Komatsu IR-DAY in 2020
Investors & ESG Meeting

Komatsu’s Environmental Activities

December 16,2020
General Manager, Environmental Affairs Department
Yoshie Ideura

○I am Ideura, General Manager, Environmental Affairs Department.

○Today, I would like to introduce Komatsu's environmental activities, centering on TCFD.

KOMATSU

Today's Topics

- Mid-term Management Plan
- Initiatives Based on TCFD Framework

  -Governance
  -Risk Management
  -Strategies
    Risks, opportunities and addressing strategy based on scenario
  -Indicators and Targets

○I would like to explain the initiatives based on the TCFD Framework.

Komatsu Mid-Term Management Plan

Management Targets of the Mid-Term Management Plan and Related Performance

Management Target		FY2019 (First year of the plan)	
		Indicator	Performance
Growth	• Growth rate above the industry's average	Sales growth rate	▲10.3%
Profitability	• An industry's top-level operating income ratio	Operating income ratio	10.3%
Efficiency	• 10%-level ROE	ROE	8.6%
Financial position	• Keep a fair balance between investment for growth and shareholder return (including stock buybacks), while placing main priority on investment	Net debt-to-equity ratio	0.43
Shareholder return	• Set the goal of a consolidated payout ratio of 40% or higher	Consolidated payout ratio	57.7%
ESG	• Reduction of environmental impact CO_2 emissions: Decrease by 50% in 2030 from 2010. Renewal energy use: Increase to 50% of total energy use in 2030. • Evaluation by external organizations: Selected for DJSI (World & Asia Pacific) and CDP A-list (Climate Changes and Water Risk)	Reduction of environmental impact Evaluation by external organizations	CO_2 emissions: Decrease by 40% in 2021 Renewable energy use: Increase to 15% of total energy use in 2021 Selected for DJSI CDP Climate Change: A CDP Water Risk: A-
Retail finance business	• ROA: 1.5%–2.0%	ROA	1.5%
	• 5.0 or under for net debt-to-equity ratio	Net debt-to-equity ratio	3.80

DJSI: Corporate social responsibility index developed jointly by S&P Dow Jones Indices of the United States and RobecoSAM.
CDP: The non-profit global environmental disclosure platform. Companies receive scores of A to D- for how effectively they are tackling climate change, deforestation and water security by answering to the questionnaire from CDP.

○Let me first introduce Komatsu's mid-term management plan.
Starting with the current mid-term management plan, Komatsu has included ESG in its management targets.There are two major aspects of ESG.

○First is the reduction of environmental impact.
The goal is set to reduce CO2 emissions by 50% in 2030 compared to 2010, while increasing the rate of renewable energy use to 50% in 2030.

○Second is the evaluation by external organizations, that is, being selected by the DJSI and the CDP A-list.With regard to CO2 emissions and the ratio of using renewable energy, we are making steady progress toward achieving 40% and 15%, respectively, in FY2021, the final year of the current mid-term management plan.
We were listed in the DJSI in 2020.Concerning CDP, they are going to announce their evaluation results for 2020 soon. For 2019, we were in A for Climate Change and A- for Water Risk.

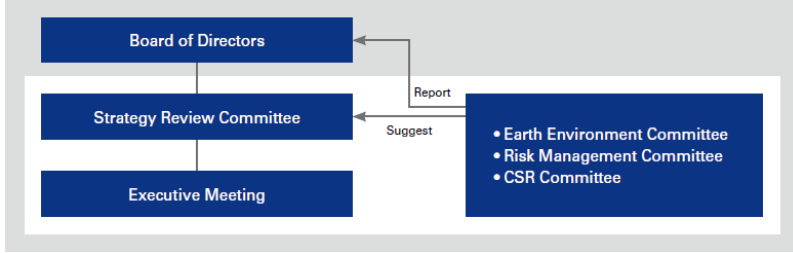
TCFD(Governance)

Resolution of ESG Issues

Initiatives Based on TCFD Framework

Governance

Climate Change-Related Reporting and Deliberation System



Major Discussion Items Related to Climate Change

Name	Chairperson	Major Discussion Items Related to Climate Change
Board of Directors	Chairman of the Board and Representative Director	• Report from Earth Environment Committee (once a year) • Reports from research, development, and product planning divisions and the Chief Technology Officer (once a year) • Reports from production and procurement divisions (once a year) • Mid-term management plan progress report (once a year)
Strategy Review Committee	President	• Growth strategies for major plants (including climate change-related matters, five times a year) • Report from Environmental Affairs Department (once a year)
Executive Meeting	President	• Progress in regard to product development and production systems (monthly) • Climate change lectures by external specialists (once a year)

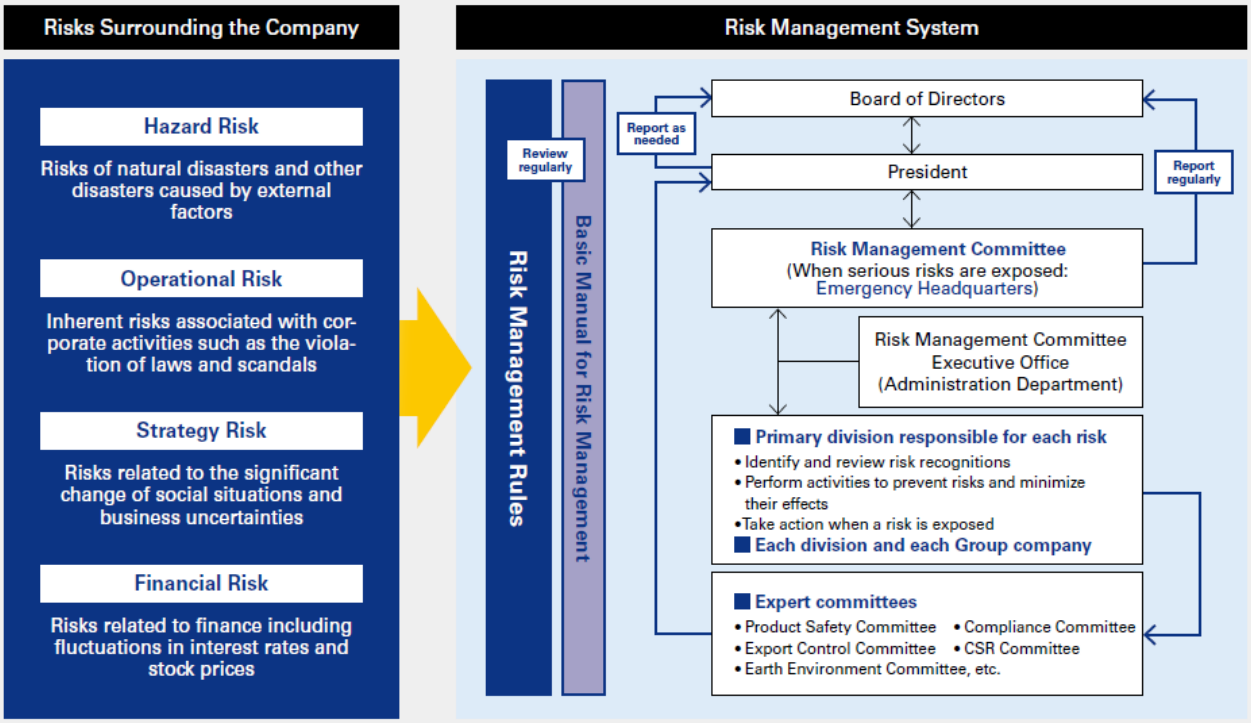
○Now, I would like to talk about the TCFD, which is the main topic of today's discussion. In August this year, we disclosed information in accordance with the TCFD for the first time in the Komatsu Report (the so-called Integrated Report), which we uploaded on our website.I will explain each topic of discussion.

○This page focuses on our corporate governance, describing how we report and discuss climate change-related matters, for example. There are three committees which are related to climate change: Global Environment Committee, Risk Management Committee, and CSR Committee.
From its own perspective, each committee reports to the Board of Directors and makes suggestions to the Strategic Review Committee.

○The chairperson and main agenda for each meeting body are shown in the table. Starting from the bottom of the table, in the monthly meetings of Executive Officers, they report on the progress of development and production, including KPIs of ESG, and hold lectures by outside experts.
In the meetings of the Strategic Review Committee, they discuss growth strategies of our main plants, including CO2 reduction and climate risk response.In addition, the Global Environment Committee, for which our department serves as the secretariat, deliberates on its activity topics at least once a year.
The Board of Directors has a system of regular reporting and supervision covering all such activities.

TCFD(Risk Management)

Risk Management



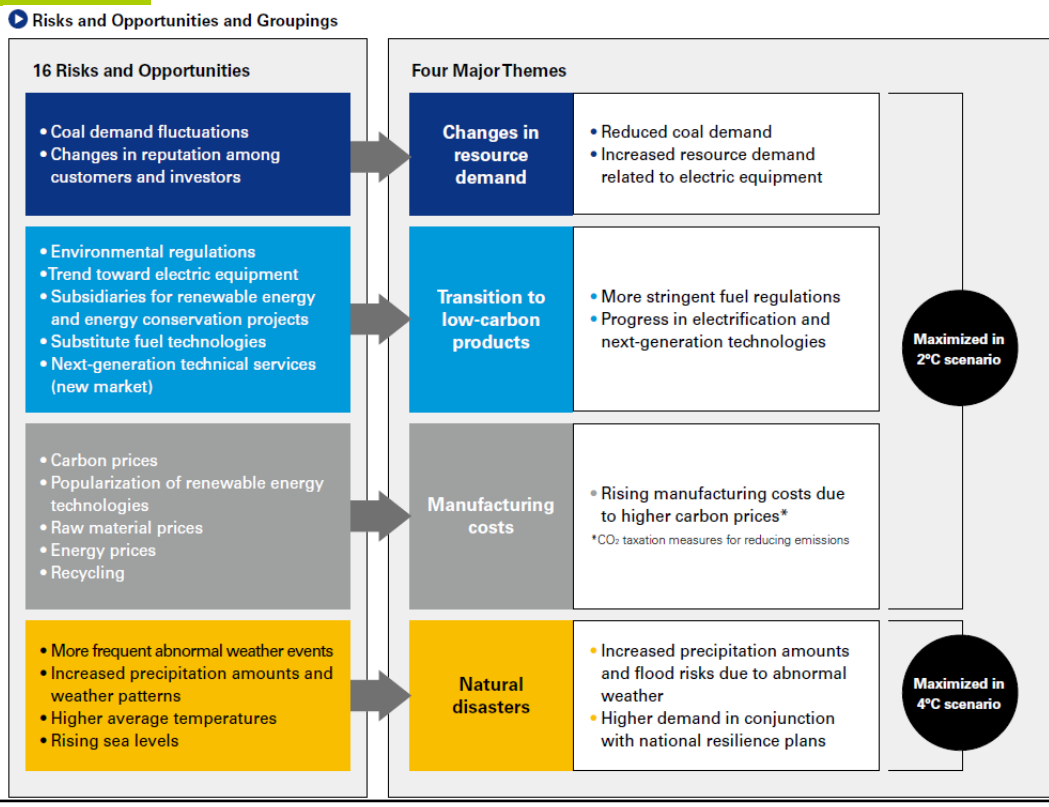
○The next, topic of discussion is our risk management system.

○Komatsu divides the risks surrounding the company into four categories.
These are hazard risk (e.g., natural disasters), operational risk (e.g., violations of laws), strategic risk (e.g., business uncertainties), and financial risk.
By type of risks, we have established rules and manuals that outline the specific risks and the departments responsible for handling them.

○While TCFD requires management of both risks and opportunities, our current system focuses more on risks, especially natural disaster risks.
We plan to make improvements in this area in the future.

TCFD(Strategies)

Strategies



○Strategies are our next topic of discussion.

○From the risks and opportunities listed in the TCFD Framework, we have selected 16 items that are relevant to Komatsu and have grouped them into four major themes.

○Three major themes include changes in demand for commodities, transition to low-carbon products, and manufacturing costs. These are the risks and opportunities that are maximized in the 2℃ scenario.
Lastly, natural disasters are the risks and opportunities that are maximized in the 4℃ scenario.

○Komatsu has decided to explain its strategy for each of the two scenarios of 2℃ and 4℃, by referring to the forecasts of the IEA (International Energy Agency) and other organizations.

TCFD(Strategies)

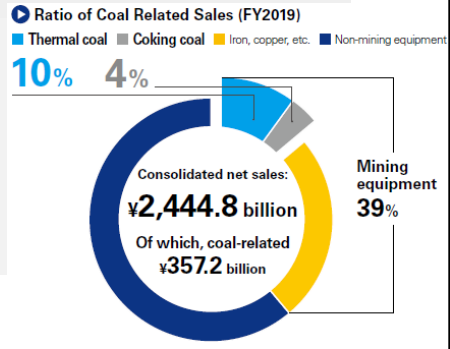
Changes in Resource Demand

	Risks	Opportunities
2°C scenario	• Regulation of power generation using fossil fuels • Massive reductions in coal production volumes under IEA scenarios • Reduced sales to coal-related customers by Komatsu	• Rapid transition from fossil fuel-powered equipment to electric equipment • Higher 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 equipment
4°C scenario	• Limited regulation of coal in developing nations • Coal production volumes in 2030 in line with current levels under IEA scenarios • Reduced appetite for investment in coal mines	• Trend toward electric equipment less pronounced than in 2°C scenario • Higher demand for copper and other resources necessary for electric equipment • Rise in investment for streamlining mine operations

Strategies

Exploration of business opportunities arising from climate change through value creation by means of innovation and growth strategies based on innovation

- Increased metal resource demand in conjunction with transition to electric equipment—Expansion of underground mining equipment operations
- Contribution to sustainable forestry—Provision of equipment and systems for streamlining processes spanning from afforestation to logging
- Contribution to rehabilitation of closed mine sites and greenification of deserts—Forest restoration projects at closed mine sites and forest machine operations
- Transition to circular economies—Expansion of equipment restoration (“Reman”) business



○Among the four themes, I would like to talk about the question frequently asked by investors, which is concerned with the change in demand for commodities.

○The risk is fossil fuels, especially coal.
In the 2 ℃ scenario, power generation from fossil fuels will decrease, and demand for coal in particular will decrease, which is expected to cause a decline in sales to coal mines among Komatsu's customers.
In the 4℃ scenario, coal demand is not expected to decline as rapidly as in the 2℃ scenario.

○The pie chart in the lower right shows the ratio of coal-related equipment sales for FY2019.Of our consolidated sales, 10% represents fuel coal used for thermal power generation, etc., and 4%, coking coal used as raw material for steelmaking.Accordingly, the portion affected by the coal-fired power generation regulation is about 10%.

○Meanwhile, in terms of opportunity, demand for copper, and other metals necessary for global-scale electrification, will increase, and sales to related mining customers can be expected to increase.

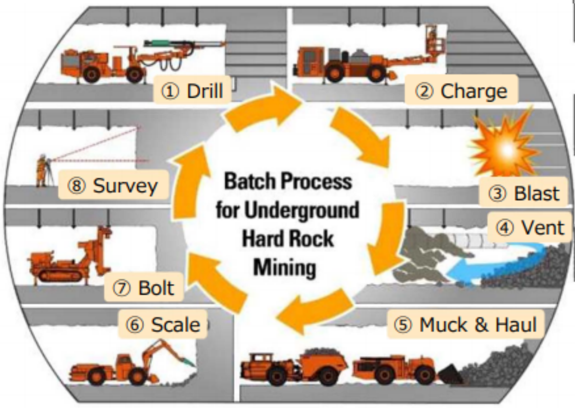
○Komatsu’s overall strategy is to develop business opportunities that are not affected by changes in demand for commodities, and conversely, brought about by climate change. To this end, we are expanding underground mining machines, promoting sustainable forestry and greening, and strengthening the Reman business.
I will explain these one by one, starting from the next page.

KOMATSU

Under Ground(Hard Rock) Business Strategy

- We aim to develop products which are not existing, but delivering more value to customers "Dantotsu Product" for expanding our market share.
- No Blasting (Safety), No Diesel (Environment), No Batch (Productivity)
  ⇒ Underground mining automation factory

① Conventional excavation method
(Drilling and Blasting : D&B)



② "Dantotsu" UGHR products instead of D&B

No Blasting

- **DynaMiner**: excavated by Dynamic Disc Cutting based on undercutting technology
  =>Safety, Reduce support , Flexible tunnel shape, Working environment improvement

No Batch

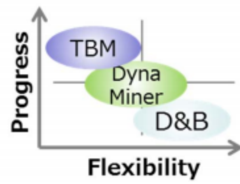
- **Mining TBM**(Tunnel Boring Machine): excavated by many disc cutters
  => Safety, Rock support reduction, Working environment improvement
  Rapid excavation
  = early production start

No Diesel

- **Hybrid LHD**:
  =>Reduce emissions & temperature raise in tunnel
  :Improve health & working environment, Reduce ventilation cost

Key words at "Dantotsu" UGHR products

No Blasting | **No Batch** | **No Diesel**



- Complementation between TBM, DynaMiner, D&B
- To improve productivity by innovating Drill jumbo

〇This is a growth strategy for underground mining.

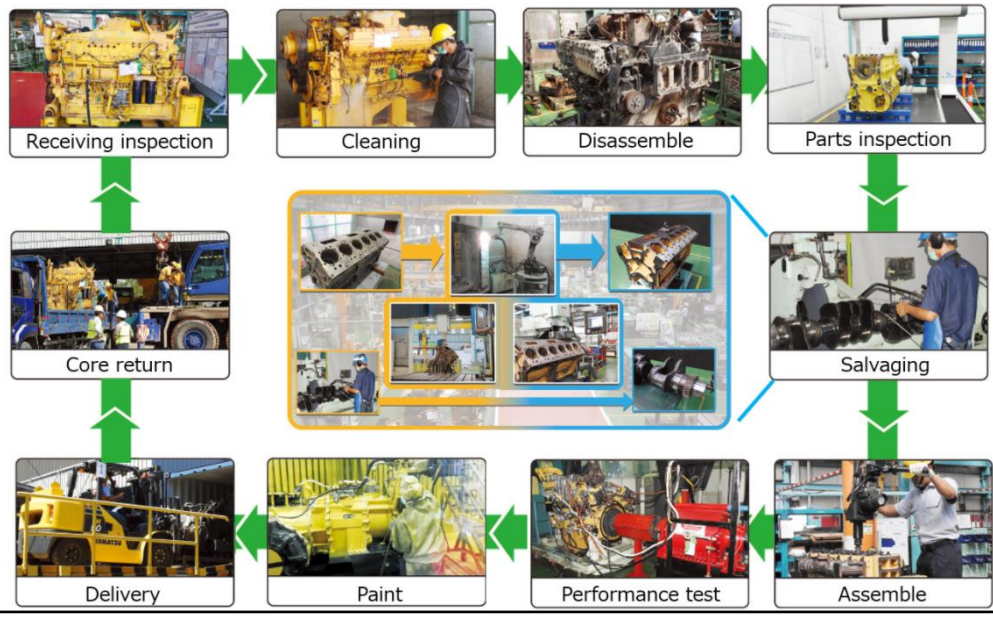
〇While coal is referred to as soft rock, minerals other than coal are referred to as hard rock.
Copper is a good example.As the world moves forward in electrification, demand for copper, which is essential for electric wires, is expected to increase.

〇Komatsu is working to expand its market share by introducing DANTOTSU products to replace the conventional underground mining method, which is associated with danger and environmental impact.

Promotion of Effective Use of Resources by Remanufacturing Business

In Remanufacturing (“Reman”) operations, the engine and transmission components collected during regular replacements are restored to the same status as if they were new so that these products can once again be sold on the market.

- Guaranteed quality and performance on a level with new products
- Lower prices than new products
- Shorter equipment downtimes through supply of appropriately stocked Reman components
- Resource conservation and waste reduction through component reuse and recycling



○We promote the effective use of resources through the Reman business.

○Komatsu's Reman (remanufacturing) business has been much appreciated by our customers, especially those in the mining industry with long operating hours.
In this business, Komatsu collects and remanufactures components, such as engines and transmissions, from customers' vehicles during periodic inspections and on other occasions.

○Recently, the term "circular economy" has been in vogue. Reman is the business that has played the forerunner role in this economy.

○Komatsu designs, manufactures, and services components. We also disassemble, repair, and inspect the components, and return them to the customer as good as new.

○We can supply components at a reasonable price without stopping the customer's on-site operations. In addition, or society, this service is more effective in saving resources and reducing waste than making new components.
We will continue to promote this type of business

Komatsu is working to mechanize forestry operation, including planting, cultivating, and harvesting trees, to contribute to sustainable forestry and CO2 reduction.

● Introduction of New Tree Planting Products

Planting

D61EM-23M0 automated tree planter

Land preparation

D85EX subsoiling machine

● Improvement of Harvesting and Extracting Productivity and Safety

Harvesting

PC130F Harvester
(forest machine based on hydraulic excavators)

Extracting

Forwarder 895
Forest Forwarder Usable on Slopes

○As for the circular economy, or sustainable business, we will also contribute to the forestry sector.
○As shown on the right side of this page, Komatsu has been providing machines that cut and transport trees, contributing to making the forestry industry safer and more productive.
Incorporating the concept of a circular economy, we have introduced new products which automate tree planting and perform subsoiling techniques.

○Recently, Japan has announced its policy to aim for net zero greenhouse gas emissions by2050.
Expectations are rising for forests to play a role in absorbing CO2.

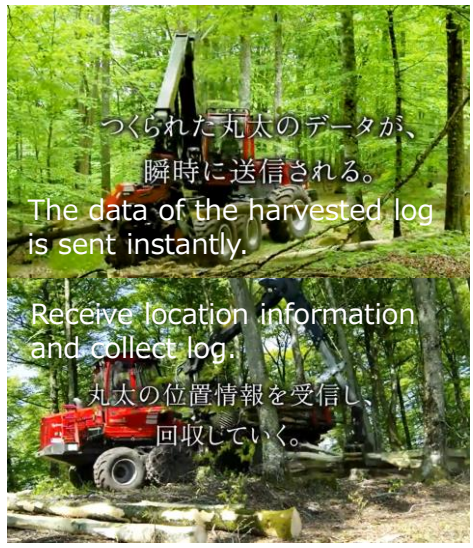
○In order for forests to grow well, it is necessary to cut and transport trees appropriately.
While our harvesters and forwarders have been contributing sufficiently, we have thought about how our machines could contribute even more, Accordingly, we have developed the machine on the left side of this page.

○We will continue to work with our customers to address environmental issues in a consistent manner, from planting to growing and harvesting.
We will continue to promote the sustainable forestry business as an important opportunity.

Smart Forestry

Initiatives for smart forestry utilizing ICT

Create a 3D image from the drone's shooting data. The number, diameter, and volume of woods are automatically calculated based on the image.
It is possible to improve the efficiency of forest resource surveys before logging.



Working hours can be reduced by cutting and sorting using an ICT harvester.

<In the future>

Timber market
Timber consumers

- We are also focusing on developing applications that utilize data from harvesting.
- In the future, we will share information on the timber market and timber consumers with forestry companies, and contribute to the efficiency of business operations.

○In addition to selling machines, we are also working on solutions.
This is "Smart Forestry".

○Komatsu already has a track record in "smart construction" at construction sites, and this is a forestry version of that.
In forestry, 3D images taken by drones can be used to improve the efficiency of pre-work surveys and logging plans.

○Of course, at logging sites, customers can use our ICT harvesters for lumbering to improve efficiency.
In the future, in the same way as Smart Construction and Landlog, we will use apps and platforms to contribute to the creation of safe and highly productive forestry sites.

Afforestation Projects Advanced Worldwide

Projects are underway to transform the sites of closed mines into lands where plants grow and restore them as a forest.

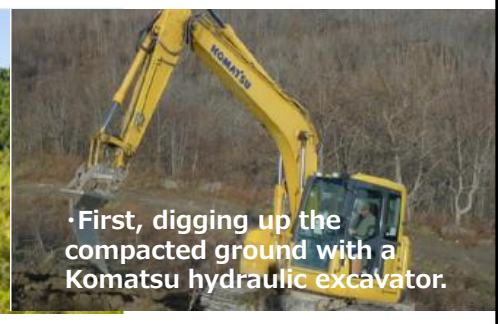
Forest Restoration Project

・**North America :** Participated in a project to restore about 4km^2 of closed mine site in 3 years from April 2019. Underway with the support of the U.S. Department of Agriculture and Forest Service in partnership with the NPO Green Forests Work (GFW), which specializes in regreening the former mine site. Start by digging up the compacted mine site with Komatsu's heavy machinery so that plants can grow. In 2019, 50,000 trees were planted on 0.4 km^2.

・**Australia :** Joint afforestation project by three companies, major mineral resource company Anglo American PLC and Komatsu Australia Pty. Ltd. and Komatsu Mining. At the kick-off event in March 2020, 120 people including employees of three companies, local residents and elementary school students participated and planted 4000 trees in a single day.

・USA: Closed mine site without plants (2009)

The same site where GFW planted trees (2017)



・First, digging up the compacted ground with a Komatsu hydraulic excavator.

○Concerning afforestation, we are also promoting activities in cooperation with our customers and government ministries in different countries.

○In surface mines, the original forest is cut down to make way for mining.
And the site is also hardened by large heavy machinery during decades of mining.
We are participating in initiatives to restore the forest on the sites of such mines after mining is completed.

○Specifically, we are participating in a three-year project in North America that started last year.
Here, we start by digging up the hard compacted ground with hydraulic excavators.
In 2019, we planted 50,000 trees.

○In Australia, we are also participating in a tree planting project with a major customer.
We planted 4,000 trees in one day.

○While providing machines for mining mineral resources, we also supply machines and employees to help restore the greenery afterwards.
This is another initiative that only Komatsu can take, and one that we hope to continue for a long time to come.

Dipterocarpaceae project in Indonesia

[Afforestation of Dipterocarpaceae in Indonesia]

1. The Dipterocarpaceae is an ecologically important tree species that constitutes the tropical forests of Southeast Asia, but it has been the target of logging as lauan wood.
2. Although tropical forest has decreased, it is difficult to produce saplings, and no trees has been planted, and that is the challenges for tropical forest regeneration.
3. Since 1993, Komatsu has been working with the Ministry of Forestry of Indonesia, the institute for forest, to develop technology for the production of saplings of the Dipterocarpaceae family by the cutting method that does not rely on seeds, and succeeded in mass production of saplings.
4. Approximately 200,000 test plantations were created on Java and Sumatra using saplings produced with this technology, contributing to the study of planting methods and growth analysis of the Dipterocarpaceae family.
5. Even now, the local subsidiary KMSI continues to manage it as a test plantation site in collaboration with the Ministry of Forestry of Indonesia.

Development of sapling production method.

1997: Tree planting in desolated land

2015

Management building in the plantation

○In fact, Komatsu has been contributing to the regeneration of tropical forests since the 1990s.

○This is our Dipterocarpaceae project in Indonesia.
There is a tree in the Dipterocarpaceae family called Jatropha, for example.
In Southeast Asia, this tree is actively harvested as lauan wood, but it has been difficult to produce seedlings, and thus could not be planted.

○In cooperation with the Indonesian Ministry of Forestry, Komatsu has succeeded in mass-producing seedlings by using the cutting method.
With these seedlings, we have planted 200,000 trees in Indonesia, contributing to the regeneration of tropical forests.

○In this way, we will continue to strengthen our involvement in the forestry industry through different ways of cooperation, depending on Komatsu's production bases and the regions where our customers operate.

Initiatives for agricultural equipment

Developed an ICT-equipped "agricultural bulldozer" by having a partnership agreement with Ishikawa Prefecture.
Started rice cultivating test using swamp bulldozer with Indonesian government.

V-furrow direct seeding by the agricultural bulldozer

Overcoming the weakness of direct seeding

In direct seeding, sprouts are short, so high-precision leveling of the paddy surface is important for seedlings grow uniformly in water.

Smooth paddy thanks to excellent leveling.

Agricultural bulldozer working in Indonesia

Highly precise position analysis and high-precision leveling enables direct seeding cultivation that does not require rice sapling.

Model for V-furrow direct seeding in dry soil and growing in water-filled paddies by using multifunctional ICT-intensive dozer (Ishikawa Prefecture Agricultural Exp. Stn.)

○As our next project in Indonesia, we have started to test rice cultivation using agricultural bulldozers.

○This is an agricultural bulldozer developed with the Ishikawa prefectural government.
Komatsu's ICT bulldozer is capable of accurately leveling the ground using GPS information.
We applied this technology to rice paddies to make them level, in other words, to make them flat.
By using the levelled rice paddies, the harvest will increase.
Then, with the red attachment shown in the upper right photo, we dig a V-shaped trench and sow seeds right away.
In this way, the transplanting of rice seedings is no longer needed.
By digging V trenches, the seeds are protected from crows, rain and wind, and fertilizer is reduced.

○With Komatsu's ICT technology, which was developed on construction sites and in cooperation with the local Ishikawa Prefecture, Komatsu is also improving agricultural sites in a smart manner.
Now, we are extending these results to agriculture in Indonesia.

TCFD(Strategies)

Transition to Low-Carbon Products

	Risks	Opportunities
2°C scenario	• Regulations promoting transition to fuel-efficient equipment, electric equipment, and other low-carbon products • Rapid changes in research and development trends and competitive climate and market entry by new competitors	• Higher demand for electric, fuel-efficient, and bio-fuel equipment • Expansion of equipment restoration ("Reman") business in conjunction with transition to circular economies • Increased demand for SMARTCONSTRUCTION and other solutions contributing to decarbonization
Strategies	• Respond to transition risks by shifting toward low-carbon products through realization of the safe, highly productive, smart, and clean workplaces of the future described in the mid-term management plan	

Addressing the risk of transition to low-carbon products

Komatsu introduced electric mini excavator to the market

Mini Excavator PC30E-5

○So far, I have introduced our strategies related to changes in mineral resources demand.

○We have three other themes.

○As for the transition to low-carbon products, we believe that the electrification of construction machinery will follow that of automobiles.
Our goal is to realize a safe, highly productive, smart and clean workplace.

○With regard to manufacturing costs, regulations on carbon pricing, etc. and energy policies may have an impact.
First of all, our strategy is to minimize the impact by promoting energy-saving and the use of renewable energy at production plants, which is the target of the current mid-term management plan.

○Concerning natural disasters, we are dedicated to risk management and meeting the needs of disaster prevention.

TCFD(Strategies)

Manufacturing Costs

	Risks	Opportunities
2°C scenario	• Taxation of fossil fuels and CO_2 emissions • Transfer of higher product purchase prices to Komatsu • Rising power fees and energy costs following investment in power generation facilities with low CO_2 emissions	• Increased competitiveness through production technologies that reduce CO_2 emissions
Strategies	• Mitigation of cost increases by achieving CO_2 reduction and renewable energy targets defined in the mid-term management plan	

Natural Disasters

	Risks	Opportunities
4°C scenario	• Increased frequency of heavy rain and floods due to abnormal weather • Risks of disaster damages to Komatsu plants at high risk of flooding • Component supply delays following damages to suppliers from disasters	• Increased demand for flood-control works
Strategies	• Institute heavy rain and flood countermeasures across the value chain	

Addressing the risk of manufacturing cost CO2 reduction by introducing renewable energy

Solar panel introduced at Thai plant (2018)

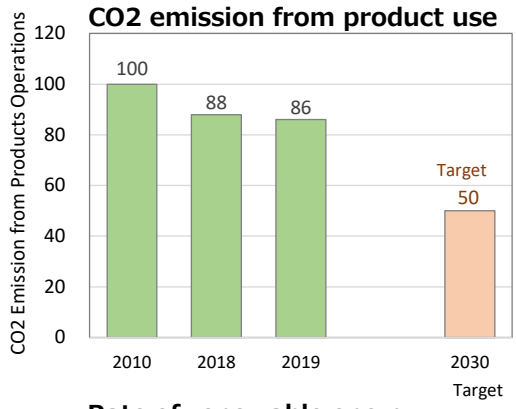
○As an example of our low-carbon products, we introduced electric mini excavators to the market this spring.

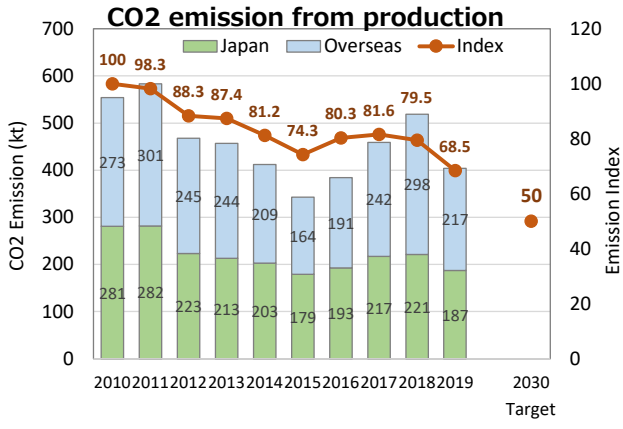
○We are also steadily promoting the use of renewable energy at our production plants.

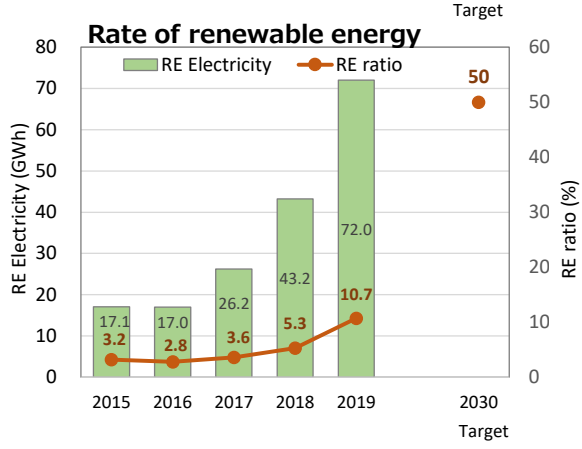
TCFD(Indicators and Targets)

Indicators and Targets

■2030 Targets
・CO2 emission from product use:
Decrease by 50% (Base year 2010, Basic unit index)
・CO2 emission from production:
Decrease by 50% (Base year 2010, Basic unit index)
・Rate of renewable energy use:
50% in 2030







○Here are the indicators and targets that summarize my presentation today.
Thank you.

・Komatsu has improved on-site safety and productivity and reduced environmental impact by implementing solutions that utilize ICT and IoT, which are the strength of Komatsu Group.
・We will continue to steadily engage in ESG activities that society requires.