



LRQA Independent Assurance Statement Relating to Bridgestone Group's Greenhouse Gas Emission Inventory, Environmental and Social Data for the calendar year 2021

This Assurance Statement has been prepared for Bridgestone Corporation in accordance with our contract.

Terms of Engagement

LRQA Limited (LRQA) was commissioned by Bridgestone Corporation (the Organisation) to provide independent assurance of its greenhouse gas (GHG) emissions inventory, and on its environmental and social data ("the Report") for the calendar year 2021 (from 01/01/2021 to 31/12/2021) against the assurance criteria below to a limited level of assurance and materiality of the professional judgement of the verifier using LRQA's verification procedure. LRQA's verification procedure refers to ISO 14064-3:2019 for GHG emissions, is based on current best practise and is in accordance with ISAE 3000 (Revised).

Our assurance engagement covered the operations and activities of Bridgestone Group¹ and specifically the following requirements:

- Verifying conformance with the Organisation's in-house reporting methodologies for the selected datasets;
- Evaluating the accuracy and reliability of the selected datasets listed below:

Environmental:

- Amount of raw materials used, Ratio of Recycled/Renewable Material
- Total energy consumption, Energy consumption (fuels, consumption of fuels oriented from renewable energy, Energy consumption (purchased electricity, consumption of purchased electricity oriented from renewable energy, Energy consumption (purchased steam), Energy consumption (self-generated renewable electricity from non-fuel sources; solar, etc.), Electricity sold, Total energy consumption (renewable), Total energy consumption (non-renewable),
- Total water withdrawal, Total water withdrawal in water stress area, Water withdrawal (surface water), Water withdrawal (groundwater), Water withdrawal (water supply, industrial water), Water withdrawal (seawater),
- GHG emissions^{2 3} (Scope 1), GHG emissions (Scope 2) Market-based and Location-based, GHG emissions (Scope 3) Categories⁴ 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12 and 14,
- Contribution to CO₂ Reduction by reducing rolling resistance, etc. (compared with 2020)⁵
- NOx emissions, SOx emissions,
- Volume of waste generated, Volume of recycled waste, Recycling waste rate, Volume of waste to landfill, Volume of regulated hazardous waste generated, Volume of regulated hazardous waste recycled, Volume of regulated hazardous waste to landfill,
- Ratio of Beneficial Next Use/Proper Treatment of Used Tire,
- Resource productivity, and
- Sites with ISO14001 certification

¹ Except non-production sites for environmental data. 122 production sites for energy consumption, Scope 1 and Scope 2 GHG emissions, NOx emissions and SOx emissions, 142 production sites for water withdrawal and waste data in the world are covered. Out of social data, OIFR covers operations and activities of Bridgestone Group's production sites in Japan and overseas. Female ratio covers the group companies in Japan and overseas but a part of group companies are excluded from the subject for the quantification (approx.12% of the total group employees).

² Scope 1 and 2 GHG emissions are as defined in The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard.

³ GHG quantification is subject to inherent uncertainty.

⁴ The categories of Scope 3 GHG emissions are as defined in the Greenhouse Gas Protocol – Corporate Value Chain (Scope 3) Accounting and Reporting Standard, Table 5.3.

⁵ Calculated using Bridgestone's calculation method based on the "Tyre LCCO₂ Calculation Guidelines Ver. 3.0.1" (The Japan Automobile Tyre Manufacturers Association, Inc), citing fuel consumption data from the International Council on Clean Transportation and other sources and Department for Environment, Food & Rural Affairs.



Social:

- Lost-time injury frequency rate of employees and temporary staff, Lost-time injury frequency rate of contractors, Serious injury rate of employees and temporary staff, Serious injury rate of contractors, Occupational illness frequency rate of employees and temporary staff, and
- Female ratio

Our assurance engagement excluded the data and information of the Organisation’s suppliers, contractors and any third-parties mentioned in the Report. The Organisation’s GHG Emissions Inventory excludes GHG emissions from operations and activities of Bridgestone Group’s non-production sites, emissions of GHGs other than CO₂, CH₄, N₂O from use of energy, GHG emissions from mobile sources used outside of the production sites. Categories 10 and 11 of Scope 3 GHG emissions are calculated for tires of passenger cars, trucks and buses as the main products only. These GHG emissions excluded from the calculation are relatively small to the total GHG emissions of the Organisation.

LRQA’s responsibility is only to the Organisation. LRQA disclaims any liability or responsibility to others as explained in the end footnote. The Organisation’s responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Report and for maintaining effective internal controls over the systems from which the Report is derived. Ultimately, the Report has been approved by, and remains the responsibility of the Organisation.

LRQA’s Opinion

Based on LRQA’s approach nothing has come to our attention that would cause us to believe that the Organisation has not, in all material respects:

- Met the requirements of the criteria listed above; and
- Disclosed accurate and reliable performance data and information on GHG emissions and key environmental data as summarized in Tables 1 and 2 below.

The opinion expressed is formed on the basis of a limited level of assurance⁶ and at the materiality of the professional judgement of the verifier.

Table 1. Summary of Bridgestone Group’s GHG Emissions Inventory for calendar year 2021

Scope of GHG emissions	Kilo-tonnes CO ₂ e
Direct GHG (Scope 1) CO ₂ <small>Note1</small>	1,722
Energy indirect GHG emissions (Scope 2, Market-based) CO ₂ <small>Note1 Note2</small>	1,664
Energy indirect GHG emissions (Scope 2, Location-based) CO ₂ <small>Note1 Note2</small>	2,062
Total GHG emissions (Scope 1&2, Market-based) CO ₂	3,387
Total energy oriented CH ₄ , N ₂ O emissions (Scope 1&2 total) <small>Ref. Note1</small>	16
Other indirect GHG emissions (Scope 3)	113,421
Category 1	13,039
Category 2	836
Category 3	448
Category 4	680
Category 5	151
Category 6	18
Category 7	63
Category 9	431

⁶ The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Scope of GHG emissions		Kilo-tonnes CO ₂ e
	Category 10	3
	Category 11	95,665
	Category 12	2,017
	Category 14	73
Note1: Energy oriented CH ₄ and N ₂ O emissions are separately calculated and shown in the total amount of Scope 1&2.		
Note2: Scope 2, Location-based and Scope 2, Market-based are defined in the GHG Protocol Scope 2 Guidance, 2015		

Table 2. Summary of Bridgestone Group's Environmental and Social Data for calendar year 2021

Environmental data	Amount
Amount of raw materials used	4,611 kilo-ton
Ratio of Recycled/Renewable Material	37 %
Total energy consumption	42,726 TJ (11,868 GWh)
Energy consumption (fuel)	24,668 TJ
Energy consumption (fuel from renewable sources)	101 TJ
Energy consumption (purchased electricity)	4,654 GWh
Energy consumption (purchased electricity from renewable sources)	720 GWh
Energy consumption (purchased steam)	1,248 TJ
Energy consumption (self-generated renewable electricity from non-fuel sources; solar, etc.)	42 GWh
Electricity sold	27 GWh
Total energy consumption (renewable)	2,847 TJ (791 GWh)
Total energy consumption (non-renewable)	39,879 TJ (11,078 GWh)
Total water withdrawal	66,744 x10 ³ m ³
Total water withdrawal in water stress area	2,981 x10 ³ m ³
Water withdrawal (surface water)	2,729 x10 ³ m ³
Water withdrawal (groundwater)	9,086 x10 ³ m ³
Water withdrawal (water supply, industrial water)	17,249 x10 ³ m ³
Water withdrawal (seawater)	37,679 x10 ³ m ³
Contribution to CO ₂ Reduction by reducing rolling resistance, etc. (compared with 2020)	1,579 kilo-tCO ₂
NOx emissions	1,839 ton
SOx emissions	588 ton
Volume of waste generated	293 kilo-ton
Volume of recycled waste	277 kilo-ton
Recycling waste rate	94.5 %
Volume of waste landfill	16 kilo-ton
Volume of regulated hazardous waste generated	20 kilo-ton
Volume of regulated hazardous waste recycled	17 kilo-ton
Volume of regulated hazardous waste to landfill	3 kilo-ton
Ratio of Beneficial Next Use/Proper Treatment of Used Tire	96 %
Resource productivity	7.04 million JPY/kilo-ton
Sites with ISO 14001 certification	99.3 %



Social data	Amount
Lost-time injury frequency rate of employees and temporary staff	2.75
Lost-time injury frequency rate of contractors	0.79
Serious injury rate of employees and temporary staff	0.08
Serious injury rate of contractors	0.11
Occupational illness frequency rate of employees and temporary staff	1.32
Female Ratio	
– Japan total	10.6 %
– Bridgestone Corporation (included in Japan total)	8.8 %
– Americas	12.1 %
– Europe, Russia, Middle East, India and Africa	11.8 %
– China, Asia Pacific	9.4 %

LRQA’s Approach

LRQA’s assurance engagements are carried out in accordance with our verification procedure. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- conducting a remote assessment to Pune Plant in India and Aiken (PSR) Plant in the U.S.A. and reviewing processes related to the control of data and records;
- interviewing relevant employees of the organization responsible for managing data and records; and
- assessing the Organisation’s data management systems to confirm they are designed to prevent significant errors, omissions or mis-statements in the Report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal quality control.
- conducting review of the following datasets through the verification processes:
 - Environmental: Reclaimed products rate, Energy consumption outside of the organisation, Energy intensity (energy consumption per unit of sales), Reduction volume of energy consumption, CO₂ emissions per unit in lifecycle stages, and CO₂ emission reduction rate per unit in the operations and products’ after-use (compared with 2005)
 - Social: Number of fatalities of employees, and, Number of fatalities of the contractors
- verifying historical data and records at an aggregated level for the calendar 2021.

Observations

Further observations and findings, made during the assurance engagement, is:

- The Organisation should continue to make efforts to improvement of the procedures for data calculation and information disclosure, and strengthening of the internal data checks.

LRQA’s Standards, Competence and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition and ISO/IEC 17021 Conformity assessment – Requirements for bodies providing audit and certification of management systems that are at least as demanding as the requirements of the International Standard on Quality Control and comply with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

The verification is the only work undertaken by LRQA for the Organisation and as such does not compromise our independence or impartiality.



Signed

Dated: 3 June 2022

A handwritten signature in black ink, appearing to read 'Michiaki Chiba', is written over a light blue horizontal line.

Michiaki Chiba
LRQA Lead Verifier
On behalf of LRQA Limited
Queen's Tower A, 10th Floor, 2-3-1 Minatomirai, Nishi-ku
Yokohama 220-6010, Japan

LRQA reference: YKA00000672_4

LRQA, its affiliates and subsidiaries, and their respective officers, employees or agents are, individually and collectively, referred to in this clause as 'LRQA'. LRQA assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant LRQA entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

The English version of this Assurance Statement is the only valid version. LRQA assumes no responsibility for versions translated into other languages.

This Assurance Statement is only valid when published with the Report to which it refers. It may only be reproduced in its entirety.

Copyright © LRQA, 2022.