, we look to aid customers in realizing zero-emissions operations by expanding partnerships through the Komatsu GHG Alliance, which was founded in 2021. Other efforts to this end will include a focus on developing electrified mining equipment and power agnostic concept trucks that can run on a variety of power sources. Through these efforts, we will work toward the challenging goal of achieving carbon neutrality by 2050 described in the mid-term management plan.

Looking ahead, Komatsu will continue its quest to create the safe, highly productive, smart and clean workplaces of the future by partnering with customers to resolve the issues they face in their workplaces. This will be done while monitoring trends in the operating environment and in markets worldwide. We are committed to thereby leading the mining equipment industry and achieving ongoing growth.

Partner message

Alf Barrios

Chief Commercial Officer
Rio Tinto



**Komatsu has been and continues to
be a key collaborator in solving our
challenges, including decarbonization.**

To achieve our decarbonization ambitions, Rio Tinto is working with key partners like Komatsu.

Rio Tinto and Komatsu share a long history of partnership on innovation going back to when we built the world's largest Komatsu autonomous haulage fleet in 2008.

Since early August 2021, we have partnered with Komatsu to fast-track the development and implementation of zero-emission mining haulage solutions, including haul trucks. We will conduct a pre-production trial of the new equipment at a Rio Tinto site, and we look forward to successful collaboration, development, and deployment of energy-efficient trucks that will operate safely at our sites.

At Rio Tinto, we are always excited to work with like-minded partners to identify opportunities to improve our operations and to excel together. Our

continued partnership with Komatsu underscores our shared commitment to actively collaborate on product planning, development, testing, and deployment of the next generation of zero-emission mining equipment and infrastructure as we look to decarbonize our business.

Decarbonizing mining operations is one of the biggest challenges for our industry. Addressing climate change effectively requires businesses, governments, and society to work together. Our collaboration with Komatsu recognizes the role zero-emission haul trucks will play in meeting the emission reduction goals of not only Rio Tinto but the entire mining industry.

We are also proud to be one of the first companies to join Komatsu's Greenhouse Gas (GHG) Alliance. Being part of the Alliance gives us the opportunity to contribute to innovation and the scaling up of industry-wide sustainable solutions. Through regular engagement, sharing of knowledge, and identifying operational opportunities, we are optimistic that the Alliance will collectively accelerate decarbonization efforts.

Our partnership with Komatsu has also extended to a collaborative educational support, in the form of 10-year Komatsu-Rio Tinto Scholarship Program. For 10 years between 2011 and 2021, we supported 333 students who were affected by the disastrous Great East Japan Earthquake and had challenges continuing their studies for financial reasons.

We are grateful for the long-standing and multifaceted partnership with Komatsu and look forward to continued success.