Bridgestone Corporation - Climate Change 2021

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

The Bridgestone Group, headquartered in Tokyo, is the world's largest tire and rubber manufacturer. We manufacture and sell a variety of tires, including those for passenger cars, trucks and buses, construction and mining vehicles, aircraft, industrial machinery, agricultural machinery, and motorcycles. We also provide automotive parts, automotive maintenance and repair services, raw materials for tires and other products. In the diversified products business, we produce and sell chemical and industrial products. We also provide bicycle, golf, tennis, and other sporting goods that are more familiar to consumers. In addition, we have recently been going beyond simply selling tires and diversified products on a standalone basis to develop a solutions business. This business combines products, maintenance and other services, with IT and sensing technologies to provide solutions to the customers. These products and services are sold in over 150 nations and territories around the world.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2020	December 31 2020	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Argentina
Australia
Belgium
Brazil
Canada
China
Costa Rica
France
Hungary
India
Indonesia
Italy
Japan
Liberia
Malaysia
Mexico
Philippines
Poland
Russian Federation
South Africa
Spain
Taiwan, Greater China
Thailand
Turkey
United Kingdom of Great Britain and Northern Ireland
United States of America
Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

JPY

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Chief Executive Officer (CEO)	The Global CEO is a member of the board, and has the highest-level responsibility for climate-related issues. The Global CEO is responsible for deciding policies and measures or presenting to the board and overseeing company-wide management activities about management vision, mid-term strategies, and annual policies including climate-related issues. In 2020, the Board of Directors including the Global CEO discussed and approved a new Mid-Long Term Business Strategy that places sustainability at the core of Bridgestone management. In the process of developing the Mid-Term Business Plan based on the business strategy, a Sustainability Business Framework that links carbon neutral initiatives with the business model was also discussed and approved.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – some meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding business plans Setting performance objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues	<Not Applicable>	Bridgestone, in accordance with its Articles of Incorporation and applicable laws, stipulates in the Regulations of the Board of Directors that the Board of Directors is the highest decision-making body within the company. The restructuring of the Board's authority conducted in February 2018 enables the Board to focus more on deliberations concerning business strategy including: 1) Fundamental management policy the foundation of which includes: -Our global CSR commitment ("Our Way to Serve") -Sustainability Framework that explains how it will become a sustainable solutions company and Sustainability Business Model -The Environmental Mission Statement one of the important objectives of which is CO2 reduction 2) Mid-Long Term Business Strategy: This is the new growth strategy, where sustainability is embedded as a core business driver. The Group will create new value for society by addressing social issues and positively contributing to the achievement of the SDGs including Climate Change issues. By creating, balancing and expanding its social and customer value, the Group will further its competitive advantage. 3) Mid Term Business Plan: The Group's mid-term business plan for 2021-2023, based on the Mid-Long Term Business Strategy, sets out a Sustainability Business Framework to achieve carbon neutrality and a circular economy. This includes CO2 reduction targets in Milestone 2030 (Reduce our absolute CO2 emissions by 50% versus 2011 and contribute to reducing more than 5 times our emissions). To the Board, situation and progress of execution of the items above are reported quarterly. The progress and activities of mid-term strategy related to CSR and sustainability, including environment and climate change issues, are reported and discussed once a year by the Global Executive Committee (Global EXCO), Bridgestone highest-level execution committee. In 2020, (1) Progress of our CSR activities such as education and enhancement of Global CSR commitment "Our Way to Serve" – under one of the 3 priority areas: environment including CO2 reduction (2) It was reported and approved that the Group commits to reduce absolute CO2 emissions by 50% by 2030 (Baseline year: 2011), by updating the Mid-term target "Milestone 2030", clearly indicating toward carbon neutrality in the long-term environmental target for 2050.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

At Bridgestone, the CEO is the highest-level management position and has ultimate responsibility for management strategy and overall management including climate-related issues. And the highest-level committee associated with the Bridgestone Group global business execution is the Global Executive Committee (Global EXCO). Members of the Global EXCO are nominated from full-time corporate officers by the CEO/COO.

Reporting to the Global EXCO, Bridgestone has the Global Sustainability Committee (GSC) that is led by the Global COO and comprised of executive officers and professionals responsible for Sustainability and representatives of SBUs and functions.

Sustainability is led holistically and globally by the GSC with working groups of cross-functional, cross-regional leaders responsible for operationalizing the Bridgestone Group's sustainability framework. Under the GSC, Bridgestone has 7 working groups* which are related to the areas focused in our Global Sustainability Commitment; "*Our Way to Serve*". Each working group comprised of members from corresponding functions or related areas in each SBU and report to the GSC. Among the 7-working groups, the "Environment Working Group" and "Carbon Neutral Working Group" summarize and report results related to CO2 goals and management, and proposes strategies to the GSC, taking into account the latest social trends that might represent environmental risks/opportunities. The Group also established a Global Sustainability Function with members from each region to activate its sustainability journey to ensure the successful cultural, strategic and operational integration of "Our Way to Serve" Bridgestone's Global Sustainability Commitment.

According to deliverables from the working groups including that from the Environment Working Group as written above, the GSC prioritizes Sustainability initiatives in areas pertaining to a variety of global issues including climate change, formulates global strategies and tracks the progress of activities in each area. Then, the GSC reports to the Global EXCO and ask them for decision making on important issues. Under this structure, the Global EXCO receives quarterly reports from the GSC, on plans and progress in addressing climate-related issues, and the Global CEO makes decisions on key climate-related issues with Global EXCO members such as CO2 reduction targets.

As for risk management/assessment, the Bridgestone Group broadly divides risks into two categories: business strategic risks, which are related to management decision-making, and operational risks, which include climate change risks and are related to daily operations. The former is handled through business operations, while the latter is handled by the Chief Risk Officer (CRO), who has overall responsibility for managing risks and reports to the CEO.

*7 working groups under the GSC: "People", "Environment", "Compliance, Fair Competition", "BCP, Risk Management", "Human Rights, Labor Practices", "Procurement" and "Carbon Neutral"

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity inventivized	Comment
All employees	Monetary reward	Emissions reduction project	The Bridgestone Group Awards (BGA) are the highest global recognition for all employees that rewards efforts of organizations and individuals in five award categories: Achievement, Mobility, People, Environment and Management Fundamentals. One of award categories, Environment, recognizes efforts related to climate change, such as achieving a CO2 reduction target, reducing energy use, and improving efficiency or reducing waste. This award program also functions as a system to raise employees' awareness and encourage environmental activities, including financial rewards in some regional awards In 2020, two activities were awarded under the BGA Environment category: Development of New Technology for Sustainable Use of Rare Resources and a new technology for effective odour control. The former one contributes to CO2 reduction by working to improve tire life.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?
Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	5	
Medium-term	5	10	
Long-term	10	40	

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

From a strategic point of view, Bridgestone defines Risk as “events (incidents, accidents, natural disasters, problems, etc.) that may cause losses to the organization, employees, products and services, financial conditions, brands, customers, shareholders, business partners, and neighbouring residents, etc.” in the Risk Management Basic Manual, and Climate Change is also included as a factor that causes these events. When the Strategic Business Unit (SBU) extracts risks, it evaluates the events related to natural disasters, disaster prevention, procurement, and occupational health and safety that are judged to be climate change factors as climate change risks. The degree of risk impact is assessed quantitatively according to the Risk Assessment Criteria from 5 viewpoints: Amount of damage, Human life, Operational impact, Environmental and Social trust. Then, it is comprehensively classified into five levels: Extensive impact, Substantial impact, Major impact, Moderate impact and Minor impact based on the impact level of each viewpoint. Among them, Extensive impact, Substantial impact, Major impact are defined as substantive financial impact, which are equivalent or more than one week impact on operational impacts or a major damage amount (assessed and judged around the order of USD 100 million).

And also, from a financial perspective, the threshold for the judgement is whether the risk is anticipated to cause more financial loss than a standardized amount.

The process for risk identification and assessment mentioned above is also applied to the risks other than environment related ones including climate change, so various risks which we may face can be assessed in comparable manner.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
1. Risk Assessment Structure in the Bridgestone Group The Bridgestone Group broadly divides risks into two categories: business strategic risk directly related to realization of the Mid-Long Term Business Strategy, and operational risks related to daily operations. Through the dual promotion of the Group's global unified activities and autonomous risk management activities by branches, important risks common to the Group (Corporate risk, managing process of which is reported to the CRO once every half a year) and risks of each site and Group company (Asset risk, countermeasures and yearly self-assessment of which are considered and conducted by each facility) are identified. 2. The process for assessing the potential size and scope of identified risks In the Bridgestone group, both corporate officers and manufacturing facilities conduct risk identification at least per year, utilizing globally common direction. The risk categories identified and addressed include ESG risks, including but not limited to occupational safety, environmental protection including climate change, sustainable operations and suppliers and ethics and compliance. Then, they evaluate risks, utilizing globally unified criteria which consists of viewpoints of their impact and possibility of occurrence. The Group standardized the degree of impacts of risks by impact-type such as human life/health, financial loss, operational impact (period of suspension of sales and plant operation or time necessary for response), social trust and so on, regardless of the possible timing of occurrence. The criteria to determine rank differs by the impact type. As for environment related risks including climate change and CO2 emission etc., the Group considers the possible impact is substantive when it falls under one of the following criteria: “Strong feeling of discomfort extending to areas surrounding the office/plant, accompanied by health damage in some cases, or health damage caused externally over a wide area”, “Excess limit of financial amount (determined by company)”, “Over two weeks’ impact on division (period of suspension of sales and plant operation or time necessary for response)”, or “Trust damaged in terms of the company’s reputation (falsified reports, organizational scandal)” . In identifying risks, those that are currently affected or that may occur within the next five years are considered to be short-term, and those that may occur thereafter are considered to be medium-long term. 3. Case Study Using the process described above, Bridgestone identified disruption of supplies of raw material due to extreme weather events such as river flood as a risk in the sustainable operations and suppliers category, and classified it as one of the major business strategic risks that could lead to suspension of continuous shutdowns with the extensive impact based on the risk assessment criteria. Especially, productivity of natural rubber which is the main raw material in tires could decrease by droughts in South East Asia as a primary growing area of Para rubber trees. So far, its probability of occurrence is not very high in the short term, but on the other hand, Bridgestone uses large quantities of natural rubber in tires and other rubber products. In addition, the Group sources most of its natural rubber from Southeast Asia and owns two rubber farms in Indonesia. Therefore, shortage and cost increase of natural rubber due to extreme weather could adversely affect the Companies’ operating results and financial position substantially so, the Group classifies it into Corporate Risk in medium term. As part of the risk mitigation measures, the Group is working to improve rubber productivity at suppliers' farms. Bridgestone provides Hevea rubber tree seedlings to smallholder farmers and conducts technical training in key producing countries using the same productivity-improvement techniques the Group developed for our own rubber farms at the Agricultural training center in North Sumatra. To stablize the supply of natural rubber and the protection of rubber trees,

Bridgestone established a breakthrough simple disease diagnostic technology for easily, quickly, and accurately diagnosing white root disease affecting Hevea brasiliensis, traditionally a major source of natural rubber. This early detection of white root disease is expected to prevent the spread of infection from afflicted trees to healthy ones. Through these efforts, we are augmenting output and decreasing the risk of short supply. Bridgestone has identified risks related to demand trends in the automotive industry and tire market as a business strategic risk directly related to realization of the Mid-Long Term Business Strategy. On the other hand, for Bridgestone, the demand shift due to growing needs for low fuel consumption performance is regarded as one of major opportunities. Bridgestone provides products and services that can contribute to reducing CO2 emissions, such as fuel-efficient tires. So, changes on climate-related requirements and regulations in the market may impact our sales. For example, against the growing expectations for fuel-efficient tires, if we provide tires with timely development or satisfactory performance, we may rise in competitiveness and grow in market share. Demand for fuel-efficient tires is already rising, and the impact is expected to be significant for Bridgestone, whose tire sales accounts for more than 80% of total sales. Therefore, the Group classifies response failure to market demand shifts as Corporate Risk in the short term, and at the same time, we also see it as an opportunity to increase competitiveness by responding. The Group's fuel-efficient tires, represented by ECOPIA, contribute to greater vehicle fuel efficiency and meet a variety of customer needs, including superior levels of low-rolling resistance, lighter weights and other performance metrics. The Group achieved a 24% reduction (from a 2005 baseline) in tire rolling resistance, equal to a contribution of approximately 12.0 million tonnes CO2 reduction, in 2020.

Value chain stage(s) covered
Direct operations

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
Annually

Time horizon(s) covered
Long-term

Description of process
1. Risk Assessment Structure in the Bridgestone Group The Bridgestone Group broadly divides risks into two categories: business strategic risks, which are related to management decision-making, and operational risks, which include climate change risks and are related to daily operations. The former is handled through business operations, while the latter is handled by the Chief Risk Officer (CRO), who has overall responsibility for managing risks and reports to Global CEO. The Group promotes risk assessment as a part of comprehensive activities to appropriately manage risks common to the operations, with consideration for the scale and characteristics of each site and Group company and without limitation of time period (Six years or more). Through the dual promotion of the Group's global unified activities and autonomous risk management activities by branches, important risks common to the Group (Corporate risk, managing process of which is reported to the CRO once every half a year) and risks of each site and Group company (Asset risk, countermeasures and yearly self assessment of which are considered and conducted by each facility) are identified. 2. The process for assessing the potential size and scope of identified risks In the Bridgestone group, both corporate and facilities conduct risk identification at least once a year, utilizing globally common direction. Then, they evaluate risks, utilizing globally unified criteria which consists of viewpoints of their impact and possibility of occurrence. The Group standardized the degree of impacts of risks by impact-type such as human life/health, financial loss, operational impact (period of suspension of sales and plant operation or time necessary for response), social trust and so on, regardless the possible timing of occurrence. The criteria to determine rank differ by the impact-type. But as for environment related risks including climate change and CO2 emission etc., the Group consider its possible impact is substantive when it falls under one of the following criteria: "Strong feeling of discomfort extending to areas surrounding the office/plant, accompanied by health damage in some cases, or health damage caused externally over a wide area", "Excess limit of financial amount (determined by company)", "Over two weeks' impact on division (period of suspension of sales and plant operation or time necessary for response)", or "Trust damaged in terms of the company's constitution (falsified reports, organizational scandal)". On the other hand, we also estimate possibility of occurrence and classify them into 4 ranks based on the likelihood. 3. How climate-related risks are identified and assessed at a company/asset level As the result of the evaluation based on impact and possibility of occurrence, the risks "with a high possibility of occurring and major impact" and "with a significant impact of it should occur, although its possibility is low" are considered "Significant risk" and classified into "Corporate risk". And others are into "Asset Risk". 4. Case Study < Transition risk> Through the process written above, for Bridgestone, increasing production cost due to tightening of regulations on CO2 emissions and increased introduction of carbon tax, is considered a major risks. Considering the fact that carbon tax has been introduced in many countries where Bridgestone has locations, including the EU, South Africa and Canada in recent years, its probability of occurrence is very high. On the other hand, since the introduction of carbon tax varies from country to country, its impact is considered to be gradual in the mid-long term. For Bridgestone, which has facilities in over 20 countries, increases in production costs due to laws and regulations or carbon taxes may result in restrictions on the use of existing equipment and production suspension, which could adversely affect the Companies' operating results and financial position. As the risk mitigation strategy the Group is promoting activities to minimize CO2 emissions, such as maximizing energy efficiency, increasing use of renewable energy, and promoting manufacturing and engineering innovation, etc. As a concrete example of maximizing energy efficiency, Bridgestone has conducted Group-wide energy surveys to identify energy loss since 2009. We are continuously developing the ability of our personnel to recognize and implement energy-saving opportunities, and our proficient staff is able to earn distinctions by becoming energy diagnosis technicians. Energy diagnosis technicians have already been assigned to every tire plant in Japan, and we will continue to increase technician numbers throughout Asia, the Americas and Europe. In addition, the internal guidelines stipulate that a comprehensive evaluation for the realization of a sustainable society including CO2 reduction should be made when making investment decisions. When introducing large-scale equipment, we will also consider CO2 emission costs.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Recently, various regulations have been introduced for the purpose of curbing climate change. With respect to tires also, maximum limits on rolling resistance and the labelling system have been introduced. Following such new regulations, operational cost such as to develop low rolling resistance tires, to measure rolling resistance coefficient value and to print labels has been increased. There is a possibility of further increase of operational cost in case such regulations become stricter and/or expand globally. For example, Europe (EU member states), South Korea, Brazil and the Middle East (GCC, Israel) have already introduced the maximum limit and labelling systems for rolling resistance. Studies of introducing regulations are underway in the United States, India and China, and there is a possibility of further expansion in the future. Bridgestone's tire sales accounts for more than 80% of total sales, and since we sell a wide range of tires in over 150 countries, such as for passenger cars, truck and bus, and light truck, in each country that has introduced or is considering the labelling system and promoting development of low rolling resistance tires as represented by ECOPIA which superior level of fuel efficiency and other performance. Therefore, its impact is significant. The global Environment Working Group is monitoring social trends including current regulations and Bridgestone encourages the development and launch of low rolling resistance tires to contribute to CO2 emissions reduction activities.
Emerging regulation	Relevant, always included	There are discussions about introducing carbon pricing in many countries, and since Bridgestone has facilities in over 20 countries, there is a possibility of increasing operational cost. For example, the current carbon tax rate in Japan is 289 yen/tCO2e, if the carbon tax rises by 1 yen, the impact will be 740,000 yen. If the carbon tax increases gradually in the future, it is considered that the impact will be large. The global Environment Working Group is monitoring social trends including emerging regulations such as carbon tax, etc. and Bridgestone continues to encourage activities to reduce CO2 emissions.
Technology	Relevant, always included	There is a possibility of sales decrease in the case of becoming less competitive because of delay of low carbon technology development enhancing energy efficiency of products/manufacturing. We estimate that the potential financial impact is 24.27 billion yen per 1% decreasing of annual sales. It will be a significant impact for Bridgestone, whose tire sales account for more than 80% of total sales. By introducing such energy- efficient technologies, Bridgestone encourages providing products and services that can contribute to reduce CO2 emissions, such as fuel-efficient tires.
Legal	Relevant, always included	Bridgestone is subject to relevant laws and regulations in each country in which it conducts business. In case of providing accurate information with climate change-related data in administrative reports and product labelling, there is a risk of investigation by authorities and litigation. For example, there may be cases in which an incorrect explanation of energy efficiency is displayed in the tire labelling, or CO2 emissions from production sites are reported incorrectly. Incorrect tire fuel consumption information will also affect the fuel consumption information of the vehicle, which will prevent measures against climate change by vehicles with a large impact on CO2 emissions. As it affects not only the company's laws and regulations, but also car manufacturers and their purchasers, it is considered to be a major risk. In the future, mistaking compliance with new laws and regulations may have negative impacts such as business activity restrictions and increased costs for litigation.
Market	Relevant, always included	Bridgestone encourages providing products and services which can contribute to reducing CO2 emissions, such as fuel-efficient tires. However, changes on climate-related requirements in the market may impact our sales. For instance, expectations for fuel efficient tires and retread tires are increasing in our markets. However, there is a possibility of losing competitiveness and drop in market share in case of delaying the development and providing tires which can not improve customer satisfactions related to CO2 reductions. We estimate that the potential financial impact is 24.27 billion yen per 1% decreasing of annual sales. It will be a significant impact for Bridgestone, whose tire sales accounts for more than 80% of total sales. In addition, in case that global temperature becomes significantly higher and snowfall becomes lower, demand for winter tires might be lower. The global Environment Working Group is monitoring social trends including market requirements from customers such as automakers.
Reputation	Relevant, always included	With the increasing demand for climate change response in the automotive industry, disclosure of environmental data is also becoming more important. Bridgestone encourages ESG disclosure, and disclose environmental data including energy and CO2 emission data in various media such as the Annual Report, Sustainability Report and website. But in the event of a crisis that damages social credibility by providing inaccurate information related to climate change, there are possibilities to lose trust from customers and stock price. It may cause a decline and adversely affect business performance and financial condition. It could negatively impact Bridgestone's business performance and financial position, and at the same time impair investors' chances of making appropriate decisions on climate change initiatives. To enhance the transparency and reliability of disclosure, Bridgestone conducts third-party verification and reviews of most of the data contained in sustainability reports such as CO2 emissions. The global Environment Working Group also monitors ratings of Bridgestone by externals. The global Environment Working Group also monitors social trends including reputations of advanced companies on ESG as benchmark and criticisms for companies with ESG related misdoings to avoid potential negative reputational impacts.
Acute physical	Relevant, always included	Bridgestone's main business is tires whose raw materials consist of natural rubber. Currently, natural rubber is almost entirely made from the sap (latex) of para rubber tree. 90% of the growing area of para rubber tree is in Southeast Asia and owing to droughts in the tropical rainforests of Southeast Asia caused by El Nino, the deciduous period for para rubber tree becomes longer and the period during which sap can be obtained becomes shorter, thereby leading to a decrease in yield. As a result, the balance of supply and demand is expected to be upset and the price of natural rubber, which plays a vital role as a raw material of tires, is expected to surge. If the price of natural rubber rises and it becomes difficult to procure such rubber, the cost of tire production will increase. This in turn is expected to result in lower profit or a decrease in share due to higher tire prices. In addition, severe weather such as floods and hurricanes could affect operations at manufacturing facilities and/or distribution channels. The global Environment Working Group is monitoring social trends including yearly climate change status in all regions.
Chronic physical	Relevant, always included	Bridgestone's main business is tires whose raw materials consist of natural rubber. Currently, natural rubber is almost entirely made from the sap (latex) of para rubber tree. 90% of the growing area of para rubber tree is in Southeast Asia. There is a risk of rubber supply shortage as climate pattern changes in regions where para rubber tree grows and rubber production efficiency worsen. It can lead to lower profit because of a higher rubber procurement cost. For example, in 2017, rubber prices rose about 15% when rubber yields temporarily declined 10% in Thailand. If the yield of rubber decreases chronically due to climate change and the price of rubber continues to rise, the cost of manufacturing tires will increase. This in turn is expected to result in lower profit or a decrease in share due to higher tire prices. The global Environment Working Group is monitoring social trends including publications about long-term estimations related to climate-change.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Introducing carbon pricing in various countries would cause increase of operational cost since Bridgestone has facilities in over 20 countries. For example, in October 2012,

the Tax for Climate Change Mitigation was introduced in Japan. In response to such introduction, the Bridgestone Group is paying more taxes directly according to the use of fuel and indirectly according to the use of electricity. Specifically, by using a CO2 emissions factor of each fossil fuel, the tax rate per unit quantity (kilo litter or tonne) is set so that each tax burden is equal to 289 yen per tonne of CO2 emissions. For Bridgestone, it is an important climate risk to consider because approx. 30% (47 facilities as of 2020) of our manufacturing facilities are located in Japan and CO2 emission of these facilities accounts for approx. 23.4% of our Scope1 & Scope 2.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
740000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Financial impact is estimated to 289 yen/tCO2 based on the current carbon tax rate. Although it depends on the degree of increase the tax rate, the figure shown in the “Potential financial impact 740,000 yen” is a calculation of 1 yen increase case. In the breakdown of CO2 emissions (Scope1, 2) in 2020, Japan's emissions were 740,167 tonnes. (740000 tCO2 * 1 yen/tCO2 = 740000 yen) This is the financial impact in Japan, and further impact is expected if the carbon pricing is introduced in various countries where we operate.

Cost of response to risk
5181000000

Description of response and explanation of cost calculation
To mitigate this risk, Bridgestone has two approaches to reduce the impact of future carbon taxes by reducing CO2 emissions. One is to include the evaluation from the viewpoint of CO2 emission cost in the equipment introduction study. The internal guidelines stipulate that a comprehensive evaluation including the realization of a sustainable society such as CO2 reduction should be made when making investment decisions. The carbon price of CO2 emission cost is set accordingly considering business characteristics and regional situations of each business unit, however the common default value for reference is updated once a year. Based on this information, each business unit will install equipment while considering reducing the future impact of carbon prices. The other is to improve energy efficiency with existing equipment. To maximize energy efficiency, we are promoting conversion to energy that produces little CO2 emissions and also reducing energy use itself. Energy saving initiatives at production sites are one of our primary activities. We have been implementing CO2 reduction measures such as the introduction of high efficiency equipment, installing steam turbine generators, converting to fuel emitting less CO2 and so on. In 2020, as an example, we implemented 264 projects, including the installation of exhaust heat recovery equipment, upgrading to energy-saving hydraulic units, and switching to LED lighting. As a result, about 8,000 tons of CO2 has been reduced in the completed projects. Investments mainly for enhancing energy saving through improvements of equipment, including upgrading equipment to high efficiency equipment and converting them to inverter, at Bridgestone plants amounted to 5,181 million yen in 2020. In the calculation, those that contribute to energy saving (efficiency improvement of buildings such as heat insulation, repair, air conditioning, lighting / efficiency improvement of processes such as heat recovery, fuel conversion, equipment replacements) were extracted from the list of capital investment in 2020 at the production facilities, and the investment amount was totalled.

Comment
As example of other activities, we are promoting energy saving initiatives at Bridgestone offices. We have reduced the number of units of equipment by promoting scrapping and integration through the visualization of the layout and utilization rate of office equipment such as printers and multifunction office equipment. We also have long succeeded in reducing power consumption by resetting illuminance by thorough measurement of lighting illuminance of business offices. We have introduced an “electric power visualization” system at the business office of our technology center in Japan which is used to visualize the status of power consumption and verify the effects of reduction measures and to set reduction targets.

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Upstream

Risk type & Primary climate-related risk driver

Chronic physical	Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact
Increased direct costs

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Bridgestone’s main business is tires whose raw materials consist of natural rubber. Currently, natural rubber is almost entirely made from the sap (latex) of the Hevea rubber tree. 90% of the the Hevea rubber supply is grown in Southeast Asia. Due to droughts in the tropical rainforests caused by El Nino, the deciduous period for para rubber tree becomes longer and the period during which sap can be obtained becomes shorter, thereby leading to a decrease in yield. As a result, the balance of supply and demand is expected to be upset and the price of natural rubber, which plays a vital role as a raw material of tires, is expected to surge. If the price of natural rubber rises and it becomes difficult to procure such rubber, the cost of tire production will increase. This in turn is expected to result in lower profit or a decrease in share due to higher tire prices. Bridgestone sources most of its natural rubber from Southeast Asia and owns two rubber farms in Indonesia. Therefore, we are aware that this risk has a significant impact.

Time horizon
Medium-term

Likelihood

Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
4147000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Financial impact is estimated to 1 yen/kg based on our total amount of raw materials used for production. Although it depends on the degree of increase the raw material prices, the figure shown in the “Potential financial impact 4,147,000,000 yen” is a calculation when the price of all raw materials increases by 1 yen/kg based on our latest data. Our total amount of raw materials used for production, including natural and synthetic rubber, is 4,147 thousand tonnes in 2020. (4,147,000 tonnes * 1 yen/kg = 4,147,000,000 yen)

Cost of response to risk
95200000000

Description of response and explanation of cost calculation
Bridgestone is reducing the above risks through two approaches: improving the rubber productivity and diversifying natural rubber supply sources. To improve productivity, Bridgestone provides rubber tree seedlings to smallholder farmers and conducts technical training with the same productivity-improvement techniques the Group developed for its own rubber farms. In 2020, P.T. Bridgestone Kalimantan Plantation provided tapping training to local neighbours in Indonesia. Also, for the protection of rubber trees, Bridgestone has been taking measures against common diseases that affect the plants. In Southeast Asia, white root rot disease (WRD) is one of the major factors affecting the productivity of natural rubber. Detection accuracy of this disease is low and damage is likely to spread. To respond to this issue, Bridgestone promoted development of technologies that accurately diagnosis the disease. In 2020, we developed a diagnostic technology that can successfully identify diseased trees across vast farm areas quickly and with about 90% accuracy, regardless of type or age. The drone-based technology merges aerial photography and artificial intelligence (AI) image analysis for disease detection. This technology makes it possible to diagnose and treat trees with WRD at early stages and thereby contributes to improved productivity at rubber farms. Through these efforts, we are augmenting output and preparing for the risk of being unable to procure. To diversify natural rubber supply sources, we are researching alternative plants other than Hevea brasiliensis. Bridgestone is promoting various research projects utilizing partnerships aimed at practical applications for guayule, a shrub that can be cultivated on land native to the arid region spanning the south-western United States to northern Mexico. Aiming for commercial applications over the next decade, we will continue to improve guayule productivity through sustainable methods, establish new production processes, improve logistics, and promote other initiatives. The research and development expenses of the Global Group, including above measures like establishing disease diagnostic technology and conducting research on genome decoding aimed at breed improvement totalled 95.2 billion yen per year in 2020. We see this as a risk management cost and this data can be referenced in Financial Data on Global website as R&D Expenses.

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Downstream

Risk type & Primary climate-related risk driver

Technology	Unsuccessful investment in new technologies

Primary potential financial impact
Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Recently, various regulations have been introduced to curb climate change. With respect to tires, maximum limits on rolling resistance and the labelling system have been introduced. Although tires do not emit GHG when they are used, passenger cars and trucks emit a large volume of GHG. Improving fuel consumption, would be a countermeasure against such emissions. The impact of resistance by tire is said to be about 10-20% for passenger cars and about 20-30% for trucks, though this depends on driving conditions. Resistance by tire mentioned here is referred to as “rolling resistance” which is resistance when a tire rolls. In other words, the same vehicle will have better fuel consumption if the tire rolling resistance is low. As such, each country is adopting the following systems as a measure to lower rolling resistance.1. Set a maximum value for rolling resistance and prohibit sale if this maximum value is exceeded. (Maximum limit) 2. Grade rolling resistance according to 5-7 levels and carry out labelling. For example, Europe (EU member states), South Korea, Brazil and the Middle East (GCC, Israel) have already introduced the maximum limit and labelling systems. Further studies are underway in the United States, India and Thailand, and there is a possibility of further expansion in the future. In addition, Japan has introduced the labelling system as a voluntary industry standard and China is also considering introducing it. Sales in the regional segments including countries where labeling systems are under consideration account for more than 70% of total sales, and failure to respond could result in a decline in sales, so the impact would be significant. Bridgestone considers that these systems could be are a risk to decrease sales units if investment in new technology for better rolling resistance in align with other performances including price is unsuccessful. Therefore, we are developing products with better rolling resistance to prevent reduction of sales volume.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
24270000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The global tire market is valued at approximately 167 billion US dollars in 2019 (Reference: Tire Business – Global Tire Company Rankings) and is expected to grow two to three-fold by 2050. Although it depends on the degree of decrease in actual sales, “Potential financial impact 24,270,000,000 yen” shows the values per 1% decrease in sales based on our latest data. Our tire sales in 2020 was about 24.27 billion yen. (2,427,000,000,000 yen * 0.01 = 24,270,000,000 yen)

Cost of response to risk
95200000000

Description of response and explanation of cost calculation
The most important factor to prevent this risk is the development of technology for reducing tire-rolling resistance. To this end, we are developing technology for tires in overall focusing on the molecular structure of raw materials, weight reduction, internal structure of tires, and tire groove configuration, among other things. As example, Bridgestone launched “ENLITEN” in 2019, an innovative lightweight tire technology that balances increasing considerations for the environment with performance demands. ENLITEN technology makes it possible to reduce the weight of tires by approximately 20% and rolling resistance by approximately 30%* compared to conventional passenger car tires. It achieves these benefits by reducing the number of components used in tires, while maintaining driving performance and tire life. This makes it possible to reduce CO2 emissions caused by tires by about 30% when driving gasoline-powered vehicles. In 2020, ENLITEN was adopted as the tire to be installed on new vehicles by multiple OEMs in recognition of its environmental performance, and is expanding further. We invest in development aiming to reduce rolling resistance every year. The entire research and development expenses of the Global Group, including technology development for reducing tire-rolling resistance totalled 95.2 billion yen per year in 2020. This data can be referenced in Financial Data on Global website as R&D Expenses. In addition, retreading tires, the replacement of the worn tread, can contribute to improving resource productivity and reducing CO2 emissions. Based on the premise that Bridgestone tires are used three times by customers, comparing the use of three new tires with the use of one new fuel-efficient tire retreaded twice, the amount of raw materials used and CO2 emissions during the entire life cycle, excluding the use phase, can be reduced by about half. The Group is developing and deploying retreading solutions that include multiple retreads using our unique technologies. * Comparison with tire size 225/40R18

Comment

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Downstream

Risk type & Primary climate-related risk driver

Reputation	Increased stakeholder concern or negative stakeholder feedback

Primary potential financial impact
Decreased access to capital

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
Disclosure of GHG related information is increasingly being required around the world. If Bridgestone stocks are deemed to be outside the scope of ESG investment by financial institutions due to our failure to disclose information or negative campaigns are conducted by NGOs, there is a risk that this would lead to a decline in the stock price. In 2020, the number of letters and inquiries about climate change, especially from investors, increased by 80% from the previous year. Thus, it is expected that requests for disclosure of climate change information to the Company will increase further in the future, and the reputational risk is high. We should be managed properly by the measures as written below.

Time horizon
Short-term

Likelihood
About as likely as not

Magnitude of impact
Medium-low

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
714000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Financial impact is estimated to 1 yen/share based on our stock price. Although it depends on the degree of decrease actually stock price, the figure shown in the “Potential financial impact 714,000,000 yen” is a calculation of 1 yen decline case. Number of shares issued was about 713,698,000 share in the end of 2020. (714,000,000 share * 1 yen = 714,000,000 yen) It brings more difficult access to capital.

Cost of response to risk
28100000

Description of response and explanation of cost calculation

Expectations for climate change disclosure to our company are high, and we believe that appropriate disclosure can enhance our brand value. To this end, we believe it is necessary to properly understand not only GHG emissions but also the information required by stakeholders, such as governance and strategies for addressing climate change, and to disclose reliable information in a timely manner through the appropriate channels. To respond to the needs of stakeholders, we are following the framework of the TCFD recommendations in our information disclosure on our corporate website. To ensure transparency and reliability of the data, we also obtained a third-party verification of our 2020 calculation results through an external organization. We have received third-party assurance for key environmental data since 2015, and our 160 production sites' CO2 emissions Scope 1, 2 and our Scope 3 emissions have been verified on an ongoing basis as reported in C10. In addition, we use our corporate website and Global Sustainability Report to make it possible for all stakeholders to access information of our various activities. As the result of such effort by 2020, we were ranked A on CDP Climate Change, DJSI Asia Pacific, FTSE4Good Index Series, and STOXX GLOBAL ESG LEADERS INDEX etc. as of Feb.2021. We spent approx. 28.1 million yen in 2020 in total for implementing the measures above including obtaining a third-party verification of our 2020 GHG calculation results and issuing a Sustainability Report.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Recently, various regulations have been introduced with the purpose of curbing climate change. With respect to tires, maximum limits on rolling resistance and the labelling system have been introduced. “Rolling resistance” is resistance arising when a tire rolls, and the same vehicle will have better fuel consumption if the tire rolling resistance is low. Therefore, each country is adopting the following systems as a measure to lower rolling resistance. 1. Set a maximum value for rolling resistance and prohibit sale if this maximum value is exceeded. (Maximum limit) 2. Grade rolling resistance according to 5-7 levels and carry out labelling. For example, several regions and countries such as Europe (EU member states), South Korea, Brazil and the Middle East (GCC, Israel) have already introduced the maximum limit and labelling systems, and Japan has introduced only the labelling system as a voluntary industry standard. Bridgestone’s tire sales accounts for more than 80% of total sales, and since we sell a wide range of tires in over 150 countries, such as for passenger cars, truck and bus, and light truck, in each country that has introduced or is considering the labelling system and promoting development of low rolling resistance tires as represented by ECOPIA which superior level of fuel efficiency and other performance. Therefore, its impact is significant. Bridgestone considers the introduction of these systems could be comparatively large opportunity to fairly disclose and appeal to consumers the maximum limit and grading of rolling resistance of our products. Bridgestone’s fuel-efficient tires, represented by ECOPIA, contribute to greater vehicle fuel efficiency and meet a variety of customer needs, including superior levels of low-rolling resistance, lighter weights and other performance metrics. The Group achieved a 24% reduction (from a 2005 baseline) in tire rolling resistance, equal to a contribution of approximately 12.0 million tonnes CO2 reduction, in 2020. Bridgestone believes that it can respond to the labelling system through the development of such fuel-efficient tires and appeal to the demand for fuel-efficient tires.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
24270000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The global tire market is valued at approximately 167 billion US dollars in 2019 (Reference: Tire Business – Global Tire Company Rankings) and is expected to grow two to three-fold by 2050. Financial impact is estimated to 1% based on our tire sales. Although it depends on the degree of increase actually sales, the figure shown in the “Potential financial impact 24,270,000,000 yen” is a calculation when the sales of tire business increases 1%. Our sales of tire business in 2020 was about 2,427 billion yen. (2,427,000,000,000 yen * 0.01 = 24,270,000,000 yen)

Cost to realize opportunity
95200000000

Strategy to realize opportunity and explanation of cost calculation
The most important factor in taking advantage of such systems is the development of technology to reduce tire-rolling resistance. In the Mid Term Business Plan, the Bridgestone Group is challenging to realize a sustainable business framework, which ties in efforts for resource circulation, CO2 emission reduction and achieving carbon neutrality with our business model. In this strategy, it is important to reinforce “Dan-totsu” (the absolute and clear leaders) products, so we are developing technology for tires, focusing on the overall molecular structure of raw materials, weight reduction, internal structure of tires, and tire groove configuration, among other things. At the same time, we are implementing the sales strategy of focusing on expanding sales of “ECOPIA” tires with substantially lower rolling resistance as a global brand. We have successfully been increasing sales of “ECOPIA” brand products and will foster this brand continuously. Additionally, we developed the “Large and Narrow concept tire” employing “ologic” technology as a new tire environmental technology. Tires with this new technology are able to realize levels of fuel efficiency that greatly exceed those of the fuel-efficient tires already on the market, and as a result, this is expected to reduce CO2. ECOPIA with ologic technology further improves fuel efficiency and has been adopted for use in BMW's evolutionary i3 electric vehicle. In addition , Bridgestone launched “ENLITEN” in 2019, an innovative lightweight tire technology. ENLITEN technology makes it possible to reduce the weight of tires by approximately 20% and rolling resistance by approximately 30%* compared to conventional passenger car tires. This makes it possible to reduce CO2 emissions caused by tires by about 30% when driving gasoline-powered vehicles. In 2020, ENLITEN was selected as the tire to be installed on new vehicles. We will continue to develop these next-generation fuel-efficient tire technologies and expand sales of fuel-efficient tires. In order to promote the development of such low rolling resistance tires, we have set a goal of reducing rolling resistance, and have achieved a 24% reduction (equivalent to 12.0 million t-CO2) in 2020 compared to 2005. The entire research and development expenses of the Global Group, including technology development for reducing tire-rolling resistance totalled 95.2 billion yen per year in 2020. * Comparison with tire size 225/40R18

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Upstream

Opportunity type
Resilience

Primary climate-related opportunity driver
Resource substitutes/diversification

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Currently, natural rubber, the main raw material of tires, is almost entirely produced from the sap of para rubber trees. 90% of growing areas of para rubber trees are in Southeast Asia and its price often fluctuates due to issues such as demand change, climate change and speculation etc. Therefore, finding a substitute for the raw material source will be one key factor to enhance competitiveness and resilience of Bridgestone’s business. The Bridgestone Group proactively conducts research and production of natural rubber resources consisting of Guayule cultivated in arid climates as substitutes for para rubber trees. Additionally, we have successfully developed a rubber material with a "double network" structure in collaboration with 12 research organizations. It combines hard, energy-absorbing properties with soft, supple properties. While maintaining the fuel efficiency of conventional fuel-efficient rubber (made with standard rubber), the new material is about five times stronger, making it possible to produce thinner and lighter tires. We expect this new technology would contribute to reducing natural rubber usage amount. Through these activities, we can use this opportunity to differentiate ourselves in terms of diversity of raw material source and cost competitiveness and supply of tires.

Time horizon
Medium-term

Likelihood
Likely

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
166000000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
Financial impact is estimated to 1% based on tire sales per market share. Although it depends on the degree of expansion of actually market share, the figure shown in the “Potential financial impact 166,000,000,000 yen” is a calculation when the market share increases 1%. Our tire sales in 2020 was about 2,427 billion yen and the latest our tire share is 14.6% . (2,427 billion / 0.146 * 1%= 166 billion)

Cost to realize opportunity
95200000000

Strategy to realize opportunity and explanation of cost calculation
The Bridgestone Group is diversifying the regions where it produces natural rubber while also expanding the range of renewable resources of reinforced plant fibers it uses for securing raw materials. We are developing technology to synthetic rubber and carbon black, which are made from finite resources, are instead synthesized from renewable resources. To aim at easing the overconcentration of natural rubber producing areas in Southeast Asia, we conduct research and development of guayule as a new natural rubber source replacing para rubber tree to stabilize supply. As guayule grows in arid regions, unlike Para rubber tree, and the rubber component contained in its tissue has similar properties to the natural rubber harvested from the para rubber tree, it is expected to be a new natural rubber source. We commenced experimental production of natural rubber harvested from guayule in 2015. BSAM (Bridgestone Americas Inc) announced the results of this collaborative project in January 2021. They were able to fully sequence and assemble a guayule genome, making it possible to identify genes for important traits. Through the joint work, Bridgestone developed mapping populations and paved the way towards selecting genes from inherent genetic diversity to breed highly productive varieties of guayule. Furthermore, Bridgestone Corporation is developing a new technological innovation to increase the productivity of guayule farms through a joint project with Kirin Holdings. Combining the world-class biotechnologies of Kirin Holdings and the guayule cultivation expertise of Bridgestone, the project aims to deliver large-scale propagation of guayule plants from high-quality seeds. Aiming for commercial applications in the next 5-10 years, we will continue to improve guayule productivity through sustainable methods, establish new production processes, improve logistics, and promote other initiatives. The entire research and development expenses on Group/Global basis, including development of alternative resources above, totalled 95.2 billion yen per year in 2020. This data is can be referenced in Securities report.

Comment

Identifier
Opp3

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Shift in consumer preferences

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
Bridgestone delivers a wide range of products to customers around the world, including tires, rubber and other diversified products. We have been providing best-in-class services, sensor devices, data-driven technology and tire asset management systems as “Solution Business” that enable increased productivity for our customers. Among the customers, Commercial Fleet operators are under constant pressure to maximize their fleet performance whilst minimizing costs. Bridgestone’s integrated solution offering, combining premium products, extensive services and state of the art digital platforms provide fleet customers with safer, more sustainable and economical mobility. From climate-related viewpoint, improvement of fuel efficiency brought by our solution have been contributing to CO2 reduction. In case that stricter emission control and/or carbon pricing etc. are introduced with the rise of social momentum in future, CO2 emission reduction would become more important theme for such operators. We consider this to be a business opportunity. Bridgestone has focused on this solution business in recent years by measures represented by the acquisition of Bandag in 2007, introducing “ECO Value Pack” service which bundles new tires, retread tires and tire maintenance service into a single package for transport operators and other customers. Moreover, Webfleet solutions joined our business in 2019. Webfleet provides all the information fleet managers need to protect drivers, manage their inventories, optimize operations and total cost of ownership per vehicle, and reduce environmental impact. Real-time vehicle tracking improves operations of the entire fleet and driver behaviour. Monitoring and analysing driver behaviour and optimizing routes reduces fuel costs and greenhouse gas emissions. Automated processes also support compliance with regulatory guidelines. Therefore, Bridgestone would be able to grasp the expansion of solution business related opportunities.

Time horizon
Short-term

Likelihood
Very likely

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
Yes, a single figure estimate

Potential financial impact figure (currency)
24270000000

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The global tire market is valued at approximately 167 billion US dollars in 2019 (Reference: Tire Business – Global Tire Company Rankings) and is expected to grow two to three-fold by 2050. Financial impact is estimated to 1% based on our tire sales. Although it depends on the degree of increase actually sales, the figure shown in the “Potential financial impact 24.270,000,000 yen” is a calculation when the tire sales increases 1%. Our tire sales in 2020 was about 24.27 billion yen. (2,427,000,000,000 yen * 0.01 = 24,270,000,000 yen)

Cost to realize opportunity
95200000000

Strategy to realize opportunity and explanation of cost calculation
With recent developments like MaaS (Mobility as a Solution) and CASE (Connected, Autonomous, Shared, Electric), the mobility industry is facing a once-in-a-century pace of change. As mobility continues to rapidly evolve, it has the strong potential to solve many of the challenges affecting society. The Bridgestone Group’s mobility solutions business creates new value by combining its wealth of knowledge about tires with tire and mobility data to contribute to world mobility. For customers, the Group’s solutions that maximize tire performance help optimize operations and introduce damage prevention measures that avoid downtime, improve vehicle performance and reduce TCO (Total Cost of Ownership). For society, the value the Group co-creates with customers and partners reduces CO2 emissions and helps realize a circular economy. Based on this strategy, Bridgestone has focused on the solutions business, including the acquisition of Bandag in 2007 and the introduction of a package of new tires, retreaded tires and tire maintenance services for fleets. Moreover, Webfleet solutions joined our business from 2019. “WEBFLEET” service supports transportation operation and contributes to improved safety, efficiency and productivity by managing various data related to vehicle operations. It also contributes to improved fuel efficiency and reduced CO2 emissions by streamlining operations. To date, 900,000 vehicles have used WEBFLEET. By combining vehicle operations data with the Bridgestone Group’s knowledge of tire wear and durability, it can provide a wider range of solutions, including products and services based on customers’ unique operating conditions and needs. As an example, one customer reported that WEBFLEET reduced fuel consumption costs by 10% and CO2 emissions by 2000 tonnes. Additionally, data on vehicle operating and tire usage conditions is being deployed by R&D teams to more rapidly develop high-quality tires that meet customers’ evolving needs. Based on the strategy, Bridgestone will maximize the value of the solution to meet the needs of customers and create business opportunities that can contribute from the perspective of climate change. The figure of “Cost to realize opportunity“ shows annual cost based on the entire research and development expenses of the Global Group, including technology development for reducing tire-rolling resistance totalled 95.2 billion yen per year in 2020.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes, and we have developed a low-carbon transition plan

C3.1a

(C3.1a) Is your organization's low-carbon transition plan a scheduled resolution item at Annual General Meetings (AGMs)?

	Is your low-carbon transition plan a scheduled resolution item at AGMs?	Comment
Row 1	No, and we do not intend it to become a scheduled resolution item within the next two years	There is a possibility of discussing the medium-term business plan, including the low-carbon strategy, with shareholders during Q&A, etc.

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
2DS IEA 450 IEA Sustainable development scenario	1. Purpose The impact of climate change risks on future automobile market trends is very important to Bridgestone as a tire manufacturer. We extracted climate risks to incorporate into our mid-long term strategy. 2. Time horizon We conducted scenario analysis with business projections as of 2030 because we did the analysis as a part of the study to consider mid-term target towards 2030, the target year of the SDGs. 3. Boundary The scope targets the tire business, which is our core segment that accounts for 84% of sales. There are 96 tire-related production bases in the Americas, Europe/Middle East/Africa/Russia, China/Asia Pacific and Japan. 4. Scenario identification We selected 2 degree / 4 degree scenarios to clarify climate risks widely on overall aspects (including procurement, manufacturing, logistics etc. not limiting to our product/service). We consider the 2 scenarios would be appropriate representatives of contrast viewpoints of "low carbon society" and society where climate change actualizes due to increasing of carbon emission. 5. Methodology 1) List climate risks on the scenarios widely 2) Estimate financial impacts of the risks with the following inputs and their future prediction. -Financial information (Sales, cost, operating profit, capital expenditure etc.) -Non-financial information (CO2 emission, energy consumption, material consumption, water intake etc.) -External information (Carbon price/tax, price of renewable energy, material, water etc.) 3) Evaluate importance of each risk based on the impacts and probability 6. Assumption on the analysis 1) On the 2 degree scenario, we assume that physical impact such as flood, water shortage caused by climate change won't be significant impact driver so the risks to focus is limited to strong rise of social demand and stricter policy. 2) On the 4 degree scenario, we assume that GHG emission will be kept high due to insufficient climate policy and/or social actions. Therefore, the risks to focus are limited to physical impact caused by high temperature, flood, hurricane, drought etc. 3) On both scenarios, we assume that we won't conduct any particular countermeasures for the climate risks. 7. Results and implications to business objectives / strategy We found the following risks are especially important for us on each scenario. <2 degree scenario> - Increased cost of manufacturing due to introduction of carbon pricing / tax - Increased price of natural rubber caused by stronger demand for forest protection and shortage of its supply - Increased demand for products with lower CO2 emission (brought by fuel-efficient tires etc.) and investment on technologies to achieve it In addition, we recognizes that the important risks extracted are the same for well below 2 degree and 1.5 degree case although those magnitudes are bigger. <4 degree scenario> - Increased price of natural rubber caused by lower yield and supply due to abnormal weather - Damage on operation of manufacturing sites by sever and frequent weather disasters - Reduced revenue from winter tires caused by snowfall reduction According to the analysis, not taking any action will end in financial impact such as increasing of cost and the impact should be managed properly. The results of this scenario analysis are reflected in the new medium- to long-term business strategy of expanding next-generation environmentally friendly products as a new premium. An innovative lightweight tire technology ENLITEN can reduce the weight of tires by approximately 20% and rolling resistance by approximately 30% compared to conventional passenger car tires. This makes it possible to reduce CO2 emissions caused by tires by about 30% when driving gasoline-powered vehicles. In 2020, ENLITEN was selected as the tire to be installed on new vehicles. We will continue to develop these next-generation fuel-efficient tire technologies and expand sales of fuel-efficient tires.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	The tire industry has introduced maximum limits on rolling resistance and a labeling system in response to climate change, and Bridgestone has taken steps to adapt its sales strategy. The introduction of these regulations is expected to increase in the future, so there is a risk that sales will decline if we are unable to respond to these regulations. The potential of financial impact to net sales is estimated 24.27 billion yen per 1% of our sales decrease by occurrence of the risk, in the short term. Since this risk impact is high, in the Bridgestone Mid-term Business Plan, we will expand next-generation eco-friendly products as a new premium to minimize these risks and differentiate from other products and services by contributing to CO2 reduction and resource productivity improvement. And in 2019, Bridgestone launched “ENLITEN,” an innovative lightweight tire technology that balances increasing considerations for the environment with performance demands. After maintaining athletic performance and tire life, this technology makes it possible to reduce weight by about 20% and reduce rolling resistance by about 30% compared to conventional passenger car tires. Benefiting car manufacturers, drivers and environment, tires with embedded ENLITEN technology also improves the vehicle handing and stability to increase driving pleasure. And in 2020, we promoted the sales expansion of ENLITEN, and it was selected as the tire to be installed on new vehicles one after another.
Supply chain and/or value chain	Yes	In recent years, there has been an increase in the need for customers to reduce GHG emissions in their life cycles, and Bridgestone, as a supplier, has been required to reduce GHG emissions. In response to this, Bridgestone set the environmental mid-term target “Milestone 2030” in 2020, and promote to reduce CO2 emissions across the product lifecycle and entire value chain. One particular important example of approach to contribute CO2 reduction for customers is through our fleet solution services. It will also be an opportunity to increase profits when the need for fuel-efficient tires and cost reductions increases due to the effects of climate change in the short term. Bridgestone promotes this solution service through our overwhelming robust service network, which is our strength. In 2019, WEBFLEET joined our business as a fleet solution, which provides all the information fleet managers need to protect drivers, manage their inventories, optimize operations and total cost of ownership per vehicle, and reduce environmental impact. Monitoring and analysing driver behaviour and optimizing routes reduces fuel costs and greenhouse gas emissions. We think that this service will contribute to the long-term reduction of CO2 emissions for our customers. In 2020, Bridgestone strengthened its solution services, including the acquisition of the iTrack Solutions Business from UK-based Transense Technologies PLC.
Investment in R&D	Yes	Currently, natural rubber, the main raw material used in the manufacturing of tires, is almost entirely produced from the sap of para rubber trees. 90% of para rubber trees are grown in Southeast Asia and the price often fluctuates due to issues such as demand change, climate change and speculation etc. Against this background, Bridgestone decided to conduct research to find a substitute for the raw material source in order to enhance competitiveness and resilience of its business. In 2020, we successfully developed a rubber material with a "double network" structure in collaboration with 12 research organizations. It combines hard, energy-absorbing properties with soft, supple properties. While maintaining the fuel efficiency of conventional fuel-efficient rubber (made with standard rubber), the new material is about five times stronger, making it possible to produce thinner and lighter tires. In the mid-term, we will promote R&D activities, such as the development of fuel-efficient tires and alternative materials to natural rubber, which will contribute to the mid-term target “Milestone 2030”*. The entire research and development expense of the Global Group totalled 9.52 billion yen per year in 2020. * Contribute to global CO2 emissions reduction across the lifecycle and value chain (Scope 3) of our products and services exceeding five times our operation’s (Scope 1 and 2) CO2 emissions by 2030 (vs 2020)
Operations	Yes	Efforts to reduce CO2 emissions in production are a direct means to prevent global warming, and many countries introduced carbon pricing, which is also an opportunity to reduce costs in the future. Bridgestone has been working to reduce CO2 based on the mid-term target “Milestone 2030”: Reduce our absolute CO2 emissions (Scope 1 and 2) by 50% by 2030 (versus 2011). We are proceeding with the improvement energy efficiency though equipment and processes improvements, and introduction of renewable energy. As for the introduction of renewable energy, five more plants in Poland, Hungary, Belgium and the U.K. switched to renewable electricity and a 2MW large-scale solar power generation system started operating at the U.S. plant in 2020. As a result, 268,000 MWh of electricity has switched to renewable energy and the renewable electricity ratio increased to 11%. In the mid-term, based on the Milestone 2030, we will continue to expand the introduction of renewable energy and improve energy efficiency, while also promoting manufacturing and engineering innovation.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Revenues Direct costs Indirect costs Capital expenditures Capital allocation Acquisitions and divestments Access to capital Liabilities	In 2020, the factor that particularly affected financial plans related climate risk was access to capital: In the face of calls for companies to step up their efforts on climate change, there is a risk that their access to mid and long-term capital will be reduced if they fail to adequately address the issue. To address this risk, companies are linking their borrowing from financial institutions to ESG risk assessments to promote their own climate change initiatives, and are also making their borrowing more transparent by making it consistent with the Sustainability Linked Loan Principles. As part of this activity, Bridgestone Americas, Inc. issued a $1.1 billion sustainability-linked credit facility, one of the first of its kind in the U.S. tire industry. Bridgestone partnered with SMBC to execute this inaugural syndicated sustainability-linked credit facility. The financing features a sustainability-linked pricing adjustment mechanism that adjusts interest rate based on the ESG Risk Rating of Bridgestone, as determined by Sustainalytics, as well as by the ESG rating of FTSE Russell, both leading independent providers of environmental, social and governance ratings. As Bridgestone sustainability ratings improve, borrowing costs will be reduced. The sustainability mechanism was structured in accordance with the Sustainability-Linked Loan Principles promulgated by the syndicated loan market industry associations. Bridgestone set a new vision of “continuing to provide social and customer value as a sustainable solutions company toward 2050.” and the Mid-Long Term Business Strategy was also introduced in the same year. Under the Sustainability Framework in this strategy, we aim to complete the Sustainability Business Model across our “produce and sell”, “provide value at use”, and “renew” business areas by 2030. This will facilitate a circular economy where business value is sustainably generated, linked with efforts toward resource circulation and achieving carbon neutrality. Other financial plans affected are as follows. Revenues: We promoted sales expansion of eco-products/services such as the ECOPIA and ENLITEN brand as an opportunity to increase profits as the market changing to low-carbon. In Japan, the ratio of environmental products in 2020 was 98.5%. Direct costs: Increased procurement costs due to a rubber supply shortage is a major risk for Bridgestone. Therefore, we set a Global Sustainable Procurement Policy to help identify and evaluate qualified suppliers and promote best practices on our value chain. Capital allocation: The entire research and development expense of the Global Group including costs for developing eco-related technology (i.e. developing tires with low rolling resistance), machines/equipment (i.e. tire building machine with low energy consumption) etc. totalled 95.2 billion yen per year in 2020. Expenses and investments mainly for introducing equipment for energy saving, including upgrading them, at Bridgestone plants amounted to 4,633 million yen in 2020. Access to capital: Introducing highly efficient equipment to manufacturing facilities is one important measure for CO2 reduction and we have promoted and will promote this.

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Both absolute and intensity targets

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

Base year
2011

Covered emissions in base year (metric tons CO2e)
4565384

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)
50

Covered emissions in target year (metric tons CO2e) [auto-calculated]
2282692

Covered emissions in reporting year (metric tons CO2e)
3162390

% of target achieved [auto-calculated]
61.4622559679536

Target status in reporting year
Underway

Is this a science-based target?
Yes, we consider this a science-based target, but it has not been approved by the Science-Based Targets initiative

Target ambition
Well-below 2°C aligned

Please explain (including target coverage)
Bridgestone set a new Mid-term Targets, Milestone 2030. Focused target: Reduce our absolute CO2 emissions (Scope 1 and 2) by 50% by 2030 In addition, we also set a new target for our production sites in the Mid Term Business Plan: to increase the renewable electricity ratio to 50% or more by 2023.

Target reference number
Abs 2

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 1+2 (market-based)

The second absolute target covers the CO2 emission amount by operations and products ' after-use excess our contribution from avoided emissions when our customers use the tires by improving fuel efficiency of our tires.

Base year
2011

Covered emissions in base year (metric tons CO2e)
4565384

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2050

Targeted reduction from base year (%)
100

Covered emissions in target year (metric tons CO2e) [auto-calculated]
0

Covered emissions in reporting year (metric tons CO2e)
3162390

% of target achieved [auto-calculated]
30.7311279839768

Target status in reporting year
Underway

Is this a science-based target?
No, and we do not anticipate setting one in the next 2 years

Target ambition
<Not Applicable>

Please explain (including target coverage)
The Number “100” written in “Targeted reduction from base year (%)” indicates our long-term environmental vision of "Contribute towards carbon neutral (2050 and beyond)”.

Target reference number
Abs 3

Year target was set
2019

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Scope 3 (upstream & downstream)

Base year
2020

Covered emissions in base year (metric tons CO2e)

Covered emissions in base year as % of total base year emissions in selected Scope(s) (or Scope 3 category)
100

Target year
2030

Targeted reduction from base year (%)

Covered emissions in target year (metric tons CO2e) [auto-calculated]
<Calculated field>

Covered emissions in reporting year (metric tons CO2e)

% of target achieved [auto-calculated]
<Not Applicable>

Target status in reporting year
Please select

Is this a science-based target?
No, but we are reporting another target that is science-based

Target ambition
<Not Applicable>

Please explain (including target coverage)
Bridgestone set a new Mid-term Targets, Milestone 2030. Focused target: Contribute to global CO2 emissions reduction across the value chain (Scope 3) of our products and services exceeding five times our operation’s (Scope 1 and 2) CO2 emissions by 2030

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2010

Target coverage
Company-wide

Scope(s) (or Scope 3 category)
Other, please specify (Scope 1+2(Market-based)+ 3(Purchased goods & services, upstream transportation & distribution, downstream transportation and distribution, end-of-life treatment of sold products, upstream leased assets))

The target covers Scope 1+2(Market-based method + location-based method) + 3 (Purchased goods & services, Upstream transportation & distribution, Downstream transportation and distribution, End-of-life treatment of sold products, Upstream leased assets)

Intensity metric
Metric tons CO2e per unit revenue

Base year
2005

Intensity figure in base year (metric tons CO2e per unit of activity)
585

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
100

Target year
2020

Targeted reduction from base year (%)
35

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
380.25

% change anticipated in absolute Scope 1+2 emissions
-15

% change anticipated in absolute Scope 3 emissions
-15

Intensity figure in reporting year (metric tons CO2e per unit of activity)
368.2

% of target achieved [auto-calculated]
105.885225885226

Target status in reporting year
Achieved

Is this a science-based target?
No, but we are reporting another target that is science-based

Target ambition
<Not Applicable>

Please explain (including target coverage)
Focusing on the lifecycle of the Group's products, we had been working to reduce sales intensity of CO2 emitted in the manufacturing process from raw material procurement to production, logistics, and products' after-use. CO2 intensity of the base year is 585 tCO2/hundred million yen. Individual targets/measures were considered by each business division for achieving our overall objective, and progress was made toward the objective. As a result, in 2020, the final year of the target, the CO2 intensity was 368.2tCO2/hundred million yen, achieving the target.

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
No other climate-related targets

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	62	27514
Implementation commenced*	95	31831
Implemented*	25	2682
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in buildings	Other, please specify (Insulation and maintenance)

Estimated annual CO2e savings (metric tonnes CO2e)
245

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
873000

Investment required (unit currency – as specified in C0.4)
4146000

Payback period
4-10 years

Estimated lifetime of the initiative
6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Other, please specify (Switching fuel, optimizing process, etc.)

Estimated annual CO2e savings (metric tonnes CO2e)
2437

Scope(s)
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
8137000

Investment required (unit currency – as specified in C0.4)
40793000

Payback period
4-10 years

Estimated lifetime of the initiative
6-10 years

Comment

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Other (Please see the Comment column)	Relevant divisions report the emission costs and reduction benefits of CO2-related measures in the budgetary discussions, and investment decisions on capital expenditure are made for overall optimization. Management examines the business plans in the yearly mid-term plan, but carefully reviews investment projects based on Investment Profit Criteria taking into account the CO2 emission costs and reduction benefits as the criteria at that time. Based on the EUA price, CO2 emissions are converted into monetary value and incorporated into the Investment Profit Criteria using the Discounted Cash Flow method and used as one of the indexes for investment decisions. Both aspects of cost increase and decrease resulting from CO2 emission increase/decrease are considered for decision making.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?
Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation
Company-wide

Description of product/Group of products
Fuel-efficient tires: Tires that have reduced tire rolling resistance which influences vehicle fuel efficiency. A wide-ranging line-up is available, from passenger car tires to tires for trucks/buses, and the design facilitates rolling resistance in order to enhance fuel efficiency. Specifically, through the use of NanoPro-Tech which exercises control over the fine structure of materials, we are striving to reduce rolling resistance by reducing energy loss and controlling heat generation of tread rubber.

Are these low-carbon product(s) or do they enable avoided emissions?
Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions
Other, please specify ("Tyre LCCO2 Calculation Guidelines" published by JATMA)

% revenue from low carbon product(s) in the reporting year
71

% of total portfolio value
<Not Applicable>

Asset classes/ product types
<Not Applicable>

Comment
CO2 reduction using fuel-efficient tires during the product use stage. Reasons for the possibility of reduction: Improvement of tire rolling efficiency can contribute to fuel efficiency improvement/CO2reduction when customers use one's vehicles. Since the tire fuel efficiency or its standards differ by country, we approximate CO2 emissions. When we calculate based on "Tyre LCCO2 Calculation Guidelines" published by JATMA, due to reduction in tire rolling resistance, it contributed about 12,000,000 tonnes of CO2 reduction in 2020 compared with the products in 2005.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
January 1 2011

Base year end
December 31 2011

Base year emissions (metric tons CO2e)
2114245

Comment

Scope 2 (location-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 2 (market-based)

Base year start
January 1 2011

Base year end
December 31 2011

Base year emissions (metric tons CO2e)
2450139

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superceded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment)
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
1503530

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
1931932

Scope 2, market-based (if applicable)
1658860

Start date
<Not Applicable>

End date
<Not Applicable>

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?
Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source
GHGs except CO2

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
At production sites in Japan and the Americas, GHGs except CO2 are collected but are excluded because emissions are minimal relative to CO2.

Source
Production sites with number of workers below 50 people and that is not the subject of accreditation of ISO14001

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
The reasons why production sites with number of workers below 50 people and are not the subject of accreditation of ISO14001, are excluded is because their influence on the total is very limited.

Source
Office/storages etc., nonproduction sites (supplementary facilities of plants are excluded)

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
Office energy is collected at major sites but excluded because emissions are minimal.

Source
Company owned car

Relevance of Scope 1 emissions from this source
Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source
Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)
Emissions are not relevant

Explain why this source is excluded
Refilling company owned cars outside the premises is excluded because their influence on the total is very limited. (Refilling fuel within the premises is included in Scopes)

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Metric tonnes CO2e
6132361

Emissions calculation methodology
Calculated by multiplying the purchased amount of each raw material with CO2 emission factors for each raw material determined by Japan Rubber Manufacturers Association calculation methods.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Capital goods

Evaluation status
Relevant, calculated

Metric tonnes CO2e
867361

Emissions calculation methodology
Calculated by multiplying the capital expenditures material with CO2 emission factors determined by Japanese Ministry of the Environment

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Metric tonnes CO2e
387932

Emissions calculation methodology
Calculated by multiplying the energy consumption with CO2 emission factors determined by DEFRA

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
346212

Emissions calculation methodology
[Ground transportation] Calculated by multiplying purchased amount of each raw material with CO2 emission factors for each raw material determined by Japan Rubber Manufacturers Association calculation methods. [Marine transportation] The result for 2008 is calculated based on the volume and distance of marine transportation with respect to the CO2 emission factors of the GHG protocol for shipment. It is calculated as a ratio of the purchased raw materials for 2020 and 2008.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Waste generated in operations

Evaluation status
Relevant, calculated

Metric tonnes CO2e
149359

Emissions calculation methodology
Calculated by multiplying the amount of waste generated with CO2 emission factors determined by Japanese Ministry of the Environment

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Business travel

Evaluation status
Relevant, calculated

Metric tonnes CO2e
17945

Emissions calculation methodology
Calculated by multiplying the amount of waste generated with CO2 emission factors determined by Japanese Ministry of the Environment

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Employee commuting

Evaluation status
Relevant, calculated

Metric tonnes CO2e
63607

Emissions calculation methodology
Calculated by multiplying the amount of waste generated with CO2 emission factors determined by Japanese Ministry of the Environment

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
CO2 emissions from Bridgestone's upstream leased assets are included in Scope 1 and 2, and are not subject to being calculated as Scope 3.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Metric tonnes CO2e
411317

Emissions calculation methodology
CO2 per unit sales is calculated from CO2 emitted from a part of one’s own store and multiply it by total sales for proportional allotment

Percentage of emissions calculated using data obtained from suppliers or value chain partners
3

Please explain

Processing of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
2484

Emissions calculation methodology
Calculate the power consumed during tire installation by multiplying installation power per tire by the number of tires sold.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Use of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
99092569

Emissions calculation methodology
Calculated from our Tyre sales unit and CO2 emission per 1 tire when it used based on "Tyre LCCO2 Calculation Guidelines Ver. 2.0" by The Japan Automobile Tyre Manufacturers Association, Inc.(JATMA) April 2012

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

End of life treatment of sold products

Evaluation status
Relevant, calculated

Metric tonnes CO2e
1595177

Emissions calculation methodology
Calculated by multiplying the purchased quantity of each raw material with CO2 emission factors determined by Japan Rubber Manufacturers Association calculation methods.

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Bridgestone had no leased assets in 2020.

Franchises

Evaluation status
Relevant, calculated

Metric tonnes CO2e
64195

Emissions calculation methodology
Calculate by multiplying CO2 emission per typical shop by the number of franchise shops

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain

Investments

Evaluation status
Not relevant, explanation provided

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Our business does not generate CO2 emission through investment.

Other (upstream)

Evaluation status

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

Other (downstream)

Evaluation status

Metric tonnes CO2e
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	10532	

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.00000106

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
3162390

Metric denominator
unit total revenue

Metric denominator: Unit total
2994524000000

Scope 2 figure used
Market-based

% change from previous year
5.6

Direction of change
Decreased

Reason for change
The Bridgestone Group is working to minimize its CO2 emissions by maximizing energy efficiency and expanding its use of renewable energy at manufacturing and other facilities. As an example of efforts to expand renewable energy, five plants in Poland, Hungary, Belgium and the U.K. switched to renewable energy and a new 2MW large-scale solar power generation system was launched at the Aiken plant in the U.S. in 2020. As a result, Total CO2 emissions was decreased approximately 20% in 2020 comparing that of 2019. Certainly, the reduction of CO2 emissions was affected by the decrease in production volume due to the COVID-19 pandemic, but the Group will continue to minimize the impact on CO2 emissions of the recovery of production volume.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
No

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	321547
Canada	19319
Mexico	78526
Costa Rica	9287
Argentina	15310
Brazil	58321
France	0
Belgium	3141
Spain	43797
Poland	13991
Italy	26946
Hungary	12097
United Kingdom of Great Britain and Northern Ireland	273
Turkey	45454
South Africa	32215
Liberia	7836
Thailand	207415
Indonesia	70853
Taiwan, Greater China	8027
India	15378
Australia	60
Malaysia	47
Philippines	43
Viet Nam	3795
China	51596
Japan	451709
Russian Federation	6548

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Tire	1403133
Others	100397

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United States of America	524250	510663	1275237	0
Canada	14077	14077	107294	0
Mexico	52678	52678	115775	0
Costa Rica	445	445	47865	25774
Argentina	12380	12380	38542	0
Brazil	22046	22046	221343	0
France	9813	12077	69158	0
Belgium	2212	409	11069	8560
Spain	43757	301	169470	168302
Poland	157226	24958	289823	187436
Italy	898	1085	2926	0
Hungary	18067	0	71668	71668
United Kingdom of Great Britain and Northern Ireland	160	119	701	252
Turkey	76508	76508	164780	0
South Africa	45043	51547	50537	0
Liberia	0	0	0	0
Thailand	189453	182401	447483	0
Indonesia	61962	61962	81389	0
Taiwan, Greater China	26104	26104	64866	0
India	67561	67561	90443	1535
Australia	4292	4292	6053	0
Malaysia	602	521	914	0
Philippines	3013	3013	4310	0
Viet Nam	10769	10769	23779	0
China	227048	227048	434749	2811
Japan	354046	288458	707951	0
Russian Federation	7523	7523	21133	0

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Tires	1691742	1432327
Others	240190	226533

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	173408	Decreased	4.4	Our 5 plants in Poland, Hungary, Belgium and the U.K. have switched 100% of its electricity to renewable energy and 2MW solar power at Aiken plant in the U.S started its operation, resulting in a total CO2 reduction of 173,408 tCO2e. Therefore, the same amount which is equivalent to 4.4% was reduced from 2019. (-173,408 / 3,946,290) * 100 = -4.4% *Previous year(2019) Scope 1 + 2 emission was 3,946,290 tCO2e
Other emissions reduction activities	79444	Decreased	2	We reduced 79,444 tonnes as a result of energy-saving activities in 2020. Since Scope 1 and 2 emissions were 3,946,290 tonnes the previous year, that represents a 2.0% reduction from 2019. (-79444/3946290) * 100 = -2.0% *Previous year(2019) Scope 1 + 2 emission was 3,946,290 tCO2e
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output	560877	Decreased	14.2	In 2020, due to the impact of COVID-19, the production volume decreased and the associated Scope 1 and 2 emissions decreased by 560,877 tonnes. (-560877/3946290) * 100 = -14.2% *Previous year(2019) Scope 1 + 2 emission was 3,946,290 tCO2e
Change in methodology	15782	Decreased	0.4	Electricity emission factors was updated to the latest figures. The values on the left was difference between Scope1 + 2(Market-based) emission in 2020 with the latest electricity emission factors and that with the factors of previous year. (-15782/3946290) * 100 = -1.92% *Introduction of renewable electricity in 6 plants written in the first column was excluded from this calculation * Previous year(2019) Scope 1 + 2 emission was 3,946,290 tCO2e
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other	45611	Increased	1.2	Due to changes in the composition of energy sources, impacts of located production variation, etc. (45611/3946290) * 100 = 1.2% (i.e. an 1.2% increase in emissions) * Previous year(2019) Scope 1 + 2 emission was 3,946,290 tCO2e

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	LHV (lower heating value)	25774	6094130	6119904
Consumption of purchased or acquired electricity	<Not Applicable>	440563	3747836	4188400
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	330856	330856
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	20414	<Not Applicable>	20414
Total energy consumption	<Not Applicable>	486751	10172823	10659574

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	Yes
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Fuels (excluding feedstocks)
Petrol

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
4328

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
4328

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.27

Unit
kg CO2e per liter

Emissions factor source
"Facilities in Japan: Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superceded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment) Others:The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)"

Comment
Including Biogasoline

Fuels (excluding feedstocks)
Kerosene

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
3611

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
3611

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.49

Unit
kg CO2e per liter

Emissions factor source
"Facilities in Japan: Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment) Others: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)"

Comment

Fuels (excluding feedstocks)
Diesel

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
97831

MWh fuel consumed for self-generation of electricity
48915

MWh fuel consumed for self-generation of heat
39132

MWh fuel consumed for self-generation of steam
9783

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.67

Unit
kg CO2e per liter

Emissions factor source
"Facilities in Japan: Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment) Others: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)"

Comment

Fuels (excluding feedstocks)
Fuel Oil Number 4

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
42137

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
42137

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.71

Unit
kg CO2e per liter

Emissions factor source

Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment)

Comment
We put information about Heavy Oil A as Fuel Oil No.4

Fuels (excluding feedstocks)
Fuel Oil Number 6

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
140049

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
140049

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
3

Unit
kg CO2e per liter

Emissions factor source
Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment)

Comment
We put information about Heavy Oil B/C as Fuel Oil No.6

Fuels (excluding feedstocks)
Liquefied Petroleum Gas (LPG)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
124075

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
124075

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.71

Unit
metric tons CO2e per metric ton

Emissions factor source
"Facilities in Japan: Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment) Others: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)"

Comment

Fuels (excluding feedstocks)
Liquefied Natural Gas (LNG)

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
377172

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
29060

MWh fuel consumed for self-generation of steam
116241

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
231870

Emission factor
3

Unit
metric tons CO2e per metric ton

Emissions factor source
Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment)

Comment

Fuels (excluding feedstocks)
Town Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
958868

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
77420

MWh fuel consumed for self-generation of steam
309680

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
571768

Emission factor
2.23

Unit
metric tons CO2e per m3

Emissions factor source
"Facilities in Japan: Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment) Others: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)"

Comment

Fuels (excluding feedstocks)
Natural Gas

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
3937976

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
698491

MWh fuel consumed for self-generation of steam
2793965

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
445520

Emission factor
1.89

Unit
metric tons CO2e per m3

Emissions factor source
"Facilities in Japan: Japan Ministry of the Environment, Law Concerning the Promotion of the Measures to Cope with Global Warming, Superseded by Revision of the Act on Promotion of Global Warming Countermeasures (2005 Amendment) Others: The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)"

Comment

Fuels (excluding feedstocks)
Coal

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
93887

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
93887

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
2.13

Unit
metric tons CO2 per metric ton

Emissions factor source
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition): Anthracite, Brown coal briquettes, Sub bituminous coal, Other bituminous coal

Comment

Fuels (excluding feedstocks)
Other, please specify (Carbon fuel oil)

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
314197

MWh fuel consumed for self-generation of electricity
61924

MWh fuel consumed for self-generation of heat
252273

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
3.3

Unit
metric tons CO2e per metric ton

Emissions factor source
Measured value of carbon content ratio of the fuel

Comment
Information of "carbon fuel oil" is shown in this row

Fuels (excluding feedstocks)
Wood Pellets

Heating value
LHV (lower heating value)

Total fuel MWh consumed by the organization
25774

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
25774

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration
0

Emission factor
0

Unit
metric tons CO2e per metric ton

Emissions factor source
GHG protocol "Emission Factors from Cross-Sector Tools"

Comment
According to the GHG protocol "Emission Factors from Cross-Sector Tools, the emission factor is 1.7472. But we consider the biomass fuel as renewable/low carbon source and exclude from calculation of the Scope1.

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	589586	557631	20414	20414
Heat	991235	991235	0	0
Steam	3346174	3346174	20455	20455
Cooling	0	0	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method
Other, please specify (Off-grid energy consumption from an on-site installation or through a direct line to an off-site generator owned by another company)

Low-carbon technology type
Biomass

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Costa Rica

MWh consumed accounted for at a zero emission factor
25774

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Breakdown of the source is unknown)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Belgium

MWh consumed accounted for at a zero emission factor
8560

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Breakdown of the source is unknown)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Spain

MWh consumed accounted for at a zero emission factor
168302

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Breakdown of the source is unknown)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Poland

MWh consumed accounted for at a zero emission factor
187436

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Breakdown of the source is unknown)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
Hungary

MWh consumed accounted for at a zero emission factor
71668

Comment

Sourcing method
Green electricity products (e.g. green tariffs) from an energy supplier, supported by energy attribute certificates

Low-carbon technology type
Other, please specify (Breakdown of the source is unknown)

Country/area of consumption of low-carbon electricity, heat, steam or cooling
United Kingdom of Great Britain and Northern Ireland

MWh consumed accounted for at a zero emission factor
252

Comment

Sourcing method
Power purchase agreement (PPA) with on-site/off-site generator owned by a third party with no grid transfers (direct line)

Low-carbon technology type
Solar

Country/area of consumption of low-carbon electricity, heat, steam or cooling
India

MWh consumed accounted for at a zero emission factor
1535

Comment

Sourcing method
Power purchase agreement (PPA) with on-site/off-site generator owned by a third party with no grid transfers (direct line)

Low-carbon technology type
Solar

Country/area of consumption of low-carbon electricity, heat, steam or cooling
China

MWh consumed accounted for at a zero emission factor
2811

Comment

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/ section reference
Please refer to the page.6/6 for the actual value

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/ section reference
Please refer to the page.6/6 for the actual value

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/ section reference
Please refer to the page.6/6 for the actual value

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Purchased goods and services

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Capital goods

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Upstream transportation and distribution

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Waste generated in operations

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Business travel

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Employee commuting

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Downstream transportation and distribution

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Processing of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Use of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: End-of-life treatment of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 3 category
Scope 3: Franchises

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
Third-party Assurance of Environmental and Social Data 2020.pdf

Page/section reference
It is listed on the page 6 of the assurance statement as the total amount of Scope3.

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C8. Energy	Energy consumption	ISAE 3000	Total energy consumption, Energy consumption (fuel) including fuel from renewable sources, Energy consumption (purchased electricity) including electricity from renewable sources, Energy consumption (purchased steam), energy consumption (self-generated renewable electricity from non-fuel sources; solar, etc.)

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

Japan carbon tax

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

6.7

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2020

Period end date

December 31 2020

Allowances allocated

96334

Allowances purchased

2800

Verified Scope 1 emissions in metric tons CO2e

100652

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Facilities we own and operate

Comment

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Japan carbon tax

Period start date
January 1 2020

Period end date
December 31 2020

% of total Scope 1 emissions covered by tax
30

Total cost of tax paid
130543936

Comment
% of emission covered by tax was calculated by Scope1 emission in Japan divided by global Scope1 emission. And total cost of tax paid was calculated by Scope1 emission in Japan multiplied Japan Carbon tax rate (289yen/tCO2e) *In addition, the carbon tax is indirectly affect electricity price in the Scope 2.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

As a strategy to comply with the EU ETS, the Japanese carbon tax and other regulated carbon pricing systems, Bridgestone aims to minimize the additional cost of CO2 emissions and achieve the Milestone 2030 "Reduce our absolute CO2 emissions (Scope 1 and 2) by 50% by 2030 (versus 2011)", by actively and steadily promoting the reduction of CO2 emissions on a global basis.

To this end, we are promoting CO2 reduction through approaches Energy saving, Renewable energy introduction, and Enlightenment activities to raise employees' environmental awareness.

Typical energy saving initiatives are introduction of highly efficient equipment. As example in 2018, Bridgestone's Turkish affiliate Brisa Bridgestone Sabancı Lastik Sanayi ve Ticaret A.Ş.(BRISA) established a new manufacturing facility for radial tires in Aksaray Province, Turkey with investment which amounted to 300 million USD. This new plant achieved 30% energy saving and contributes to our manufacturing with less CO2 emission. We also promote the introduction of renewable energy, and have switched 100% of our electricity to renewable energy at five plants in Poland, Hungary, Belgium, and the UK, reducing CO2 emissions by 189 thousand tonnes in 2020 compared to BAU case. And in the same year, a new 2MW large-scale solar power generation system was launched at the Aiken plant in the U.S.

In addition, as part of our efforts to raise the environmental awareness of our employees, we provide not only on-site training but also continuing education using e-leaning.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price
Drive energy efficiency
Drive low-carbon investment

GHG Scope
Scope 1
Scope 2

Application
Applied to decisions of investment for equipment

Actual price(s) used (Currency /metric ton)
6500

Variance of price(s) used
If the actual price is available in each regional system, the price is applied preferentially. If not, the price above is utilized commonly inside company as a guide and reviewed once a year.

Type of internal carbon price
Shadow price

Impact & implication
Because the proportion of Bridgestone's CO2 emissions that are subject to EU-ETS with high carbon pricing is small(6.7% in 2020), Bridgestone stipulates that a comprehensive evaluation including the realization of a sustainable society such as CO2 reduction should be made when making investment decisions in the internal guideline. Carbon price of CO2 emission cost is set accordingly considering business characteristics and regional situations of each business unit, however the common default value for reference is updated once a year. When it is expected that the CO2 emission impact from the investment will be large, the business unit will calculate the investment payback period including the CO2 emission cost due to carbon pricing, and use it as the basis for making decision on investment profitability.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change
Other, please specify (Engaging suppliers to take the third party assessment on sustainability including environment/climate change related aspect)

% of suppliers by number
100

% total procurement spend (direct and indirect)
100

% of supplier-related Scope 3 emissions as reported in C6.5
6

Rationale for the coverage of your engagement
Coverage: In Feb.2018, Bridgestone issued the Global Sustainable Procurement Policy which is applicable to all purchased materials and services, as well as all suppliers globally. Rationale for the coverage: The journey towards “100% sustainable materials” which is one of the Bridgestone’s goals for 2050 and beyond and includes aspect of mitigation of climate related impact, will not be simple, nor can Bridgestone achieve it alone. This policy is to help identify and evaluate qualified suppliers, promote best practices, and serve as a communication and improvement tool for the industry. Bridgestone expects all of its suppliers to recognize the importance of Sustainable Procurement, and work with the Company to implement appropriate practices to create value for all stakeholders. Note: During the development of the policy, Bridgestone gained insights from external stakeholders, including international consultants, non-governmental organizations (NGOs), materials suppliers, natural rubber farmers, and key customers to ensure the policy reflects industry standards and best practices. In addition, the policy is supported by a global implementation and communication plan. Available in 12 languages, the policy will be implemented, governed and enforced regionally. As an immediate first step, Bridgestone will prioritize working closely with its employees, suppliers and customers and other industry experts to implement the policy.

Impact of engagement, including measures of success
The Global Sustainable Procurement policy defines the four major areas impacted throughout Bridgestone’s supply chain: “Transparency”, “Compliance”, “QCD (Quality/Cost/Delivery) and Innovation”, “Sustainable Procurement Practices” incorporating environmentally responsible procurement including measures for climate change, reduction of GHG emission as well as the use of energy. Through a partnership with EcoVadis, risk and performance ratings for global supply chains, Bridgestone conducts assessing suppliers’ current sustainability practices, as well as the possible support needed to improve performance. The policy will be updated as necessary in response to changes in the external environment, including climate change. Since it is of utmost importance for Bridgestone to ensure that our suppliers are aware of the latest policy, we use EcoVadis as an indicator to manage the progress of supplier awareness of the policy. In addition, we monitor the results of each supplier's activities through third-party evaluations. As an indicator to confirm progress, Bridgestone focuses on the ratio of acknowledgement of the policy by suppliers. The Group has held annual conferences for suppliers to ensure full understanding of its sustainable procurement policy in multiple regions in which it operates. In the annual conferences, the Group has communicated with suppliers on four foundational elements of the policy. In 2020, 137 suppliers, which is mainly important suppliers for global and Japan business, attended the annual conference in Japan. Forty Asia Pacific suppliers and 176 China domestic suppliers attended the conference held in Singapore and China. In order to assess the increased awareness of procurement policies by suppliers through these activities, we have asked our suppliers to undergo an evaluation by EcoVadis. As of the end of 2020, acknowledgement rate of the policy his more than 99 percent of the company’s Tier 1 tire material suppliers. In addition, as of March 2020, 48% of the Group’s Tier 1 tire material suppliers completed the third-party assessment with EcoVadis. Of suppliers who were reviewed, 55% earned an EcoVadis Medal, which corresponds to confirmed compliance with our sustainable procurement practices. This activity could be an opportunity for suppliers to confirm and improve their actions for preventing climate change further.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement
Collaboration & innovation

Details of engagement
Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number
100

% of customer - related Scope 3 emissions as reported in C6.5
15

Portfolio coverage (total or outstanding)
<Not Applicable>

Please explain the rationale for selecting this group of customers and scope of engagement
i) In the development of new vehicle models by automakers, which are our business partners, the development and delivery of fuel-efficient tires that contribute to the reduction of fuel consumption in cooperation with automakers leads to the reduction of GHG emissions. In addition, we cooperate in calculating the emissions of automakers and contribute to reductions in the life cycle by cooperating in the GHG emission survey of automakers through the CDP supply chain program. Because we promote such activities with all automakers, 100% is input into "size of engagement" ii) By improving the rolling resistance of tires used in automobiles, we contribute to automakers' efforts to lower fuel consumption during the use of their products.

Impact of engagement, including measures of success
i) Bridgestone continued to develop and deliver fuel-efficient tires that meet the required performance in collaboration with our business partners. In addition, we calculated the GHG emissions requested in the CDP Supply Chain Program 2020 and responded 100%. Through this activity, we have the opportunity to recognize the need to respond to climate change and the needs of our business partners even within internal. ii) Improvement of fuel efficiency in tires contributes CO2 reduction from vehicles. The direct impact of the engagement is calculated by the result of tire units sold to the automakers multiplied by the average of CO2 emission per tire. And the technology which is developed by the engagement can be applied tires which are sold directly to end-users for their replacement needs. From this perspective, the engagement has further potential to contribute CO2 reduction. From this viewpoint, we kept going on improvement of fuel efficiency of tires with corporate-wide and mid-term target on 25% reduction of rolling resistance which affects fuel efficiency vs 2005 until 2020. In 2020, the Group achieved 24% reduction which is equivalent to 12,000,000t-CO2 reduction in our Scope3 (Category11) compared to 2005 baseline. Furthermore, we set a new target to contribute to global CO2 emissions reduction across the lifecycle and value chain (Scope 3) of our products and services exceeding five times our operation's (Scope 1 and 2) CO2 emissions by 2030.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Bridgestone Americas, Inc. (Bridgestone) replaces carbon black, which is one of the raw materials for tires, with recovered carbon black (rCB), which is obtained by thermally decomposing End-of-Life (EOL) tires, commercializes tires using this, and sells it in the United States market from 2019.

rCB is made by Delta Energy Group LLC, which has a partnership with Bridgestone. The move to at-scale commercialization of the company's rCB, Delta-Energy Group's proprietary rCB product recovered from EOL tires, marks a significant milestone in achieving Bridgestone Group's long-term environmental vision of targeting 100% sustainable materials – and contributing to globally agreed target (towards carbon neutral society) – by the year 2050 and beyond. The process by Delta-Energy Group to extract materials reduces 81% CO2 emission per ton as compared to new carbon black.

Bridgestone began evaluating Delta-Energy's materials in 2007 and became an equity partner in late 2014. Since that time, the use of the company's rCB as a partial replacement for new carbon black in new tires has undergone extensive testing to ensure compliance with the high standards and superior quality and performance for which Bridgestone tires are known.

In 2020, Bridgestone purchased over 1,200 metric tons of rCB, the equivalent of approximately 380,000 end-of-life tires, resulting in the reduction of approximately 1,900 metric tons of CO2 emissions. Annually, the company targets to increase the use of rCB to 6,800 metric tons and reduce the equivalent of over 10,800 metric tons of CO2 emissions. Through the partnership with Delta-Energy, Bridgestone will divert millions of EOL tires annually into new products that will give them a new life.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?
Trade associations

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?
Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association
The Japan Rubber Manufacturers Association (JRMA)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
After the commitment period of the Kyoto Protocol (since 2013), JRMA has been working consistently to achieve the goal of reducing CO2 in 2020 which has been set as a trade association's target in line with the national policy calling for the ongoing reduction of CO2. In addition, JRMA set the target for 2030 also in 2015. Based on the targets of industry groups including JRMA, Japan's reduction targets submitted to COP21 were drawn up. Every year, they give a follow-up report on the reduction status to the government and steadily promoted activities to reduce the emission. According to the follow-up report which they issued in November 2020, their CO2 emission intensity in 2019 was 82% vs 2005. This result is one year ahead of the target (85% of the base year by 2020) and still higher than the target.

How have you influenced, or are you attempting to influence their position?
At the Environmental Committee, Bridgestone leads industry activities and summarizes the opinions as the chairperson.

Trade association
The Japan Automobile Tyre Manufacturers Association, Inc. (JATMA)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
JATMA is one of the major tire industry associations in the world, and has established the Tire Labelling System in 2010, and has been contributing to increase the ratio of "Fuel Efficient Tires" in the market. (In the lifecycle of tire, CO2 emission in usage stage consists of more than 80%) In 2015, JATMA compiled and announced the benefits of CO2 emission reduction through reduced rolling resistance of passenger car tires from 2006 to 2012. In 2018, JATMA issued a report on the contribution of rolling resistance coefficient (RRC) of tires for CO2 reduction. According to the report, CO2 emission per tire has been reduced by 13.9% in 2016, compared to 2006.

How have you influenced, or are you attempting to influence their position?
Our employees have participated in various committees and presented our opinions. At the Environmental Committee, Bridgestone leads industry activities and summarizes the opinions as the chairperson.

Trade association
World Business Council for Sustainable Development (WBCSD)

Is your position on climate change consistent with theirs?
Consistent

Please explain the trade association's position
Since 2006, the Tire Industry Project (TIP) under the umbrella of the World Business Council for Sustainable Development has served as a voluntary joint-initiative undertaken by 11 global leading tire manufacturers, under the leadership of the CEOs, with an aim to identify and address the potential human health and environmental impacts associated with tire development and use. TIP is a proactive organization that allows the industry's leading companies to leverage their collective action in advancing sustainability throughout the industry. In 2020, TIP conducted research on 2019 results of environmental KPIs for tire manufacturing such as CO2 emission and energy consumption for issuance of a report.

How have you influenced, or are you attempting to influence their position?
As one of the co-chair companies of the Tire Industry Project, Bridgestone is engaged in the visualization of the overall impact of climate change through discussions with other companies.

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Global functions of sustainability, corporate communication, government relation and standard & regulation, and also each regional function that interact governments, companies, organizations, and industry groups discuss on climate related issues monthly to ensure global consistency internally. The Corporate Strategy Division which belongs to Bridgestone's headquarters is in charge of communication and negotiation with external companies and organizations uniformly handles cooperation with industry groups mentioned in C12.3c reflecting the roundtable discussion. Important discussions with industry groups are reported to the Global Environment Working Group and the Global Sustainability Committee (GSC), for review and to ensure consistency and representatives of Bridgestone's feedback into industry groups.

The Bridgestone Group also lobbies for the Japanese government's climate change measures through its participation in the Japan Climate Change Initiative (JCI), including endorsing the JCI message "Calling for an Ambitious 2030 Target for Japan to Realize the Paris Agreement Goal".

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In mainstream reports

Status
Complete

Attach the document
Annual Securities Report_2020 (Japanese).pdf

Page/Section reference
Bridgestone's Annual Securities Report is issued in Japanese as required by the Financial Instruments and Exchange Act. Governance: page 50 - 54 Strategy: page 11 Risks: page 12- 15 (Climate Change risk is page 13 - 14) Target: page 14

Content elements
Governance
Strategy
Risks & opportunities
Emission targets

Comment
Bridgestone publishes excerpts of its Annual Securities Report in English as Annual Reports. https://www.bridgestone.com/corporate/library/annual_report/

Publication
In voluntary sustainability report

Status
Complete

Attach the document
Sustainability Report 2020-2021.pdf

Page/Section reference
Governance: page 19-20. 30-36 Strategy: pages 7-18 Risks&opportunities: page 41 (Contribution to fuel efficiency) page 38(Risk Management) Emission figures: page 35 Emission targets :page 35, 41 page 52-53 (Energy consumption in Environment-related Data) etc.

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
Detail of our environmental and Sustainability related activities is written in the report.

C15. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Global COO	Chief Operating Officer (COO)