





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 https://www.pmi.com/carbon-neutrality-declaration-2022-pmpsa

This is the **second declaration** of achievement for Philip Morris Products SA Operations Factory in Neuchâtel, Switzerland as per PAS 2060:2014 standard.

Carbon Neutrality of the Scope 1 and 2 emissions under the direct operational control of Philip Morris Products SA Operations Factory in Neuchâtel, Switzerland, achieved by Philip Morris Products SA in accordance with PAS2060:2014 at 31st December 2021 with a commitment to maintain to 31st December 2022 for the period commencing 1st January 2022, SGS United Kingdom Limited Certified.

Certification letter from SGS can be found in Annex A.





1 Introduction

This document forms the Qualifying Explanatory Statement (QES) to demonstrate that Philip Morris Products SA Operations Factory in Neuchâtel, Switzerland has achieved **carbon neutrality** for the below mentioned affiliates (plants) manufacturing processes for the period starting 1st January 2021 and ending 31st December 2021 in accordance with PAS 2060:2014.

This has been achieved through:

- Continuous carbon emissions reduction through action plans under PMI direct controls: affiliates
 and fleet under affiliates' control (These reductions have been captured as part of the GHG inventory
 for 2021).
- Compensation of carbon emissions for the period commencing 1st January 2021 and ending 31st December 2021.

This report includes the information which substantiates the declaration of PMI affiliates achievement of carbon neutrality for second application period (under PAS 2060:2014) and commitment on carbon neutrality up to 2025 (6 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 PAS 2060:2014 standard.

1.1 General information

PAS 2060 Information requirement	Information as it relates to PMI affiliates
Entities making PAS 2060 declarations	Philip Morris Products SA Operations Factory in Neuchâtel, Switzerland
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 PAS 2060 declaration	Carbon Neutrality of the Scope 1 and 2 emissions under the direct operational control of Philip Morris Products SA Operations Factory in Neuchâtel, Switzerland (complete list available in Annex C)
Function of subject	Factory manufacturing conventional and Reduced Risk Products 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; Manufacturing of Reduced Risk Products; Flavor & Casing Processing; Cut Filler Processing; Filter Processing; Machine Cigarette Processing; Quality Control Laboratory Activities; Manufacturing of Heated Tobacco sticks
Rationale for selection of the subjects	PMI's ambition is to be carbon neutral for all of its direct operations (factories, fleet and offices) by 2025. 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 PAS 2060 programme	1st of January 2020
Achievement period	1st of January 2021–31st of December 2021
Commitment period	1st of January 2022 – 31st of December 2025

Table 1.1 - General information

1.2 Scope

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

• Philip Morris Products SA (Switzerland)

The main business activity is the manufacturing of conventional and RRP 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





GHG emissions associated to affiliate manufacturing process within the defined boundary from the periods of 1st January 2021 to 31st December 2021 have been quantified in accordance with GHG Protocol Corporate Accounting Standard (operational control), and verified by SGS.

The data for this second 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 2060:2014.

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 2021 (application period) and represent a total of 1189 tons of CO₂ equivalent.

GHG scope	GHG emissions [tCO2eq]	Scope contribution
Scope 1 – manufacturing	1189	100%
Scope 1 – fleet	0	0%
Scope 2 – Market based	0	0%
Total carbon footprint	1189	100%

Table 2.1 - GHG emissions overall results

2.2 Methodology

Total GHG emissions associated with PMI affiliate(s), 1st January 2021 to 31st December 2021, 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
 - o LPG, Propane and Butane
 - Diesel (fuel oil)
 - o Heavy fuel oil
 - Petrol
 - Biomass
- Mobile combustion
 - o Petrol
 - o Diesel
 - Biodiesel
 - o 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 the PMI affiliate 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 veriifcation process and certification against the 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 certification 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 ensure the coverage of any potential exclusions within the system boundary an additional 3% has been added to total Carbon Footprint to ensure 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).
- No other secondary data has been used.

Result of the uncertainty calculation is reported in Annex D.

2.7 Comparison with baseline period results

This section is completed as 2020 was the first PAS 2060:2014 certification, therefore will be used as baseline period subsequently.

	Year 2020	Year 2021	
GHG scope	GHG emissions [tCO2eq]	GHG emissions [tCO2eq]	
Scope 1 – Manufacturing	1658	1189	
Scope 1 – Fleet	0	0	
Scope 2 – Market based	-	-	
Total carbon footprint	1658	1189	
Overrate to cover exclusions (3%)	50	36	

TOTAL GHG emissions [tCO2eq]	1708	1225





	Market l	Total Production (Mio Ket based [t GHG] Total Production (Mio Cigarettes Equivalent) [Mio Cig] Total CO2 Emissions per Mio Cig Equivalent - Market based [t GHG/Mio Cig]		Cigarettes Equivalent) [Mio				
Company name	2020	2021	Absolute reduction [%]	2020	2021	2020	2021	Intensity reduction [%]
Philip Morris Products SA	1.658	1.189	28%	13.468	12.135	0,1231029	0,0979838	20%





3 Carbon Management Plan

The carbon reduction management plan will consider a 6 years period (2020-2025) 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 project 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) Tabaqueria (Portugal)). Others started later and will be considered in the boundaries of this study.

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 2021, 37 out of 42 affiliates, 100% of electricity purchased came from renewable sources (electricity source for the affiliates in the carbon neutral factory certification are provided in annex F). 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 1,3 million ton of CO₂ equivalent**.

Indicator	2017	2018	2019	2020	2021	Total Value
CO2 Scope 2 (GHG emissions) - Manufacturing - Market based [t GHG]	217.563	149.757	111.508	65.289	41.157	585.273
CO2 Scope 2 (GHG emissions) - Manufacturing - Location based [t GHG]	414.126	395.371	398.332	357.670	336.964	1.902.463
Cumulative difference between location based and market based	196.563	245.615	286.824	292.382	295.807	1.317.190

Table 3.1 - Green electricity increase





3.2 Implemented GHG emissions reduction project repository

At PMI, emissions reduction project governance and budget approval comes from two distinctive main streams; one driven from central functions and another by the local team. Table 3.2 shows project implemented in the last few years, evaluated in 2021 Carbon Footprint assessment.

Project name	Description	Year	Type of energy used	Emission reduction [kg CO2 eq]
Heat recovery from steam boiler stacks	Addition of heat recovery system on the steam boiler stacks to provide heat to the hot water system	2010	Gas	198'000
Thermal insulation improvement in Steam boilers room	Replacement and improvement of the thermal insulation in the steam boilers room with Calonat (insulation blanket)	2011	Gas	57'000
Heat recovery on Vacuum pumps	Additional heat recovery system on the Vacuum pumps to provide heat to the hot water system	2011	Gas	97'000
Steam and hot water boilers O2 control	Addition of an O2 control on all our boilers in order to approach a stochiometric combustion	2012	Gas	246'000
Compressed air replacement and addition of a heat recovery system	Replacement of a Compressed air with up to date technology and addition of heat recovery system to provide heat to the hot water system	2013	Gas	101'000
FTD/TSE Heat recovery	Addition of a heat recovery system on the FTD/TSE process	2014	Gas	535'000
HVAC replacement phase 1 to 3	Replace old HVAC units by new units	2018- 2021	Gas	130'000
Heat pump on Lake water return	Addition of 2 heat pumps of 600kW each on the return pipe to the lake water to recover the heat from the cooling system to provide heat to the hot water system	2020	Gas	1′000′000
Flash steam heat recovery	Building H & R heat recovery to heat up sanitary hot water	2021	Gas	140'000

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 31/12/2025 Table 3.3 shows main initiatives identified and estimated reduction for the whole commitment period (2021-2025).

Initiative name	Description	Year	Type of	Estimated reduction
miliative name	- Description -	planned	energy used	[kg CO2eq]
Pyrolysis installation	Addition of a Pyrolysis to treat on site biogenic waste (paper, tobacco, wood, tobacco) and generate syn gas to produce steam	2022	Gas	1'500'000
Car fleet	Conversion from diesel fleet to hybrid fleet and increase own charging stations.	2021/2024	Electrical and diesel	0 (if necessary, with offsets)
Steam Trap Monitoring System	Inline monitoring of the steam traps to reduce steam losses	2022	Gas	4'000
Insulation of steam traps	Ensure proper insulation of steam traps to reduce losses	2022	Gas	4'000
two-tier control for staging of multiple boilers	Install a controller to ensure that boiler staging is linked to steam demand instead of pressure staging	2023	Gas	2'000
Adiabatic Humidification	Install adiabatic humidification in cutfiller tobacco storage area to reduce steam consumption	2024	Gas	28'000
Photovoltaic panels to produce renewable energy on site	Implement solar photovoltaic solar panels on the roofs of the Production and IDC buildings	2023	Electricity	0 (as we buy green electricity)

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 second application period

PMI has an offsetting program in place to support the carbon neutrality, based on quality criteria aligned with the most rigorous international standards and targeting social and economic benefits.

Through collaborating with Carbonsink (an internationally recognized stakeholder in carbon neutral strategies), PMI has invested into an offsetting "Gs2447 Gs1265 African Biomass Energy Conservation Poa Malawi Biomass Conservation" that has be used to compensate outstanding emissions in this declaration of carbon neutrality.

Carbon 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 benefits, which contribute to United Nations Sustainable Development Goals (SDGs) and are labelled by independent carbon standards such as **Standard (VCS)**¹, **Climate Community and Biodiversity Alliance (CCBA)**², **Gold Standard**³, **and other offsets as endorsed in PAS2060**.

Credits were retired by the 27th June 2022

These credits are supported by publicly available project documentation on the <u>GSF Registry (goldstandard.org)</u>⁴). The registry system is the central storehouse of data on all registered projects, and tracks the 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 Philip Morris Products SA are:

"Gs2447 Gs1265 African Biomass Energy Conservation Poa Malawi Biomass Conservation

² http://www.climate-standards.org/

https://verra.org/

³ https://www.goldstandard.org/

⁴ https://registry.goldstandard.org/projects?q=&page=1t





4.3 Amount of credits purchased

Credits have been ordered by PMI for the period covering 1st of January 2021 – 31st December 2021. The amount of credits purchased is 1225 tons of CO₂ equivalent, it is composed by two contributions:

- o 1189 tons of CO₂ equivalent, amount evaluated for the first application period
- 36 tons of CO₂ equivalent, that represent the overrate of 3% of the whole baseline carbon footprint to cover all the exclusions (Annex C) and precludes underestimation.

We can reasonably assume that PMI Factory Carbon Neutral covers 100% of the GHG emissions.

PMI portfolio offsetting credits is composed of:

Project: "Gs2447 Gs1265 African Biomass Energy Conservation Poa Malawi Biomass Conservation – 100%

The Gold Standard guarantee that the offsets **generated represent genuine**, **additional GHG** emission reductions. The projects are technically designed so as to enable the quantification of a specific number of emissions reductions/removals the carbon credits expected from each farm/forest. The Gold Standard label also guarantee that the project involved in delivering credits meet the criteria of additionality, permanence, leakage and double counting.

It also guarantee that the units were verified by an independent thid-party and that the credits were only issued after the emission reduction has taken place.

Originating Project Name: Gs2447 Gs1265 African Biomass Energy Conservation Poa Malawi Biomass Conservation"

Vintage Year: 2016

Quantity of retired GS VER credits: 1225

Serial Number: GS1-1-MW-GS2447-16-2016-6766-1034- 2258

Retirement Date: 27 June 2022

Project ID: Gs2447 Gs1265 - African Biomass Energy Conservation PoA Malawi Biomass Conservation

Project type: Energy Efficiency - Domestic

Country: Malawi

Retired on behalf of Philip Morris Products SA, for offsetting unavoidable emissions, year 2021.







CERTIFICATE OF RETIREMENT

On behalf of:

Philip Morris Products SA [CH (PMP SA Neuch)]

Certificate n. 1152

To compensate 1.225 tons. CO_2 eq. through the retirement of certified carbon credits from the project:

Name e Project ID	Type of Project and Country	Certification Standard	tCO₂eq.
African Biomass Energy Conservation (GS2447)	Energy Efficiency - Cookstoves (Malawi)	Gold Standard	1.225

Data: 27/06/2022 www.carbonsink.it









https://registry.goldstandard.org/credit-blocks/details/276850

4.4 Compensation programme for the third application period

For the third application period, PMI will cancel the volume of carbon credits required once the emission calculations are completed for this period. The volumes of credits required by PMI affiliates will be confirmed at later stage upon completion of the greenhouse gas inventory audit for that Application Period. The portfolio composition and share among projects will be determined based on the volume of credits.





5 Annex A – Carbon Neutral Assurance letter



Verification Statement Number: CCP278808/22/02/2022

The Carbon Neutrality Declaration as presented in its Qualifying Explanatory Statement (QES), for the application period 01/01/2021 – 31/12/2021 of:

Philip Morris Products SA Operations Factory,

Neuchâtel, Switzerland

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: Andrew James Collins

Authorised by:

Pamela Chadwick

Business Manager SGS United Kingdom Ltd

Verification Statement Date: 7th July 2022

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







Schedule Accompanying Greenhouse Gas Verification Statement CCP278808/22/02/2022

Brief Description of Verification Process
SGS has been contracted by Philip Morris Products SA Operations Factory for the verification of their Carbon Neutrality Declaration as presented in its Qualifying Explanatory Statement (QES), for the application period 01/01/2021 – 31/12/2021, against the requirements of PAS 2060-2014: Specification for the demonstration of carbon neutrality (PAS 2060).

Rales and responsibilities

The management of Philip Morris Products SA Operations Factory is responsible for the organization's GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the calculation and determination of GHG emissions information, preparation of reports, QES, and purchase and retirement of carbon offsets.

It is SGS' responsibility to express an independent opinion on the Carbon Neutrality Declaration as provided by the client for the application period 01/01/2021 = 31/12/2021.

SGS conducted a third-party verification following the requirements of ISO 14064-3: 2019 of the provided carbon neutral declaration and supporting QES during the period April – July 2022. The assessment was conducted via desk review. The verification was based on the verification soope, objectives and criteria as agreed between Philip Morris Products SA Operations Factory and SGS.

Objectives:
The purpose of the verification exercise was, by review of objective evidence, to independently review and confirm:

• That the carbon neutrality declaration and QES conform to the

- That the carbon neutrally declaration and QES conform to the
 requirements of PAS 2060
 That the emissions data reported in the QES are accurate, complete,
 consistent, transparent and free of material error or omission and have
 been determined in accordance with .WRI/WBCSD GHG Protocol,
 Corporate Accounting and Reporting Standard
 That evidence is available to support information reported within the
 OSS substant as a few parts of the protocol of the prot
- QES including carbon offset purchases and retirements.

Level of Assurance The level of assurance agreed is reasonable.

- Scope
 This engagement covers verification of:

 Philip Morris Products SA Operations Factory

 The organizational boundary was established following the operational control consolidation approach.

 Title or description of activities: Emissions for manufacturing facilities, warehousing, offices and operator-controlled fleet.

 Scope 1.8.2 emissions only

 - Location/boundary of the activities: Single facility, Switzerland
 Second application period: Calendar Year 2021







Intended user of the verification statement: internal, customers, general public.

Muteriality
The materiality required of the verification was considered by SGS to be below 5%,

We planned and performed our work to obtain the information, explanations and evidence that we considered necessary to provide a reasonable level of assurance that the $\rm CO_2$ equivalent emissions, carbon neutrality declaration and QES for the first period 01/01/2021 – 31/12/2021 are fairly stated.

SGS' approach is risk-based, drawing on an understanding of the risks associated with compiling and reporting GHG emission information and the controls in place to mitigate these risks. Our examination included assessment, on a sample basis, of evidence relevant to the voluntary reporting of emission information and carbon neutrality.

Philip Morris Products SA Operations Factory provided their carbon neutrality declaration based on the criteria cutlined above. The carbon neutrality declaration and QES for the application period 01/01/2021 – 31/12/2021 are verified by SGS to a reasonable level of assurance, consistent with the agreed verification scope, objectives and criteria.

SGS concludes with reasonable assurance that the presented carbon neutrality declaration and supporting QES is materially correct and is a fair representation of the COs equivalent data and information and conforms to the requirements of PAS2060 2014.





6 Annex B – Qualifying Explanatory Statements (QES) checklist







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





8 Annex D – 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")⁵; 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:



Outcome of the uncertainty calculation (from attached file)

		Step 1+2					Step 3					
	А	В	С	D	E	F	G	н	1	J	К	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	Auxiliar Variable
	-		expressed in 1 percent)			expressed in 1 percent)	A*D	G/1000	I = √C + F +		(H*D	K ²
cample: 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	20794409.28	MJ	+/- 7.0%	0.06	kg CO2 / MJ	+/- 7.0%	1.180.082.73	1,180.08	+/- 9.9%	Good	116.82	13,647.4
LPG / Propogne / 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	112843.79	MJ	+/- 7.0%	0.07	kg CO2 / MJ	+/- 7.0%	8.428.30	8.43	+/- 9.9%	Good	0.83	0.70
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	0.00	1	+/- 7.0%	2.69	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Biodiesel	0.00	L L	+/- 7.0%	0.17	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Bioethanol	0.00	- i	+/- 7.0%	0.01	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Natural gas	0.00	i i	+/- 7.0%	1.15	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Petrol	0.00	i i	+/- 7.0%	2.31	kg CO2 / L	+/- 7.0%	0.00	0.00	+/- 9.9%	Good	0.00	0.00
Electricity - Market based	13304315.45	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
te: For individual uncertainties greater than 60%, the	results of the tool are n	ot valid			Sum CO ₂ e	missions (M):	1,188,511.03	1,188.51				
					,				_	Aggregated Certainty Ranking		
					Step 4: Cumula	ated Uncertainty:	$\pm u = \pm \frac{\sqrt{\sum_{i=1}^{n} (I)}}{2}$	$H_i * I_i)^2$	+/- 9.8%	Good		

Table 8.1 - Uncertainty calculations

⁵ https://ghgprotocol.org/calculation-tools





Uncontribution due to emission Footons and Asticity Date								
Uncertainties due to emission Factors and Activity Data 1 2 3 4 5								
Gas	_	3 Emission factor	4	5				
	Source category		Activity data	Overall uncertainty				
CO ₂	Energy	7%	7%	10%				
CO ₂	Industrial Processes	7%	7%	10%				
	Land Use Change							
CO ₂	and Forrestry	33%	50%	60%				
CH₄	Biomass Burning	50%	50%	100%				
CH₄	Oil and Nat. Gas Activities	55%	20%	60%				
CH₄	Rice cultivation	3/4	1/4	1				
CH₄	Waste	$\frac{2}{3}$	1/3	1				
CH₄	Animals	25%	10%	20%				
CH₄	Animal waste	20%	10%	20%				
N₂0	Industrial Processes	35%	35%	50%				
N ₂ 0	Agricultural Soils			2 orders of magnitude				
N ₂ 0	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 E – Voluntary offset program

The project is developed in the north, center and south of Malawi and it promotes the introduction of improved cookstoves to enhance the living conditions of local people and mitigate the environmental impact. The distribution of efficient cookstoves will improve these people's living conditions, reducing the pollution deriving from the burning of woodfires and thus reducing the related diseases and injuries.

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



All the relevant project documentations can be found at the following link:

GSF Registry (goldstandard.org)

SustainCERT Platform (sustain-cert.com)

https://registry.goldstandard.org/credit-blocks/details/276850





10 Annex F – Renewable Energy Certificates

10.1 Philip Morris Products SA



END OF THE DOCUMENT

Neuchâtel, 11th July 2022

Carlo Serpentino

Director Manufacturing PMP SA