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DECLARATION OF CARBON NEUTRALITY

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0 Carbon Neutrality declaration

The **Qualifying Explanatory Statement** (QES) contains all the required information on the carbon neutrality of the given subject. All information provided within this report has been **reviewed by a third party** (SGS) and is believed to be correct. If provided with any information affecting the validity of the following statements, this document will be updated accordingly to reflect the affiliate(s) current status towards carbon neutrality. This report is publicly available on a dedicated website at https://www.pmi.com/carbon-neutrality-declaration-tabaqueira.

This is the **first declaration** of achievement for Tabaqueira - Empresa Industrial de Tabacos, S.A. (Tabaqueira EIT, S.A.)

Certification letter from SGS can be found in Annex A.

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1 Introduction

This document forms the Qualifying Explanatory Statement (QES) to demonstrate that Philip Morris International (PMI) has achieved **carbon neutrality** for the below mentioned affiliates (plants) manufacturing processes for the period starting 1st January 2020 and ending 31st December 2020, in accordance with PAS2060:2014.

This has been achieved through:

- **Continuous carbon emissions reduction** through action plans under PMI direct controls: affiliates and fleet under affiliates' control (when applicable). These reduction have been captured as part of the GHG inventory for 2020.
- **Compensation of carbon emissions** for the period commencing 1st January 2020 and ending 31st December 2020.

This report includes the information which substantiates the declaration of PMI affiliates achievement of carbon neutrality for first application period (under PAS2060) and commitment on carbon neutrality up to 2030 (10 years, from 2020 the reference year) in compliance with PAS 2060:2014 standard.

PMI affiliates has also set up a **Carbon Management Plan** to **reduce the GHG emissions associated to the manufacturing processes** in order to demonstrate commitment to being carbon neutral in accordance with PAS2060:2014 standard.

1.1 General information

PAS2060 Information requirement	Information as it relates to PMI affiliates
Entities making PAS 2060 declarations	Tabaqueira - Empresa Industrial de Tabacos, S.A. (Tabaqueira EIT, S.A.)
Individual responsible for the evaluation and provision of the data necessary for the substantiation of the declaration (inc. preparing, substantiating, communicating and maintaining the declaration)	Gianluca Capodimonte
Subject of PAS2060 declaration	2020 affiliates manufacturing processes (complete list available in Annex C)
Function of subject	Factory manufacturing conventional products for PMI and its brands.
Activities required for subjects to fulfil its function	The activities required within the manufacturing process are: - Manufacture of Tobacco related products - Flavor & Casing Processing;

	- BBS Processing; - Improved Stems Processing; - Cut Filler Processing; - Filter Processing; - Machine Cigarette Processing - Quality Control Laboratory Processing
Rationale for selection of the subjects	PMI's ambition is to be carbon neutral for direct operations (factories, fleet and offices) by 2030. In this journey, all subjects (factories) that have reached substantial emission reduction in the past years qualify to compensate residual emissions and become carbon neutral.
Type of conformity assessment undertaken	I3P-3 Independent third-party certification - unified
Reference date for PAS2060 programme	1st of January 2020
Achievement period	1st of January 2020 – 31st of December 2020
Commitment period	1st of January 2021 – 31st of December 2030

Table 1.1 - General information

1.2 Scope

The **subject** for carbon neutrality is the following affiliate:

- **Tabaqueira (Portugal)**

The main business activity is the manufacturing of conventional products within PMI brands, as reported in Annex C.

During the reporting period, the definition of the subject(s) remained unchanged. In the case that material change occurs to the subject(s) in the future, the process of determination and substantiation of the subject(s) and associated GHG emissions shall be re-started on the basis of newly defined subject(s).

1.3 Boundaries of the subject

The system boundaries considered for the organizational carbon footprint of the subject are **all the activities** occurring **within the physical perimeter of the affiliate** and **under the affiliate control** including:

- The manufacturing plant
- The office(s) and/or warehouse(s) included within the perimeter
- The fleet under the affiliate's control

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GHG emissions associated to affiliate manufacturing process within the defined boundary from the periods of 1st January 2020 to 31st December 2020 have been quantified in accordance with GHG Protocol (operational control), following a corporate GHG inventory accounting verification conducted by SGS.

The data for this first application period has been **verified by an independent third party**, SGS, who confirms that the Carbon Neutral Declaration set out in this QES is appropriately reported in accordance with the requirement of PAS 2060.

The assurance letter issued by SGS can be found in Annex A.

2 Quantification of carbon footprint

2.1 Emissions results

The total GHG emissions related to scope 1 and 2 refer to manufacturing process during the year 2020 (1st application period) and represent a total of **4,608 tons of CO_2 equivalent**.

GHG scope	GHG emissions [tCO2eq]	Scope contribution
Scope 1 – manufacturing	4,560	98.95%
Scope 1 – fleet	48	1.05%
Scope 2 – Market based	0	0%
Total carbon footprint	**4,608**	**100%**

Table 2.1 - GHG emissions overall results

2.2 Methodology

Total GHG emissions associated with PMI affiliate(s), 1st January 2020 to 31st December 2020, have been quantified according to GHG Protocol, Corporate Accounting and Reporting Standard, following the operational control approach. This methodology was chosen as it represents best practice in terms of organization carbon footprint inventory and PAS 2060 endorses it as being fully compliant with its requirements.

The types of greenhouse gases (GHG) included in the Kyoto Protocol to the United Nations Framework Convention on Climate Change are required for reporting under the GHG Protocol Corporate Standard and the below listed were covered in the calculations:

- carbon dioxide (CO2),
- methane (CH4),
- nitrous oxide (N2O).

The inventory accounts for 100% of GHG emissions of business activities and operations in which PMI affiliate(s) has direct operational control and the full authority to introduce and implement its operating policies.

All scope 1 and 2 greenhouse gas emissions relevant to the system boundary are included and quantified, in accordance with the GHG Protocol, Corporate Accounting and Reporting Standard, as confirmed by SGS verification.

2.2.1.1 Scope 1

GHG emissions related to scope 1 come from direct emissions from sources owned or controlled by the affiliate(s). In PMI context, scope 1 emissions are:

- Stationary combustion:
  - Natural gas
  - LPG, Propane and Butane
  - Diesel (fuel oil)
  - Heavy fuel oil
  - Petrol
  - Biomass
- Mobile combustion
  - Petrol
  - Diesel
  - Biodiesel
  - Bioethanol
  - Natural Gas (Compressed)
-

2.2.1.2 Scope 2

GHG emissions related to scope 2 come from indirect emissions from the generation of purchased electricity, steam, heat and cooling consumed by the affiliate(s). In PMI context, scope 2 emissions are:

- Purchased electricity
- District steam
- District heating (inc. cooling)

2.2.1.3 Scope 3

GHG emissions related to scope 3 refer to all other indirect emissions as a consequence of the activities of the affiliate(s) that occur from sources not owned or controlled by PMI are out of scope.

2.3 Data sources

Primary and secondary data has been used for the Carbon Quantification process. Primary data is used where possible, only where primary data was not, secondary data was used to quantify emission. For scope 1 and 2, **primary data were exclusively used**.

1. Primary Data source relates to all input and output corresponding to steps under the affiliates control were directly provided. This includes energy inputs for production as well as fuel consumption for the fleet under control.

2. Emission Factors were sourced from recognized databases (DEFRA and GHG protocol).

Source of data were reviewed by SGS through the GHG Protocol verification process and requirements of PAS 2060:2014.

2.4 Assumptions and estimations

All assumptions made to quantify the Greenhouse gas emission of PMI affiliates were reviewed by SGS through the GHG Protocol verifcation process and requirements of PAS 2060:2014. For scope 1 and 2 in Manufacturing, no assumptions were made.

2.5 Exclusions

Annex C outlines all the inclusions and exclusions for GHG emissions; in order to cover all exclusions within the system boundary an overrate of 3% has been added to affiliate total Carbon Footprint for compensation; in this way the Carbon Neutrality program covers 100% of the GHG emissions.

2.6 Uncertainties

Generally, the use of secondary data throughout the assessment represents the major source of uncertainties on results. Actions taken to minimize these uncertainties are described below and were reviewed by SGS.

- Secondary emissions factors: uncertainty associated to the use of secondary emission factors is because they represent averages, rather than specific emissions. However, their use was appropriate, and care has been taken to use the best available datasets (DEFRA and GHG Protocol).
- Secondary data has not been used.

Result of the uncertainty calculation is reported in Annex F.

2.7 Comparison with baseline period results

This section will be completed in subsequent years as 2020 is the first PAS 2060 certification, therefore will be used as baseline period subsequently.

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3 Carbon Management Plan

The carbon reduction management plan will consider a 11 years period (2020-2030) with the aim of maintaining the emissions down, this means that the emission indicator must not increase along the period.
This target will be monitored periodically (annually) in order to check if the expected results are aligned to the real ones. In order to achieve the target a series of projects will be implemented.
Although PMI affiliates began its Carbon Management Programme for Carbon Neutrality in 2020, energy saving measures have been implementing since 2010 within the production plants (i.e. Klaipeda (Lithuania) PMPSA (Switzerland) Tabaqueira (Portugal)). Others started later and will be considered in the boundaries of this study as part the GHG inventory.
The following paragraphs explain in detail implemented (paragraph 3.2) and planned (paragraph 3.3) projects, that are mainly related to production plant GHG emissions reductions.

3.1 PMI best practice

In 2020, 25 out of 42 affiliates, 100% of electricity purchased came from renewable font (electricity source for the affiliates in the carbon neutral factory certification are provided in annex G). Since 2017, we are gradually increasing the uptake of green electricity (as showed in below table) to reach 100% green electricity purchased for all our affiliates by 2025. By investing in renewable energy electricity, PMI overall avoided the emissions of **over 1 million ton of CO_2 equivalent**.

Indicator	2017	2018	2019	2020	Total Value
CO2 Scope 2 (GHG emissions) - Manufacturing - Market based [t GHG]	*217,563.41*	*149,756.70*	*111,507.79*	*65,288.69*	*544,116.60*
CO2 Scope 2 (GHG emissions) - Manufacturing - Location based [t GHG]	*414,126.07*	*395,371.30*	*398,331.67*	*357,670.25*	*1,565,499.29*
Cumulative difference between location based and market based	*196,562.66*	*245,614.60*	*286,823.88*	*292,381.56*	***1,021,382.69***

Table 3.1 - Green electricity increase

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3.2 Implemented GHG emissions reduction project repository

At PMI, emissions reduction project governance and budget approval comes from two distinctive main stream; one driven from central functions and another by the local team. Table 3.2 shows project implemented in the last few years, evaluated in 2020 Carbon Footprint assessment.

Project name	Description	Year	Type of energy used	Emission reduction [kg CO2 eq]
Energy Efficiency Plan 2010	The energy efficiency plan 2010 encompassed, i.e.: Compressed Air Leakage, Flash Steam Recovery, Variable Speed Drivers for Compressors, Steam Boiler Economizer 1, and Chiller Replacement	2010 | 2011	Electricity/Gas	780,817.54
Energy Efficiency Plan 2011	The energy efficiency plan 2011 encompassed, i.e.: Efficient LED Lightening, and VSD and Higher Efficiency Motors	2011 | 2012	Electricity/Gas	823,099.32
Energy Efficiency Plan 2013 and Renewable Electricity	The energy efficiency plan 2013 encompassed, i.e.: Heat recovery for Boiler House, and FTD Heat Recovery. Purchase of Green Electricity since June 2014	2013 | 2014	Electricity/Gas	5,587,121.69
Steam Boilers Replacement	Install one new boiler with higher energy efficiency and dimensioned according to	2014 | 2015	Gas	533,449.07

	planned future needs (10 Ton/h) replacing the boilers nº2 and nº3.			
Renewable Electricity	Portuguese legislation requirement to have renewable electricity since 2014 – in 2019 was already 100% renewable and PMI energy efficiency/saving program	2014 | 2015	Electricity	2,168,545.70
Energy Efficiency Plan 2015	The energy efficiency plan 2015 encompassed, i.e.: Optimization of the combustion control system	2015 | 2016	Gas	1,007,358.85
Energy Efficiency Plan 2016	The energy efficiency plan 2016 encompassed, i.e.: Thermal Energy Recovery in the Exhaust Gases of the Steam Generator, Thermal Energy Recovery in the BBS Dryer, Thermal Energy Recovery in DCC Dryers for Heating the Air Supply of AHU12, Improvement of Energy Efficiency in the Steam Distribution Network	2016 | 2017	Gas	470,419.48

Energy Efficiency Plan 2017	The energy efficiency plan 2017 encompassed, i.e.: New Heat Changer Recover for gas exhaust boiler nº2, and New thermal valve jackets isolation	2017 | 2018	Gas	115,431.03
Shutdown Management	Implementation of a management system to optimize the operating periods of utility equipment, such as: AHUs and Steam Boilers.	2018 | 2019	Gas	237,349.32
Energy Efficiency Plan 2019	The energy efficiency plan 2019 encompassed, i.e.: Flash Steam Recovery, and Heat Recovery from CA Plant	2019 | 2020	Gas	188,899.61

Table 3.2 - Implemented GHG emissions reduction projects

3.3 Planned GHG emissions reduction initiatives

In order to achieve the above-mentioned target, PMI is committed to identifying and implementing carbon saving projects until 31/12/2030 DATE. Table 3.3 shows main initiatives identified and estimated reduction for the whole commitment period (2020-2030DATE).

Initiative name	Description	Year planned	Type of energy used	Estimated reduction [kg CO2eq]
Car fleet	Exchange of the automobile diesel fleet for hybrid fleet and increase own charging stations.	2021/2024	Electrical and diesel	0 (if necessary, with offsets)

Solar park	Implemented photovoltaic solar plant, which covers an area of 5525 m2 with a production capacity of 1MW, which will guarantee the integration of 7% of electric energy for self-consumption. This solar park also powers 12 own charging stations for plug in vehicles in Tabaqueira fleet.	2021/2022	Electrical	865,000.00
Locker rooms boiler	Study to replace the inefficient gas boiler of locker rooms	2021	Gas	
Hydrogen plant	Memorandum of Understanding with Dourogas to study the implementation of a hydrogen plant	2021	Gas	
Carbon capture	Memorandum of Understanding with Dourogas to study the feasibility of a carbon capture solution for e-methane production	2021	Gas	

Table 3.3 - Planned GHG emissions reduction initiatives

Actual emsisions reductions will be measured in terms of intensity metrics relating to production output.

4 Carbon offset program

4.1 Offset program for the first application period

PMI has put in place an offsetting programme that complies with the most rigorous international standards, while also driving social and economic improvements.
In the meanwhile, with Carbonsink collaboration (an internationally recognized consultancy in carbon neutral strategies), an insetting project has been initiated to have a direct impact with PMI supply chain and will be used to compensate emissions in the upcoming declaration of carbon neutrality.
Either way, the neutrality is achieved by reducing and compensating Greenhouse Gases (GHG) emissions through supporting the development of sustainable climate solutions in developing countries. Compensation projects bring social, environmental and economic side-benefits, which contribute to United Nations Sustainable Development Goals (SDGs) and are labelled by **Verified Carbon Standard (VCS)**[1] and the **Climate Community and Biodiversity Alliance (CCBA)**[2] and other offsets as endorsed in PAS2060.

The **VCS Program** is the world's most widely used voluntary GHG program. A wider description of each project is reported in Annex F.

VCS guarantee that the offset purchased or insetting project generated represent **genuine, additional GHG emission reduction**: projects are assessed using a technically sound GHG emission reduction quantification methodology specific to that project type. The VCS label also guarantee that the project involved in delivering credits through this methodology meet the criteria of additionality, permanence, leakage and double counting. It also guarantees that the units were verified by an independent third-party and that the credits were only issued **after the emission reduction has taken place**.

CCBA developed the Climate, Community and Biodiversity Standards (**CCB** Standards) and have been managed by the VCS since November 2014. The CCB Standards evaluate land management projects from the early stages of development through implementation and foster the **integration of best-practice and multiple-benefit approaches into project design and implementation**.

The CCB Standards include projects that reduce greenhouse gas emissions from deforestation and forest degradation or projects that remove carbon dioxide by sequestering carbon or other land management.

Credits were retired by 8th July 2021.

These credits are supported by publicly available project documentation on the **Market registry online** (Markit[3]). The registry system is the central storehouse of data on all registered projects, and tracks the

[1] https://verra.org/

[2] http://www.climate-standards.org/

[3] https://mer.markit.com/br-reg/public/index.jsp?s=ca

generation, retirement and cancellation of all credits. To register with the program, projects must show that they have met all standards and methodological requirements.

4.2 Offsetting project(s)

Offsetting projects selected by PMI / Tabaqueira are:

1748 Units
Originating project: GS5658 VPA 11: Promoting energy efficiency &clean cooking in Pemba
Project ID: GS7524
Project type: Energy Efficiency – Domestic

2999 Units
Originating project: Revegetation with fruit Trees in North Manica Province, Mozambique
Project ID: VCS2085
Project type: Agriculture Forestry and Other Land Use

4.3 Amount of credits purchased

Credits have been ordered by PMI for the period covering 1st of January 2020 – 31st December 2020.
The amount of credits purchased is 4,747 tonnes of CO_2 equivalent, it is composed by two contribution:

- **4608 tonnes of CO_2 equivalent**, amount evaluated for the first application period
- **139 tonnes of CO_2 equivalent**, that represent the overrate of 3% of the whole baseline carbon footprint to cover all the exclusions (Annex C) and precludes underestimation.

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Climate
Positive Action for Planet + People

We are delighted to confirm the retirement of

1748 Verified Emission Reductions (VERs)

for

CarbonSinkGroup

on 07/07/2021

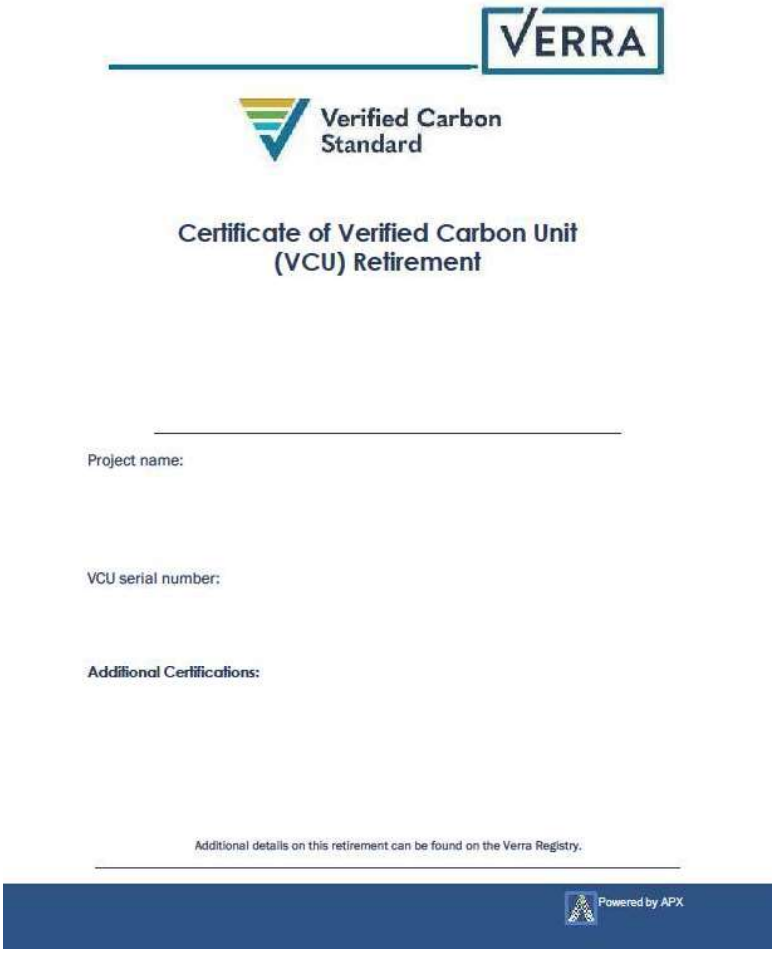
GS5658 VPA 11: Promoting energy efficiency & clean cooking in Pemba
Retired on behalf of Tabaqueira EIT, SA for offsetting of unavoidable emissions, year 2020

These credits have been retired, saving 1748 tonnes of CO2 emissions
from being released into the atmosphere.
Thank you for investing in a safer climate and more sustainable world.

Gold Standard

Retirement certificates are hosted on the Gold Standard Impact Registry. view your certificate.

Gold Standard | Chemin de Balexert 7-9 1219 Châtelaine, International Environment House 2, Switzerland | goldstandard.org | +41 22 788 7030 | help@goldstandard.org


VERRA

Verified Carbon Standard

Certificate of Verified Carbon Unit (VCU) Retirement

Project name:

VCU serial number:

Additional Certifications:

Additional details on this retirement can be found on the Verra Registry.

Powered by APX

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4.4 Compensation programme for the second application period

For the second application period, PMI will cancel the volume of carbon credits required once the emission calculations are completed for this period from the insetting project actually under development. The volumes of credits required by PMI affiliates (increasing in number until 2025) will be confirmed at later stage upon completion of the greenhouse gas inventory audit for this Application Period. The portfolio composition and share among projects will be determined based on the volume of credits generated through the insetting project.

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5 Annex A – Carbon Neutral Assurance letter

Attach Carbon Neutral assurance letter generated by SGS

SGS

Verification Statement Number:
CCP278808/12/07/2021

The Carbon Neutrality Declaration as presented in its Qualifying Explanatory Statement (QES), for the application period 01/01/2020 – 31/12/2020 of:

Tabaqueira - Empresa Industrial de Tabacos, S.A.
Av. Alfredo da Silva 35
Albarraque
2639-002 Rio de Mouro
Sintra
Portugal

has been verified by SGS United Kingdom Limited as conforming to the requirements of PAS 2060:2014: Specification for the demonstration of carbon neutrality (PAS 2060).

Lead Assessor: Lisa Gibson
Technical Reviewer: Paulomi Raythatha

Authorised by:

Pamela Chadwick

Business Manager
SGS United Kingdom Ltd

Verification Statement Date: 12th July 2021

This Statement is not valid without the full verification scope, objectives, criteria and conclusion available on pages 2 to 3 of this Statement

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6 Annex B – Qualifying Explanatory Statements (QES) checklist

Attach QES excel files once all points have been finalized and validated both internally AND externally by SGS.

EHS.D.410.F02 QES Check List v0.8- TAB.xl

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7 Annex C – Scope 1, 2 and 3 emissions inclusion and exclusion

Included and excluded emission sources related to the subject(s) are presented below, together with explanation for exclusions.

Scope	Emission source	Description	Inclusion exclusion	Justification of Exclusion
1.1	Stationary combustion	Combustion of fuels in boilers and furnaces for the generation of heat and steam, used for production processes and heating of buildings	Included	-
1.2	Mobile combustion sources	Transportation of employees and goods with cars under affiliate control.	Included	-
1.3	Process emissions	Emissions occurring during the production process (DIET)	Included	-
1.4	Fugitive emissions	Refrigerant gases losses	Excluded	Identified as below materiality threshold within the GHG inventory
2.1	Electricity consumption	Generation of purchased electricity	Included	-
2.2	Heat, steam and/or cold consumption	Purchase of heat, steam or cold energy not produced at operation site.	Included	-
3	Scope 3	All other indirect emissions	Excluded	Out of scope

Table 7.1 - Inclusions and exclusions

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8 Annex E – Uncertainty calculation

8.1 Uncertainty calculation

Uncertainties around the quantification of the carbon footprint have been assessed throughout the assessment following the guidelines released by ISO and available in the "GHG Protocol's Measurement and Estimation Uncertainty of GHG Emissions tool" (supporting worksheet file "Uncertainty_Calculation_Tool")[4]; since the uncertainties are not known for all the parameters (activity data and emission factors), the IPCC Guideline for National Greenhouse Inventories Reporting Instructions (1996) was used:

- Activity data: 7%
- Emission factor: 7%

All information can be accessed in the below file attached:

ghg-uncertainty.xlsx

Outcome of the uncertainty calculation (from attached file)

	Step 1+2						Step 3					
	A	B	C	D	E	F	G	H	I	J	K	L
	Activity Data (e.g. Quantity of fuel used)	Unit used to measure Activity Data	Uncertainty of activity data (a) (Confidence interval expressed in ± percent)	GHG emission factor	Unit of GHG emission factor (for kg CO2!)	Uncertainty of emission factor (Confidence interval expressed in ± percent)	CO2 emissions in kg	CO_2 emissions in metric tonnes	Uncertainty of calculated emissions	Certainty Ranking	Auxiliary Variable 1	Auxiliary Variable 2
							A * D	G/1000	$\pm\sqrt{C^2 + F^2}$		(H*I)	K^2
Example: Source 1	1000.00	GJ	+/- 5.0%	56.10	kg CO2 / GJ	+/- 10.0%	56,100.00	56.10	+/- 11.2%	Good	6.27	39.34
Source description												
Natural gas	80524286.75	MJ	+/- 7.0%	0.06	kg CO2 / MJ	+/- 7.0%	4,557,674.63	4,557.67	+/- 9.9%	Good	451.19	203,569.50
LPG / Propoane / butane	0.00	MJ	+/- 7.0%	0.06	kg CO2 / MJ	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Diesel or Fuel oil	0.00	MJ	+/- 7.0%	0.07	kg CO2 / MJ	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Biomass	0.00	MJ	+/- 7.0%	0.10	kg CO2 / MJ	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Diesel	17977.09	L	+/- 7.0%	2.69	kg CO2 / L	+/- 7.0%	48,320.08	48.32	+/- 9.9%	Good	4.78	22.88
Biodiesel	0.00	L	+/- 7.0%	0.17	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Bioethanol	0.00	L	+/- 7.0%	0.01	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Natural gas	0.00	L	+/- 7.0%	1.15	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Petrol	0.00	L	+/- 7.0%	2.31	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Electricity - Market based	23160222.50	kWh	+/- 7.0%	0.00	kg CO2 / kWh	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
							0.00	0.00	+/- 0.0%	High	0.00	0.00
Note: For individual uncertainties greater than 60%, the results of the tool are not valid					Sum CO_2 emissions (M):		4,605,994.71	4,605.99				
										Aggregated Certainty Ranking		
					Step 4: Cumulated Uncertainty:		$\pm u = \pm \frac{\sqrt{\sum_{i=1}^{n} (H_i * I_i)^2}}{M}$		+/- 9.8%	Good		

Table 8.1 - Uncertainty calculations

[4] https://ghgprotocol.org/calculation-tools

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Uncertainties due to emission Factors and Activity Data				
1	2	3	4	5
Gas	**Source category**	**Emission factor**	**Activity data**	**Overall uncertainty**
CO_2	Energy	7%	7%	10%
CO_2	Industrial Processes	7%	7%	10%
CO_2	Land Use Change and Forrestry	33%	50%	60%
CH_4	Biomass Burning	50%	50%	100%
CH_4	Oil and Nat. Gas Activities	55%	20%	60%
CH_4	Rice cultivation	3/4	1/4	1
CH_4	Waste	2/3	1/3	1
CH_4	Animals	25%	10%	20%
CH_4	Animal waste	20%	10%	20%
N_20	Industrial Processes	35%	35%	50%
N_20	Agricultural Soils			2 orders of magnitude
N_20	Biomass Burning			100%

Note: Individual uncertainties that appear to be greater than ± 60% are not shown. Instead judgement as to the relative importance of emissions factor and activity data uncertainties are shown as fractions which sum to one

Source:
Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories: Reporting Instructions

Table 8.2 - IPCC uncertainty data

9 Annex F – Voluntary offset program

In this annex, specific project sheet concerning the chosen offsetting projects are presented.

9.1 Verified Carbon Standard (VCS)

The VCS[5] Program is the world's most widely used voluntary GHG program. More than 1300 certified VCS projects have collectively reduced or removed more than 200 million tons of carbon and other GHG emissions from the atmosphere.

By using the carbon markets, entities can neutralize, or offset, their emissions by retiring carbon credits generated by projects that are reducing GHG emissions elsewhere. Of course, it is critical to ensure, or verify, that the emission reductions generated by these projects are actually occurring. This is the work of the VCS Program – to **ensure the credibility of emission reduction projects**.

Once projects have been certified against the VCS Program's rigorous set of rules and requirements, project developers can be issued tradable GHG credits that we call **Verified Carbon Units** (VCUs). Those VCUs can then be sold on the open market and retired by individuals and companies as a means to offset their own emissions. Over time, this flexibility channels financing to clean, innovative businesses and technologies.

Projects developed under the VCS Program must follow a **rigorous assessment process in order to be certified**. VCS projects cover a diverse range of sectors, including renewable energy (such as wind and hydroelectric projects), forestry (including the avoidance of deforestation), and others. Emission reductions certified by our program are eligible to be issued as VCUs, with one VCU representing one metric ton of greenhouse gas emissions reduced or removed from the atmosphere.

Figure 9-1 - The 3 main guarantee of the VCS labelled projects

[5] Extract from https://verra.org/

All VCS projects are subject to desk and field **audits by both qualified independent third parties and Verra staff** to ensure that standards are met and methodologies are properly applied.

The **registry system** is the central storehouse of data on all registered projects, and **tracks the generation**, **retirement and cancellation of all VCUs**. To register with the program, projects must show that they have met all standards and methodological requirements.

While VCS projects typically include a discrete set of activities, governments are now establishing policies and programs to mitigate GHG emissions across entire national or subnational jurisdictions. In the forest sector, these programs (called REDD+ programs) can be accounted for and credited using the world's first jurisdictional-scale framework, the Verra Jurisdictional and Nested REDD+ (JNR) framework. JNR integrates government-led and project-level REDD+ activities and establishes a clear pathway for subnational- and project-level activities to be incorporated within broader REDD+ programs.

9.2 Climate, Community and Biodiversity Alliance (CCBA)

The **CCBA**[6] is a unique partnership of leading international NGOs that was founded in 2003 with a mission to stimulate and promote land management activities that credibly mitigate global climate change, improve the well-being and reduce the poverty of local communities, and conserve biodiversity. The CCBA brings together diverse stakeholders through a transparent and inclusive participatory process to develop standards and tools that stimulate, identify and promote high quality multiple-benefit land management activities. CCBA initiatives include:

- **Climate, Community & Biodiversity (CCB) Standards**, for site-based projects, developed by the CCBA and managed by the Verified Carbon Standard (VCS) since November 2014
- **REDD+ Social and Environmental Standards (REDD+ SES),** for government-led strategies and actions to reduce emissions from deforestation and degradation
- Sustainable Landscapes Rating Tool (under development)

The Climate, Community and Biodiversity Standards (CCB Standards) evaluate land management projects from the early stages of development through implementation. The CCB Standards were developed by the CCBA and have been managed by the VCS since November 2014. The CCB Standards foster the integration of best-practice and multiple-benefit approaches into project design and implementation.

The CCB Standards:

- Identify projects that simultaneously address climate change, support local communities and smallholders, and conserve biodiversity.
- Promote excellence and innovation in project design and implementation.

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[6] Extract from http://www.climate-standards.org/

- Mitigate risk for investors and offset buyers and increase funding opportunities for project developers.

The CCB Standards identify land management projects that deliver **net positive benefits for climate change mitigation, for local communities and for biodiversity**. The CCB Standards can be applied to any land management project, including projects that reduce greenhouse gas emissions from deforestation and forest degradation or from avoided degradation of other ecosystems, and projects that remove carbon dioxide by sequestering carbon (e.g., reforestation, afforestation, revegetation, forest restoration, agroforestry and sustainable agriculture) or other land management, from design through implementation and monitoring.

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INTERNATIONAL

10 Annex G – Renewable Energy Certificates

10.1 Tabaqueira

Matteo Zompa (Aug 2, 2021 13:13 GMT+1)

Albarraque, 12th July “021

Matteo Zompa

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