

Module: Introduction**Page: Introduction**

CC0.1**Introduction**

Please give a general description and introduction to your organization.

Bridgestone is a global leader in the tire industry, whose business consists of the "Tire sector"; manufacturing/sales of tires/tubes, sales of tire related products and car maintenance /repairs, and "Diversified products sector"; chemical & industrial products, sports products, bicycle manufacturing and sales, and other various businesses.

The CSR, Environment and Quality Management Planning Division responds to CDP. This division plays the role of coordination and management on a global level based on our Environmental Mission Statement, providing environmental support to business sections (Strategic Business Units).

CC0.2**Reporting Year**

Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.

We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.

Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed

Fri 01 Jan 2016 - Sat 31 Dec 2016

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country

Japan

Rest of world

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

JPY(¥)

CC0.6

Modules

As part of the request for information on behalf of investors, companies in the electric utility sector, companies in the automobile and auto component manufacturing sector, companies in the oil and gas sector, companies in the information and communications technology sector (ICT) and companies in the food, beverage and tobacco sector (FBT) should complete supplementary questions in addition to the core questionnaire.

If you are in these sector groupings, the corresponding sector modules will not appear among the options of question CC0.6 but will automatically appear in the ORS navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.

If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below in CC0.6.

Automotive

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

(i) Global CSR Enhancement Committee (GCEC)

(ii) The overall global decision-making regarding environmental programs, including climate change, is carried out by the Global CSR Enhancement Committee (GCEC). Members of GCEC are composed of executive officer in charge of CSR and representatives of regions and functions. Important decisions made by GCEC are reported to Global Executive Committee (Global EXCO), Bridgestone's body of global business execution. Based on the overall strategy and basic policy transmitted from Global EXCO, the Global Management Platform (GMP) indicates the direction of activities and provides support and assistance to Strategic Business Units (SBUs). At the SBU level, management reviews and implements environmental activities such as activities related to biodiversity, resource efficiency, and climate change. In order to deepen cooperation between GMP and SBUs, the Global Environment Working Group (WG) structured with members of the regional environment function has been formed to promote global environmental activities.

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
All employees	Monetary reward	Emissions reduction project Emissions reduction target Energy reduction project Energy reduction target Efficiency project Efficiency target Environmental criteria included in purchases Supply chain engagement Other: Behaviour change related indicator	At Bridgestone, organizations and individuals who have made outstanding achievements, including various climate change mitigation actions and results, such as achieving a CO2 reduction target, reducing energy use, and improving efficiency or reducing waste, are recognized by the CEO and COO in a company-wide event held on March 1, the foundation day, and recognized every year by the head of the worksite in a district event. Since the foundation day is a day on which the understanding of Bridgestone's history and philosophy of foundation is to be deepened to reconfirm the direction the company to take in the future, the event held on this day raises employees' awareness of corporate activities. In the event of the receipt of both the company-wide and district recognition, a certificate of recognition and merit bonus are granted. In 2016, a solution which can contribute to reducing CO2 emissions from tire manufacturing stage and use stage was recognized.
All employees	Recognition (non-monetary)	Emissions reduction project Emissions reduction target Energy reduction	Bridgestone Group Awards is a program for all employees that recognizes efforts of organizations and individuals in five award categories. One of award categories, Environment award, recognizes efforts related to climate change, such as achieving a CO2 reduction target, reducing energy use, and improving efficiency or reducing waste for the purpose of raising the awareness of each employee to participate in environmental activities. Bridgestone Group Awards 2016 recognized a facility which

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
		project Energy reduction target Efficiency project Efficiency target Environmental criteria included in purchases Supply chain engagement Other: Behaviour change related indicator	installed biomass boiler and reduced about 50 % CO2 emissions.

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually	Board or individual/sub-set of the Board or committee appointed by the Board	The risk/opportunity assessment applies to all regions involved in production activities (25 countries in the world), comprising Europe, North America, South America, the Middle and Near East, Africa, Asia, and Oceania. The regions involved in sales cover the whole world.	> 6 years	The risks/opportunities assessment of climate change and other environmental problems are reviewed at the Global Environment Working Group (WG) composed of members of the environment function in each area of the world and reported to the Global CSR Enhancement Committee (GCEC) in the overall global decision-making process. In addition, important decisions made by GCEC are reported to Global Executive Committee (Global EXCO), Bridgestone's body of global business execution.

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

Company-wide level

The risks/opportunities assessment of climate change and other environmental issues are reviewed at the Global Environment Working Group (WG) composed of members of the environment function in each area of the world and reported to the Global CSR Enhancement Committee (GCEC) in the overall global decision-making process. In addition, important decisions made by GCEC are reported to Global Executive Committee (Global EXCO), Bridgestone's body of global business execution.

Facilities Division level

The risks and opportunities of climate change and other environmental issues are assessed at the divisions in charge of the environment of each production/sales site in the world in order to determine the appropriate response. Significant risks and opportunities are reviewed by the Global Environment Working Group (WG) composed of members of the environment function in each area of the world, and the company-wide level process is applied as mentioned above.

CC2.1c

How do you prioritize the risks and opportunities identified?

The risks and opportunities are prioritized by Global Environment Working Group (WG) composed of members of the environmental function representing each SBU region, based on impact of risks and opportunities on business analysed from social expectations from our stakeholders. The prioritized risks and opportunities are reported to the Global CSR Enhancement Committee (GCEC) in the overall global decision-making process. Based on the decision, the Five-Year Mid-term Management Plan is reviewed in each division every year, and the plan for measures against climate change is compiled by the CSR Environment Division in cooperation with the Sales Division, Manufacture Division and Development Division. Initiatives to strike a balance between GHG reduction and business continuity are preferentially reflected in the plan.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment
--------------------------------------	-------------------------------------	---------

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

i) How the strategy has been influenced

The overall global decision-making regarding the environment, including climate change, is carried out by the Global CSR Enhancement Committee (GCEC). Members of the committee are composed of an executive officer in charge of CSR and representatives of regions and functions. Important decisions made by GCEC are reported to Global Executive Committee (Global EXCO), Bridgestone's body of global business execution, and based on the management plan finalized at Global EXCO, Strategic Business Units (SBUs) reflect it in each Five-Year Mid-term Management Plan.

ii) Example of business strategy influenced

We are pushing ahead with development of tires that contribute to reduction of CO2 emissions from driving an automobile (through reduced rolling and air

resistance). In 2016, we succeeded in developing new polyisoprene rubber with a possibility of improving fuel efficiency which can contribute to reducing CO2 emissions from driving. We will continue research and development for practical application by 2020.

iii) Aspects of climate change influenced the strategy

1) Regulatory Risks/Opportunities

-Improvement in production efficiency and reduction of raw material losses at plants complying with current and future GHG emission regulations and acquiring emission rights

-Long-term product development and sales such as fuel-efficient tires as a response to product regulations of each country such as rolling resistance coefficient (RRC) regulations

2) Product Strategy Risks/Opportunities

-Reduction of raw material use through weight reduction of products as a response to the risk of a decrease in supplies of raw material resources

-Development and sales of fuel-efficient tires complying with tire grading, etc. of each country aimed at capturing opportunities to improve market share by responding to growing market needs for fuel-efficient tires

3) Environmental Communication Risks/Opportunities

-Evaluation by stakeholders, including customers, consumers, local residents, NGOs, rating agencies, and investors, in regard to climate change initiatives

4) Business Risks/Opportunities due to Changes in Weather Conditions

-Re-examination of production areas and diversification of supply sources of natural rubber, such as Russian Dandelion and Guayule, as a response to the risk of floods and global warming

iv) The most important components of the short term strategy

Bridgestone defines the short term to be affected by climate change as the period from the present up to 2020.

-Achievement of CO2 emission reduction targets throughout the whole Group, setting 2020 as the target year, with 2005 as the baseline. We backcasted and drew up these targets from long-term environmental vision, which are ideal conditions in 2050.

-Achievement in reduction of GHG emissions mainly by the improvement in production efficiency and reduction of raw material losses at plants with an eye to regulatory compliance and acquisition of emission rights

-Product development complying with product regulations and grading of each country

-Re-examination of product structure and line-up due to shifting consumer tendencies associated with climate change.

-Needs of consumers, local residents and others in regard to climate change initiatives. In particular, acceleration of development and expansion of sales of fuel-efficient tires

v) The most important components of the long term strategy

Bridgestone defines the long term to be affected by climate change as the period from the present up to 2050.

-Strengthening initiatives toward establishing a more sustainable society according to the Bridgestone Group's Environmental Mission Statement.

-As initiatives for realizing a low-carbon society, globally-agreed long-term target that contributes to reducing GHG emissions of the whole world by at least 50% in the year 2050 and beyond.

-Re-examination of production sites controlled by the changes in weather conditions and local regulations

-Development of lightweight products that consider changes in supplies and reserves of raw material resources

-Development of fuel-efficient tires for which materials are controlled at nano level

vi) How the Paris Agreement has influenced the business strategy

We are aware of Paris Agreement aiming to reach net zero CO2 emissions, considering necessity of revision of strategies toward long-term environmental vision. In addition, it is necessary to monitor and respond to social trend since there is a possibility of establishment of measures such as carbon tax, to achieve each country's reduction target based on Paris Agreement.

vii) How this is gaining the company strategic advantage over competitors

Our strategic advantages over competitors are as follows.

-Research and development capabilities for raw materials such as development of biomass-derived synthetic rubber and solutions for controlling diseases and pests of rubber trees

-Strategic planning from a long-term view up to 2050 based on long-term environmental vision

-Planning and implementation of efficient and effective CO2 emission reduction measures by having own sites in the entire supply chain from in-house production sites for raw materials to production sites and sales within the Group

viii) Forward-looking scenario analysis

We are now considering strategies taking into account 2°C scenario.

ix) The most substantial business decisions

In 2015, Bridgestone decided to reorganize our R&D and manufacturing base located in Kodaira City, Tokyo in order to accelerate technology and business model innovation for the future. We expect to invest about 30 billion yen for this project, with construction scheduled to begin in 2017. By expanding R&D facilities and strengthening our R&D structure which supports products and services on a global basis, we aim to create value through continuous innovations. Going forward, we will promote R&D that contributes to mitigating climate change, such as development of fuel-efficient tires and energy-saving technologies.

Furthermore, in order to further enhance the competitiveness of our domestically produced tires, we finished transferring the production of PSR and LTR at the Tokyo Plant to other domestic plants at the end of June 2016. By consolidating our production plants and effectively utilizing our facilities, human resources, and know-how, we will work to further enhance production efficiency. In addition, we are carrying out capital investment in Hikone Plant. As the flagship plant of the Group, Hikone Plant aims to achieve by far the best competitiveness. In order to reduce CO2 emissions by further enhancing quality and production efficiency, we are redesigning the plant's production lines, including a shift toward IT and automation, by introducing cutting-edge technologies and equipment. We plan to invest roughly 15 billion yen in the plant. The project at the Hikone Plant began in 2016 and is scheduled to conclude by 2020.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price on carbon?

Yes

CC2.2d

Please provide details and examples of how your company uses an internal price on carbon

Internal guidelines: Our Investment Profit Criteria stipulate that carbon emission impacts (increase or reduction) of investments are to be integrated as cost when making profitability judgments for strategic investment projects. The cost of emission impacts is to be calculated as the price of an emissions credit unit.

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Trade associations

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
----------------------	--------------------	-----------------------	-------------------------------

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
The Japan Rubber Manufacturers Association (JRMA)	Consistent	After the commitment period of the Kyoto Protocol (since 2013), JRMA has been working consistently to achieve the goal of reducing CO2 in 2020 which has been set as a trade association's target in line with the national policy calling for the ongoing reduction of CO2. Every year, it gives a follow-up report on the reduction status to the government. In 2015, JRMA set the target for 2030 in addition. Based on the targets of industry groups including JRMA, Japan's reduction targets submitted to COP21 were drawn up. JRMA steadily promoted activities to reduce the emission in 2016 and reported actual CO2 reduction results to the Ministry of Economy, Trade and Industry in Japan.	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.
The Japan Automobile Tyre Manufacturers Association, Inc. (JATMA)	Consistent	JATMA is one of the major industry associations in the world, has established the Tire Labelling System in 2010 and has been contributing to increase the ratio of "Fuel Efficient Tires" in the market. In 2015, JATMA compiled and announced the benefits of CO2 emission reduction through reduced rolling resistance of passenger car tires. In 2016, based on the above results, JATMA appealed to consumers that use of the Fuel Efficient Tire is important for contributing to the low carbon society in its website, etc.	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.
World Business Council for Sustainable Development (WBCSD)	Consistent	Since 2006, the Tire Industry Project (TIP) under the World Business Council for Sustainable Development (WBCSD) has served as a voluntary joint-initiative undertaken by 11 global leading tire manufacturers, under the leadership of the CEOs with an aim to identify and address the potential human health and environmental impacts associated with tire development and use. TIP is a proactive organization that allows the industry's leading companies to leverage their collective action in advancing sustainability throughout the industry. In 2016, TIP worked on the draft industry rules for the estimation regarding life cycle impacts of tire products. These draft rules for life cycle assessment have been posted for the public reviews.	As one of co-chair of the Tire Industry Project, Bridgestone is engaged in the visualization of the overall impact of climate change through discussions with other companies.

Do you publicly disclose a list of all the research organizations that you fund?

CC2.3e

Please provide details of the other engagement activities that you undertake

CC2.3f

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

In order to ensure consistency, the Environmental External Relations Department uniformly handles cooperation with industry groups. Important discussions with industry groups are reported to Global Environment Working Group (WG) and Global CSR Enhancement Committee (GCEC), reviewed to ensure consistency and representatives of Bridgestone's feedback to industry groups.

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

Absolute target
Intensity target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
Abs1	Scope 1+2 (market-based)	100%	50%	2005	4570763	2050	No, but we anticipate setting one in the next 2 years	Target of Bridgestone Long-term Vision is to contribute to globally-agreed target (over 50% reduction of CO2 emissions).The globally-agreed target currently refers to agreement of G8 in Toyako summit in 2008, to reduce at least 50% global GHG emissions.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
Int1	Other: Scope 1+2(Market-based method + location-based method)+3 (Purchased goods & services, Upstream	100%	35%	Metric tonnes CO2e per unit	2005	585	2020	No, but we anticipate setting one in the next	Focusing on the lifecycle of the Group's products, we are working to reduce sales intensity of CO2 emitted in the manufacturing

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
	transportation & distribution, Downstream transportation and distribution, End-of-life treatment of sold products, Upstream leased assets)			revenue				2 years	process from raw material procurement to production, logistics, and products' after-use. CO2 intensity of the base year is 585 tCO2/hundred million yen. Individual targets/measures are considered by each business division for achieving our overall objective, and progress is being made toward the objective. The results thereof are compiled at the CSR, Environment and Quality Management Planning Division and the status of objective achievement is reviewed at Global EXCO.
Int2	Scope 3: Use of sold products	100%	25%	Other: Tire rolling resistance coefficient per tire	2005	100	2020	No, but we anticipate setting one in the next 2 years	Efforts to reduce tire rolling resistance by 25% during tire use will influence vehicle mileage and contribute to our purpose, more CO2 reduction than the amount emitted from company's operations and after-use stage. The target index is the tire rolling resistance coefficient and not CO2 intensity. Emissions during tire use refer to CO2 emitted from vehicles. However, since vehicle performance and driving conditions largely affect CO2 emission, accurate figures cannot be calculated and for this reason, we use the rolling resistance coefficient which can be managed

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment
									more appropriately. The rolling resistance coefficient has a direct impact on a vehicle's fuel consumption and is an index that is highly correlated to CO2. By using this index, we will contribute to CO2 reduction. 100 in base year emissions are presented as an index and not CO2e.

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment
Int1	Decrease	19	Decrease	19	Anticipated absolute emissions were calculated under the condition without change in sales from 2016. The target index is intensity and efficiency will be raised. If total emissions are calculated using this sales estimate, total emissions for Scope 1, 2, 3 (excluding use stage) will decrease. The same ratios were applied to Scope 1, 2, 3 (excluding use stage) since it was difficult to clearly distinguish between the scopes.
Int2			Decrease	2	Anticipated absolute emissions were calculated under the condition without change in sales from 2016. The target index is intensity and efficiency will be improved.

CC3.1d

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
----	--------------------------------	-----------	--	---------------------------------	-------------	-----------------------------------	---------

CC3.1e

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Abs1	24%	13%	
Int1	73%	83%	The figures on the left show the progress toward the target of Scope1, 2, 3 (excluding the tire use stage).
Int2	73%	53%	The figures on the left show the progress toward the targets for reducing the tire rolling resistance coefficient.

CC3.1f

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

Do you classify any of your existing goods and/or services as low carbon products or do they enable a third party to avoid GHG emissions?

Yes

CC3.2a

Please provide details of your products and/or services that you classify as low carbon products or that enable a third party to avoid GHG emissions

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Company-wide	Fuel-efficient tires: Tires that have reduced tire rolling resistance which influences vehicle fuel efficiency. A wide-ranging lineup is available, from passenger car tires to tires for trucks/buses and industrial vehicles, and the design facilitates rolling in order to enhance fuel efficiency. Specifically, through the use of NanoPro-Tech which exercises control over the fine	Avoided emissions	Other: LCA method of the Japan			CO2 reduction using fuel-efficient tires during the product use stage. Reasons for the possibility of reduction: Improvement of tire rolling efficiency can contribute to fuel efficiency improvement/CO2reduction when customers use one's vehicles. Since the tire fuel efficiency or its standards differ by country, we approximate CO2 emissions. When we calculate based on Tyre LCCO2 Calculation Guidelines published by JATMA, due to reduction in tire rolling resistance, it contributed

Level of aggregation	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
	structure of materials, we are striving to reduce rolling resistance by reducing energy loss and controlling heat generation of tread rubber.					about 8,600,000 tons of CO2 reduction in 2016 compared with the products in 2005.
Group of products	Commercial roofing and building envelope solutions such as energy-saving polyiso insulations, roofing membranes, vegetative roofing solutions, airtight building envelope systems, etc. which qualify for LEED credits and contribute to healthy, high-performance construction.	Avoided emissions	Other: Leadership in Energy and Environmental Design (LEED)			

CC3.3

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

Yes

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	24	
To be implemented*	418	69969
Implementation commenced*	13	11437
Implemented*	228	20535
Not to be implemented	0	

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Energy efficiency: Building fabric	Improving energy efficiency at tire plants by insulating buildings and equipment, etc.	1292	Scope 1 Scope 2 (market-based)	Voluntary	28000000	140000000	4-10 years	6-10 years	
Energy efficiency:	Improving energy efficiency at tire plants and offices by	2214	Scope 1 Scope 2	Voluntary	65000000	310000000	4-10 years	6-10 years	

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment
Building services	improving HVAC, lighting such as installing LED, etc.		(market-based)						
Energy efficiency: Processes	Improving energy efficiency at tire plants by replacing equipment with efficient equipment, switching fuel, optimizing process, etc.	17027	Scope 1 Scope 2 (market-based)	Voluntary	600000000	2800000000	4-10 years	6-10 years	

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Other	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.

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

Further Information

Page: CC4. Communication

CC4.1

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	Status	Page/Section reference	Attach the document	Comment
In voluntary communications	Complete	P. 6, 14-15, 24-26, 30-31, 64	https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared Documents/Attachments/CC4.1/CC4.1 Sustainability Report 2016.pdf	Sustainability Report 2016 full version
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	P.16, 18, 20	https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared Documents/Attachments/CC4.1/CC4.1 2016 Asset Securities Report.pdf	Report based on Article 24, Paragraph 1 of the Financial Instruments and Exchange Act Contents: R&D activities, risk related to laws, regulations and lawsuits, risk related to raw material procurement, and outline of capital expenditure, etc.
In voluntary communications	Complete	P.6, 7	https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared Documents/Attachments/CC4.1/CC4.1 Annual Report 2016 Operational Review.pdf	Annual report 2016 Operational review: Research and development about Tire and diversified products R&D
In voluntary communications	Complete	P.7, 30	https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared Documents/Attachments/CC4.1/CC4.1 Annual Report 2016 Financial Review.pdf	Annual report 2016 Financial review: Research and development cost

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation

Risks driven by changes in physical climate parameters

Risks driven by changes in other climate-related developments

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Carbon taxes	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	Increased operational cost	3 to 6 years	Direct	Likely	High	Current carbon tax rate is 289 yen/tCO ₂ e, however, financial impact in case of increase in tax rate can be roughly calculated as following formula. Financial impact = increase in tax rate * CO ₂	In order to reduce CO ₂ emissions, we are promoting conversion to energy that produces little CO ₂ emissions and also reducing energy use itself. 1. Energy saving initiatives at production sites: We have been implementing CO ₂	Expenses and investments mainly for enhancing energy saving through improvements of equipment, including upgrading equipment to high efficiency equipment and

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>to the use of electricity. Specifically, by using CO2 emissions factor of each fossil fuel, the tax rate per unit quantity (kilo litter or ton) is set so that each tax burden is equal to 289 yen per ton of CO2 emissions. The tax rate was raised in three stages over three and a half years and reached 289 yen in 2016. In addition, there is a possibility of increasing payment since Paris Agreement was ratified and there are discussions about introducing carbon pricing in Japan.</p>						<p>emission volume (about 950 thousand yen/1 yen increase in tax rate)</p>	<p>reduction measures such as upgrading equipment to high efficiency equipment, converting equipment to inverter which can flexibly respond to load fluctuation, installing steam turbine generators, converting to fuel emitting less CO2, and installing LED lighting. 2. Energy saving initiatives at offices: We have reduced the number of units of equipment by promoting scrapping and integration through the visualization of the layout and utilization rate of office equipment such as printers and multifunction office equipment. We also have long succeeded in reducing power consumption by resetting illuminance by thorough measurement of lighting illuminance of business offices. We</p>	<p>converting them to inverter, at Bridgestone plants amounted to 2,000million yen in 2016.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>have introduced an "electric power visualization" system at the business office of Technical Center which is used to visualize the status of power consumption and verify the effects of reduction measures and to set reduction targets. Also, in upgrading lighting equipment, we introduced LED lighting and high efficiency fluorescent lamps and motion sensors for lighting in common space of all three major buildings of Technical Center.</p>	

CC5.1b

Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Induced changes in natural resources	<p>Bridgestone's main business is tires whose raw materials consist of natural rubber. At present, natural rubber is almost entirely made from the sap of Hevea brasiliensis. 90% of growing area of Hevea brasiliensis is in Southeast Asia and owing to droughts in the tropical rainforests of Southeast Asia caused by El Nino, the deciduous period for Hevea brasiliensis becomes longer and the period during which sap (latex) 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</p>	Increased operational cost	3 to 6 years	Direct	Likely	Medium-high	<p>At this moment, we are unable to accurately estimate the financial implications. However, we believe that once this scenario takes place, the procurement cost will increase drastically. For example, an increase of about 1.8 million dollars worldwide for every dollar rise per ton of natural & synthetic rubber, based on 2016 production levels.</p>	<p>In order to avoid the risk above, Bridgestone produces a portion of the raw materials at our own rubber tree farms, as well as establishes disease diagnostic technology and conducts research on genome decoding aimed at breed improvement. Through these efforts, we are augmenting output and preparing for the risk of being unable to procure. The Bridgestone Group owns natural rubber tree farms in Indonesia and Liberia.</p>	<p>The entire research and development expenses of the Group/Global, including measures mentioned on the left, totalled 95.4 billion yen per year in FY2016.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	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 decline in share due to higher tire prices.								

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Uncertainty in market signals	Disclosure of GHG related information is increasingly being required around the world. Meanwhile,	Wider social disadvantages	1 to 3 years	Direct	Very likely	Low-medium	A drop in the stock price stemming from lower brand value would make it difficult for Bridgestone to raise funds in the	In order to prevent a decline in brand value, Bridgestone believes that it is important to accurately disclose information on supply chain GHG.	Bridgestone spent more than 22 million yen in FY2016 in total for implementing all means mentioned on

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>foreign investors own about 30% of Bridgestone stocks. 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.</p>						<p>market, and this is expected to have an enormous financial impact on Bridgestone. A one-dollar decline in the stock price per share would result in total losses of approximately 800 million dollars as of December 31, 2016.</p>	<p>When disclosing GHG information, Bridgestone deems it crucial to 1) guarantee the reliability of information, 2) secure an information disclosure method, and 3) secure a means of access to information for stakeholders, and takes the following measures. 1) Guarantee of reliability of information: We obtained third-party verification of our 2016 calculation results through an external organization and disclosed it. In addition, our environmental activities have won various awards. This seems to have helped earn the trust of stakeholders as evaluation through the view of a third party. 2) Method of information disclosure:</p>	<p>the left.</p>

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								<p>Bridgestone thinks that it is possible to meet stakeholder's expectations by implementing the disclosure of information in accordance with CDP requirements. By disclosing information connected with the objective under long-term environmental vision, we have made the purpose of our initiatives easily understandable. 3) Secure means of access to information for stakeholders: For all stakeholders, we use our website and Sustainability Report to make it possible for them to access information of our various activities.</p>	

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation

Opportunities driven by changes in physical climate parameters

Opportunities driven by changes in other climate-related developments

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Product efficiency regulations and standards	Currently, 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. Although tires do not emit GHG when they are used, passenger cars and trucks emit a large volume of GHG. Improving fuel consumption, etc. would be a countermeasure against such emissions. Although the fuel	New products/business services	Up to 1 year	Direct	Very likely	High	The global tire market is valued at approximately 160 billion US dollars in 2015 (Reference: Tire Business – Global Tire Company Rankings) and is expected to grow two to three-fold by 2050. By considering the maximum limit and labelling system of rolling resistance as an opportunity and making use of such opportunity, there is huge financial potential. Current sales	The most important factor in taking advantage of the maximum limit and labelling system of rolling resistance as an opportunity is the development of technology for reducing tire-rolling resistance. To this end, we are reducing rolling resistance by developing technology for tires in overall focusing on the molecular structure of raw materials, weight reduction, internal	Bridgestone makes investments in development aimed at reducing rolling resistance every year. Tire's research and development expenses, including such investments, totalled 79.8 billion yen in FY2016.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>consumption of passenger cars and trucks is determined by engine performance and various resistance factors, among such factors, 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 arising when a tire rolls. In other words, the same vehicle will have better fuel consumption if the tire rolling resistance is</p>						<p>of tires, including fuel-efficient tires, amount to about 2,765.7 billion yen in 2016.</p>	<p>structure of tires, and tire groove configuration, among other things. At the same time, Bridgestone is implementing the sales strategy of focusing on expanding sales of "ECOPIA" tires with substantially lower rolling resistance as a global brand. We successfully increased sales of "ECOPIA" brand products compared to sales at the time of launch of this brand, and will continue to position this brand as an important measure in</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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. 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</p>							<p>the future. Also, we successfully developed the “Large & Narrow concept tire” employing “ologic” technology which represents a new category of tire that is completely different from previous tires, as a new tire environmental technology. Tires that employ this new technology are able to realize levels of fuel efficiency that greatly exceed those of the fuel-efficient tires Bridgestone has already put on the market, and as a result,</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>industry standard. In addition, Japan, Malaysia and other countries have already decided to introduce the maximum limit system, and North America, Thailand and countries in Asia and Oceania are considering the introduction of one of the systems. Bridgestone considers these systems as an opportunity to fairly disclose to consumers the maximum limit and grading of rolling resistance of our products. From this viewpoint, we are developing products with better rolling resistance and expanding sales volume.</p>							<p>this is expected to reduce CO2.</p>	

CC6.1b

Please describe your inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Induced changes in natural resources	Currently, natural rubber, the main raw material of tires, is almost entirely made from the sap of Hevea brasiliensis. 90% of growing area of Hevea brasiliensis is in Southeast Asia and owing to droughts in the tropical rainforests of Southeast Asia caused by El Nino, the deciduous period for Hevea brasiliensis become longer and the period during which sap (latex) can be obtained	New products/business services	3 to 6 years	Direct	Likely	Medium-high	Financial impact to sales in case of change in Bridgestone's share can be roughly calculated as following formula. Financial impact = Current sales / current share * percentage of change in share (about 220 billion yen/1 % change in share)	As a means of gaining opportunities, we have been promoting research and development on alternative resources in other climatic zones aimed at easing the overconcentration of natural rubber-producing areas in Southeast Asia. 1. Guayule: The Bridgestone Group conducts research and development of guayule as a new natural rubber source replacing Hevea brasiliensis in order to alleviate the overconcentration of natural rubber production in certain regions and stabilize supply. As guayule grows in arid regions, unlike	The entire research and development expenses of the Group/Global, including the above, totalled 95.4 billion yen per year in FY2016.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>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. The Bridgestone Group proactively conducts research and production of natural rubber resources consisting of Guayule cultivated in arid climates and Russian Dandelion cultivated in temperate climates as substitutes for</p>							<p>Hevea brasiliensis, and the rubber component contained in its tissue has similar properties to the natural rubber harvested from the Hevea brasiliensis rubber tree, it is expected to be a new natural rubber source. We commenced experimental production of natural rubber harvested from guayule in 2015 and are conducting studies for its practical application in the 2020s. 2. Russian Dandelion: Russian Dandelion, a plant native to Kazakhstan and Uzbekistan, is a material for natural rubber and is cultivated in temperate zones which are completely different from the climate conditions for Hevea brasiliensis. Going</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	Hevea Brasiliensis. By doing so, we can use this opportunity to differentiate itself in terms of the price and supply of tires and expand market share.							forward, the Bridgestone Group will actively conduct research and development of Russian Dandelion.	

CC6.1c

Please describe your inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Changing consumer behavior	As a consumption trend, demand for products with a low environmental impact is expected to increase in the future, with retread tires	Increased demand for existing products/services	Up to 1 year	Direct	Very likely	Medium	Regarding retread tires, we promote technological development (ensure durability, increase the number of times retreaded, etc.) to advance	ECO Value Pack is our proprietary service that proposes the optimal combination of maintenance and tire to resolve issues facing customers. The combination of	Tire's research and development expenses, including such investments, totalled 79.8 billion yen in FY2016.

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	<p>expected to increase. Retread tires refer to tires that are reused after removing used tire treads and applying freshly vulcanized new treads. Since this process prolongs the life of tires, it leads to the reduction of used tires and the reduction of CO2 emissions during tire production. In addition, it results in the saving of tire expenses because it is less expensive than purchasing new tires. In this connection, we provide a service known as ECO Value Pack. ECO Value Pack bundles new tires, retread tires and tire maintenance service into a single package for transport</p>						<p>resource saving, in addition to aiming at a higher domestic retread tire sales ratio than the 2014 result in 2020. Annual sales of Bridgestone BRM, a group company engaged in the manufacture of retread tires in Japan, were approximately 7.1 billion yen (in 2016).</p>	<p>“new tires, retread tires, and tire maintenance service” according to the actual status of usage by customers contributes to “safe operation, environmental friendliness, cost reduction, and enhancement of operational efficiency” for customers.</p>	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
	operators and other customers. This service contributes to customers' environmental management, improvement of vehicle fuel efficiency, reduction of tire expenses, and enhancement of efficiency of customers' tire-related operations.								

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1	Sat 01 Jan 2005 - Sat 31 Dec 2005	2303629
Scope 2 (location-based)		
Scope 2 (market-based)	Sat 01 Jan 2005 - Sat 31 Dec 2005	2267134

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

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)

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
CO2	IPCC Fifth Assessment Report (AR5 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference
Other: Attach the Excel			please see attached Excel file

Further Information

Attachments

[https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared Documents/Attachments/ClimateChange2017/CC7.EmissionsMethodology/\(CC7.4\)CO2_emission_factor_table_revision09_30Mar2017.xlsx](https://www.cdp.net/sites/2017/56/2156/Climate%20Change%202017/Shared%20Documents/Attachments/ClimateChange2017/CC7.EmissionsMethodology/(CC7.4)CO2_emission_factor_table_revision09_30Mar2017.xlsx)

Page: CC8. Emissions Data - (1 Jan 2016 - 31 Dec 2016)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Operational control

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO₂e

1827633

CC8.3

Please describe your approach to reporting Scope 2 emissions

Scope 2, location-based	Scope 2, market-based	Comment
We are not reporting a Scope 2, location-based figure	We are reporting a Scope 2, market-based figure	We are reporting market-based figure in order to calculate emissions closer to actual condition.

CC8.3a

Please provide your gross global Scope 2 emissions figures in metric tonnes CO₂e

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
	2447944	

CC8.4

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

CC8.4a

Please 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	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
GHGs other than CO2	Emissions are not relevant		Emissions are not relevant	At production sites in Japan and the Americas, GHGs other than CO2 are collected but are excluded because emissions are minimal relative to CO2.
Production sites with number of workers below 50 people and is not the subject of accreditation of ISO14001	Emissions are not relevant		Emissions are not relevant	The reasons why production sites, which are sites with number of workers below 50 people and are not the subject of accreditation of ISO14001, are excluded is because their influence to the total is very limited.
Office/storages etc., nonproduction sites (supplementary facilities of plants are excluded)	Emissions are not relevant		Emissions are not relevant	Office energy is collected at major sites but is excluded because emissions are minimal.
Company owned car	Emissions are not relevant		Emissions are not relevant	Refilling company owned cars outside the premises is excluded. (Refilling fuel within the premises is included in Scopes)

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	Less than or equal to 2%	Data Gaps	Data from each site are verified by a third-party

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
		Data Management	organization.
Scope 2 (location-based)			
Scope 2 (market-based)	Less than or equal to 2%	Data Gaps Assumptions Data Management	Data from each site are verified by a third-party organization.

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

Third party verification or assurance process in place

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
Annual	Complete	Limited	https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared	Page 1	ISO14064-	100

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)
process		assurance	Documents/Attachments/CC8.6a/CC8.6_8.7_14.2a GHGVerificationReport_Bridgestone2017_Eng_170516.pdf		3	

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emission Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission

CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

Third party verification or assurance process in place

CC8.7a

Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)
Market-based	Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared Documents/Attachments/CC8.7a/CC8.6_8.7_14.2a GHGVerificationReport_Bridgestone2017_Eng_170516.pdf	Page 1	ISO14064-3	100

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
Other: Energy consumption	Energy consumption, which is used to calculate Scope 1 and 2, is verified.

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

16047

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
US, Latin America and Caribbean (USLAC)	650324
Asia Pacific (or JAPA)	1001909
Rest of world	175400

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)
-------------------	--

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude
----------	--	----------	-----------

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
----------	--

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
----------	--

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2016 - 31 Dec 2016)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
US, Latin America and Caribbean		880614	2082343	0

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
(USLAC)				
Asia Pacific (or JAPA)		1142666	2028333	0
Rest of world		424664	1038898	0

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
----------	--	--

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)
----------	--	--

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

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

CC11.2

Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	MWh
Heat	0
Steam	499152
Cooling	0

CC11.3

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

7293438

CC11.3a

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Motor gasoline	19212
Kerosene	6175
Diesel/Gas oil	177172
Other: Heavy oil A	91578
Other: Heavy oil C	235383
Liquefied petroleum gas (LPG)	127729
Liquefied Natural Gas (LNG)	383826
Town gas or city gas	1005383
Natural gas	4694612
Other: Coal	189957

Fuels	MWh
Other: Carbon black oil	362411

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Emissions factor (in units of metric tonnes CO2e per MWh)	Comment
No purchases or generation of low carbon electricity, heat, steam or cooling accounted with a low carbon emissions factor			

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment

Further Information

CC12.1

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

Decreased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities	0.5	Decrease	We reduced 20,535 tons as a result of energy-saving activities in 2016. Since Scope 1 and 2 emissions were 4,357,511 tons the previous year, that represents a 0.5% reduction from 2015.
Divestment			
Acquisitions			
Mergers			
Change in output			
Change in methodology	0.9	Decrease	Electricity emission factor in Japan was updated to the latest figures, resulting in an overall decline of 0.9%.
Change in boundary			
Change in physical operating conditions			
Unidentified			
Other	0.5	Decrease	Due to changes in the composition of energy sources, change in production volume, etc.

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.00000128	metric tonnes CO2e	3337000000000	Market-based	11	Increase	As a result of CC12.1a, total CO2 emissions decreased approximately 2% in 2016 compared to 2015. The intensity figure showed an increase of 11% due to exchange rate fluctuations.

CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
0.8850	metric tonnes CO2e	Other: metric tonne of raw material	4831000	Market-based	2.3	Decrease	Result of emission reduction activities

Further Information

Page: **CC13. Emissions Trading**

CC13.1

Do you participate in any emissions trading schemes?

Yes

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
European Union ETS	Fri 01 Jan 2016 - Sat 31 Dec 2016	90445	6207	91650	Facilities we own and operate

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

As for our strategy for reducing CO2 emissions, we will reduce emissions by implementing the following measures.

- Energy saving initiatives at production sites
- Energy saving initiatives at business offices
- Enlightenment activities to raise employees' environmental awareness

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits canceled	Purpose, e.g. compliance
---------------------------------------	--------------	------------------------	----------------------------	--	--	------------------	--------------------------

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	7436459	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.	0.00%	
Capital goods	Relevant, calculated	619214	Calculated by multiplying the capital expenditures material with CO2 emission factors determined by Japanese Ministry of the Environment	0.00%	
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Relevant, calculated	644507	Calculated by multiplying the energy consumption with CO2 emission factors determined by DEFRA	0.00%	
Upstream transportation and distribution	Relevant, calculated	409091	[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 2016 and 2008.	0.00%	
Waste generated in operations	Relevant, calculated	154170	Calculated by multiplying the amount of waste generated with CO2 emission factors determined by Japanese Ministry of the Environment	0.00%	
Business travel	Relevant, calculated	18670	Calculated by multiplying the number of employees with CO2 emission factors determined by Japanese Ministry of the Environment	0.00%	
Employee commuting	Relevant, calculated	66454	Calculated by multiplying the number of employees with CO2 emission factors determined by Japanese Ministry of the	0.00%	

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
			Environment		
Upstream leased assets	Not relevant, explanation provided				Included in scope1 and scope2
Downstream transportation and distribution	Relevant, calculated	330405	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	3.00%	
Processing of sold products	Relevant, calculated	3656	Calculate the power consumed during tire installation by multiplying installation power per tire by number of tires sold.	0.00%	
Use of sold products	Relevant, calculated	110679486	Calculated from our Tyre sales unit and CO2 emission per 1 tire when it used based on "Tyre LCCO2 Calculation Guidelines Ver. 2.0" by The Japan Automobile Tyre Manufacturers Association, Inc. April 2012	0.00%	
End of life treatment of sold products	Relevant, calculated	2308493	Calculated by multiplying the purchased quantity of each raw material with CO2 emission factors determined by Japan Rubber Manufacturers Association calculation methods.	0.00%	
Downstream leased assets	Not relevant, explanation provided				Bridgestone had no leased assets in 2016.
Franchises	Relevant, calculated	163580	Calculate by multiplying CO2 emission per typical shop by the number of franchise shops	0.00%	
Investments	Not relevant, explanation provided				Investments are not main business of Bridgestone.
Other (upstream)					
Other (downstream)					

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

Third party verification or assurance process in place

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)
Annual process	Complete	Limited assurance	https://www.cdp.net/sites/2017/56/2156/Climate Change 2017/Shared Documents/Attachments/CC14.2a/CC8.6_8.7_14.2a GHGVerificationReport_Bridgestone2017_Eng_170516.pdf	Page 1	ISO14064-3	100

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods & services	Unidentified	5.0	Increase	
Capital goods	Other: Reduction of investment	23.4	Decrease	
Fuel- and energy-related activities (not included in Scopes 1 or 2)	Emissions reduction activities	1.2	Decrease	The reason for reducing energy usage is as mentioned in CC12.1a.
Upstream transportation & distribution	Unidentified	4.0	Increase	
Waste generated in operations	Change in methodology	14.9	Decrease	
Business travel	Other: Change in the number of employees	0.5	Decrease	Employees have decreased and number of working days increased (one day as the calendar).
Employee commuting	Other: Change in the number of employees	0.1	Decrease	Employees have decreased.
Downstream transportation and distribution	Other: Decrease in sales	18.6	Decrease	
Processing of sold products	Other: Increase in number of sold tires	2.9	Increase	
Use of sold products	Other: Increase in number of sold tires	0.7	Increase	
End-of-life treatment of sold products	Change in methodology	1.3	Decrease	Incorporated into the calculations the most recent status of used tire processing in developing countries.
Franchises	Acquisitions	2.6	Increase	

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

- Yes, our suppliers
- Yes, our customers
- Yes, other partners in the value chain

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagements and measures of success

Cooperation with automakers

- i) In the development of new vehicle models by automakers, which are our business partners, the development and delivery of fuel-efficient tires that contribute to the reduction of fuel consumption in cooperation with automakers leads to the reduction of GHG emissions. In addition, we cooperate in calculating the emissions of automakers and contribute to reductions in the life cycle by cooperating in the GHG emission survey of automakers through the CDP supply chain program.
- ii) By improving the rolling resistance of tires used in automobiles, we contribute to automakers' efforts to lower fuel consumption during the use of their products.
- iii) In 2016, we supplied fuel efficient tires such as ECOPIA to low carbon emission vehicles newly developed by automakers as tires fitted to new vehicle models. By supplying fuel efficient tire, we contributed to superior fuel efficiency of vehicles.

Cooperation with carriers

- i) As for logistics in Japan, Bridgestone continuously cooperates mainly with the Bridgestone Group's carriers by setting targets concerning initiatives for reduction of GHG emissions, etc.
- ii) We conduct fact-finding surveys on each carrier based on compliance with the law to grasp CO2 emissions resulting from logistics related to Bridgestone. We currently have commenced reduction activities.
- iii) Specific example of reduction activity in 2016: We shortened transportation distance of tire by changing warehouse locations, etc. We achieved both CO2 reduction (approximately 190t-CO2/year) and cost reduction.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Type of engagement	Number of suppliers	% of total spend (direct and indirect)	Impact of engagement
Active engagement	49	76%	Bridgestone measures CO2 emissions per raw material weight delivered from suppliers for each supplier. As a result, CO2 emission is decreasing in some suppliers. In addition, we have been using the CDP supply chain program since 2015, and by doing so, suppliers can have opportunities to be aware of risks and opportunities related to climate change. The figure 76% is calculated by dividing CO2 emissions of suppliers which are targets of 2016 CDP supply chain survey, by CO2 emissions of all suppliers.

CC14.4c

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Shinichi Hanashi	Vice President and Officer CSR, Environment and Quality Management Planning	Environment/Sustainability manager

Further Information

Module: Auto component

Page: AU0. Reference Dates

AU0.1

Please enter the dates of the periods for which you will be providing data in subsequent tables. The years given as column headings in subsequent tables correspond to the year ending dates selected below

Year ending	Date range
2016	Fri 01 Jan 2016 - Sat 31 Dec 2016

Further Information

Page: AU1. Sales Volumes

AU1.1a

Sales (in thousands) of gas/petrol vehicles - Country totals

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
USA										
EU										
Japan										
China - imports										
China - domestic production										
India										
Brazil										
Russia										
Other										
TOTAL										

AU1.1b

Sales (in thousands) of gas/petrol vehicles - USA - Passenger vehicles

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
---------------	------	------	------	------	------	------	------	----------------	----------------	----------------

AU1.1c

Sales (in thousands) of gas/petrol vehicles - USA - Light Trucks & SUVs

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
---------------	------	------	------	------	------	------	------	----------------	----------------	----------------

AU1.1d

Sales (in thousands) of gas/petrol vehicles - EU

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
---------------	------	------	------	------	------	------	------	----------------	----------------	----------------

AU1.1e

Sales (in thousands) of gas/petrol vehicles - Japan

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
---------------	------	------	------	------	------	------	------	----------------	----------------	----------------

AU1.1f**Sales (in thousands) of gas/petrol vehicles - China - imports**

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated

AU1.1g**Sales (in thousands) of gas/petrol vehicles - China - domestic production**

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated

AU1.1h**Sales (in thousands) of gas/petrol vehicles - India**

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated

AU1.1i

AU1.2b**Sales (in thousands) of diesel vehicles - USA**

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Passenger car total										
Light trucks & SUVs total										

AU1.2c**Sales (in thousands) of diesel vehicles - EU**

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
--------------------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	---------------------------	---------------------------	---------------------------

AU1.2d**Sales (in thousands) of diesel vehicles - Japan**

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
--------------------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	---------------------------	---------------------------	---------------------------

AU1.2e

Sales (in thousands) of diesel vehicles - China - imports

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
----------------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	-----------------------	-----------------------	-----------------------

AU1.2f

Sales (in thousands) of diesel vehicles - China - domestic production

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
----------------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	-----------------------	-----------------------	-----------------------

AU1.2g

Sales (in thousands) of diesel vehicles - India

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
----------------------	-------------	-------------	-------------	-------------	-------------	-------------	-------------	-----------------------	-----------------------	-----------------------

AU1.2h

Sales (in thousands) of diesel vehicles - Brazil

Segment types	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
---------------	------	------	------	------	------	------	------	----------------	----------------	----------------

AU1.2i

Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

AU1.3a

Sales (in thousands) of battery electric vehicles (BEV) by region

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
USA										
EU										
Japan										
China - imports										
China - domestic production										
India										
Brazil										
Russia										
Other										
TOTAL										

AU1.3b

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2018 estimated	2019 estimated
Brazil										
Russia										
Other										
TOTAL										

AU1.3d

Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

Further Information

Page: AU2. Regulatory Compliance

AU2.1

Please explain any historic and anticipated changes in the CO2 emissions profile of vehicles sold (e.g. introduction of clean technologies, changes to sales mix) for the time period 2010-2021

AU2.2

Please explain the methodology used to calculate CO2 emissions from sold vehicles and any differences with data published by industry associations or governmental agencies or the methodologies they have used

Country	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2019 estimated	2021 estimated	Comment
production											
India											
Brazil											
Russia											
Other											

AU2.3c

Sales-weighted regulatory parameters

Country and parameter	2010	2011	2012	2013	2014	2015	2016	2017 estimated	2019 estimated	2021 estimated
USA: Sales-weighted average vehicle footprint (square feet)										
EU: Sales-weighted average running order mass (kg)										
Japan: Sales-weighted average vehicle curb weight (kg)										
China – imports: Sales-weighted average curb mass (kg)										
China – domestic production: Sales-weighted average curb mass (kg)										

AU2.3d

Companies should provide an explanation if different vehicle segmentation is used or if data is unavailable or commercially sensitive

Further Information

AU3.1a

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

Technology category - ICE

Type	2016	2021 estimated
------	------	----------------

AU3.1b

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

Technology category - Hybrids

Type	2016	2021 estimated
------	------	----------------

AU3.1c

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

Technology category - Zero emissions

Type	2016	2021 estimated
------	------	----------------

AU3.1d

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

Technology category - Transmission

Type	2016	2021 estimated
------	------	----------------

AU3.1e

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

Technology category - Body

Type	2016	2021 estimated
------	------	----------------

AU3.1f

Auto-manufacturers only - please give the % of your range of vehicles for which the following technologies are available:

Technology category - Others

Type	2016	2021 estimated
------	------	----------------

AU3.1g

Auto-equipment manufacturers only - please select the technology categories that are relevant to your business:

Others

AU3.1gi

Technology category - ICE - please state if you provide the following technologies:

Type	2016	2021 estimated
------	------	----------------

AU3.1gii

Technology category - Hybrids - please state if you provide the following technologies:

Type	2016	2021 estimated
------	------	----------------

AU3.1giii

Technology category - Zero emissions - please state if you provide the following technologies:

Type	2016	2021 estimated
------	------	----------------

AU3.1giv

Technology category - Transmission - please state if you provide the following technologies:

Type	2016	2021 estimated
------	------	----------------

AU3.1gv

Technology category - Body - please state if you provide the following technologies:

Type	2016	2021 estimated
------	------	----------------

AU3.1gvi

Technology category - Others - please state if you provide the following technologies:

Type	2016	2021 estimated
Low-rolling resistance tires	Yes	Yes

AU3.2

Auto-manufacturers only – Please provide the following details for existing and new BEV and FCV models available during the current reporting period

Model name	Technology	Market	Retail price currency	Market retail price	Range units	Urban electric range	Extra-urban electric range	Combined electric range	Minimum electric charge time (hours)	Maximum electric charge time (hours)

AU3.3

Auto-manufacturers only – Please provide the following details for existing and new PHEV models available during the current reporting period

Model name	Market	Retail price currency	Market retail price	Emissions units	Urban emissions	Extra-urban emissions	Combined emissions	Fuel consumption units	Urban fuel consumption	Extra-urban fuel consumption	Combined fuel consumption	Range units	Urban electric range	Extra-urban electric range	Combined electric range	Minimum electric charge time (hours)	Maximum electric charge time (hours)

AU3.4

Auto manufacturers only – Please indicate your spend in the following research and development (R&D) categories for the reporting year

Type	R&D spend (currency in CC0.4)	Comment
Optimizing combustion engine vehicles		
Traditional hybrids		
Advanced vehicles (BEV, PHEV, FCV)		
Autonomous vehicles		
Other		

AU3.5

For both auto manufacturers and auto-equipment manufacturers: please provide an explanation if data cannot be provided according to the proposed nomenclature or if it is unavailable or commercially sensitive

Further Information

CDP