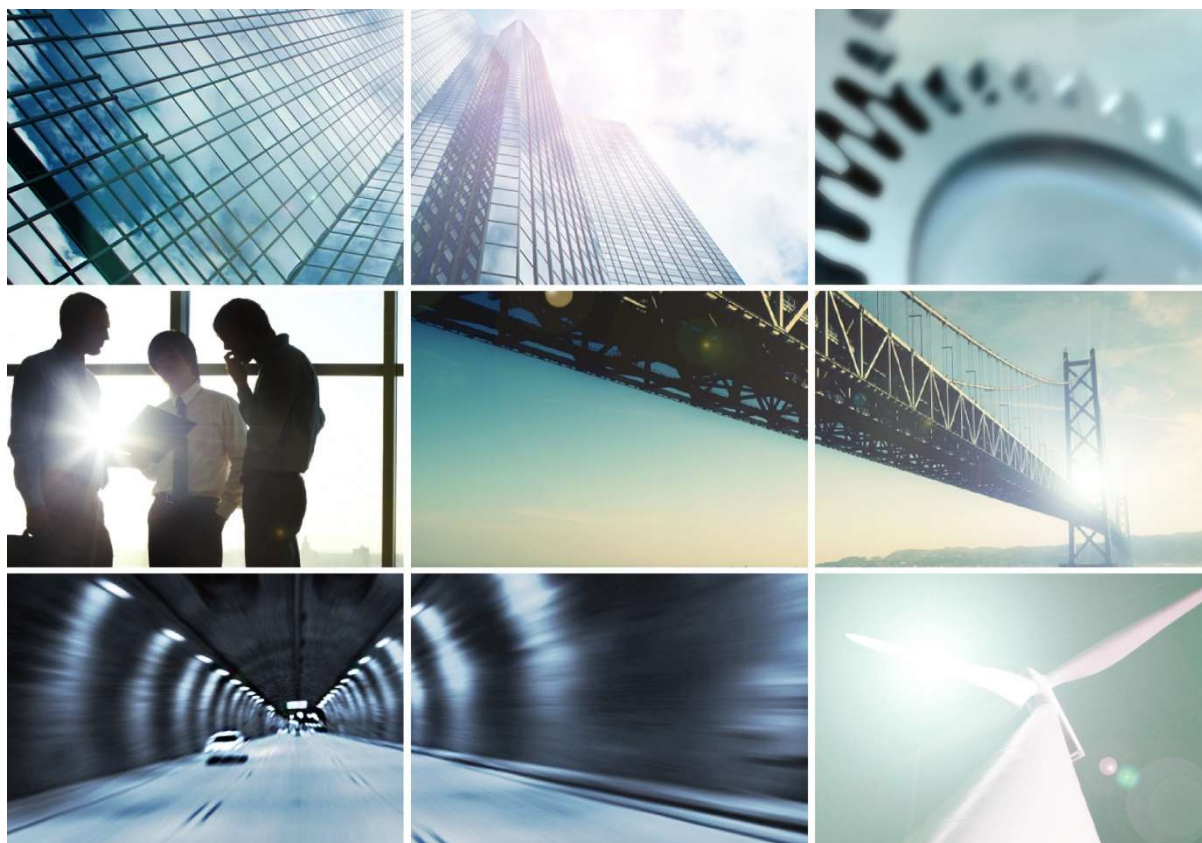


Greenhouse Gas Inventory Verification for:

Tiger Brands Limited

04 June 2019



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Glossary

AR5	Fifth Assessment Report
CDP	Carbon Disclosure Project
CFA	Carbon Footprint Assessment
CH ₄	Methane
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DEFRA	Department of Environment, Food and Rural Affairs (UK)
DJSI	Dow Jones Sustainability Index
GHG	Greenhouse Gas
GJ	Gigajoule
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
JSE	Johannesburg Stock Exchange
kL	Kilolitre
kW	Kilowatt
kWh	Kilowatt Hour
MWh	Megawatt Hour
N ₂ O	Nitrous Oxide
tCO ₂ e	Tonnes of Carbon Dioxide Equivalent
YTD	Year to Date

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I Introduction

I.1 GHG Inventory Verification Introduction

Organisations around the world are increasingly confronted with the topic of climate change and other social and environmental issues. These organisations are fast recognising that their response (or lack thereof) to environmental and social issues, poses both risks and opportunities.

Organisations are discovering that there is strategic business value by undertaking **Greenhouse Gas Inventory Verification** as part of their overall Carbon Management Plan.

These benefits include:

- **Reporting assurance:** Ensure your carbon emissions data is accurate, relevant, complete, and consistent over time for management decision making.
- **Differentiate from competition:** Show that your organisation takes its environmental impact seriously and is willing to go the extra step by undertaking external independent verification.
- **Enhance reputation:** Demonstrate your organisation's commitment to cut carbon emissions. Therefore, enhancing your reputation among shareholders, customers, and employees.
- **Attract investment:** Improve access to capital through ratings on the growing number of market indices promoting responsible investment, such as CDP, JSE / FTSE Russell and DJSI.
- **Increase CDP Score:** A company choosing to verify their footprint can achieve a better CDP score.

I.2 Project Background

Tiger Brands Limited (herewith Tiger Brands) commissioned Terra Firma Solutions to conduct an independent verification assessment of their Greenhouse Gas Inventory for the reporting period 1st January 2018 to 31st December 2018. The purpose of the verification is to verify Tiger Brand's carbon footprint for CDP reporting.

The verification has been conducted in accordance with ISO 14064 – 3: 2006 International Standard.

The verification process assesses:

- Consistency with the WBCSD/WRI GHG Protocol for Corporate Accounting Standard; and
- Material accuracy of the quantification of Tiger Brands GHG inventory.

1.3 Client Background

“Tiger Brands Limited, a Top 40 JSE Limited company whose footprint extends across the African continent and beyond, is one of the largest manufacturers and marketers of FMCG products in Southern Africa, and has been for several decades.

Tiger Brands has been built over many decades through the acquisition and clustering of businesses. Our strategy for success comes from the perpetual renovation and innovation of our brands, while our approach to expansion, acquisitions and joint ventures has given traction to a distribution network that now spans more than 22 African countries.

Our group focus is on the core business of FMCG categories that spread across the value chain. Our wide range of brands are underpinned by comprehensive research and meaningful insights into each of the markets in which Tiger Brands operates.

Tiger Brands is a world-class operation – and will continue to hold and grow its position through constant investment in every asset of the business, be it in people, brands, technology, efficiency, quality or sustainability.”

<http://www.tigerbrands.com/about-us-4/>

1.4 Verification Scope

Terra Firma Solutions conducted **limited-level assurance** of Tiger Brands Greenhouse Gas Inventory. The following verification activities were conducted:

- A desktop review of Tiger Brands’ Scope 1 and Scope 2 GHG inventory and activity data.
- A desktop review of Tiger Brands’ Scope 3 (water, waste and air travel) GHG inventory and activity data.
- The following business units were included in the verification:

Table 1: Business Units

Grains	Consumer	International
<ul style="list-style-type: none">• Albany• Milling• Jungle• King Food• Tastic• Pasta	<ul style="list-style-type: none">• Beverages• Culinary• Home, Personal Care & Baby• Value Added Meat Products• Snacks and Treats	<ul style="list-style-type: none">• Chococam• Davita• Langeberg & Ashon Foods (S.A.)

- The following documents were verified for correctness:
 - “Final Summary Carbon footprint 2018 for submission 17052019” received via email from Kavita Kalicharran on 23rd May 2019.
 - “Beverages Roodekop”
 - “Culinary”
 - “HPCB”
 - “Snacks and Treats”
 - “Vamp”
 - “Albany Bakeries”
 - “Jungle Oats”

- “King Food”
 - “Mills”
 - “Pasta Isando”
 - “Tastic Rice”
 - “Chococam 2018”
 - “DAVITA”
 - “Langeberg and Ashton Dec 2018”
 - “Tiger Brands CO2 Jan-Dec 18 Travel Data”
- All relevant emission factors were reviewed for accuracy. **NB: outdated emission factors did not have a material impact on the total GHG inventory. However, it is highly recommended they are updated in future inventories.**
- The following was not included in the verification:
 - Emission intensities
 - KPI's
 - Carbon Tax calculations
 - Exclusions
 - “Consumer Brands Summary Sheet”
 - “Grains Summary Sheet”
 - “International Summary Sheet”
- No base year was stated and was not verified.

1.5 Concept of Materiality

The determination of materiality involves qualitative as well as quantitative considerations. As a result of the interaction of these considerations, discrepancies of relatively small amounts can have a material effect on the carbon emissions assertion.

In order to ensure consistency some GHG programmes or internal reporting programmes assist this decision-making process by including materiality thresholds. This can be defined at the overall level, such as 5% of an organisation's, or GHG project's, GHG emissions.

A 5% materiality threshold was applied to Tiger Brands total organisational GHG inventory.

It can also include varying thresholds depending on the level of disaggregation, such as 5% at the gross organisational level, 7% at the facility level, and 10% at the GHG source level.

1.6 Assumptions and Limitations

All assumptions made during the verification process have been clearly explained in the relevant sections to which they pertain. Terra Firma Solutions are limited to the information and data provided by Tiger Brands.

I.7 Structure of the Report

The report has the following structure:

- Introduction
- Verification Process
- Verification Results
- Recommendations
- Verification Statement

I.8 Project Team

The table below shows the project team:

Table 2: Project Team

Name	Company	Responsibility
Julie Ntsekhe	Tiger Brands	Client Representative
Kavita Kalicharren	Tiger Brands	Client Representative
Caitlin Keam	Terra Firma Solutions	Senior Analytics Manager

2 Verification Process

2.1 Verification Process

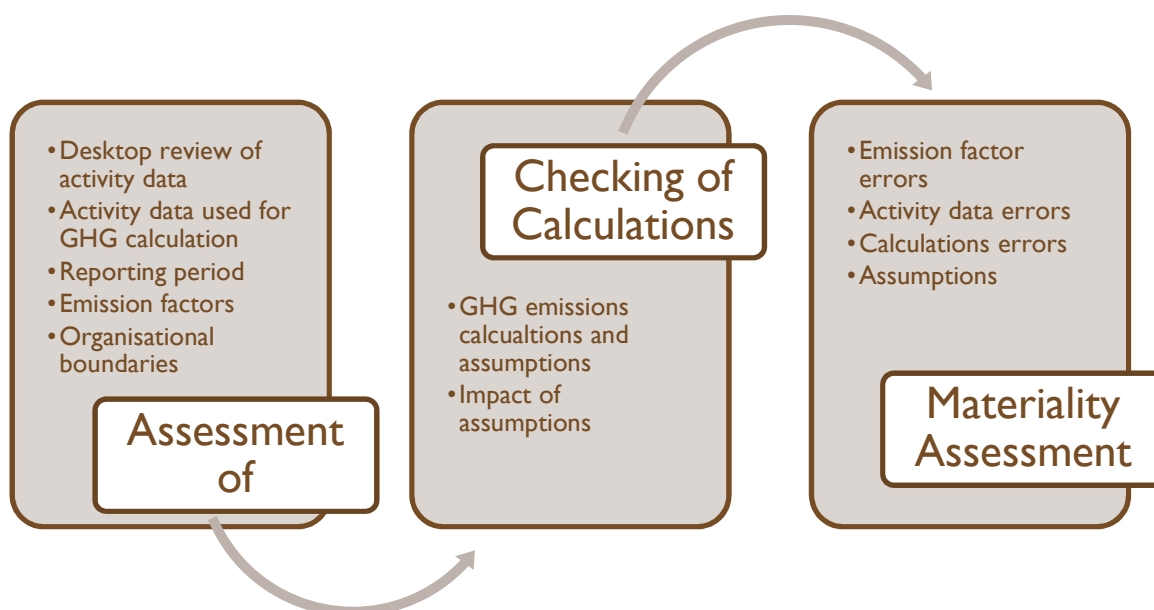


Figure 1: Greenhouse Gas Verification Process

2.2 Tiger Brands Activity Data

The GHG emissions were verified using the above process. All environmental indicator reports containing activity data were provided by Tiger Brands, for each business unit.

The following points describe the verification method used:

- Activity data was reviewed by calculating emissions using input sheet data and comparing emissions against the final consolidated GHG inventory. The following business units were included in the assessment:
 - Consumer Brands
 - Grains
 - Exports and International
- Scope 3 air travel emissions were included in the verification assessment.
- The reporting period assessed was for 1st January 2018 to 31st December 2018.
- The organisational boundaries were checked and confirmed to operational control. Therefore 100% of emissions are attributed to Tiger Brands.
- The calculations of GHG emissions were checked and assessed for material impact on the overall carbon footprint for Scopes 1 and Scope 2 emission sources. Scope 3 water, waste and air travel emissions were also assessed.
- The materiality of all discrepancies were assessed using the criteria stipulated in Section 1.5 Concept of Materiality.

3 Verification Results

The following findings relate to the scope of the verification as defined in Section 1.4.

3.1 Materiality

A 5% organisational level materiality threshold was set for the verification assessment. Based on the process and procedures conducted, there is no evidence that the GHG assertion

1. has significant material errors and is not a fair representation of GHG data and information; and
2. has not been prepared in accordance with the GHG Protocol Corporate Accounting and Reporting Standard.

3.2 Organisational Boundaries

Tiger Brands GHG inventory followed the operational control approach. The organisational boundaries were defined and utilised correctly in the calculation of the GHG Inventory.

3.3 Operational Boundaries

Tiger Brands calculated GHG emissions of the following activities:

Scope 1

- Stationary combustion (coal, natural gas, LPG, diesel, paraffin, polyfuel and HFO)
- Mobile combustion (petrol, diesel and LPG)

Scope 2

- Purchased electricity
- Purchased steam

Scope 3

- Water
- Waste to landfill
- Air travel

3.4 Reporting Period

The reporting period was correctly defined and utilised in the calculation of the GHG emissions inventory. Tiger Brands reporting period is the calendar year and not the organisations financial year.

3.5 Emission Factors

All Scope 1 and 2 emission factors used in Tiger Brands environmental indicator reports were reviewed; utilising the following sources:

- The Greenhouse Gas Protocol: Emission Factors from Cross Sector Tools (2015)
- The Greenhouse Gas Protocol: GHG Emissions from Purchased Electricity (2015)

- Eskom Integrated Annual Report (2018)
- IPCC Guidelines for National Greenhouse Gas Inventories (2006)

Scope 3 emission factors were checked for correctness; utilising the following sources:

- Guidelines to DEFRA/DEC's GHG Conversion Factors for Company Reporting (2018)

3.6 Corrective Action Requests

The following clarifications and corrective action requests were sent to Tiger Brands to improve the accuracy of the carbon footprint assessment.

3.6.1 Emission Factors

Please complete the table below for all emission factors used in the 2018 carbon footprint.

- ✓ Please enter the database reference, e.g. GHG Protocol, IPCC
- ✓ Please enter the emission factor unit, e.g. kgCO₂e / tonne
- ✗ Not all the emission factor sources utilise the latest database. Verification was conducted using the latest emission factors, the impact on the final footprint is within the 5% materiality threshold.

Emission Source	Tiger Brands: Emission Factor Database	Tiger Brands: Emission Factor Unit
Coal	GHG Protocol Stationary 2015	kgCO ₂ e/Tonne
Natural Gas (SASOL)	GHG Protocol Stationary 2015	kgCO ₂ e/Tj
LPG	GHG Protocol Stationary 2015	kgCO ₂ e/Tonne
Diesel - Heating	GHG Protocol Stationary 2015	kgCO ₂ e/Tonne
Paraffin	GHG Protocol Stationary 2015	kgCO ₂ e/Tonne
Poly Fuel	GHG Protocol Stationary 2015	kgCO ₂ e/Tonne
HFO	GHG Protocol Stationary 2015	kgCO ₂ e/Tonne
Biomass (peach pits)	GHG Protocol Stationary 2015	kgCO ₂ e/Tonne
Petrol -Transport	IPCC 2006 (AR5: CH ₄ and N ₂ O)	kgCO ₂ e/Litre
Diesel -Transport	IPCC 2006 (AR5: CH ₄ and N ₂ O)	kgCO ₂ e/Litre
LPG - Transport	IPCC 2006 (AR5: CH ₄ and N ₂ O)	kgCO ₂ e/Litre
Electricity	Eskom 2017	kgCO ₂ e/kWh
Coccam Electricity	GHG Protocol Electricity 2015	kgCO ₂ e/kWh
Water Usage	DEFRA 2018	kgCO ₂ e/Kl
Waste (Send to Landfill)	DEFRA 2017	kgCO ₂ e/Tonne
Grains Waste (Send to Landfill)	DEFRA 2017	kgCO ₂ e/Tonne
Steam	Tiger Brands Calculation	Ton CO ₂ e

3.6.2 Spreadsheet Consistency

- ✓ Please ensure the emission factors stated in the table above are consistent across all spreadsheets, for example Culinary: emission factors and units differ from the other input sheets. **[Tiger Brands: Corrective Action attended to and corrected]**
- ✓ Please ensure all activity data units are inputted correctly in the spreadsheets, and all unit conversions are applied correctly. For example, Culinary: the LPG Transportation data is provided in kilograms (the other input sheets provide the data in litres) however the same conversion methodology has been applied. **[Tiger Brands: Corrective Action attended to and corrected]**

- ✓ Please review and update the waste emission factor, as it differs across spreadsheets. **[Tiger Brands: Corrective Action attended to and corrected]**

3.6.3 Data Review

In the relevant spreadsheet, please update the data discrepancies below, or provide an explanation for the discrepancy. **[Tiger Brands: All corrective actions were attended to by Tiger Brands, unless otherwise stated].**

- ✓ Albany Bakeries > Margate > Electricity kWh > Feb 2018
- ✓ Albany Bakeries > Manna > Electricity kWh > Jan 2018
- ✓ Culinary > Boksburg > Diesel Heating > Feb 2018: **[Tiger Brands: Data is correct. Power outages which necessitated the use of the Diesel Generator]**
- ✓ Culinary > Boksburg > LPG > Jan 2018 and Feb 2018
- ✓ Culinary > Jam > Electricity > Aug 2018
- ✓ S&T > Choc > Electricity > Sept 2018
- ✓ S&T > Choc > Water > April - Sept 2018
- ✓ S&T > Candy > Water > Apr, Jun, Aug, Sep 2018
- ✓ S&T > M&J > Electricity > Sept 2018
- ✓ S&T > M&J > Water > June - Sept 2018
- ✓ S&T > M&J > Natural Gas > June - Sept 2018
- ✓ Langeberg and Ashton > L&A East > All Data > Oct – Nov 2018
- ✓ Langeberg and Ashton > L&A West > All Data > Oct – Nov 2018
- ✓ Langeberg and Ashton > L&A East and West > No data for waste sent to landfill. **[Tiger Brands: Solid waste was redirected for composting and animal feed.]**

3.6.4 Boundaries Confirmation:

Tiger Brands to please answer the questions below:

- ✓ Haco is no longer in operation? **[Tiger Brands: Not in operation anymore]**
- ✓ Albany Maitland is no longer in operation as of March 2018? **[Tiger Brands: Yes, the Bellville plant is in full production, Maitland only used for back up]**

3.6.5 Comparison to 2017

Tiger Brands carbon footprint has decreased compared to 2017. Please provide an explanation for the decrease in emissions at the following sites:

- ✓ VAMP Coal and Electricity:
 - a. **[Tiger Brands: Value Added Meat Production (VAMP): The VAMP business comprises of 4 production sites. In 2018, due to the Listeria crisis, these business units were shut down. The emissions reported for 2018 therefore only reflect a production period of 2 months whilst these plants were in operation.]**
- ✓ Culinary Scope 1 emissions decreased by 27%
 - a. **[Tiger Brands: Culinary Musina – In 2018, the production season was shorter than the previous season. The season in 2018 ran for the period April 2018 to September 2018 [6 months] compared to the previous reporting periods which ran for 10 month cycles. This was further exacerbated by the water supply challenges experienced in**

that region. Therefore, the Emissions reported for this business unit covers a shorter production period by comparison.]

- b. [Tiger Brands: Culinary Lutzville – Due to the severe drought conditions in the Western Cape region during 2017 and 2018, the Culinary Lutzville business operations were suspended from June 2017 to December 2018.]**

3.6.6 Recommendations

The below recommendations are not critical for verification however they are **highly recommended**:

- Please review all spreadsheets for consistency, e.g. ensure all data pulls through correctly across all tabs. Only the data and carbon footprint tabs have been verified due to inconsistencies.
- Please note that the following spreadsheets were not reviewed due to inconsistencies:
 - Grains summary sheet
 - Consumer summary sheet
 - International summary sheet

3.7 Verification Results Summary

The table below summarises the results of Tiger Brands 2018 carbon footprint verification. The gross organisational emissions are below the 5% materiality threshold.

Table 3: Tiger Brands GHG Inventory Verification Summary

Consumer	Tiger Brands (tCO ₂ e)			Terra Firma Solutions (tCO ₂ e)			Variance (%)		
	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3
Beverages	2 143	8 185	105	2 144	7 934	105	0%	-3%	0%
Culinary	65 603	24 615	697	65 851	23 861	696	0%	-3%	0%
HPCB	797	19 213	129	798	18 930	129	0%	-1%	0%
S&T	16 337	47 969	459	16 366	46 500	458	-4%	-3%	0%
VAMP	15 235	32 170	201	15 693	31 186	201	3%	-3%	0%
Total	100 116	132 152	1 591	100 852	128 411	1 589	1%	-3%	0%

Grains	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3
Albany	58 936	59 733	340	54 959	57 905	339	-7%	-3%	0%
Jungle	2 824	6 001	13	2 840	5 818	13	1%	-3%	0%
King Food	15 691	13 119	35	15 740	12 717	35	0%	-3%	0%
Mills	618	69 203	89	654	67 085	89	6%	-3%	0%
Pasta	2 543	10 345	24	2 549	10 029	24	0%	-3%	0%
Tastic	358	5 045	31	365	4 891	31	2%	-3%	0%
Total	80 971	163 448	533	77 106	158 444	532	-5%	-3%	0%

Export & International	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3
Chococam	2 218	1 293	96	2 391	1 254	91	8%	-3%	-5%
Davita	-	2 172	91	153	2 105	91		-3%	0%
L&AF	25 421	14 665	192	25 569	14 216	192	1%	-3%	0%
Total	27 639	18 129	379	28 114	17 575	374	2%	-3%	-1%

	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3	Scope 1	Scope 2	Scope 3
Air Travel			2 614			2 614			0%

Total	208 725	313 729	2 503	206 072	304 430	2 495	-1%	-3%	0%
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527 571	515 611	-2.27%
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4 Recommendations

The following recommendations indicate ways in which Tiger Brands can improve their carbon management system:

- **Improve data quality:** it is recommended that Tiger Brands continue to collect non-financial data by business unit. This should be accompanied by a non-financial data collection guideline which aims to reduce errors. **It is recommended that each business unit take actions to:**
 - **Reduce data gaps**
 - **Ensure all cells in the excel spreadsheet are aligned correctly**
 - **Eliminate spreadsheet errors**
 - **Ensure the correct data cells are referred to across different spreadsheets**
 - **Ensure no static values are inputted into the spreadsheet where a formula should be used**
- **Review process:** it is recommended that each business unit review the non-financial data before submitting to head office. This review should ensure that there are not material exclusions or errors in the data. Head office should review the data further, again highlighting any significant discrepancies in the data. All calculations should be reviewed by a Tiger Brands employee who did not calculate the footprint, this review should ensure all activity data is pulled correctly throughout the workbooks as indicated in the bullet point above.
- **Emission factors:** Tiger Brands should **update all relevant emission factors annually**. Eskom's integrated, or supplementary and divisional report, publishes the grid emission factor annually. International electricity emission factors are found in the Greenhouse Gas protocol guidelines, where the latest emission factor should be used. DEFRA releases an updated database of emission factors annually; the latest DEFRA emission facts should be used for scope 3 emissions.
- **Carbon footprint calculations:** it is recommended that the carbon footprint calculator is reviewed for calculation errors. This involves ensuring calculations are correct and ensuring all densities have been applied correctly.
- **Carbon inventory development:** Tiger Brand has a large scope 1 footprint, comprised of fossil fuels. It is recommended that Tiger Brand's carbon inventory identifies the largest emitters, allowing for the identification of possible carbon projects as well as investigating, at a high level, if these projects would be feasible to investigate further.
- **Detailed carbon emission reduction strategy:** There are a number of opportunities for Tiger Brands to reduce emissions. The company should look to develop a detailed emission reduction strategy in order to provide the best way forward to reduce the group emissions. The carbon strategy should look at specific opportunities at selected facilities and highlight which opportunities should be investigated more closely.

Disclaimer

Every attempt has been made by Terra Firma Solutions to ensure the accuracy of this Greenhouse Gas Inventory Verification; however, the accuracy is dependent on information provided by Tiger Brands Limited including, but not limited to:

- Activity data provided by Tiger Brands;
- Carbon emission calculations by source and business unit; and
- Assumptions used to calculate carbon emissions.

The carbon footprint verification is conducted for CDP purposes. The assessment does not include a review of Tiger Brands environmental scorecards, KPI's, carbon tax calculations etc.

5 Verification Statement

Tiger Brands Limited
Tiger 1, 3010 William Nicol Drive,
Bryanston,
Republic of South Africa

Independent Verification Statement

Introduction

Tiger Brands Limited (Herewith Tiger Brands) commissioned Terra Firma Solutions to perform limited-level assurance of its Greenhouse Gas (GHG) inventory for the reporting period 1 January 2018 – 31 December 2018 (Herewith 2018). The preparation for the GHG calculation has been the responsibility of Tiger Brands. The verifier has been given the responsibility to express an opinion on the GHG calculation.

The verification has been conducted in accordance with ISO 14064 – 3.

Objectives

The GHG assertions verified were the following:

- That the calculation of the 2018 GHG inventory for Tiger Brands has been developed in accordance with the GHG Protocol Corporate Accounting and Reporting Standard; and
- That the final reported figure of GHG emissions were calculated according to the operational control approach at **527 571 tonnes CO₂e** for Scope 1, Scope 2 and Scope 3 (water, waste to landfill and air travel).

Scope

The following verification activities were conducted:

- A desktop review of Tiger Brands Scope 1, Scope 2 and Scope 3 (water, waste to landfill and air travel) GHG inventory and activity data, where the following reviews were conducted:
 - Reliability and correctness of emission factors;
 - Assessing completeness and accuracy of activity data;
 - Assuring a consistent methodology was used for assumptions and extrapolation; and
 - Reviewing the accuracy of final GHG calculations, as per the following materiality thresholds:
 - 5% gross organisational threshold.
- The following business operations were included in the verification:

Grains	Consumer	International
<ul style="list-style-type: none">• Albany• Milling• Jungle• King Food• Tastic• Pasta	<ul style="list-style-type: none">• Beverages• Culinary• Home, Personal Care & Baby• Value Added Meat Products• Snacks and Treats	<ul style="list-style-type: none">• Chococam• Davita• Langeberg & Ashon Foods (S.A.)

- All relevant emission factors were reviewed for accuracy.
- Emission intensities were not verified.
- Documentation of verification findings, and recommendations for improvement, are highlighted in the verification report.
- Issuance of clarifications and corrective action requests to Tiger Brands for consideration and review.
- Issuance of verification statement and completion of verification.

Conclusion

The limited level of assurance was conducted so as to comply with the requirements of the Greenhouse Gas Protocol.

Scope 1:

Total Scope 1 emissions reported for 2018: **208 725 tonnes CO₂e**

For CDP purposes more than 90% but less than or equal to 100% of the reported global emissions were verified.

Scope 2:

Total Scope 2 emissions reported for 2018: **3 13 729 tonnes CO₂e**

For CDP purposes more than 90% but less than or equal to 100% of the reported global emissions were verified.

Scope 3:

Total Scope 3 emissions reported for 2018: **5 117 tonnes CO₂e**

For CDP purposes more than 90% but less than or equal to 100% of the reported global emissions were verified.

Verification Opinion

Based on the process and procedures conducted, there is no evidence that the GHG assertion

1. has significant material errors and is not a fair representation of GHG data and information;
and
2. has not been prepared in accordance with the GHG Protocol Corporate Accounting and Reporting Standard.

Date of Verification

The preparation for the verification opinion for the GHG calculation was performed between 28th April 2019 and 4th June 2019.

The verification statement is dated 4th June 2019.



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