

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 2021	December 31 2021	No	<Not Applicable>

C0.3

(C0.3) Select the countries/areas in which you operate.

- 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, 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

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	JP3830800003

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	<ul style="list-style-type: none"> 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 implementation and performance of objectives Monitoring and overseeing progress against goals and targets for addressing climate-related issues 	<Not Applicable>	<p>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 includes: -The Environmental Mission Statement one of the important objectives of which is CO2 reduction -The Bridgestone E8 Commitment: an axis to drive management while earning the trust of future generations through the pursuit of both social and customer value. Bridgestone is committed to providing 8 Bridgestone-like values starting with the letter "E". The 8 value includes Energy committed to the realization of a carbon neutral mobility society. 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 sustainability, including environment and climate change issues, are reported and discussed twice a year by the Global Executive Committee (Global EXCO), Bridgestone highest-level execution committee. In 2021, (1) Progress and strategy towards carbon neutrality targets/plans for 2023 and 2030. (2) Challenge and approach towards our Scope 3 emission reduction.</p>

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	Bridgestone Corporation has the following nominating policy for appointment to the Board: The nominating policy for outside directors requires the candidate's expertise, experience and ability to make judgements from an independent perspective. One director has excellent academic knowledge in the field of sociology and international business administration, as well as abundant wisdom regarding CSR and sustainability in Japan and overseas. He was expected to contribute to the sustainability perspective, including climate-related issues, when nominating the outside director. The nominating policy for members of the board who are not outside directors requires the candidate's scope of knowledge and experience regarding the business and its operations. One Director has experience as Executive Officer in charge of Environment, and the other Director has also experience as Executive Officer in charge of CSR and Environment. These two directors were expected to contribute to the sustainability perspective, including climate-related issues, when nominating the board members.	<Not Applicable>	<Not Applicable>

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 Global 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 Global CEO /Joint Global COO.

Reporting to the Global EXCO, Bridgestone has the Global Sustainability Committee (GSC) that is led by the Joint 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*. 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.

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 Global 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 incentivized	Comment
All employees	Monetary reward	Emissions reduction project Efficiency project	The Bridgestone Group Awards (BGA) are the highest global recognition for all employees that rewards efforts of organizations and individuals. The BGA 2021 were comprised of four categories: - Solution for Sustainability Business - Value Creation for Society - Value Creation for Customers - Management Fundamentals One of award categories, Value Creation for Society, recognizes efforts related to social value creation with society and our partners, such as achieving a CO2 reduction target, reducing energy use, and improving efficiency. This award program also functions as a system to raise employees' awareness and encourage environmental activities, including financial rewards in some regional awards.
Corporate executive team	Monetary reward	Emissions reduction target Other (please specify) (Important items related to sustainability and transformation promotion)	We have introduced the "Performance-Based Stock Compensation for Sustainability" to evaluate important items related to sustainability and transformation promotion, including efforts toward carbon neutrality, for executive officers (including those who concurrently serve as Member of the Board). Efforts will be evaluated for each business year by the Compensation Committee, and our company's shares will be delivered, and money will be paid according to the evaluation.

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 50 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 health and safety, environmental protection including climate change, sustainability, supplier management and compliance programs, 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 stabilize 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. In 2021, the contribution to CO2 reduction combined with the activities of the entire value chain is equivalent to approximately 1.6 million tons.

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

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 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 unified criteria. 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/CO2e, in the case the carbon tax rises to 1,000 yen in the future, the impact will be 840,000,000 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 30.03 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 30.03 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 worsens. 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
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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 liter 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. 32% (46 facilities as of 2021) of our manufacturing facilities are located in Japan and CO2 emission of these facilities accounts for approx. 25% of our Scope1 & Scope 2. Therefore, there is a risk of a further increase in the operational cost if the tax rate increases.

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)

840000000

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 840,000,000 yen" is a calculation to 1,000 yen increase case. This 1,000 yen increase is the lowest of the four options for the carbon tax increase estimated by the Ministry of the Environment, Government of Japan in 2021: 1,000 yen, 3,000 yen, 5,000 yen, and 10,000 yen. In the breakdown of CO2 emissions (Scope1, 2) in 2021, Japan's emissions were around 840,000 tonnes. (840,000 tCO2 * 1,000 yen/tCO2 = 840,000,000 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

6285000000

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 2021, as an example, we implemented 260 projects with a payback period of 4-10 years. CO2 emission reductions per year from projects completed in 2021 are approximately 8,000 tonnes. 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 6,285 million yen in 2021. 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, and equipment replacements) were extracted from the list of capital investment in 2021 at the production facilities, and the investment amount was totalled.

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)
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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)

4611000000

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 4,611,000,000 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 4,611 thousand tonnes in 2021. (4,611,000 tonnes * 1 yen/kg = 4,611,000,000 yen)

Cost of response to risk

95500000000

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 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 commercializing production by 2026, with full-scale production by 2030, 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 95.5 billion yen per year in 2021. 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
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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 our 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 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)

30030000000

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 30,030,000,000 yen" shows the values per 1% decrease in sales based on our latest data. Our tire sales in 2021 was about 3,003 billion yen. (3,003,000,000,000 yen * 0.01 = 30,030,000,000 yen)

Cost of response to risk

95500000000

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 is developing and expanding fuel-efficient tires equipped with ENLITEN, an innovative tire technology that combines environmental and driving performance. In 2021, 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 95.5 billion yen per year in 2021. 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
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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 2021, the number of letters and inquiries about climate change, especially from investors, increased by 30% 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 2021. (714,000,000 share * 1 yen = 714,000,000 yen) It brings more difficult access to capital.

Cost of response to risk

35400000

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 2021 calculation results through an external organization. We have received third-party assurance for key environmental data since 2015, and our 144 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 2021, we were ranked A on CDP Supplier Engagement, DJSI Asia Pacific, FTSE4Good Index Series, and ISS ESG Corporate Rating etc. as of December 2021. We spent approx. 35.4 million yen in 2021 in total for implementing the measures above including obtaining a third-party verification of our 2021 GHG calculation results and issuing an Integrated 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 and result in the increased revenues. 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. In 2021, the contribution to CO2 reduction combined with the activities of the entire value chain is equivalent to approximately 1,579,000t-CO2. 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)

30030000000

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 30,030,000,000 yen" is a calculation when the sales of tire business increases 1%. Our sales of tire business in 2021 was about 3,003 billion yen.

(3,003,000,000,000 yen * 0.01 = 30,030,000,000 yen)

Cost to realize opportunity

95500000000

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. In addition, Bridgestone is developing and expanding fuel-efficient tires equipped with ENLITEN, an innovative tire technology that combines environmental and driving performance. In 2021, 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 in 2020 compared to 2005. In 2021, we continued to reduce the tire rolling resistance, and the contribution to CO2 reduction combined with the activities of the entire value chain is equivalent to approximately 1.6 million tons. In addition, we sets the focused target towards 2030: contributing to global CO2 emissions reduction across the lifecycle and value chain (Scope 3) of its products and services exceeding five times its operation's (Scope 1 and 2) CO2 emissions. To do so, we define a key action towards 2030: developing products and services that contribute to CO2 emissions reduction (e.g. fuel-efficient tires with low rolling resistance). The entire research and development expenses of the Global Group, including technology development for reducing tire-rolling resistance totalled 95.5 billion yen per year in 2021. * 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. Increased availability of natural rubber resources could contribute to the financial impact of stabilized sales, increased market share, and lower procurement costs.

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)

221000000000

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 2021 was about 3,003 billion yen and the latest our tire share is 13.6% . (3,003 billion / 0.136 * 1%= 221 billion)

Cost to realize opportunity

95500000000

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 commercializing production by 2026, with full-scale production by 2030, 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 95.5 billion yen per year in 2021. 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 that this increased demand for CO2 emission reduction is an opportunity to increase revenues in the Mobility Solutions business.

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)

32000000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

We are scaling up the Mobility Solutions business by deploying Webfleet Solutions' system and expertise globally from Europe as a Center of Excellence. In addition, Bridgestone acquired Azuga Holdings in 2021 and this will accelerate Bridgestone's progress toward delivering sustainable mobility solutions that improve fleet efficiency, safety, vehicle uptime and customer service. Through these efforts, we plan to increase sales in the Mobility Solutions business from 23.3 billion yen in 2021 to 32.0 billion yen in 2022.

Cost to realize opportunity

109300000000

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" the net of payments for acquisition of the Webfleet solutions (former TOMTOM TELEMATICS) totalled 109.3 billion yen per year in 2019.

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization’s strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan

Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan

Yes

Mechanism by which feedback is collected from shareholders on your transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

We receive feedback every year from institutional investors who are shareholders on our annual Sustainability Report, which includes our transition plan. In 2021, we received feedback from four companies. In addition, we hold dialogues with institutional investors as shareholders on ESG issues, including our transition plan. In 2021, we held dialogues with 8 companies on the topic of transition plans.

Frequency of feedback collection

Annually

Attach any relevant documents which detail your transition plan (optional)

Explain why your organization does not have a transition plan that aligns with a 1.5°C world and any plans to develop one in the future

<Not Applicable>

Explain why climate-related risks and opportunities have not influenced your strategy

<Not Applicable>

C3.2

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

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative and quantitative	<Not Applicable>	<Not Applicable>

C3.2a

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

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Physical climate scenarios RCP 8.5	Company-wide	<Not Applicable>	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. The following changes are assumed in the RCP 8.5 scenario, where global surface temperature averaged over 2081–2100 is very likely to be higher by 3.3°C to 5.7°C: - Frequency and increase in intensity of heavy 1-day precipitation event that occurred once in 10 years on average in a climate without human influence will likely occur about 1.5 times from the base period (1850-1900) around 2030 and about 1.7 times around 2050. - Frequency and increase in intensity of an agricultural and ecological drought event that occurred once in 10 years on average across drying regions in a climate without human influence will likely occur 2.0 times from the base period (1850-1900) around 2030 and about 2.4 times around 2050.
Physical climate scenarios RCP 1.9	Company-wide	<Not Applicable>	The following changes are assumed in the RCP 1.9 scenario, where global surface temperature averaged over 2081–2100 is very likely to be higher by 1.0°C to 1.8°C: - Frequency and increase in intensity of heavy 1-day precipitation event that occurred once in 10 years on average in a climate without human influence will likely occur about 1.5 times from the base period (1850-1900) both around 2030 and around 2050. - Frequency and increase in intensity of an agricultural and ecological drought event that occurred once in 10 years on average across drying regions in a climate without human influence will likely occur 2.0 times from the base period (1850-1900) both around 2030 and around 2050.
Transition scenarios IEA NZE 2050	Company-wide	<Not Applicable>	On the 1.5 and/or 2 degree scenario, we assume that physical impact such as flood, water shortage caused by climate change won't be as significant as in the 4 degree scenario so the risks to focus is strong rise of social demand and stricter policy. The following demands and stricter policies are assumed in the NZE 2050 scenario: - CO2 price in advanced economies is assumed to rise to 130USD/t-CO2 in 2030 and 250USD/t-CO2 in 2050 - CO2 price in the other major economies including China, Brazil, Russia and South Africa is assumed to rise to 90USD/t-CO2 in 2030 and 200USD/t-CO2 in 2050 - No new internal combustion engine (ICE) car sales in 2035
Transition scenarios Customized publicly available transition scenario	Company-wide	1.6°C – 2°C	PRI Forecast Policy Scenario is used as a supplement to IEA NZE 2050 scenario to identify transition risks and opportunities. On the 1.5 and/or 2 degree scenario, we assume that physical impact such as flood, water shortage caused by climate change won't be as significant as in the 4 degree scenario so the risks to focus is strong rise of social demand and stricter policy. The following demands and stricter policies are assumed in the PRI Forecast Policy Scenario: - Major tropical forest countries are assumed to end deforestation by 2030 - Net deforestation is assumed to stop in 2030

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

The impact of climate change risks and opportunities on future automobile/tire market and natural rubber is continuing to increase so this is very important issue for Bridgestone as a tire manufacturer. For this reason, we verify whether the significant business risks and opportunities identified in the scenario analysis have been incorporated in our mid-long term strategy and the other plans looking ahead for 2030 and 2050. The scenarios and the resulting assumptions take into account the characteristics of the tire industry, such as natural rubber procurement and its major production regions. We conducted scenario analysis with business projections as of 2030 and/or 2050. The scope targets the tire business, which is our core segment that accounts for more than 80% of sales. There are 90 tire-related production bases in the Americas, Europe/Middle East/Africa/Russia, China/Asia Pacific and Japan. We selected 4 degree / 1.5 and/or 2 degree scenarios to clarify climate risks widely on overall aspects (including procurement, manufacturing, logistics etc. not limiting to our product/service). We consider the 1.5 and/or 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. 1) List climate risks on the scenarios widely 2) Estimate financial impacts of the risks and opportunities 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

Results of the climate-related scenario analysis with respect to the focal questions

We found the following risks and opportunities are especially significant for us on the scenario. [Physical risks and opportunities related to climate change] - Risks related to the procurement of raw materials as a result of changing rainfall patterns leading to poor harvesting of natural rubber. - Risks of stronger typhoons and increased frequency of flooding and drought, which pose the risk of interrupting business activities. - Risk of lower demand for winter tires due to reduced snowfalls. - Opportunities to commercialize natural rubber derived from guayule, which grows in arid regions. Risks due to poor harvesting of natural rubber derived from Para rubber trees, which are found predominantly in tropical regions. [Risks and opportunities of transition to a decarbonized society] - Risk of adverse effects on operating results and financial position, such as limitations on business activities and increased costs, if R&D expenses required to meet the rapidly changing needs of society and customers do not produce sufficient results when systems and regulations to combat climate change are introduced (for example, carbon taxes, CO2 emission reduction obligations and emissions trading systems, systems and regulations related to low-fuel consumption performance of tires, systems and regulations related to recycling used tires, etc.). - Opportunities associated with changes in competitive factors due to changes in mobility needs (for example, increased demand for tires for electric vehicles, increased demand for tires and solutions that help customers reduce CO2 emissions). - Risk of increased price of natural rubber caused by stronger demand for forest protection and shortage of its supply - Opportunities to commercialize the recycling business resulting from increased regulation around the recycling of used tires. The results of the scenario analysis verified that the significant business risks and opportunities identified in the scenario analysis have already been incorporated in our mid-long term strategy toward achieving carbon neutrality or the other plans looking ahead for 2030 and 2050. The Group is working to reduce the risks of transition to a decarbonized society by reducing CO2 emissions throughout its value chain, while at the same time reducing physical risks through adaptive measures such as diversifying natural rubber supply sources through initiatives to commercialize guayule, a rubber-producing plant that grows in arid regions. The details are described at C3.3.

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 30.03 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 tire technology that is optimal for EV fitment and combines environmental and driving performance. Benefiting car manufacturers, drivers and environment, tires with embedded ENLITEN technology also improves the vehicle handling and stability to increase driving pleasure. And in 2021, 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	We are working to reduce transition risks by setting 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. In addition, we are working to reduce CO2 emissions across the value chain through efforts to build a recycling business that converts used tires back into raw materials. We are also working to reduce physical risks by diversifying natural rubber supply sources through initiatives to commercialize guayule.
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". * 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 through equipment and processes improvements, and introduction of renewable energy. 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. Concerning physical risks due to climate change and their associated opportunities, in line with our BCP, we continue to set up systems to ensure an appropriate response should a crisis occur, as well as support for resumption of business activities.

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	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 in 2021, 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 2021 was 95.6%. 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 95.5 billion yen per year in 2021. Expenses and investments mainly for introducing equipment for energy saving, including upgrading them, at Bridgestone plants amounted to 6,285 million yen in 2021. 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.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

Yes

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's transition to a 1.5°C world.

Financial Metric

Revenue

Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)

3

Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)

Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)

Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world

The above shows the percentage of truck and bus retread tire sales (global) in 2021. A retread tire reuses a used tire by replacing the worn tread with a new tread on the existing casing. The Climate Bonds Taxonomy defines the Facilities for the Re-use of Materials as assets and projects which are considered to be automatically compatible with a 1.5°C degree decarbonisation trajectory. And the SASB Standard for Auto Parts sector and the draft of IFRS Climate-related Disclosures for Auto Parts sector (as of March, 2022) define the following Accounting Metrics and its examples: TR-AP-410a.1. Revenue from products designed to increase fuel efficiency and/or reduce emissions* *Examples of products that may increase fuel efficiency and/or reduce emissions include (...) low rolling resistance (LRR) new and retread tire technologies In addition, we plan to offer approximately 90 ENLITEN equipped products for passenger car and light truck tires from 2022 to 2030, aiming to achieve 100% fitment of ENLITEN by 2030. ENLITEN is the innovative tire technology optimized to fit EVs and the considerable reduction in tire weight and rolling resistance and longer wear life per raw material help to conserve resources and lower the environmental impact.

C4. Targets and performance

C4.1

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

Absolute target

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)

Scope 1
Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Base year

2011

Base year Scope 1 emissions covered by target (metric tons CO2e)

2069200

Base year Scope 2 emissions covered by target (metric tons CO2e)

2328777

Base year Scope 3 emissions covered by target (metric tons CO2e)

<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

4397976

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2030

Targeted reduction from base year (%)

50

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

2198988

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

1722210

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

1664403

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

3386613

% of target achieved relative to base year [auto-calculated]

45.9922018674045

Target status in reporting year

Underway

Is this a science-based target?

Yes, we consider this a science-based target, and the target is currently being reviewed by the Science Based Targets initiative

Target ambition

Well-below 2°C aligned

Please explain target coverage and identify any exclusions

Bridgestone set a Mid-term Targets, Milestone 2030. Focused target: Reduce our absolute CO2 emissions (Scope 1 and 2) by 50% by 2030

Plan for achieving target, and progress made to the end of the reporting year

Bridgestone has set an interim target of reducing Scope 1 and 2 emissions by 30% or more by 2023, compared to 2011. To achieve the targets above, we define the following key actions in Milestone 2030: - Continuously improve energy efficiency in operations to reduce total energy consumption - Enhance renewable electricity ratio - Promote manufacturing and engineering innovation In addition, we also set a target for our production sites to increase the renewable electricity ratio to 50% or more by 2023. In 2021, we continued its efforts to improve energy efficiency and introduce renewable energy sources, and achieving 25% reduction compared to 2011.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

Target reference number

Abs 3

Year target was set

2019

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

<Not Applicable>

Base year

2011

Base year Scope 1 emissions covered by target (metric tons CO2e)

2069200

Base year Scope 2 emissions covered by target (metric tons CO2e)

2328777

Base year Scope 3 emissions covered by target (metric tons CO2e)

<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

4397976

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2050

Targeted reduction from base year (%)

100

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

0

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

1722210

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

1664403

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

3386613

% of target achieved relative to base year [auto-calculated]

22.9961009337022

Target status in reporting year

Underway

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

<Not Applicable>

Please explain target coverage and identify any exclusions

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

Plan for achieving target, and progress made to the end of the reporting year

To achieve Bridgestone's long-term environmental vision by 2050, the Group had previously conducted global initiatives its mid-term 2020 targets under Milestone 2020, reduced emissions footprint from customers' use of Bridgestone tires will exceed the Group's emissions from raw material procurement, product manufacturing, distribution and its products' after-use, and reached ahead of schedule. As part of reviewing initiatives for the next decade until 2030, the Group conducted an assessment of the business impact of environment-related social issues as well as its potential impact on society. It has applied the assessment results into the strategic and business plans to set Milestone 2030. See Abs 1 in C4.1a for progress on the Milestone 2030.

List the emissions reduction initiatives which contributed most to achieving this target

<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Net-zero target(s)

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number

NZ1

Target coverage

Company-wide

Absolute/intensity emission target(s) linked to this net-zero target

Abs3

Target year for achieving net zero

2050

Is this a science-based target?

No, but we are reporting another target that is science-based

Please explain target coverage and identify any exclusions

This net zero target indicates our long-term environmental vision of "Contribute towards carbon neutral (2050 and beyond)".

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?

No

Planned milestones and/or near-term investments for neutralization at target year

<Not Applicable>

Planned actions to mitigate emissions beyond your value chain (optional)

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*	148	23955
Implementation commenced*	35	13317
Implemented*	77	8364
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 (Lighting)
--------------------------------	----------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

1878

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

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

74700000

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

373500000

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 (Process optimization)
---	--

Estimated annual CO2e savings (metric tonnes CO2e)

43757

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

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

1182297000

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

5911513000

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
Internal price on carbon	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?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify ("Tyre LCCO2 Calculation Guidelines" published by Japan Automobile Tyre Manufacturers Association (JATMA))

Type of product(s) or service(s)

Other	Other, please specify (Fuel-efficient tires)
-------	--

Description of product(s) or service(s)

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. We are developing and expanding fuel-efficient tires equipped with ENLITEN, an innovative tire technology that combines environmental and driving performance, and mobility solutions that provide fleet management services.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify ("Tyre LCCO2 Calculation Guidelines" published by Japan Automobile Tyre Manufacturers Association (JATMA))

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

One fuel-efficient passenger car tire is installed (Fuel-efficient tyre B tyre in the JATMA Guidelines: size 195/65R15, rolling resistance coefficient 6.2 N/kN, driving life 30,000 km)

Reference product/service or baseline scenario used

One conventional passenger car tire is installed (Conventional PC tyre in the JATMA Guidelines: size 195/65R15, rolling resistance coefficient 10.5N/kN, driving life 30,000 km)

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

0.251

Explain your calculation of avoided emissions, including any assumptions

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/CO2 reduction when customers use one's vehicles. Since the tire fuel efficiency or its standards differ by country, we approximate CO2 emissions. We estimate the above "Estimated Avoided Emissions" based on "Tyre LCCO2 Calculation Guidelines" published by JATMA. This figure the following: For every 1% reduction in rolling resistance coefficient of passenger car tire, each tire contributes 251.1 kgCO2e reduction*. When we calculate using the "Estimated Avoided Emission", our reduction rate of the tire rolling resistance coefficient and the 2021 sales volume of our passenger cars tire, it contributed about 9,000,000 tonnes of CO2 reduction in 2021 compared with our products in 2005. * Calculation Methodology: Estimated avoided emissions per tire was calculated using the following formula Difference in GHG emissions (250.5 kgCO2e for conventional tire - 155.1 kgCO2e for fuel efficient tire) / Difference in tire rolling resistance (100% for conventional tire - 62% for fuel efficient tire)

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

79

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

Yes, a divestment

Name of organization(s) acquired, divested from, or merged with

Firestone Building Products

Details of structural change(s), including completion dates

LafargeHolcim has acquired Firestone Building Products (FSBP), a leader in commercial roofing and building envelope solutions with 15 manufacturing facilities, on April 1, 2021. FSBP manufacturing facilities are not included in the emission data in this disclosure from this reporting year (FY2021).

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in methodology	The emission factors used have been updated to the latest version.

C5.1c

(C5.1c) Have your organization's base year emissions been recalculated as result of the changes or errors reported in C5.1a and C5.1b?

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	Yes	The base year emissions are recalculated in the event of any business divestment.

C5.2

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

Scope 1

Base year start
January 1 2011

Base year end
December 31 2011

Base year emissions (metric tons CO2e)
2069200

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)
2328777

Comment

Scope 3 category 1: Purchased goods and services

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
13335981

Comment

Scope 3 category 2: Capital goods

Base year start
January 1 2019

Base year end
December 31 2019

Base year emissions (metric tons CO2e)
922548

Comment

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

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

536621

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

682672

Comment

Scope 3 category 5: Waste generated in operations

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

185999

Comment

Scope 3 category 6: Business travel

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

18667

Comment

Scope 3 category 7: Employee commuting

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

66166

Comment

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

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.

Scope 3 category 9: Downstream transportation and distribution

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

515674

Comment

Scope 3 category 10: Processing of sold products

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

3002

Comment

Scope 3 category 11: Use of sold products

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

91995418

Comment

Scope 3 category 12: End of life treatment of sold products

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

2043095

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Bridgestone had no downstream leased assets in 2021.

Scope 3 category 14: Franchises

Base year start

January 1 2019

Base year end

December 31 2019

Base year emissions (metric tons CO2e)

72420

Comment

Scope 3 category 15: Investments

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Our business does not generate CO2 emission through investment.

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

(C5.3) 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, Superseded 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)

1722210

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

2062166

Scope 2, market-based (if applicable)

1664403

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 relevant and calculated, but not disclosed

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.

Estimated percentage of total Scope 1+2 emissions this excluded source represents

0

Explain how you estimated the percentage of emissions this excluded source represents

- CH4 and N2O: Calculated by multiplying the amount of steam used by CO2 emission factors - HFC: Calculated from HFC emitted from a part of one's own sites and multiply it by total CO2 emissions for proportional allotment

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.

Estimated percentage of total Scope 1+2 emissions this excluded source represents

Explain how you estimated the percentage of emissions this excluded source represents
Calculated by multiplying energy consumptions by CO2 emission factors. Some sites for which data was not available are estimated from CO2 emissions per site for which data is available.

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

Emissions in reporting year (metric tons CO2e)

13038530

Emissions calculation methodology

Average data method

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

0

Please explain

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.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

835780

Emissions calculation methodology

Spend-based method

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

0

Please explain

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

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

448019

Emissions calculation methodology

Average data method

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

0

Please explain

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

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

680060

Emissions calculation methodology

Average data method
Distance-based method

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

0

Please explain

[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.

Waste generated in operations

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

151377

Emissions calculation methodology

Waste-type-specific method

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

0

Please explain

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

Business travel

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

17633

Emissions calculation methodology

Average data method

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

0

Please explain

Calculated using Bridgestone's calculation method based on the "Tyre LCCO2 Calculation Guidelines Ver. 3.0.1" (The Japan Automobile Tyre Manufacturers Association, Inc), citing fuel consumption data from the International Council on Clean Transportation and Department for Environment, Food & Rural Affairs (DEFRA).

Employee commuting

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

62501

Emissions calculation methodology

Average data method

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

0

Please explain

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

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons 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

Emissions in reporting year (metric tons CO2e)

430729

Emissions calculation methodology

Spend-based method
Site-specific method

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

2

Please explain

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

Processing of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

2616

Emissions calculation methodology

Average data method

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

0

Please explain

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

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

95664694

Emissions calculation methodology

Methodology for direct use phase emissions, please specify (Calculated from our Tyre sales unit and CO2 emission per 1 tire when it used based on "Tyre LCCO2 Calculation Guidelines Ver. 3.0" by The Japan Automobile Tyre Manufacturers Association, Inc.(JATMA) March 2021)

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

0

Please explain

Calculated from our Tyre sales unit and CO2 emission per 1 tire when it used based on "Tyre LCCO2 Calculation Guidelines Ver. 3.0" by The Japan Automobile Tyre Manufacturers Association, Inc.(JATMA) March 2021

End of life treatment of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

2016749

Emissions calculation methodology

Waste-type-specific method

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

0

Please explain

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

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons 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 downstream leased assets in 2021.

Franchises

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

72538

Emissions calculation methodology

Average data method

Site-specific method

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

0

Please explain

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

Investments

Evaluation status

Not relevant, explanation provided

Emissions in reporting year (metric tons 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

Emissions in reporting year (metric tons 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

Emissions in reporting year (metric tons 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	11339	

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

0.00000104

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

3386613

Metric denominator

metric ton of product

Metric denominator: Unit total

3246057

Scope 2 figure used

Market-based

% change from previous year

1.2

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. In 2021, BSEMIA completes the transition of electricity use to 100% renewable energy at all tire plants producing new tires in Europe. Additionally, the Group has switched all electricity used to renewable energy sources at its four plants in Japan (Hikone, Shimonoseki, Tosu, and Kitakyushu), two plants in China (Tianjin and Wuxi) and its plant in Bari, Italy. The Chonburi plant in Thailand installed 2,160 photovoltaic panels on its roof and started supplying 1MW of solar power in 2021.

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	333556
Canada	21018
Mexico	104652
Costa Rica	12271
Argentina	19946
Brazil	72288
France	0
Belgium	3854
Spain	51116
Poland	15774
Italy	30287
Hungary	13145
United Kingdom of Great Britain and Northern Ireland	403
Turkey	52008
South Africa	34312
Liberia	9738
Thailand	256272
Indonesia	82287
Taiwan, China	6932
India	16032
Australia	62
Malaysia	46
Philippines	0
Viet Nam	4717
China	59854
Japan	513127
Russian Federation	8511

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	1638162
Others	84048

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)
United States of America	489755	419092
Canada	15905	15905
Mexico	56685	56809
Costa Rica	331	331
Argentina	14771	14771
Brazil	27377	27377
France	1357	1169
Belgium	2042	2146
Spain	40935	0
Poland	165371	27672
Italy	1708	0
Hungary	17653	0
United Kingdom of Great Britain and Northern Ireland	215	0
Turkey	83406	60058
South Africa	45018	45018
Liberia	0	0
Thailand	212124	209135
Indonesia	71889	71889
Taiwan, China	28726	28726
India	91700	82980
Australia	4305	4305
Malaysia	557	557
Philippines	3181	3181
Viet Nam	17887	17887
China	261477	234361
Japan	396641	329883
Russian Federation	11152	11152

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	1864286	1485454
Others	197880	178949

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?

Increased

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	46913	Decreased	1.5	In 2021, BSEMIA completes the transition of electricity use to 100% renewable energy at all tire plants producing new tires in Europe. Additionally, the Group has switched all electricity used to renewable energy sources at its four plants in Japan (Hikone, Shimonoseki, Tosu, and Kitakyushu), two plants in China (Tianjin and Wuxi) and its plant in Bari, Italy. The Chonburi plant in Thailand installed 2,160 photovoltaic panels on its roof and started supplying 1MW of solar power in 2021. This results in a total reduction of 46,913 tons of CO2 from 2020. Therefore, the same amount which is equivalent to 1.5% was reduced from 2020. $(-46,913 / 3,162,390) * 100 = -1.5\%$ *Previous year(2020) Scope 1 + 2 emission was 3,162,390 tCO2e
Other emissions reduction activities	351890	Decreased	11.1	We are continuously developing the ability of the personnel to recognize and implement energy-saving opportunities. In Milestone 2030, we aim to improve our energy efficiency by 0.5% per year. We reduced 351,890 tonnes as a result of energy-saving activities in 2021. Since Scope 1 and 2 emissions were 3,162,390 tonnes the previous year, that represents a 11.1% reduction from 2020. $(-351,890 / 3,162,390) * 100 = -11.1\%$ *Previous year(2020) Scope 1 + 2 emission was 3,162,390 tCO2e
Divestment		<Not Applicable >		
Acquisitions		<Not Applicable >		
Mergers		<Not Applicable >		
Change in output	635620	Increased	20.1	In 2020, due to the impact of COVID-19, the production volume decreased by 902 thousand tonnes from the previous year, and in 2021 that production increased by 462 thousand tonnes from the previous year. Therefore, the associated Scope 1 and 2 emissions increased by 635,620 tonnes in 2021. $(+635,620 / 3,162,390) * 100 = +20.1\%$ *Previous year(2020) Scope 1 + 2 emission was 3,162,390 tCO2e
Change in methodology	74899	Decreased	2.4	Electricity emission factors was updated to the latest figures. The values on the left was difference between Scope1 + 2(Market-based) emission in 2021 with the latest electricity emission factors and that with the factors of previous year. $(-74,899 / 3,162,390) * 100 = -2.4\%$ *Introduction of renewable electricity in 6 plants written in the first column was excluded from this calculation *Previous year(2020) Scope 1 + 2 emission was 3,162,390 tCO2e
Change in boundary		<Not Applicable >		
Change in physical operating conditions		<Not Applicable >		
Unidentified		<Not Applicable >		
Other	62386	Increased	2	Due to changes in the composition of energy sources, impacts of located production variation, etc. $(+62,386 / 3,162,390) * 100 = +2.0\%$ *Previous year(2020) Scope 1 + 2 emission was 3,162,390 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)	27996	6824140	6852136
Consumption of purchased or acquired electricity	<Not Applicable>	720373	3933994	4654366
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	346671	346671
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	42419	<Not Applicable>	42419
Total energy consumption	<Not Applicable>	790787	11104804	11895592

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.

Sustainable biomass

Heating value

LHV

Total fuel MWh consumed by the organization

0

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

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other biomass

Heating value

LHV

Total fuel MWh consumed by the organization

27996

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

27996

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

Total fuel MWh consumed by the organization

0

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

0

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Coal

Heating value

LHV

Total fuel MWh consumed by the organization

100236

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

100236

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Oil

Heating value

Total fuel MWh consumed by the organization

725247

MWh fuel consumed for self-generation of electricity

191860

MWh fuel consumed for self-generation of heat

354637

MWh fuel consumed for self-generation of steam

178750

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

0

Comment

Gas

Heating value

Total fuel MWh consumed by the organization
5998658

MWh fuel consumed for self-generation of electricity
0

MWh fuel consumed for self-generation of heat
1029011

MWh fuel consumed for self-generation of steam
3562627

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

MWh fuel consumed for self- cogeneration or self-trigeneration
1407020

Comment

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

Total fuel MWh consumed by the organization
0

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
0

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

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

Comment

Total fuel

Heating value

Total fuel MWh consumed by the organization
6852136

MWh fuel consumed for self-generation of electricity
191860

MWh fuel consumed for self-generation of heat
1383648

MWh fuel consumed for self-generation of steam
3869609

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

MWh fuel consumed for self- cogeneration or self-trigeneration
1407020

Comment

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	726936	726936	42419	42419
Heat	1118558	1118558	0	0
Steam	3683172	3683172	22219	22219
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 or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method

Purchase from an on-site installation owned by a third party

Energy carrier

Electricity

Low-carbon technology type

Solar

Country/area of low-carbon energy consumption

India

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

5017

Country/area of origin (generation) of the low-carbon energy or energy attribute

India

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2019

Comment

Sourcing method

Purchase from an on-site installation owned by a third party

Energy carrier

Electricity

Low-carbon technology type

Solar

Country/area of low-carbon energy consumption

China

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

2959

Country/area of origin (generation) of the low-carbon energy or energy attribute

China

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2018

Comment

Sourcing method

Purchase from an on-site installation owned by a third party

Energy carrier

Electricity

Low-carbon technology type

Solar

Country/area of low-carbon energy consumption

Thailand

Tracking instrument used

Contract

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

410

Country/area of origin (generation) of the low-carbon energy or energy attribute

Thailand

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2021

Comment

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area

United States of America

Consumption of electricity (MWh)

1283386

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1283386

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Canada

Consumption of electricity (MWh)

123198

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

123198

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Mexico

Consumption of electricity (MWh)

142712

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

142712

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Costa Rica

Consumption of electricity (MWh)

56095

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

56095

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Argentina

Consumption of electricity (MWh)

51431

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

51431

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Brazil

Consumption of electricity (MWh)

262990

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

262990

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

France

Consumption of electricity (MWh)

3516

Consumption of heat, steam, and cooling (MWh)

5412

Total non-fuel energy consumption (MWh) [Auto-calculated]

8928

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Belgium

Consumption of electricity (MWh)

12394

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

12394

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Spain

Consumption of electricity (MWh)

206428

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

206428

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Poland

Consumption of electricity (MWh)

213790

Consumption of heat, steam, and cooling (MWh)

107829

Total non-fuel energy consumption (MWh) [Auto-calculated]

321619

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Italy

Consumption of electricity (MWh)

5992

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

5992

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Hungary

Consumption of electricity (MWh)

77697

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

77697

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

United Kingdom of Great Britain and Northern Ireland

Consumption of electricity (MWh)

1031

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

1031

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Turkey

Consumption of electricity (MWh)

193478

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

193478

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

South Africa

Consumption of electricity (MWh)

48308

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

48308

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Liberia

Consumption of electricity (MWh)

38897

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

38897

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Thailand

Consumption of electricity (MWh)

451176

Consumption of heat, steam, and cooling (MWh)

86417

Total non-fuel energy consumption (MWh) [Auto-calculated]

537593

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Indonesia

Consumption of electricity (MWh)

94379

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

94379

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Taiwan, China

Consumption of electricity (MWh)

38870

Consumption of heat, steam, and cooling (MWh)

33314

Total non-fuel energy consumption (MWh) [Auto-calculated]

72184

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

India

Consumption of electricity (MWh)

126937

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

126937

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Australia

Consumption of electricity (MWh)

6285

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

6285

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Malaysia

Consumption of electricity (MWh)

841

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

841

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Philippines

Consumption of electricity (MWh)

4734

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

4734

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Viet Nam

Consumption of electricity (MWh)

27570

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

27570

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

China

Consumption of electricity (MWh)

379573

Consumption of heat, steam, and cooling (MWh)

113698

Total non-fuel energy consumption (MWh) [Auto-calculated]

493271

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Japan

Consumption of electricity (MWh)

815257

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

815257

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Russian Federation

Consumption of electricity (MWh)

29819

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

29819

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

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

Independent Assurance Statement for Bridgestone 2021.pdf

Page/ section reference

Please refer to the page 2 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

Independent Assurance Statement for Bridgestone 2021.pdf

Page/ section reference

Please refer to the page 2 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

Independent Assurance Statement for Bridgestone 2021.pdf

Page/ section reference

Please refer to the page 2 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
- Scope 3: Capital goods
- Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
- Scope 3: Upstream transportation and distribution
- Scope 3: Waste generated in operations
- Scope 3: Business travel
- Scope 3: Employee commuting
- Scope 3: Downstream transportation and distribution
- Scope 3: Processing of sold products
- Scope 3: Use of sold products
- Scope 3: End-of-life treatment of sold products
- 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

Independent Assurance Statement for Bridgestone 2021.pdf

Page/section reference

It is listed on the page 2 and 3 of the assurance statement.

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

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1 2021

Period end date

December 31 2021

Allowances allocated

17425

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO₂e

103238

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 2021

Period end date

December 31 2021

% of total Scope 1 emissions covered by tax

29.8

Total cost of tax paid

148293675

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 complete the transition of electricity use to 100% renewable energy at all tire plants producing new tires in Europe in 2021. Additionally, the Group has switched all electricity used to renewable energy sources at its four plants in Japan (Hikone, Shimonoseki, Tosu, and Kitakyushu), two plants in China (Tianjin and Wuxi) and its plant in Bari, Italy. The Chonburi plant in Thailand installed 2,160 photovoltaic panels on its roof and started supplying 1MW of solar power. As a result of these renewable energy introductions, we reduced CO₂ emissions by 46,913 tonnes in 2021 compared to BAU case.

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-learning.

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
Scope 3

Application

Applied to decisions of investment for equipment

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

11200

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 (6.0% in 2021), we have introduced internal carbon pricing for CO₂ reduction since 2011. By utilizing internal carbon pricing, the impact of CO₂ reduction/increase is taken into account as a factor in investment decision, and is intended to promote investment toward carbon neutrality. 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. Common internal carbon price is set accordingly considering market price of CO₂ emission cost such as EU-ETS and other factors, and reviewed once a year. In 2022, the price was updated to \$100* per tonne of CO₂ and the scope of application was extended to investment related to Scope 3. Internal carbon pricing is embedded in the standard process of evaluation of profitability on investment. Quantitative changes in CO₂ emissions by the investment are calculated and the impact of CO₂ emission cost based on internal carbon price is included in the calculation of payback period and it is used as the basis for making decision on investment. The internal carbon pricing has been applied to a variety of investment such as introduction of energy-efficient equipment, self-generation system by renewable energy for CO₂ reduction, etc. * The 11,200 yen reported in the "Actual price(s) used" above is the \$100 multiplied by 112 yen/\$, which is the exchange rate forecast for the fiscal year 2022 in the Consolidated Financial Statements for Q1 2022 (issued on May 11, 2022).

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
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

62

% total procurement spend (direct and indirect)

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

100

Rationale for the coverage of your engagement

Coverage: All Tier 1 tire material suppliers. Tier 1 suppliers indicate suppliers that supply materials directly to the Bridgestone Group. Rationale for the coverage: The Tier 1 tire material suppliers are subject to our engagement and third party assessment because of their relatively large size and frequency of our purchases.

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. In order to assess the increased awareness and sustainability practices of the procurement policies by suppliers through these activities, we have asked our suppliers to undergo an evaluation by EcoVadis. We have set the following KPI as one of measures of success: 95% or more of its spend basis for the Group's Tier 1 tire material suppliers will have completed an EcoVadis enhanced ESG risk assessment by the end of 2023. We conduct sustainable procurement seminars in all business regions for certain suppliers based on the sustainable procurement policy and the results of their ESG risk assessments, to help support their efforts to complete the EcoVadis assessment and improve ESG activities. In 2021, 148 suppliers, consisting primarily of important suppliers for Bridgestone's global business and its business in Japan, were invited to the annual online conference in Japan. Owing to our educational activities for the suppliers, as of March 31st 2022, 95% of the Group's Tier 1 tire material suppliers completed the third-party assessment with EcoVadis. This activity could be an opportunity for suppliers to confirm and improve their actions for preventing climate change further.

Comment

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.

In Japan, Bridgestone and ENEOS Corporation launched a joint research and development project aimed at the successful development of "chemical recycling technologies that enable precise pyrolysis of used tires in 2022. In this joint project, we will engage in demonstration projects that achieve high-yield production of chemical products, such as butadiene, a raw material used in synthetic rubber. Together, Bridgestone and ENEOS, as leaders in the tire and rubber industry and the petroleum and petrochemicals industry respectively, are working to increase resource circulation and reduce CO2 emissions across the value chains of their industries.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization's purchasing process?

Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Climate-related disclosure through a non-public platform

Description of this climate related requirement

To better understand the strengths and vulnerabilities of suppliers, the Group worked with EcoVadis to conduct enhanced environmental, social and governance (ESG) risk assessments of the Group's new and existing major, Tier 1 tire material suppliers. Consistent with the sustainable procurement policy, the ESG issues assessed include energy consumption, water, biodiversity, pollution, waste, customer safety, industrial safety, labor practices, human rights, corruption, bribery, fraud, money laundering, and sustainable procurement. The Bridgestone Group's goal is to increase EcoVadis assessments from 95% as of March 2022 to 95% or more of its spend basis for the Group's direct material suppliers by 2023.

% suppliers by procurement spend that have to comply with this climate-related requirement

100

% suppliers by procurement spend in compliance with this climate-related requirement

95

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment
Supplier scorecard or rating

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage indirectly through trade associations

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

Bridgestone Environmental Policy.pdf

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

The Bridgestone Group is promoting co-creation with stakeholders by encouraging open innovation in technology, business models and design, and combining technologies in various fields. For climate change action, the Group is also working with other organizations and businesses to accelerate carbon neutral initiatives.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate

<Not Applicable>

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Other, please specify (Japan Climate Change Initiative (JCI))

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The JCI, as non-state actors such as companies and local governments, pledge to stand at the forefront of global challenges in order to realize the decarbonized society envisioned by the Paris Agreement. In April 2021, Bridgestone endorsed a message by JCI calling for the government of Japan to set ambitious greenhouse gas emission reduction targets to realize the goals of the Paris Agreement. The message, which calls for a 2030 reduction target of "going beyond 45% - aiming for a 50% emission reduction", was delivered as an open letter to Japan's Prime Minister, Foreign Minister, Minister of Economy, Trade and Industry, and Minister of the Environment, and published by various media outlets.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify (The Japan Rubber Manufacturers Association (JRMA))

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

JRMA has been set as a trade association's target for 2030 in line with the national policy calling for the ongoing reduction of CO2. 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 January 2022, their CO2 emission intensity in 2020 was 93.9% vs 2005. At the Environmental Committee, Bridgestone leads industry activities and summarizes the opinions as the chairperson.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify (The Japan Automobile Tyre Manufacturers Association, Inc. (JATMA))

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

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 2022, 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 15.9% in 2020, compared to 2006. 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.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

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_2021 (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 46 Strategy: page 12-13 Risks & opportunities: page 14 and 16 Emission target: page 13

Content elements

- Governance
- Strategy
- Risks & opportunities
- Emission targets

Comment

Bridgestone publishes the English version of its Annual Securities Report below: https://www.bridgestone.com/ir/library/securities_report/

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	Yes, both board-level oversight and executive management-level responsibility	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 Global CEO/Joint Global COO. Reporting to the Global EXCO, Bridgestone has the Global Sustainability Committee (GSC) that is led by the Joint 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. 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" summarize and report results related to biodiversity, and proposes strategies to the GSC, taking into account the latest social trends that might represent environmental risks/opportunities. Then, the GSC reports to the Global EXCO 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 biodiversity issues with Global EXCO members. Situation and progress of mid-term strategy related to CSR and sustainability are reported quarterly.	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	Yes, we have made public commitments and publicly endorsed initiatives related to biodiversity	Commitment to Net Positive Gain Commitment to No Net Loss Commitment to not explore or develop in legally designated protected areas Commitment to no conversion of High Conservation Value areas Commitment to secure Free, Prior and Informed Consent (FPIC) of Indigenous Peoples	Other, please specify (Business for Nature, Global Platform for Sustainable Natural Rubber (GPSNR))

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?	Portfolio
Row 1	Yes, we assess impacts on biodiversity in both our upstream and downstream value chain	<Not Applicable>

C15.4

(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	Yes, we are taking actions to progress our biodiversity-related commitments	Land/water protection Land/water management Species management Education & awareness Law & policy

C15.5

(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	Yes, we use indicators	Pressure indicators Response indicators

C15.6

(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located
In voluntary sustainability report or other voluntary communications	Content of biodiversity-related policies or commitments Governance Impacts on biodiversity Details on biodiversity indicators Influence on public policy and lobbying Risks and opportunities Biodiversity strategy	2022 Integrated Report.pdf (page: 51-52, 74-76, 91-93) Global Sustainable Procurement Policy_V2.0.pdf (page: 20-22) 2022 Integrated Report.pdf Global Sustainable Procurement Policy_V2.0.pdf

C16. 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.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

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