

JBS S.A.

Limited Assurance Report on  
Scope 1 and 2 Greenhouse Gas  
Emissions Inventory Statement



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## Independent Practitioners' Limited Assurance Report

To the Board of Directors and Shareholders of  
JBS S.A.

Report on the Scope 1 and 2 Greenhouse Gas Emissions (GHG) Inventory Statement of JBS S.A. ("the Company") for the year ended December 31, 2023. This engagement was conducted by a multidisciplinary team including assurance practitioners and engineers.

### Conclusion

We have performed a limited assurance engagement on whether the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement and accompanying notes (the "Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement") of JBS S.A. for the year ended December 31st, 2023, has been prepared in accordance with the following "**Criteria**":

- The Greenhouse Gas (GHG) Protocol - Corporate Accounting and Reporting Standard - Revised Edition from WRI (World Resources Institute) and WBCSD (World Business Council for Sustainable Development) - (2004 Revised Edition)
- 2006 IPCC (Intergovernmental Panel on Climate Change) Guidelines for National Greenhouse Gas Inventories
- 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories

Based on the procedures performed and evidence obtained, nothing has come to our attention to cause us to believe that JBS S.A.'s Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement for the year ended December 31, 2023 was not prepared, in all material respects, in accordance with the Criteria.

### Basis for conclusion

We conducted our engagement in accordance with International Standard on Assurance Engagements (ISAE) 3410, Assurance Engagements on Greenhouse Gas Statements, issued by the International Auditing and Assurance Standards Board (IAASB) and NBC TO 3410 – Assurance Engagements for Declarations of Greenhouse Gas Emissions (GHG) and Climate Change, issued by the Brazilian Federal Accounting Council, which is equivalent to the ISAE 3410 standard.. Our responsibilities under those standards are further described in the "Our responsibilities" section of our report.



We have complied with the Code of Ethics for Accountants and the Professional Standards issued by the Brazilian Federal Council of Accountants, which include independence requirements and other requirements based on the fundamental principles of integrity, objectivity, professional competence and due diligence, confidentiality and professional conduct.

Our firm applies International Standard on Quality Management (ISQM) 1, Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements, issued by the IAASB and Brazilian Standard Quality Management (NBC PA 01) issued by the Brazilian Federal Accounting Council. Those standards require the firm to design, implement and operate a system of quality management, including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.

### **Responsibilities for the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement**

The management of JBS S.A., are responsible for:

- designing, implementing and maintaining internal control relevant to the preparation of the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement that are free from material misstatement, whether due to fraud or error;
- selecting or developing suitable criteria for preparing the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement and appropriately referring to or describing the criteria used;
- preparing the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement related to the year ended December 31, 2023 in accordance with the Criteria;

### **Inherent limitations in preparing the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement**

As described in the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement, GHG emissions quantification is subject to significant inherent measurement uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values to combine emissions of different gases. Greenhouse gas quantification is unavoidably subject to significant inherent uncertainty as a result of both scientific and estimation uncertainty. Estimation uncertainty can arise because of:

- the inherent uncertainty in quantifying inputs, such as activity data and emission factors, that are used in mathematical models to estimate emissions (measurement uncertainty);
- the inability of such models to precisely and accurately characterise under all circumstances the relationships between various inputs and the resultant emissions (model uncertainty);



- the fact that uncertainty can increase as emission quantities with different levels of measurement and calculation uncertainty are aggregated (aggregation uncertainty); and
- inherent uncertainty due to incomplete scientific knowledge used to determine emission factors and values that are needed to combine emissions of different gases.

The selection by management of a different but acceptable measurement method, input data, or model assumptions, or a different point value within the range of reasonable values produced by the model, could have resulted in materially different amounts or metrics being reported. Furthermore, the information included in the GHG Statement is based on historical information that is both quantitative and qualitative in nature. Accordingly, it does not provide information about future reporting periods.

### **Our responsibilities**

We are responsible for:

- planning and performing the engagement to obtain limited assurance about whether the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement is free from material misstatement, whether due to fraud or error;
- forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- reporting our conclusion to the management of JBS S.A.

We exercised professional judgment and maintained professional skepticism throughout the engagement. We designed and performed our procedures to obtain evidence about the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement that is sufficient and appropriate to provide a basis for our conclusion. Our procedures selected depended on our understanding of the Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement and other engagement circumstances, and our consideration of areas where material misstatements are likely to arise. In carrying out our engagement, we:

- A) Evaluated the suitability of JBS S.A.'s use of the Criteria, as the basis for preparing the sustainability information;
- B) Through inquiries, obtained an understanding of JBS S.A.'s control environment, processes and information systems relevant to the preparation of the sustainability information, but did not evaluate the design of particular control activities, obtain evidence about their implementation or test their operating effectiveness;
- C) Evaluated whether JBS S.A.'s methods for developing estimates are appropriate and had been consistently applied, but our procedures did not include testing the data on which the estimates are based or separately developing our own estimates against which to evaluate JBS S.A.'s estimates;



- D) Undertook site visits at twenty out of JBS S.A.'s six hundred and sixty-seven manufacturing sites and three administrative sites. The selection of these sites was based on the contribution of the site sustainability information to the aggregate sustainability information, and also included one site as unexpected random sample to visit as follows:

Company	Site	Type
JBS BRAZIL	TRP - Transportadora	Manufacturing
JBS BRAZIL	Fábrica de rações - Amparo/SP	Manufacturing
JBS BRAZIL	Confinamento bovino - Lucas do Rio Verde/MT	Manufacturing
JBS BRAZIL	Abate de suínos + Processados - Dourados/MS	Manufacturing
JBS BRAZIL	Senador Canedo/GO	Manufacturing
JBS BRAZIL	Processados - Rio Grande da Serra/SP	Manufacturing
JBS BRAZIL	São Paulo - SP Corporativo	Corporate
PPC	Mt. Pleasant, TX - Rendering	Manufacturing
PPC	Broadway, VA - Rendering	Manufacturing
PPC	Sumter, SC - Processing	Manufacturing
PPC	Gainesville, GA - Processing	Manufacturing
PPC	Russellville, AL - Processing	Manufacturing
PPC	Lufkin, TX - Processing	Manufacturing
JBS USA LUX	Greeley, CO	Manufacturing
JBS USA LUX	Mason, OH	Manufacturing
JBS USA LUX	Dalhart, TX	Manufacturing
JBS USA LUX	Riverina Beef Feedlot	Feedlot
JBS USA LUX	Corowa Pork	Manufacturing
JBS USA LUX	Greeley, CO - Corporate	Corporate
JBS USA LUX	Australia - Corporate	Corporate

- E) Inspected, at each site visited, a limited number of items to or from supporting records, as appropriate;
- F) Considered the presentation and disclosure of the sustainability information;
- G) Reperform the calculation data of greenhouse gas emissions taking into consideration Scope 1 (direct greenhouse gas emissions) and Scope 2 (indirect greenhouse gas emissions from energy purchased using the location-based and market-based methods); and



The procedures performed in a limited assurance engagement vary in nature and timing from, and are less exhaustive than those used in a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

São Paulo, November 12, 2024

KPMG Assessores Ltda.

A handwritten signature in blue ink, appearing to read 'Sebastian Yoshizato Soares', enclosed within a blue oval scribble.

Sebastian Yoshizato Soares  
Accountant CRC 1SP257710/O-4

Attachment – Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement



Monitoring Year  
2023

# Scope 1 and 2 Greenhouse Gas Emissions Inventory Statement

**JBS SA**

Av. Marginal Direita do Tietê, 500 - Vila Jaguara,  
São Paulo - SP, 05118-100, Brazil

Date: October 4, 2024

## OVERVIEW

As a major focus area, JBS SA is dedicated to improving our collection, and calculation of greenhouse gas (GHG) emissions. Therefore, we engaged KPMG Assurance Services Ltda. (KPMG) to conduct a limited assurance on JBS SA's reported 2019 base year greenhouse gas emissions. The following GHG data are included in the assurance scope where JBS SA intends to use this GHG data in future corporate sustainability reporting.

JBS SA collects, calculates, and reports GHG emissions in accordance with *The Greenhouse Gas (GHG) Protocol – Corporate Accounting and Reporting Standard – Revised Edition* from the World Resource Institute (WRI) and WBCSD (World Business Council for Sustainable Development) – (2004 Revised Edition) and using the criteria included in Appendix 1.

### 2023 Market-Based Emissions (Metric Tons of CO<sub>2</sub>e), confirmed via KPMG:

Business Unit	Scope 1	Scope 2	Total Scope 1 and 2
JBS Brazil	907,825	115,368	1,023,192
JBS Australia	705,503	302,792	1,008,295
JBS USA	878,979	459,613	1,338,592
JBS Canada	60,934	41,369	102,303
Pilgrim's USA	602,304	447,819	1,050,123
Moy Park	239,950	65,324	305,274
Pilgrim's Mexico	136,418	100,439	236,857
Pilgrim's UK	33,397	0*	33,397
Pilgrim's Food Masters	21,091	0*	21,091
<b>Total Emissions</b>	<b>3,586,401</b>	<b>1,532,724</b>	<b>5,119,124</b>

Totals may not match due to rounding.

\*Please note Pilgrim's UK and Pilgrim's Food Masters purchases 100% renewable electricity, which is why market based emissions are zero.

2023 Location-Based Emissions (Metric Tons of CO<sub>2</sub>e), **confirmed via KPMG:**

Business Unit	Scope 1	Scope 2	Total Scope 1 and 2
JBS Brazil	907,825	115,367	1,023,192
JBS Australia	705,503	233,265	1,008,295
JBS USA	878,979	525,159	1,338,592
JBS Canada	60,934	41,369	102,303
Pilgrim's USA	602,304	451,461	1,050,123
Moy Park	239,950	38,980	305,274
Pilgrim's Mexico	136,418	100,439	236,857
Pilgrim's UK	33,397	19,430	33,397
Pilgrim's Food Masters	21,091	16,283	21,091
<b>Total Emissions</b>	<b>3,586,401</b>	<b>1,541,754</b>	<b>5,120,060</b>

Totals may not match due to rounding.

\*Please note Pilgrim's UK and Pilgrim's Food Masters purchases 100% renewable electricity, which is why market based emissions are zero.

## APPENDIX I

- JBS SA has selected the Operational Control Approach to define our organizational boundaries for GHG reporting.
- JBS SA reports scope 1 emissions including stationary fuel combustion, mobile combustion, refrigerants, process – industrial CO<sub>2</sub>, wastewater, agriculture (manure management and enteric fermentation), and fertilizer emissions.
- JBS SA reports scope 2 emissions using the location-based and the market-based approach including purchased electricity, heat, and steam.
- For market-based, contractual energy purchases or instruments recognized by Greenhouse Gas Protocol are considered in this analysis. When available scope 2 emissions are calculated using

supplier-based or residual mix emission factors, otherwise if unavailable JBS SA uses the location-based emission factors associated with our given regions.

- Negligible sources of emissions equivalent to less than 1% of the total JBS SA Scope 1 and 2 emissions may not be included.
- Emissions data is collected for CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and refrigerant gases in metric tons and is converted into metric tons of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e) using global warming potentials set by the United Nations Intergovernmental Panel on Climate Change (IPCC) in their Fourth Assessment Report (AR4) and Fifth Assessment Report (AR5).
- Based on GHG Protocol, biogenic emissions are to be accounted for separately from the scopes' inventory and therefore are not included herein.
- In addition to GHG Protocol, JBS SA follows the 2006 IPCC (Intergovernmental Panel on Climate Change) Guidelines for National Greenhouse Gas Inventories, 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, as well criteria set forth by the US Environmental Protection Agency (EPA).
- GHG emissions quantification is subject to significant inherent measurement uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values to combine emissions of different gases. Greenhouse gas quantification is unavoidably subject to significant inherent uncertainty because of both scientific and estimation uncertainty. Estimation uncertainty can arise because of:
  - The inherent uncertainty in quantifying inputs, such as activity data and emission factors, that are used in mathematical models to estimate emissions (measurement uncertainty).
  - The inability of such models to characterize under all circumstances the relationships precisely and accurately between various inputs and the resultant emissions (model uncertainty).
  - The fact that uncertainty can increase as emission quantities with different levels of measurement and calculation uncertainty are aggregated (aggregation uncertainty).
  - Lastly, the selection by management of a different but acceptable measurement method, input data, or model assumptions, or a different point value within the range of reasonable values produced by the model, could have resulted in materially different amounts or metrics being reported. Furthermore, the information included in the GHG Statement is based on historical information that is both quantitative and qualitative in nature. Accordingly, it does not provide information about future reporting periods.