

Bridgestone Group

Basis of actual calculation for GHG emissions(as of March 2022)

1. Scope of Calculation

The scope of calculation covers the value chain of Bridgestone Group's major products (Scope1, 2 and 3 of the GHG protocol).

* Category 8, 13 and 15 are excluded from the 15 categories in Scope 3.

2. Reference Standards for calculation

ISO14064-1 Part 1	Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals (March, 2006)
WBCSD/WRI	A Corporate Accounting and Reporting standard (revised edition, March 2004)
WBCSD/WRI	Corporate Value Chain (Scope3) Accounting and Reporting Standard (September 2011)
WBCSD/WRI	Product Lifecycle Accounting and Reporting Standard (September 2011)
The Japan Automobile Tyre Manufacturers Association, Inc	Tyre LCCO2 Calculation Guidelines Ver. 3.0.1(2021)

3. Basis of calculation for GHG Emissions from Company Operations

GHG calculation for operations was based on most recently available measured data and referenced to standards listed in above item 2.

Some of GHG calculation data still include estimations. We seek to continue improving this area for further transparency and data accuracy.

(1) Scope 1 and 2

Energy (fuel, electricity, heat /steam) consumed during product manufacturing at our group's production sites is multiplied by GHG emission factors for each energy type in order to accurately calculate GHG emissions amount from the manufacturing phase.

* GHG emission factors by production site/consumed energy are referenced from the standards mentioned in item 2 and/or the standards listed below.

- GHG Protocol, Emission Factors from Cross Sector Tools, March 2017, developed by WRI and WBCSD
- International Energy Agency (IEA) – GHG Emission Factors 2021
- Law Concerning the Promotion of Measures to Cope with Global Warming
- US EPA eGRID

(2) Scope 3 (Category 1: Purchased goods and services)

Calculated by multiplying the purchased amount of each raw material with GHG emission factors* for each raw material.

* "Tyre LCCO2 Calculation Guidelines Ver. 3.0.1" (The Japan Automobile Tyre Manufacturers Association, Inc)

(3) Scope 3 (Category 2: Capital goods)

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

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

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

(5) Scope 3 (Category 4: Upstream transportation and distribution)

Upstream transportation and distribution include both ground and marine transportation of tires.

GHG emissions from ground transportation are calculated from the amount of distribution in our group.

Calculation for GHG emissions from marine transportation in the tire business are based on the amount of distribution and transportation distance. GHG emissions in other business areas are estimated from the amount of distribution and sales.

(6) Scope 3 (Category 5: Waste generated in operations)

Calculated by multiplying the amount of waste generated with the GHG emission factor*

* "The Database of Emissions Unit Values for Calculation of Greenhouse Gas Emissions, etc., by. Organizations throughout the Supply Chain (ver 3.2)" (Ministry of the Environment and METI of Japan)

(7) Scope 3 (Category 6: Business travel)

Calculated by multiplying the number of employees with the GHG emission factor*

* "The Database of Emissions Unit Values for Calculation of Greenhouse Gas Emissions, etc., by. Organizations throughout the Supply Chain (ver 3.2)" (Ministry of the Environment and METI of Japan)

(8) Scope 3 (Category 7: Employee commuting)

Calculated by multiplying the number of employees with the GHG emission factor*

* "The Database of Emissions Unit Values for Calculation of Greenhouse Gas Emissions, etc., by Organizations throughout the Supply Chain (ver 3.2)" (Ministry of the Environment and METI of Japan)

(9) Scope 3 (Category 9: Transportation and distribution (downstream))

GHG per unit sales is calculated from GHG emitted from a part of one's own store and multiply it by total sales for proportional allotment.

(10) Scope 3 (Category 10: Processing of sold products)

The power consumed during tire installation is calculated by multiplying the power required to mount each tire by the number of tires sold, and then multiplying this by the Ministry of the Environment's "Emission Factor by Electric Utility (2022)".

(11) Scope 3 (Category 11: Use of sold products)

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.

(12) Scope 3 (Category 12: Use of sold products)

To obtain GHG emissions from the after-use phase, the amount of disposed products estimated from the amount of procured raw material is multiplied by the GHG emission factor* for each raw material.

* "The Database of Emissions Unit Values for Calculation of Greenhouse Gas Emissions, etc., by Organizations throughout the Supply Chain (ver 3.2)" (Ministry of the Environment and METI of Japan)

(13) Scope 3 (Category 14: Franchises)

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

4. Notices

Since the disclosure of "GHG reduction target" achievements through our CSR report 2011, third party reviews and comments are closely considered when updating GHG calculation methods for further accuracy. Actual base year (2011) figures have also been altered along with this updating process.

The major changes made in calculation methods after disclosure of target achievement in Bridgestone Group Integrated Report 2022 are given below.

Target	Details of change
Scope1, 2	<p>Production sites related to businesses that were sold or transferred in 2021 (e.g., Firestone Building Products Company, LLC) were excluded from the Milestone 2030 target calculation based on business restructuring in accordance with the Mid-term Business Plan.</p> <p>*Energy consumption and GHG emissions disclosed in "ESG Data" continue to be included in the scope of calculation.</p>
Scope 3	<p>Emission factors have been updated in accordance with the revision of The Japan Automobile Tyre Manufacturers Association's "Tyre LCCO2 Calculation Guidelines" (ver. 2.0 => ver. 3.0.1), which is the main reference source for GHG emission factors.</p> <p>In addition, fuel consumption data from the International Council on Clean Transportation and the Department for Environment, Food & Rural Affairs (DEFRA) were introduced for Scope 3 Category 11 calculations.</p>

Calculation of actual results is based on preconditions deemed reasonable by our group at the time of disclosure (June, 2022). GHG calculation methods including measures to reduce emissions will be reviewed regularly by paying close attention to changing social conditions and our business environment.