GHG Inventory Verification Report

Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd

Date: On-site verification February 2021

Contract No.: [illegible]-NB-GHG-2021-0103

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Contents

EXECUTIVE SUMMARY-VERIFICATION OPINION

Level of Assurance Chosen to Verification

☒ Reasonable level of assurance
☐ Limited level of assurance

Materiality threshold:

Scope

Reporter's Organizational Boundaries:

☐ Financial or ☒ Operational or ☐ Equity Share

Date on site verification was completed: 3-6 February 2021

Production and Activities: Core business is the production and sale of corrugated board, corrugated boxes and other corrugated products.

Reporting Year of Emission Report Verified: ***2020***

Standards Used to Verify GHG emission inventory and report

☒ ISO 14064 Series ISO 14064-1:2006 and ISO14064-3

☐ Other Requirements:

Verification Team Members

Team Leader: Li Ziqi

GHG Emission Reporting Overview

Total entity GHG emission verified:		**46,783**	Tonnes CO_2-e
Total Direct Emissions:		**18,301**	Tonnes CO_2-e
Breakdown	CO_2	**18,265.4**	Tonnes CO_2-e
	CH_4	**9.9**	Tonnes CO_2-e
	N_2O	**25.8**	Tonnes CO_2-e
	HFC_S	**0**	Tonnes CO_2-e
	PFC_S	**0**	Tonnes CO_2-e
	SF_6	**0**	Tonnes CO_2-e
Percentage of total GHG emission		**39%**	
Total Energy Indirect Emissions:		**28,482**	Tonnes CO_2-e
Percentage of total GHG emission		**61%**	
Other indirect GHG emission:		**0**	Tonnes CO_2-e
Percentage of total GHG emission		**0%**	

Verification Statement and Opinion

Based on the data and information provided by **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd**, CTI Certification has conducted verification activities in compliance with ISO14064 series. CTI Certification provides **Reasonable** level of assurance that **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd** reported greenhouse gas emission from **2020/01/01** to **2021/12/31** are verifiable and meet the requirements of ISO14064 series.

CTI Certification concluded that **based on the process and procedures conducted, the GHG assertion is materially correct and is a fair representation of the GHG data and information**.

(Note: this opinions links to specific level of assurance selected)

1 INTRODUCTION

1.1 Objective

The verification has been conducted in accordance with ISO14064-1. As such CTI Certification has undertaken the following procedures that we considered appropriate to be able to provide a **Reasonable** level of assurance:

- Sample testing of source data for data and bill check;
- Confirmation that arithmetical calculations are correct;
- Onsite inspection of equipments and reported GHG emission;
- Interview and discussion with relevant personnel in relation to systems, procedures, and operation controls; and
- Observation and review of relevant documentation.

CTI Certification did not conduct any verification procedures with respect to the internal control environment and data management system of **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd** as a whole. As such, no assurance is provided on any internal control environment and data management system not associated with calculating the GHG emission inventory and preparing the GHG emission inventory report.

CTI Certification confirms that we are not aware of any actual or perceived conflict of interest in having completed this engagement.

1.2 Scope

CTI Certification has been engaged to undertake a verification of **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd**.'s GHG inventory report. The verification has been planned and performed to provide a **Reasonable** level of assurance opinion on whether **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd**.'s GHG emission inventory in the year of **2020** is fairly presented, in all material aspects, in accordance with requirements as defined in standard ISO14064-1.

1.3 Level of Assurance

The following matrix clarifies the different level of assurance chosen to perform GHG inventory verification. Therefore, verification statement and opinion will be concluded based on selected level of assurance which implies different acceptability by interested parties.

Select	Level	Assurance activities	Materiality thresholds and typical opinion in assurance statement
√	Level 1 Reasonable level of assurance	Sampling plan: risk-based approach. The detailed sampling plan shall be prepared matching the materiality threshold agreed with intended user covering ***all high and medium risk events*** identified in the risk assessment including sites, facilities, sources and calculation.	The materiality threshold for this level is defined by specific GHG program or agreed with intended user. Less than +certain percentage (%) means the errors, omissions and misrepresentation is immaterial overstatement. Less than –certain percentage (%) means the errors, omissions and misrepresentation is immaterial understatement. The actual materiality threshold can be calculated by sampled data. The typical opinion as: ***An emission report is materially correct.***
	Level 2 Limited level of assurance	Sampling plan: risk-based approach The limited sampling plan shall be prepared matching this materiality threshold agreed with intended user covering ***only high risk events*** identified in the risk assessment including sites, facilities, sources and calculation.	The materiality threshold for this level is defined by specific GHG program or agreed with intended user. Less than +certain percentage (%) means the errors, omissions and misrepresentation is immaterial overstatement. Less than –certain percentage (%) means the errors, omissions and misrepresentation is immaterial understatement. The actual materiality threshold can be calculated by sampled data. The typical opinion as ***There is no evidence that an emission report is not materially correct.***

The level of assurance chosen along this verification process is **Reasonable level of assurance**.

2 METHODOLOGY

The verification consisted of the following procedures:

- Sample testing of source data for data and bill check;
- Confirmation that arithmetical calculations are correct;
- Onsite inspection of equipments and proposed energy savings measures;
- Interview and discussion with relevant personnel in relation to systems, procedures, and operation controls; and
- Observation and review of relevant documentation.

Based on ISO14064-1 and CTI Certification procedure, the verification Plan was worked out and verification activities is undertaken according to the plan (see Verification Plan).

2.1 Interviewed Persons

Name	Job Title
On-site verification	
Jessie Zhang	Corp. Marketing manager
June Lin	Corp. Sales Supervisor
Feng Anni	CSBP HR manager
Feng Chun	CSBP Production manager
Liu Ke	CSBP CS
Wang Changzheng	SZBP Production manager
Cao Qing	SZBP CS
Yu Ping	DLBP CS
Nian Xiaowei	DLBP Production manager
Cao Sheng	DLBP HR
Zhang Lei	QDBP Production manager
Geng Yuying	QDBP HR

2.2 Document Reviewed

The following table outlines the documents assessed during the verification:

Activity or Emission Source	Document
Identifying Emission Sources	
Emission Source Inventory	☒ Facility Inventory ☒ Emission Source Inventory
Understanding Management Systems and Methodologies	
• Responsibilities for Implementing GHG • Management Plan	☒ Organization Chart ☒ Greenhouse Gas Management Plan
Training	☐ Training Manual ☐ Procedures Manual
Methodologies	☐ Protocols Used
Verifying Emission Estimates	
Direct Emissions from Mobile Combustion (☒Applicable ☐ Non-applicable)	☒ Monthly Utility Bills ☒ Fuel Purchase Records ☒ Fuel in Stock ☐ Vehicle Miles Traveled ☒ Inventory of Vehicles ☒ Emission Factors
Direct Emissions from Stationary Combustion (☒Applicable ☐ Non-applicable)	☒ Monthly Utility Bills ☒ Fuel Purchase Records ☒ Inventory of Stationary Combustion Facilities ☒ Emission Factors
Direct Emissions from Process Activities (☐Applicable ☒ Non-applicable)	☐ Raw Material Inputs ☐ Production Output ☐ Calculation Methodology ☐ Emission Factors

Activity or Emission Source	Document
Direct Fugitive Emissions: • Refrigeration Systems (☒Applicable ☐ Non-applicable)	☒ Refrigerant Purchase Records ☐ Refrigerant Sales Records ☒ Calculation Methodology, ☒ Emission Factors
• CO_2 fire extinguisher (☒Applicable ☐Non-applicable)	☒ CO_2 Purchase Records ☐ CO_2 Sales Records ☒ Calculation Methodology, ☒ Emission Factors
• Septic Systems (☒Applicable ☐Non-applicable)	☒ Calculation Methodology, ☒ Emission Factors
• Landfills (☐Applicable ☒Non-applicable)	☐ Waste-in-Place Data ☐ Waste Landfilled ☐ Calculation Methodology ☐ Emission Factors
• Others:	
Indirect Emissions from Electricity Use (☒Applicable ☐ Non-applicable)	☒ Monthly Electric Utility Bills ☒ Emission Factors
Indirect Emissions from Cogeneration, Imported Steam, District Heating, District Cooling, (☒Applicable ☐ Non-applicable)	☒ Monthly Utility Bills ☐ Fuel and Efficiency Data from Supplier ☒ Emission Factors
Others procedures and records	
	☐ GHG inventory and data quality management ☒ GHG inventory reporting ☐ Electricity Energy Reduction Project Plan ☒ Previous GHG verification report ☒ Previous GHG inventory report ☐ GHG internal audit instruction ☐ GHG management review instruction ☐ Others

2.3 Internal Quality Control

The draft verification report underwent an independent review before being submitted to the reporter. The independent review was performed by an internal peer reviewer qualified in accordance with CTI Certification's competence management procedure for Entity GHG Verification.

3 VERIFICATION CHECHLIST

The results of the verification procedures undertaken are set out in the following Verification Checklist. All Clarifications (CLs) and Correction Actions Request (CARs) and comments were described in Note column.

Verification Checklist	Finding (Yes / No / N/A)	Note
1 General Management		
Were you able to consult with appropriate operational and management personnel?	Yes	Jessie Zhang and June Lin are responsible to the GHG inventory relevant issues.
Is someone responsible for managing and reporting GHG emissions? Is that person qualified to do so?	Yes	The GHG reporting is the responsibility of the GHG Team Leader, Chen Peng.
Is appropriate training provided to personnel assigned to GHG emissions reporting duties?	Yes	
2 Reporting Boundaries		
Is the Reporter's reporting boundary clearly defined? What consolidation methods used (equity share, financial control or operational control)	Yes	Operational control method is used to consolidate GHG emission.
Does the Reporter's reporting boundary reflect its business structure?	Yes	
Are lease adequately addressed?	N/A	
Are all facilities within defined locations (single site and multi sites) included?	Yes	
Are the exclusion of GHG sources and threshold of materiality defined?	Yes	Exclusion threshold is 1%
3 Greenhouse Gas Emissions Sources		
Are all Scope 1, 2 and 3 (where required) emissions sources from within the Reporter's boundary considered? All stationary, mobile, process, fugitive sources and indirect sources are captured including small sources?	Yes	The Scope1 and Scope 2 are considered. Scope 1 includes Boiler, Forklift, Hold car and Official vehicles, and Scope 2 includes purchased electricity and purchased steam. There is no any GHG emission from process. GHG emissions from air-conditioning, septic systems and fire extinguisher are excluded because the emissions less than 1% of the total emissions.
Does the GHG Emission Inventory consider all of the following nominated greenhouse gases? • Carbon dioxide (CO_2)	No	GHG emissions only include Carbon dioxide (CO_2), Methane (CH_4) and Nitrous oxide (N_2O)

Verification Checklist	Finding (Yes / No / N/A)	Note
• Methane (CH_4) • Nitrous oxide (N_2O) • Hydrofluorocarbons (HFCs) • Perfluorocarbons (PFCs) • Sulfur hexafluoride (SF_6) If any of the above are excluded, is this justified?		
Are the activity levels for each emission source identified and their use clearly justified?	Yes	
Are the activity levels of each emission source supported by appropriate data and records (source data)?	Yes	
Have any activities been outsourced in the current year?	No	
Have any mergers, acquisitions, or divestitures occurred during the reporting year? If a baseline has been specified, has it been adjusted accordingly?	No N/A	
4 Quantification Methodology		
Are appropriate calculation methodologies/procedures used to manage GHG emissions at the source level and justified when changed? Are the methods based on reliable accurate and current references? Are they appropriate given the uncertainty/risk associated with the emissions?	Yes Yes No	
Are all emissions that are considered de minimis emissions documented as such?	Yes	
Are appropriate methods used to manage and implement entity-wide GHG emissions reporting programs?	Yes	
5 Data Calculation		
Is activity data based on appropriate sources and being collected for the quantification method?	Yes	
Is the activity data the most accurate available?	No	
Have the most appropriate emission factors been used and justified?	No	
If the reporter uses alternative emission factors, are they documented and explained appropriately?	N/A	

Verification Checklist	Finding (Yes / No / N/A)	Note
Have emissions been calculated correctly by multiplying emission factors by activity levels for each emission source? - All emission sources are considered. - Unit conversion. - GHG emission exclusion and amount. - Level of assurance with actual quantitative uncertainty.	Yes	Uncertainty is assessed qualitatively.
Have all emissions been converted into tonnes of CO_2-e?	Yes	
Does the sum of these values represent the total emissions for the Reporter?	Yes	
Is the total quantity of emissions appropriate relative to the scale and operation of the Reporter?	Yes	
Are the current year's reported emissions significantly different from the prior year?	No	
If the reporter has more than one facility, is the level of aggregation or disaggregation within the inventory appropriate?	Yes	The reporter has eleven sites.
Has the accumulated change in reported emissions, since the last baseline update? Has the baseline, if any, been recalculated?	Yes	
Are discrepancies between your emissions estimates and the reporter's immaterial?	No	
6 Base Year		
Consideration of base year selection, its applicability	Yes	The reporters selects the rolling base year. When GHG emissions inventory for 2020, the 2019 is the company's base year.
If applicable, a description of the approach for adjusting base year emissions for mergers, acquisitions, divestitures, and outsourcing. Any changes implemented consistently (emission decrease as well as increase)?	Yes N/A	In subsequent GHG inventories re-calculation, the following is to be taken into account: a) closure of an operating unit b) creation of a new operating unit c) acquisition of another company or part of another company d) outsourcing of business activities e) changes to organizational or operational boundaries

Verification Checklist	Finding (Yes / No / N/A)	Note
A description of the approach for adjusting base year emission for changes in calculation methodologies, emission factors, or error correction.	Yes	In subsequent GHG inventories re-calculation, the following is to be taken into account: Any change in GHG quantification method resulting in significant changes to the quantified GHG emissions or removals.
7 GHG Inventory Quality Management		
Are appropriate documents created to support and/or substantiate activities related to GHG emissions reporting activities, and is such documentation retained appropriately?	Yes	
Does the Reporter have a documented GHG information management procedure to ensure accuracy and completeness of inventory, identify error and omission, archive GHG inventory records	No	
Is uncertainty and quality assurance measure for data process available and functional, minimizing the error?	Yes	Uncertainty is assessed qualitatively. Quality assurance measures reducing the uncertainty has not been set.
Is a process likely to avoid data errors in computing final rolled up inventory totals?	Yes	
Are all likely error sources considered?	Yes	
Are GHG data monitoring instruments been properly maintained and calibrated in according with documented procedures?	Yes	
Are processes in place for records to be maintained?	Yes	
Are the record-keeping arrangements operational and effective?	Yes	
Is a clear and transparent audit trail of documents, data and records that support any calculations, assumptions or decisions reached available?	Yes	Collection of activity data, aggregation, calculation, supporting documents, etc. are all reachable and combined in the tailor-made Excel form.
Are relevant records maintained for the proper duration?	Yes	Records will be kept for 5 years.
Are all relevant records that support greenhouse gas assertions available to the Verifier?	Yes	
Where data has been transferred or reconciled was this done	Yes	

Verification Checklist	Finding (Yes / No / N/A)	Note
correctly?		
8 GHG Reduction Activities		
Do any GHG reduction objectives set up?	NO	Compared with the base year, the carbon emission reduction rate per unit output value is 0.2%
Are offsets included in the inventory? If yes, please describe the offsets.	N/A	
Have the offsets been approved by any authority?	N/A	
Have the offsets been calculated correctly and converted into tonnes of CO_2-e? Please describe the calculation methodology and how it was assessed. Where offsets have not been calculated correctly please assess the materiality of this discrepancy.	N/A	
Has the net total inventory been calculated correctly by subtracting the offsets from the gross total inventory?	N/A	
What abatement actions are planned to be taken? Please describe all abatement actions listed	NO	
Have the abatement actions been implemented?	NO	

4 ON-SITE VERIFICATION FINDINGS

The reported company located in Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd, and it includes eleven plants located in Tianjin, Qingdao, Shenyang, Suzhou, Zhejiang, Nanjing, Dalian, Changshu, Guangdong, Taicang and Jiangsu, main business is the production and sale of corrugated board, corrugated boxes and other corrugated products. The GHG inventory is including GHG emissions related to production and business activities.

Emission Scopes	Sub categories	Emission sources
Scope1	Stationary	- Boiler
	Process	-
	Mobile	- Forklift, Hold car and Official vehicles
	Fugitive	- Sewage disposal system
Scope2		- All electrical facility and equipment - All steam facility and equipment
Scope3		-

The related responsibilities of GHG inventory were stipulated in the procedure and GHG inventory report. The GHG information management system including inventory, record retention, data consolidation and calculation and data quality management were preliminarily checked and reviewed.

The verification team conducted site visit along all production processes and physical buildings. The data consolidation, calculation and data sources availability of the significant emission sources were checked accordingly.

The risk based sampling plan was prepared and to be used in on-site verification.

CTI Certification conducted planning to verification based on agreed **reasonable level of assurance**, through the sampling and the onsite verification implementation, CTI Certification concluded that the verified total GHG emission of year **2020** of **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd** is **46,783** tonnes CO_2e. The evidence of verified energy reduction was checked on the spot.

In addition, CTI Certification proposed that **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd** should pay more attention to the following points of GHG inventory practices and improve continuously.:

1. Enhance uncertainty analysis, and should consider measures to manage or reduce uncertainties;
2. Enhance the training of Inventory team and specify the responsibility and authority of each member;
3. Continue to set more robust emission reduction target and program;
4. Integrate GHG inventory and management system into other existing management system, such as Environmental Management System to streamline implementation.

5 VERIFICATION STATEMENT

See Verification Statement document.