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# Hitachi Sustainability Report 2021

## / Achieving a Decarbonized Society

### Efforts to Achieve a Decarbonized Society Approach

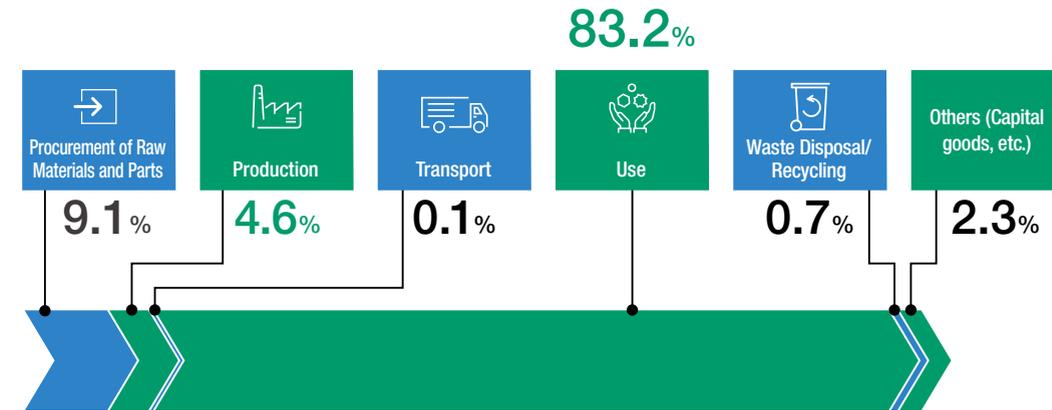
Hitachi has established a target to achieve carbon neutrality throughout its value chain by fiscal 2050 and reduce CO<sub>2</sub> emissions by 50% by fiscal 2030 (compared to fiscal 2010) in the Hitachi Environmental Innovation 2050 long-term environmental targets in order to help build a decarbonized society.

The value chain for our products and services encompasses all stages from the procurement of raw materials and parts to production, transportation, use, disposal, and recycling. We have accelerated the pace by setting the target of achieving carbon neutrality at our business sites (factories and offices), which covers the production stage of the value chain, by fiscal 2030.

The majority of our value-chain emissions result from the use of our products and services after they are sold, so reducing these emissions will be crucial to reducing CO<sub>2</sub> emissions throughout the value chain.

CO<sub>2</sub> emissions from the use of sold products and services are greatly influenced by changes in product sales and business portfolios. We have established an indicator for providing products and services that produce less CO<sub>2</sub> from among products and services offering equivalent value, and, recognizing the importance of this matter, have set and continue to manage reduction goals for our main products and services on the basis of CO<sub>2</sub> emissions per unit to reduce gross CO<sub>2</sub> emissions. Specifically, by fiscal 2030, we aim to reduce CO<sub>2</sub> emissions per unit by 50% for products and services at the usage stage and contribute to reducing global CO<sub>2</sub> emissions through energy systems that do not emit CO<sub>2</sub> at the operational stage and expanding our new decarbonization business using digital technologies such as OT and IT.

Ratio of CO<sub>2</sub> Emissions at Each Stage of Hitachi Value Chain in Fiscal 2020



\* Percentages may fluctuate due to changes in our business portfolios

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Hitachi  
Sustainability  
Report  
2021Efforts to Reduce CO<sub>2</sub> Emissions During the Use of Products and Services

## Approach

To reduce CO<sub>2</sub> emissions from the use of our products and services, which make up the largest proportion of emissions in our value chain, we have established target reduction rates of CO<sub>2</sub> emissions per unit from products and services while in use. These rates are based on fiscal 2010. Given the unique qualities of the wide range of businesses we engage in, for each product or service subject to this initiative, we calculate the reduction rate of CO<sub>2</sub> emissions per unit with CO<sub>2</sub> emissions as the numerator and function size\*<sup>1</sup> as the denominator, and work toward total elimination of CO<sub>2</sub> emissions.

We also have high expectations for specific long-term CO<sub>2</sub> reduction countermeasures such as sales of renewable energy systems with zero emissions while in use and the use of technological innovation to replace existing products or services with new versions that provide the same value but emit less CO<sub>2</sub> while in use.

The Guidelines on Calculating CO<sub>2</sub> Emission Reductions for Hitachi Group Products and Services\*<sup>2</sup> specify the following three methods for calculating different types of CO<sub>2</sub> emission reductions. Figures considered reductions for products and services while in use under the GHG Protocol, a standard for calculation and reporting of GHG emission, are calculated using method (1). Methods (2) and (3) are for avoided emissions.

## (1) Energy-saving feature enhancements

Set a reduction rate of CO<sub>2</sub> emissions per unit (compared to fiscal 2010) based on efficiency enhancements such as energy-saving feature enhancement in products and services. Every year, calculate reductions in CO<sub>2</sub> emissions considering the production volume of the relevant year.

## (2) Reduction through new systems and solutions based on technological innovation

Calculate avoided emissions as reductions in CO<sub>2</sub> emissions due to the dissemination of new systems and solutions that emit less CO<sub>2</sub> while providing equivalent value to existing products, services, and solutions.

## (3) Reduction through the deployment of non-fossil energy systems

Calculate avoided emissions as reductions in CO<sub>2</sub> emissions due to the introduction of renewable and other non-fossil energy systems, as compared to existing grid-supplied electricity (using the average emissions factor of the base year, fiscal 2010).

\*1 Major functions of products correlated with CO<sub>2</sub> emissions, such as their output and volume

\*2 The Guidelines are based on various standards, including the Guidance on Quantifying Greenhouse Gas Emission Reductions from the Baseline for Electrical and Electronic Products and Systems (IEC TR62726) issued by the International Electro-technical Commission (IEC), and calculation methods established by governments or industrial associations.

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## Contributing to a Decarbonized Society Through the Decarbonization Business

### Expanding the Decarbonization Business

#### Activities

To help achieve a decarbonized society as set out in Hitachi's Environmental Vision, we are pursuing a decarbonization business that contributes to the reduction of CO<sub>2</sub> emissions, leveraging collaborative creation with our partners. This includes a business that provides products and services with enhanced energy-saving features, a business facilitating the introduction of renewable energy, and a business that offers solutions to improve efficiency and reduce CO<sub>2</sub> emissions through digitalization, such as by using our Lumada platform. We will expand the decarbonization business by supplying solutions in the six business areas of IT, energy, industry, mobility, smart life, and automotive, thereby helping the world to mitigate and adapt to climate change.

In working to achieve a decarbonized society, we will support the electrification of social infrastructure with our OT × IT × Products approach. In seeking to realize an energy transformation, we will work to expand the transmission/distribution of renewable energy-based electric power using high-voltage direct current (HVDC) technology. Further, as we look to support carbon-free mobility, we will work to provide automobile EV systems and to promote hybridization (with power storage and hydrogen technologies) in the railway business. Also, by working to make energy utilizing digital technologies more visible, we will strive to promote the broader adoption of renewable energy and the efficient use of energy.

#### Examples of Decarbonization Business: A Hitachi Focus

 <p><b>IT</b></p> <ul style="list-style-type: none"> <li>● <b>Finance and public-oriented solutions</b> <ul style="list-style-type: none"> <li>· Promoting digital solutions</li> </ul> </li> <li>● <b>Data centers</b> <ul style="list-style-type: none"> <li>· Developing smart data centers</li> </ul> </li> <li>● <b>Servers/storage</b> <ul style="list-style-type: none"> <li>· Enhancing energy-saving features of servers and storage</li> </ul> </li> </ul>	 <p><b>Energy</b></p> <ul style="list-style-type: none"> <li>● <b>Power grid solutions</b> <ul style="list-style-type: none"> <li>· Enhancing efficiency of power transmission/distribution</li> </ul> </li> <li>● <b>Energy management</b> <ul style="list-style-type: none"> <li>· Advancing smart energy management to reduce peak electricity demand</li> </ul> </li> <li>● <b>Power generation</b> <ul style="list-style-type: none"> <li>· Promoting power generation systems using wind and other non-fossil energy sources</li> </ul> </li> </ul>	 <p><b>Industry</b></p> <ul style="list-style-type: none"> <li>● <b>Smart logistics</b> <ul style="list-style-type: none"> <li>· Improving energy-saving features through fully IT-enhanced logistics</li> </ul> </li> <li>● <b>Factory automation</b> <ul style="list-style-type: none"> <li>· Enhancing energy efficiency through shorter lead times</li> </ul> </li> <li>● <b>Water business</b> <ul style="list-style-type: none"> <li>· Enhancing efficiency of water and sewage systems</li> </ul> </li> <li>● <b>Industrial products</b> <ul style="list-style-type: none"> <li>· Enhancing efficiency of industrial products</li> </ul> </li> </ul>
 <p><b>Mobility</b></p> <ul style="list-style-type: none"> <li>● <b>Railways</b> <ul style="list-style-type: none"> <li>· Enhancing energy-saving features of rolling stock</li> <li>· Developing smart operating systems</li> <li>· Enhancing maintenance service efficiency through rolling stock monitoring</li> </ul> </li> <li>● <b>Elevators</b> <ul style="list-style-type: none"> <li>· Enhancing energy-saving features of elevators and escalators through replacement</li> <li>· Enhancing energy efficiency through total building solutions</li> </ul> </li> </ul>	 <p><b>Smart Life</b></p> <ul style="list-style-type: none"> <li>● <b>Smart cities</b> <ul style="list-style-type: none"> <li>· Reducing CO<sub>2</sub> through comprehensive urban energy management solutions</li> </ul> </li> <li>● <b>Home appliances</b> <ul style="list-style-type: none"> <li>· Enhancing energy efficiency of home appliances</li> <li>· Promoting connected home appliances</li> </ul> </li> <li>● <b>Smart therapies</b> <ul style="list-style-type: none"> <li>· Enhancing energy-saving features of medical devices</li> </ul> </li> </ul>	 <p><b>Automotive business</b></p> <ul style="list-style-type: none"> <li>● <b>Vehicle electrification</b> <ul style="list-style-type: none"> <li>· Promoting electrification through electric powertrain systems</li> </ul> </li> <li>● <b>AD/ADS (Automatic Driving, Advanced Driver-Assistance Systems)</b> <ul style="list-style-type: none"> <li>· Reducing CO<sub>2</sub> by improving operational efficiency through AD/ADAS solutions</li> </ul> </li> </ul>



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### Hitachi ABB Power Grids' Decarbonization Business Initiatives

Hitachi ABB Power Grids, which became a member of the Hitachi Group in July 2020, is accelerating the transition toward a carbon-neutral energy future, together with its customers and partners. With pioneering technologies, including high voltage direct current (HVDC) systems, it will contribute to the efficient transmission and large-scale integration of renewable energy.

In fiscal 2020, Hitachi ABB Power Grids received an order for HVDC Light®\*1 from the Dogger Bank Wind Farm in the United Kingdom, the world's largest offshore wind farm. This project will enable efficient power transmission and large-scale integration of renewable energy, and will support the United Kingdom's efforts to expand the use of offshore wind on its journey toward net zero. HVDC Light is also the facilitating technology in the NordLink project which enables the exchange of renewable energy between Norway and Germany. In this project, the world's longest\*2 HVDC voltage source converter cable and Europe's longest\*2 HVDC power grid are interconnected. Hitachi ABB Power Grids designed, engineered, and supplied the two converter stations, including control and protection systems at the core of the project, located in Southern Norway and Northern Germany.

\*1 A high-voltage DC power transmission system that is highly efficient for transmitting large amounts of electricity over long distances, integration of renewables and interconnecting grids, opening up for new sustainable transmission solutions.

\*2 As of August 2021, based on Hitachi ABB Power Grids' research.

### Achieving CO<sub>2</sub> Emission Reductions During the Use of Products and Services

Goals

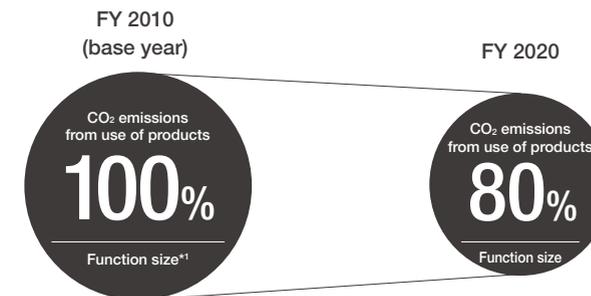
Activities

GRI 305-4/305-5

Hitachi set a target for fiscal 2020 of a 20% reduction in CO<sub>2</sub> emissions per unit from products and services compared to the base year of fiscal 2010 and achieved a 20% reduction. This was driven by an increase in sales of high energy-saving products, including industrial equipment and equipment used for social infrastructure.

#### Environmental Action Plan for 2021 Management Values

▶ Reduction in CO<sub>2</sub> Emissions per Unit (Hitachi Group)



Reduction in CO<sub>2</sub> Emissions per Unit (Hitachi Group) **20% reduction** From base year  
FY 2020 reduction target rate: 20%

\*1 Major functions of products correlated with CO<sub>2</sub> emissions, such as their output and volume

### Improving Environmental Performance of Products and Services Through Environmentally Conscious Design Assessments

System

Activities

We conduct independently developed Environmentally Conscious Design Assessments for all products and services involving a design process to steadily improve environmental performance throughout the Group. We identify 30 environmental impact items that may cause climate change, resource depletion, and ecosystem degradation across the entire life cycle of products and services, assess the level of environmental burden reduction across our business activities in multifaceted ways, and strive to achieve further reductions.

#### Initiatives for Improving Environmental Performance of Products and Services

- Promoting environmentally conscious processes: In accordance with the IEC 62430\*1 criteria, promote environmentally conscious processes in designing and developing products and services including by meeting environmental regulatory requirements and ascertaining the environment-related needs of our stakeholders within our existing management system.
- Implementing Life Cycle Assessments (LCAs): For our main, priority products, quantitatively evaluate their global environmental burden in such areas as the consumption of mineral resources, fossil fuels, and water resources, as well as their impact on climate change and air pollution, disclose the results to our stakeholders, and utilize them in improving the design of next-generation products.

\*1 The standard developed by the International Electrotechnical Commission (IEC) concerning environmentally conscious design for electrical and electronic products.

[Case studies of Reducing CO<sub>2</sub> Emissions Throughout the Value Chain](#)

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## Contributing to a Decarbonized Society at Business Sites (Factories and Offices)

CO<sub>2</sub> Emission Reductions at Business Sites (Factories and Offices) and Hitachi Carbon Neutrality 2030

## Policy

As part of our long-term environmental targets called Hitachi Environmental Innovation 2050 we have established and promoted the goal of realizing carbon neutrality by fiscal 2030 at all business sites (factories and offices). We call this goal “Hitachi Carbon Neutrality 2030.”

Under Hitachi Carbon Neutrality 2030, we aim to be carbon neutral by effectively reducing CO<sub>2</sub> emissions 100% by fiscal 2030 compared to fiscal 2010 instead of the original 50% reduction target.

The following initiatives will help us achieve the target.

▶ Major Initiatives for Reducing CO<sub>2</sub> Emissions at Business Sites (Factories and Offices)

Factories	<ul style="list-style-type: none"> <li>● Improve equipment efficiency by introducing and upgrading to high-efficiency equipment</li> <li>● Improve production efficiency and energy use efficiency during the production through the use of the Lumada platform and production technologies cultivated from our long years of experience</li> <li>● Optimize equipment operations and reduce wasted energy by installing smart meters</li> <li>● Review product designs and processes</li> </ul>
Offices	<ul style="list-style-type: none"> <li>● Build/move to new facilities with high energy efficiency</li> <li>● Combine and integrate existing facilities</li> <li>● Install energy-saving equipment and optimize equipment operations in collaboration with building owners</li> </ul>
Factories and offices	<ul style="list-style-type: none"> <li>● Install renewable energy systems</li> <li>● Use electricity from renewable sources</li> <li>● Adopt the non-fossil fuel energy certificate*<sup>1</sup> system</li> <li>● Introduce off-balance-sheet solar power generation for self-consumption</li> <li>● Promote investment in carbon-reduction equipment through adoption of the Hitachi Internal Carbon Pricing (HICP) framework</li> </ul>

\*1 These credits are for electricity that has been certified as having been produced from renewable energy sources. Purchasers of such credits can offset their conventional energy use instead of implementing their own reduction measures.

We believe that the technologies and experience we have developed through our efforts to achieve our carbon neutrality targets will help us offer business proposals that accurately respond to our customers’ decarbonization needs and will greatly expand our new business opportunities.

## The Hitachi Internal Carbon Pricing Framework

## System

To promote CO<sub>2</sub> reduction at our business sites (factories and offices), in fiscal 2019 we started operating the Hitachi Internal Carbon Pricing\*<sup>1</sup> (HICP) framework which provides sites with incentives to invest in necessary new equipment.

The HICP framework is an internal system that aims to achieve CO<sub>2</sub> reductions effectively. It helps visualize CO<sub>2</sub> reductions from investment in equipment at factories and offices and encourages investment in new equipment that drives decarbonization through energy-saving and other measures as an extension of the established decision-making process on investment.

Specifically, with reference to emissions trading and carbon taxes globally, we establish company-internal carbon prices, convert into monetary value the effect of CO<sub>2</sub> reductions due to investment in equipment that contributes to decarbonization, add this to the value of energy reduction effects, and use the result to evaluate the effect of our investment. By applying incentives like these, we aim to further expand our investment in equipment that contributes to decarbonization.

As the climate change issue deepens, we anticipate risks like increased burdens from carbon taxes and new emissions trading frameworks to emerge. By incorporating those risks into our equipment investment decisions, we can not only make investments in equipment that contributes to decarbonization a higher priority, but also minimize the future risks of climate change and make ourselves more resilient. The introduction of the HICP framework is a key part of this process.

\*1 Internal carbon pricing: An in-house tool to assess in monetary terms the amount of carbon generated or reduced in order to voluntarily make investment decisions and conduct risk management.

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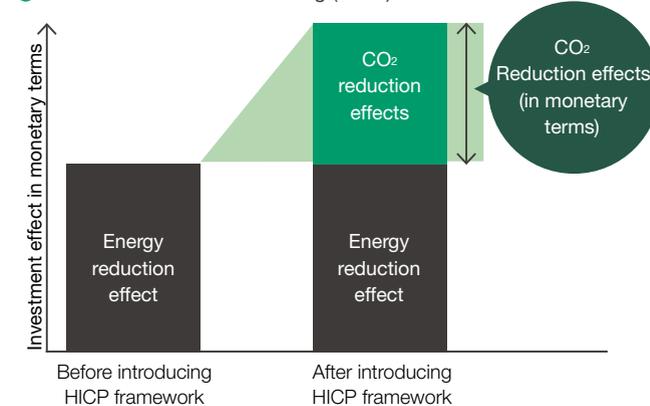
# Hitachi Sustainability Report 2021

### Achievements in Fiscal 2020

As a result of Hitachi's creation and implementation of the HICP framework and our determination to reduce CO<sub>2</sub> emissions, we have made additional investments in equipment for projects that had not originally received sufficient investment due to their low levels of investment efficiency.

In fiscal 2020, we invested in 22 cases of energy-saving equipment with a total investment of ¥250 million. These investments contributed to an annual reduction of 447 tons of CO<sub>2</sub> emissions. The annual amount of CO<sub>2</sub> emission reductions from our business sites improved 0.8% compared to the previous fiscal year.

### Hitachi Internal Carbon Pricing (HICP) Framework



- Set internal carbon prices based on future risks such as higher carbon taxes and emissions trading
- Convert effects of CO<sub>2</sub> reductions from investment in equipment that contributes to decarbonization into monetary value
- Evaluate the effect of investments by adding the monetary effect of CO<sub>2</sub> reductions to the previously calculated monetary value of the effect of energy reductions through investments
- Increase the priority of investments in equipment that contribute to decarbonization

Encourage investment in equipment that contributes to decarbonization



### Actions and Achievements

#### Activities

GRI 302-1/305-4/305-5

At Hitachi, the achievement of environmental targets for individual business sites (factories and offices) set by the Environmental Action Plan for 2021 is measured by CO<sub>2</sub> emissions per unit. Because we conduct business in various sectors, the KPI of CO<sub>2</sub> emissions per unit for each business site is calculated using the site's CO<sub>2</sub> emissions as the numerator and its activity amount\*1 as the denominator.

In fiscal 2020, the reduction rate of CO<sub>2</sub> emissions per unit was 1.4% against a target of 8% (compared to the base year of fiscal 2010). Part of the reason for not hitting the target was that decreased production caused by COVID-19 meant facilities were used less efficiently. There were also some business divisions that could not achieve the expected reductions in CO<sub>2</sub> emissions per unit due to their failure to promptly respond to reductions in fixed power allocations linked to production.

We report the total CO<sub>2</sub> emissions from our entire Group including CO<sub>2</sub> emissions from power plants selling electricity. Total CO<sub>2</sub> emissions in fiscal 2020 decreased by approximately 1,078 kt-CO<sub>2</sub>\*2 compared to fiscal 2019. The decrease in emissions was caused by removing materials companies from the consolidated Hitachi Group, decreased production due to COVID-19, lower emissions thanks to energy saving efforts, and the use of renewable electricity.

\*1 Values are closely related to CO<sub>2</sub> emissions at each business site (for example, production quantity, output, building floor space, and number of employees).  
\*2 The CO<sub>2</sub> electrical power conversion factor for total CO<sub>2</sub> emissions is market based

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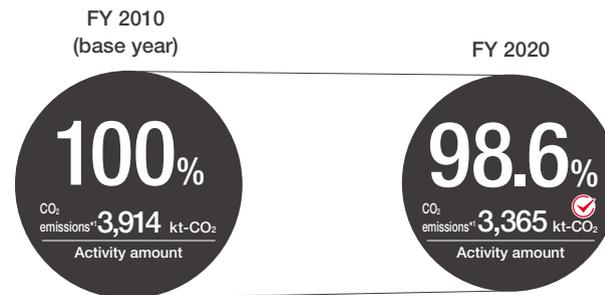
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### Environmental Action Plan for 2021 Management Values

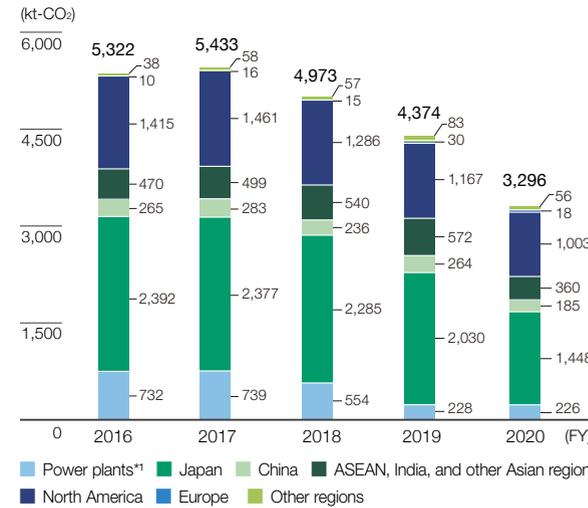
CO<sub>2</sub> emissions reduction rate per unit (Hitachi Group)



CO<sub>2</sub> emissions reduction rate per unit at Business Sites (Factories and Offices) **1.4% reduction** From base year  
FY 2020 reduction target rate: 20%

\*1 CO<sub>2</sub> emitted from the organization (Scope 1 and 2).  
 Notes: • As with the CO<sub>2</sub> electrical power conversion factor in calculations of CO<sub>2</sub> emissions per unit, a unified factor of 0.530 kg-CO<sub>2</sub>/kWh is applied across the entire Hitachi Group.  
 • The Environmental Action Plan's management values do not include amounts for our power plants in fiscal 2010 (base year) or fiscal 2020. Emissions, which are base for intensity are calculated according to the scope of environmental performance aggregation data of fiscal 2020.

CO<sub>2</sub> Emissions (Hitachi Group's factories, offices, and power plants)



\*1 Emissions by power plants selling electricity in Japan were retroactively added to total CO<sub>2</sub> emissions from fiscal 2017.

Notes: • Regarding CO<sub>2</sub> electrical power conversion factors: in Japan (including power plants), adjusted conversion factors for individual power businesses based on the Act on Promotion of Global Warming Countermeasures are used; outside of Japan, the latest values for each fiscal year supplied by the International Energy Agency (IEA) as conversion factors for individual countries are used; outside of Japan, the latest values for each fiscal year supplied by the International Energy Agency (IEA) and by power supply companies as conversion factors for individual countries are used.  
 • Energy-related CO<sub>2</sub> emissions in fiscal 2020 were 1,202 kt-CO<sub>2</sub> (Scope 1) and 2,094 kt-CO<sub>2</sub> (Scope 2, market-based).  
 • Regional classifications were changed in fiscal 2020, and the past data was recalculated based on this.

### Introducing Renewable Energy

#### Activities

Hitachi is promoting the use of solar, wind, and other forms of renewable energy at its business sites. Going forward, we will accelerate these efforts and aim to raise the share of renewable energy in our total electricity consumption to 2% by fiscal 2030.

#### Achievements in Fiscal 2020

Renewable electricity generation across the Hitachi Group was 22,000MWh in fiscal 2020 which is an increase of 20% compared to fiscal 2019. Renewable energy generated by equipment installed at business sites (factories and offices) accounted for 0.5% of the electricity consumed by the entire Hitachi Group.

### Introducing Renewable Electricity

#### Activities

Hitachi is adopting renewable electricity as a way to reduce CO<sub>2</sub> emissions and achieve carbon neutrality. As part of this, we are also offsetting any CO<sub>2</sub> emissions that cannot be reduced through energy saving and renewable electricity generation equipment. Going forward, we plan to reduce the amount of renewable electricity acquired by promoting even greater energy-saving. Renewable electricity used will be based on the standards set by the GHG Protocol.

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### Achievements in Fiscal 2020

The amount of renewable electricity used by Hitachi factories and offices in fiscal 2020 was 116,211MWh; this is three times the level in fiscal 2019 and 2.6% of Hitachi's total power consumption.

At nine sites in the United States, Europe, and Japan all the electricity used came from renewable sources. Moreover, the three sites of the Hitachi High-Tech Group have achieved carbon neutrality by adopting renewable electricity and promoting energy-saving.

#### Business Sites Fully Powered by Renewable Electricity in Fiscal 2020

Hitachi Computer Products (America)	1 site	12,056 MWh (wind power)
Hitachi Rail Italy	3 sites	27,813 MWh (hydroelectric power, etc.)
Hitachi Astemo (UK and Germany)	2 sites	3,635 MWh (hydroelectric power, etc.)
Hitachi High-Tech Group	3 sites	11,809 MWh (hydroelectric and wind power)

### Reducing Transportation Energy Consumption

#### Activities

As part of our efforts to reduce energy output during transportation as well as at our business sites (factories and offices), we have established targets for the reduction of transportation energy use per unit for each business unit and Group company in Japan. Outside Japan these targets are voluntary. Our business sites are promoting a modal shift to highly efficient transportation methods by improving truck loading ratios and taking other measures to reduce transportation energy consumption and switching to the use of eco-cars for in-house operations. Considering a modal shift from truck to rail transportation a high priority, we are working toward "Eco Rail Mark company" and "Eco Rail certified product" certifications from the Ministry of Land, Infrastructure, Transport, and Tourism. Transitioning from truck to railway transportation is expected to reduce CO<sub>2</sub> emissions per unit to one-thirteenth of its current level, and we plan to continue expanding our use of railways for long-distance transportation.

[About the Eco Rail Mark](#)

[Case studies of Energy Savings in Eco-Factories & Offices](#)

#### Eco Rail Mark Initiatives

Company	Certification
Hitachi, Ltd.	Eco Rail Mark company* <sup>1</sup> Eco Rail certified product* <sup>2</sup>
Hitachi-Omron Terminal Solutions	Eco Rail Mark company* <sup>1</sup>
Hitachi Industrial Equipment Systems	Eco Rail certified product* <sup>2</sup>



\*1 A mark conferred on companies using railways for more than 15% of freight land transportation covering 500 km or more; for 15,000 tons or more in volume per year; or for more than 15 million ton-kilometers in volume × distance per year.  
\*2 A mark conferred on products using railways for more than 30% of freight land transportation covering 500 km or more in terms of volume × distance.

### Achievements in Fiscal 2020

In fiscal 2020, CO<sub>2</sub> emissions from transportation within Japan for the Hitachi Group were 68.9 kt-CO<sub>2</sub> ✓ which is 19.5 kt-CO<sub>2</sub> less than the previous fiscal year. To reduce CO<sub>2</sub> emissions in fiscal 2020, we focused on improving efficiency when loading products for transportation while increasing the use of coordinated transportation. Furthermore, CO<sub>2</sub> emissions dropped by more than 20% compared to fiscal 2019 due to factors such as the removal of materials companies from the consolidated Hitachi Group and smaller shipment volumes stemming from decreased production during the pandemic.

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## Climate-related Financial Information Disclosure (Based on TCFD Recommendations)

GRI 102-12

In June 2018, Hitachi announced its endorsement of the recommendations by the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD). The following contains key climate-related financial information in line with the TCFD's recommendations.

## Governance

## Structure

Hitachi sees climate change and other environmental issues as important management issues.

The Board of Directors discusses the Group's sustainability strategy, including climate change measures, as a key component of management strategy. Hitachi's long-term environmental targets called Environmental Innovation 2050 which include reducing CO<sub>2</sub> emissions were established in fiscal 2016. And in fiscal 2021, they were reviewed and approved again by the Board of Directors and shared with the public.

The Executive Sustainability Committee, chaired by the executive chairman and CEO and staffed by heads of corporate divisions and business units, meets twice a year to discuss and reach decisions on environment-related policies and measures including those in response to climate change, and it sets the stage for implementing those measures. In addition, the Audit Committee of independent directors conducts an audit of sustainability-related operations once a year, and Hitachi executive officers report on climate-related issues to the committee during the audit.

As for TCFD initiatives outside the company, in 2019 a Hitachi executive officer participated in the TCFD Study

Group on Green Finance and Corporate Disclosures and helped compile its report. The initiative was launched by Japan's Ministry of Economy, Trade, and Industry. Hitachi also participates in an industry-government-academia initiative called the TCFD Consortium—comprised by 164 companies and other organizations at the time of inauguration—as a member of its Steering Committee and contributed to the formulation of TCFD Guidance 2.0, announced in July 2020.

## Strategy

## Policy

GRI 102-11/102-15/102-29/201-2

We are responding to climate change by fulfilling our responsibilities as a global company by helping to achieve a decarbonized society. Taking note of the total CO<sub>2</sub> reductions required globally under the RCP 2.6\*<sup>1</sup> and RCP 8.5\*<sup>2</sup> scenarios of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), we established long-term environmental targets called Hitachi Environmental Innovation 2050 in fiscal 2016 under our Environmental Vision. Moreover, in order to help limit the global temperature rise to 1.5°C as recommended in the IPCC Global Warming of 1.5°C report, in fiscal 2020 we revised our target to achieve carbon neutrality at Hitachi factories and offices by fiscal 2030. And then in fiscal 2021 we revised our target again to achieve carbon neutrality in our value chain by fiscal 2050. Our aim is to help create a decarbonized society by setting more ambitious targets to realize that goal.

\*1 A Representative Concentration Pathway (RCP) scenario under which, at the end of the 21st century, the increase in global temperatures from preindustrial levels is kept below 2°C.

\*2 An RCP scenario that assumes that emissions will continue to rise resulting in an approximately 4°C rise in global temperatures compared to preindustrial levels.

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### Identification and Assessment of Climate-related Risks and Opportunities

The Hitachi Group operates a broad array of businesses around the world with each business having its own set of risks and opportunities. We are responding to the impact of climate change by assessing climate-related risks and opportunities in accordance with TCFD classifications. We make sector-specific assessments of risks and opportunities for important business sectors that have a relatively high likelihood of being affected by climate change. Our assessments are also categorized according to time span, namely short term, medium term, and long term as defined below.

#### Time Spans for Assessing Climate-related Risks and Opportunities

	Time span	Reason for adoption
Short term	Over the next three years from fiscal 2019 to 2021	Corresponds to the three-year management period covered by the Environmental Action Plan for 2021 established in line with the 2021 Mid-term Management Plan
Medium term	Through fiscal 2030	Time span of our fiscal 2030 long-term environmental targets
Long term	Up to fiscal 2050	Time span of our fiscal 2050 long-term environmental targets

### Climate-related Risks (Hitachi Group)

As for climate-related business risks, we have followed the TCFD's classification in considering: (1) risks related to the transition to a decarbonized economy in the 1.5°C scenario, and (2) risks related to the physical impacts of climate change in the 4°C scenario which assumes that efforts to reduce global CO<sub>2</sub> emissions have failed. Previously, we ascertained risks based on a 2°C scenario, but after considering the importance of helping to realize a decarbonized society, we are now working with the 1.5°C scenario. Hitachi has already set long-term environmental goals and has been promoting activities accordingly. Moreover, very few of our businesses depend on fossil fuels. Therefore, switching to the 1.5°C scenario does not have a big impact on the potential climate change-related risks and opportunities for Hitachi.

#### (1) Risks related to the transition to a decarbonized economy (applying mostly to the 1.5°C scenario)

Category	Major risks	Time span	Main initiatives
Policy and legal	Increased business costs from the introduction of carbon taxes, fuel/energy consumption taxes, emissions trading systems, and other measures	Short to long term	<ul style="list-style-type: none"> <li>Avoid or mitigate increases in business costs, such as from carbon taxes, by further enhancing production and transport efficiency and promoting the use of non- or low-carbon energy sources</li> <li>Promote energy-saving equipment by introducing Hitachi Internal Carbon Pricing (HICP)</li> </ul>
Technology	Loss of sales opportunities due to delays in technology development for products and services	Medium to long term	<ul style="list-style-type: none"> <li>Contribute to reducing CO<sub>2</sub> emissions by developing and marketing innovative products and services that lead to the achievement of long-term environmental targets and expanding the decarbonization business</li> <li>Promote the development of low-carbon products by implementing Environmentally Conscious Design Assessments when designing products and services</li> </ul>
Market and reputation	Impact on sales due to changes in market values or assessment of our approach to climate issues	Medium to long term	<ul style="list-style-type: none"> <li>In light of growing market concerns about climate change and investor expectations for companies to play more active roles, we revised our long-term environmental targets called Hitachi Environmental Innovation 2050 by setting the goal of becoming carbon neutral by fiscal 2050 throughout our entire value chain</li> </ul>

#### (2) Risks related to the physical impacts of climate change (4°C scenario)

Category	Major risks	Time span	Main initiatives
Acute and chronic physical risks	Climate-related risks to business continuity including increased severity of typhoons, floods, and droughts (acute risks), as well as rising sea levels and chronic heat waves (chronic risks)	Short to long term	Taking into account the possibility of flood damage when deciding on the location or equipment layout of a new plant. Measures tailored to the water risks of each manufacturing site will be strengthened in the future based on the results of a water risk assessment now being conducted

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### Climate-related Opportunities (Hitachi Group)

CO<sub>2</sub> emissions during our customers' use of our products and services account for the main total emissions in our value chain. To achieve the CO<sub>2</sub> reduction targets set forth in our long-term environmental targets and 2021 Mid-term Management Plan, it is essential that we reduce emissions during use. Developing and providing products and services that emit zero or very little CO<sub>2</sub> during their use will not only satisfy customer needs but also help meet society's demands for reduced emissions. This represents a business opportunity for us in the short, medium, and long term and constitutes a major pillar of the Social Innovation Business that we are promoting as a management strategy.

Category	Major opportunities	Main initiatives
Products/services and markets	Increased corporate value and revenue from expanded sales of products and services with innovative technology that can contribute to the mitigation and adaptation of climate change	<ul style="list-style-type: none"> <li>Expand business areas that contribute to decarbonization.</li> <li>Promote decarbonized solutions and services through collaborative initiatives with customers.</li> <li>Focusing on the fields of energy, mobility, and industry, we are promoting greater utilization of digital technology (Green by Digital) and developing products that offer world-class efficiency.</li> </ul>
Resilience	Provision of solutions to address climate-related natural disasters	<ul style="list-style-type: none"> <li>Providing disaster prevention solutions such as high-performance firefighting command systems</li> <li>Providing construction equipment that enables quicker recoveries from disasters</li> </ul>

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### Responding to Climate Scenario Risks and Opportunities for Each Business

Hitachi operates a broad array of businesses with each business having its own set of risks and opportunities. We therefore selected businesses that have a relatively high likelihood of being affected by climate change and examined the business impact of and responses to the 1.5°C and 4°C scenarios. Under the 1.5°C scenario, as projected by the IPCC's RCP 2.6 climate model, we are anticipating a world where stringent measures and regulations will be implemented to help realize a decarbonized society. Therefore, we investigated risks and opportunities on the premise of carbon neutrality by fiscal 2050. Under the latter scenario, we focused on there being increased climate-induced natural disasters as a result of lax regulations as projected by the RCP 8.5 scenario.

In selecting the businesses that have a relatively high likelihood of being affected by climate change, we took many different factors into account and chose those with (1) relatively high CO<sub>2</sub> emissions from the use of products and services, (2) a relatively high need for fossil fuels during the use of products and services, and (3) high sales volume within the Group. The businesses we selected using these criteria were railway systems, power generation and power grids, IT systems, industrial equipment, automotive systems, and construction machinery.

Our assessment of the major climate-related risks and opportunities for these businesses are outlined in the following table:

▶ The Business Environment, Major Risks and Opportunities, and Strategies under the 1.5°C and 4°C Scenarios  
**Note: This table is divided into the following three pages.**

Target businesses	Railway systems	Power generation and power grids	IT systems	Industrial equipment	Automotive systems	Construction machinery
The business environment and major risks and opportunities under the 1.5°C scenario	<p><b>Business environment</b> Global demand for transport systems that emit less CO<sub>2</sub> per distance covered will grow with tighter CO<sub>2</sub> emission regulations in each country and region.</p>	<p><b>Business environment</b> Global demand for electricity generated from renewable energy, nuclear power, and other non-fossil sources will grow with tighter CO<sub>2</sub> emission regulations in each country and region. Power networks will increasingly accommodate natural energy produced through distributed generation.</p>	<p><b>Business environment</b> Demand for energy-saving, high-efficiency IT solutions will grow with tighter CO<sub>2</sub> emission regulations in each country and region. There will also be a jump in demand for data centers and data analysis systems to accommodate the expansion of financial services such as investments and loans for decarbonization businesses, green bond issues, and data utilization businesses.</p>	<p><b>Business environment</b> Global demand for energy-saving industrial equipment will grow with tighter CO<sub>2</sub> emission regulations in each country and region.</p>	<p><b>Business environment</b> Electric vehicles will rapidly spread with tighter laws and regulations on fuel efficiency and environmental standards, and increases in fossil fuel prices. Markets for alternative non-fossil technologies like hydrogen and biofuel vehicles will expand. The number of countries and regions with near zero sales of internal combustion engine vehicles will increase.</p>	<p><b>Business environment</b> Demand for electric and no carbon-fuel construction machinery will grow with tighter laws and regulations on the use of fossil fuels. Environmental regulations for items other than CO<sub>2</sub> emissions (air and noise pollution, etc.) will grow tighter in urban areas.</p>
	<p><b>Risks</b> Competitiveness will decline if there are delays in the development of innovative emission-reducing technologies including those to improve the efficiency of railway services through digital utilization such as dynamic headway (flexible operations in response to passenger demand) and new mobility services like MaaS.</p>	<p><b>Risks</b> Delays in the construction of power networks that would enable the mass introduction of renewable energy with large output fluctuations.</p>	<p><b>Risks</b> Competitiveness will decline if there is a lack of technological and human resource development to provide energy-saving and highly efficient IT solutions and also if decarbonized measures for energy-intensive data centers are delayed.</p>	<p><b>Risks</b> Competitiveness will decline if there are delays in the development of high-efficiency, low-loss products.</p>	<p><b>Risks</b> Delay transition to a new business environment of rapidly declining sales of internal combustion engine vehicles.</p>	<p><b>Risks</b> Higher development costs, lost markets due to slow response, and higher costs in building customer support for the use of electric and low/no carbon fuel machinery. Loss of customers due to the short range of electric machinery and lack of fueling and power-storage infrastructure for no carbon fuel machinery. Declining demand due to the divestments of major coal companies, and pressure on profitability due to the continued high cost of parts and equipment resulting from a lag in the adoption of no carbon fuel machinery.</p>
	<p><b>Opportunities</b> Demand will grow for railways, which emit less CO<sub>2</sub> per distance covered. There will be a shift to energy-saving railcars from conventional models, and the efficiency of railway services will be improved through digital utilization. Data usage will also boost demand for new mobility services.</p>	<p><b>Opportunities</b> Business opportunities will grow with rising demand for renewable energy—the key to a decarbonized future—and with the provision of grid solutions, digital service solutions, and energy platforms that can accommodate the diversification of energy suppliers.</p>	<p><b>Opportunities</b> Demand will grow for energy-saving and high-efficiency information systems that contribute to zero-emissions. There will also be increased demand for platforms to offer such environment-related financial services as investments and loans for decarbonization businesses and green bond issues.</p>	<p><b>Opportunities</b> Utilization of IoT, digitalization, and connected systems to develop innovative products and solutions that contribute to CO<sub>2</sub> emission reductions without relying on the energy-saving features of individual products.</p>	<p><b>Opportunities</b> Expanding market for electric, hydrogen, and biofuel vehicles to replace internal combustion engine vehicles.</p>	<p><b>Opportunities</b> Sales of electric machinery, a broader diversity of fuel types, and digital applications will increase as companies turn to new technologies and adapt to new site environments.</p>

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Target businesses	Railway systems	Power generation and power grids	IT systems	Industrial equipment	Automotive systems	Construction machinery
The business environment and major risks and opportunities under the 4°C scenario	<p><b>Business environment</b> Demand for electric-powered transport will gradually increase even without tighter energy regulations. Damage from typhoons, floods, and other natural disasters caused by climate change will rise sharply.</p>	<p><b>Business environment</b> The cost competitiveness of non-fossil energy will increase, and demand for renewable, nuclear, and other non-fossil energy will increase as the expansion of energy consumption pushes up the price of fossil fuels. Natural disasters caused by climate change will rise sharply.</p>	<p><b>Business environment</b> Demand for new, high-efficiency technology will expand as multiplex IT systems in response to natural disaster BCPs will result in increased energy consumption. Demand will also grow for social and public systems to reduce damage from natural disasters.</p>	<p><b>Business environment</b> Typhoons, floods, and other natural disasters caused by climate change will rise sharply.</p>	<p><b>Business environment</b> Fuel efficiency laws and regulations will remain lax globally, and internal combustion engine vehicles will remain a major mode of transport. The modal shift will be slow, as conventional automobiles and motorcycles will remain predominant. Typhoons, floods, and other natural disasters caused by climate change will rise sharply.</p>	<p><b>Business environment</b> Natural disasters caused by climate change will rise sharply, boosting demand for construction machinery to support speedy and safe disaster countermeasures.</p>
	<p><b>Risks</b> The high frequency of natural disasters will exacerbate damage to production facilities, worsen working environments, and disrupt supply chains leading to delays in deliveries and the procurement of parts.</p>	<p><b>Risks</b> The high frequency of natural disasters will increase damage to power generation and transmission/distribution facilities, hamper efforts to restore power transmission/distribution, and disrupt supply chains leading to delays in deliveries and the procurement of parts.</p>	<p><b>Risks</b> Natural disasters will exacerbate damage to production facilities, worsen working environments, and disrupt supply chains leading to delays in deliveries and the procurement of parts.</p>	<p><b>Risks</b> Natural disasters will exacerbate damage to production facilities, worsen working environments, and disrupt supply chains leading to delays in deliveries and the procurement of parts.</p>	<p><b>Risks</b> Natural disasters will exacerbate damage to production facilities and disrupt supply chains leading to delays in deliveries and the procurement of parts.</p>	<p><b>Risks</b> Major wind, snow, and flooding events will lead to factory damage and production setbacks due to highway closures and supply chain disruptions. More regular and extreme heat days will cause a deterioration in working environments and decrease productivity.</p>
Non-environmental market factors (neither the 1.5°C nor 4°C scenario)	<p><b>Opportunities</b> Transport systems more resilient to natural disasters can be developed. Competitiveness can be enhanced by providing added value in such forms as energy-saving railcars and adaptability to new technologies.</p>	<p><b>Opportunities</b> Energy demand will grow as warmer weather leads to increased use of air conditioning. Demand will increase for disaster-resilient power generation and transmission/distribution technologies.</p>	<p><b>Opportunities</b> Demand will increase for social and public systems that help reduce damage from natural disasters and for IT systems required as part of BCP.</p>	<p><b>Opportunities</b> Efforts to accommodate IoT products will lead to higher demand for remote control and remote maintenance during natural disasters.</p>	<p><b>Opportunities</b> Demand will grow for technologies to enhance the efficiency of internal combustion engines.</p>	<p><b>Opportunities</b> Demand of construction machinery that can assist natural disaster measures will grow.</p>
	<ul style="list-style-type: none"> <li>● Economic growth will lead to urbanization and population growth around the world which will drive the railway business globally as an efficient form of public transport for large numbers of passengers regardless of climate conditions. Market size in Japan will remain flat, but the Asian market overall will see substantial growth.</li> <li>● Long-distance transport will decline going forward as the global pandemic restricts travel and encourages remote work. Although the decline in demand will not be as severe as that for air transport.</li> <li>● Competition will grow as major railway manufacturers in various countries will expand their businesses to meet global demand.</li> </ul>	<ul style="list-style-type: none"> <li>● Economic growth, urbanization, and population growth will push up demand for energy, especially electricity, mainly in developing countries.</li> <li>● Energy supply and demand will diversify due to various factors, such as CO<sub>2</sub> emissions, the environmental burden, economic performance, safety, and supply stability.</li> <li>● Digital technology will be further applied to enhance the stability and efficiency of the power supply.</li> </ul>	<ul style="list-style-type: none"> <li>● Further digitization globally will exponentially increase the volume of data circulated, accumulated, and analyzed. Experience with the global pandemic will prompt a shift to remote, noncontact, and online formats, both in our life and work and will boost demand for digital solutions that facilitate such a shift.</li> <li>● New services and businesses utilizing big data, IoT, AI, and other digital technology will expand rapidly.</li> </ul>	<ul style="list-style-type: none"> <li>● Digitalization, infrastructure renewal, population decline, and worker shortages will expand the automation market in industrial countries.</li> <li>● As the global pandemic forces people to stay at or work from home, demand will grow for factory automation enabling a handful of workers to operate a factory.</li> <li>● The industrial market in emerging economies will grow due to a rise in production plants.</li> </ul>	<ul style="list-style-type: none"> <li>● Economic growth, urbanization, population growth, and infrastructure development like road construction will expand the global market for automobiles and motorcycles as a flexible and personal means of transport.</li> <li>● The global pandemic may temporarily dampen passenger vehicle sales due to restrictions on people's movements, but commercial vehicle sales appear to be rising as the need for the delivery of goods increases.</li> <li>● Businesses that offer greater safety, security, and comfort, such as those developing autonomous driving and advanced safety devices, will become increasingly important.</li> </ul>	<ul style="list-style-type: none"> <li>● Worker shortages will be addressed through further labor savings, automation, remote work, robotic solutions, and greater development of safety-related products and solutions.</li> <li>● There will be greater development of products, services, and solutions to meet the needs for developing smart infrastructure that can cope with accelerated urbanization and aging infrastructure.</li> <li>● Emerging economies with expanding markets represent both increased sale opportunities and intensifying competition with emerging manufacturers.</li> <li>● There is a need for stronger total supply chain management to accommodate shifting demand and for enhanced resilience of the business portfolio.</li> </ul>

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Target businesses	Railway systems	Power generation and power grids	IT systems	Industrial equipment	Automotive systems	Construction machinery
Response to future business risks (business opportunities)	<p><b>Response to business risks under 1.5°C or 4°C scenarios</b></p> <ul style="list-style-type: none"> <li>Continue to strengthen the railway business as global demand for railways will increase under either scenario.</li> <li>Specifically, develop and market more energy-saving railcars and battery-powered railcars for non-electrified sections. Strengthen railway services through digital utilization such as dynamic headway (flexible operations in response to passenger demand) and new mobility services like MaaS.</li> <li>Given the increasing frequency of natural disasters, take risk aversion into account when deciding the location and equipment layout of a new plant. Keep an eye on the supply chain in strengthening our ability to respond to business disruption risks in accordance with our BCPs.</li> </ul>	<p><b>Response to business risks under 1.5°C or 4°C scenarios</b></p> <ul style="list-style-type: none"> <li>Continue to enhance the response to relevant markets in view of expected higher demand for non-fossil energy under either scenario.</li> <li>Strengthen the provision of grid solutions, digital service solutions, and energy platforms that can accommodate the increased use of renewable energy and diversification of energy supply and demand management.</li> <li>Given the increasing frequency of natural disasters, develop technologies for disaster-resilient renewable energy systems and disruption-resistant power transmission/distribution systems. Take risk aversion into account when deciding the location and equipment layout of a new production plant. Keep an eye on the supply chain in strengthening our ability to respond to business disruption risks in accordance with our BCPs.</li> </ul>	<p><b>Response to business risks under 1.5°C or 4°C scenarios</b></p> <ul style="list-style-type: none"> <li>Continue to develop innovative digital technologies, nurture necessary human capital, and enhance digital service solutions that generate new value in view of the expected growth in demand for digital services and the subsequent market expansion under either scenario.</li> <li>Specifically, enhance competitiveness by providing energy-saving and high-efficiency IT solutions that contribute to the following: zero-emissions; platforms for expanded environment-related financial services for decarbonization businesses; social and public systems to prevent natural disasters, reduce damage, and enhance resilience; and IT systems for BCPs.</li> <li>Given the increasing frequency of natural disasters, strengthen our ability to respond to business disruption risks in accordance with our BCPs.</li> </ul>	<p><b>Response to business risks under 1.5°C or 4°C scenarios</b></p> <ul style="list-style-type: none"> <li>Under either scenario, continue developing energy-saving, high-efficiency products that use IoT technology. Focus particularly on connected products with communication features. Miniaturized, high-efficiency, low-loss products can also help reduce CO<sub>2</sub> emissions.</li> <li>Given the increasing frequency of natural disasters, take risk aversion into account when deciding the location and equipment layout of a new plant. Keep an eye on the supply chain in strengthening our ability to respond to business disruption risks in accordance with our BCPs.</li> </ul>	<p><b>Response to business risks under the 1.5°C scenario</b></p> <ul style="list-style-type: none"> <li>Promote R&amp;D of electrification technology and other alternative technologies to enhance the response to new markets such as electric vehicles.</li> </ul> <p><b>Response to business risks under the 4°C scenario</b></p> <ul style="list-style-type: none"> <li>Promote R&amp;D and product development in existing technologies, including internal combustion engines, to not only improve energy efficiency but also non-environmental issues like safety, security, and comfort.</li> <li>Given the increasing frequency of natural disasters, take risk aversion into account when deciding the location and equipment layout of a new plant. Keep an eye on the supply chain in strengthening our ability to respond to business disruption risks in accordance with our BCPs.</li> </ul>	<p><b>Response to business risks under the 1.5°C scenario</b></p> <ul style="list-style-type: none"> <li>Differentiate by expanding the development of decarbonized technologies such as those for electric and hydrogen vehicles. Create decarbonized products by ascertaining latent market needs and accelerating product development.</li> <li>Going forward, expand the machinery and parts service business for hard rock mining (iron ore, copper, nickel, etc.) in the Central Asian and South American markets.</li> <li>Provide various solutions for customers' frontline issues using the latest digital technology.</li> <li>Ensure the rapid provision of optimal solutions for the prevention, mitigation, and response to disasters as well as recovery and reconstruction.</li> <li>Build a global production and procurement system to prepare for disasters. Going forward, enhance BCP and improve the effectiveness of business continuity management (BCM) for the entire supply chain.</li> </ul>
	Financial information (sales volume of each target sector)	Impacts a part of the ¥547.7 billion railway systems business sales (Fiscal 2020)	Impacts a part of the ¥1,107.9 billion Energy Sector sales (Fiscal 2020)	Impacts a part of the ¥2,048.7 billion IT Sector sales (Fiscal 2020)	Impacts a part of the ¥376.4 billion Industry Sector's industrial products business sales (Fiscal 2020)	Impacts a part of the ¥987.5 billion automotive business (Hitachi Astemo) sales (Fiscal 2020)



**We believe that by paying close attention to market trends and developing our business flexibly and strategically, we have high climate resilience in the medium to long term under either the 1.5°C or 4°C scenario**

Note: The above scenario analyses are not future projections but attempts to examine our resilience to climate change. How the future unfolds may be quite different from any of these scenarios.

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## Risk Management

## Structure

The Hitachi Group evaluates and monitors climate-related risks for each business unit and Group company as part of a process of assessing risks and opportunities in accordance with the Environmental Action Plan that is updated every three years. The results are tabulated by the Sustainability Promotion Division of Hitachi, Ltd., and their importance is checked at Sustainability Promotion Meetings. Those risks and opportunities perceived as being particularly important for the Group as a whole are deliberated on by the Executive Sustainability Committee which is chaired by the executive chairman and the CEO of Hitachi, Ltd.

## Metrics and Targets

## Goals

Our environmental activities are managed through the Environmental Action Plan toward achieving the Environmental Vision and long-term environmental targets called Hitachi Environmental Innovation 2050. Its metrics and targets are updated every three years including those to measure and manage climate-related risks and opportunities.

We use the reduction rate of CO<sub>2</sub> emissions per unit compared to fiscal 2010 to set targets and monitor progress across our many Group products and services in the value chain. Under the current Environmental Action Plan for 2021 (covering fiscal 2019–2021 as well), we have established annual targets and monitor progress for each business unit and Group company.

Total greenhouse gas emissions (Scope 1, Scope 2, and Scope 3) across our value chain are calculated based on GHG Protocol standards, and we have published annual figures since fiscal 2012. Given the nature of our business, most of our CO<sub>2</sub> emissions come from the use of sold products in Scope 3.

However, CO<sub>2</sub> emissions can fluctuate greatly due to changes in sales volumes and our business portfolio. Therefore, to advance CO<sub>2</sub> reductions during the use of sold products and services, we set targets and monitor the progress of reducing CO<sub>2</sub> emissions per unit. In other words, for products and services featuring equivalent value, we focus on metrics that provide customers and society with those that emit less CO<sub>2</sub>. At the same time, we will make an effort to not only reduce per unit emissions, but also total CO<sub>2</sub> emissions from our business sites (factories and offices).

[The Environmental Vision and Hitachi Environmental Innovation](#)