

# **GHG Inventory Verification Report**

# Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd



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# **EXECUTIVE SUMMARY-VERIFICATION OPINION**

#### Level of Assurance Chosen to Verification



Reasonable level of assurance Limited level of assurance

#### Materiality threshold:

#### <u>Scope</u>

#### **Reporter's Organizational Boundaries:**

 $\Box$  Financial or  $\boxtimes$  Operational or  $\Box$  Equity Share

#### **Date on site verification was completed:** <u>15-16 March 2022</u>

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

#### Reporting Year: 2021

#### Standards Applied to Verify GHG Emission Inventory and Report

SISO 14064-1:2018

Other Requirements

#### Specifications and guidelines for verification organization

ISO 14064-3:2019

Other Requirements

#### Verification Team Members

Team Leader: <u>Li Ziqi</u>

Members: Bao Han, Zhang Shaoyi

#### **GHG Emission Reporting Overview**

Category	GHG	CO <sub>2</sub>	CH4	N <sub>2</sub> O	HFCs	PFCs	SF <sub>6</sub>	NF3	Total GHG Emission
	Emission (tCO <sub>2</sub> e/year)	19,363.60	9.82	27.26	0.00	0.00	0.00	0.00	19,401
Category 1	Percentage in total emission	99.81%	0.05%	0.14%	0.00%	0.00%	0.00%	0.00%	100.00%
	Emission (tCO <sub>2</sub> e/year)	23,471.82	0.00	0.00	0.00	0.00	0.00	0.00	23,472
Category 2	Percentage in total emission	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Category 3	Emission (tCO2e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Catagory 4	Emission (tCO <sub>2</sub> e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Category 4	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Catagory 5	Emission (tCO <sub>2</sub> e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Category 5	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Emission (tCO <sub>2</sub> e/year)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00%
Category 6	Percentage in total emission	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
T ( )	Emission (tCO <sub>2</sub> e/year)	42,835.42	9.82	27.26	0.00	0.00	0.00	0.00	42,873
Total	Percentage in total emission	99.91%	0.02%	0.06%	0.00%	0.00%	0.00%	0.00%	100.00%

#### Verification Statement and Opinion

Based on the data and information provided by **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd**, CTI has carried out the verification activities in accordance with ISO 14064-1:2018 Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals. CTI provides **Reasonable** level of assurance that **Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd** reported greenhouse gas emission from **2021/01/01** to **2021/12/31** are verifiable and meet the requirements of ISO 14064-1:2018.

CTI concludes that: the GHG assertion is substantially correct and fairly statement of GHG data and information. (Note: the conclusion relates to the specific level of assurance selected).

# **1 BRIEF INTRODUCTION**

## **1.1 Objective**

The verification work is implemented in accordance with ISO 14064-1:2018 and ISO 14064-3:2019. To be able to provide a level of reasonable assurance, CTI has implemented the following procedures we consider appropriately:

- Taking sampling test source data to check data and documents.
- Confirming the calculation is correct.
- On-site inspection of instruments and reported GHG Emission.
- Conducting face-to-face interviews and discussions with relevant personnel involved in systems, procedures, and operation control.
- Observations and checking related documents.

For the overall internal control environment and data management system of <u>Shanghai Pacific Millennium</u> <u>Packaging & Paper Industries Co., Ltd</u>, CTI has not implemented any verification activities. Likewise,



we cannot provide any assurance on any internal control environment and data management system that is not related to the calculation of GHG Emission inventory and the preparation of GHG Emission inventory reports.

CTI confirms that we are not aware of any actual or perceived conflict of interest when completing this agreement.

## 1.2 Scope

CTI is contracted to carry out the verification of the GHG Inventory Report of <u>Shanghai Pacific</u> <u>Millennium Packaging & Paper Industries Co., Ltd</u>. The verification has been planned and implemented to provide an opinion at the level of <u>Reasonable</u> assurance on whether the <u>2021</u> GHG Inventory of <u>Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd</u> has made fair presentation in all material aspects in accordance with the standards of ISO 14064-1:2018.

### **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
Beleet			opinion in assurance statement
1	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 <u>all</u> <u>high and medium risk events</u> 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	Sampling plan: risk-based	The materiality threshold for this level
	Limited level of	approach	is defined by specific GHG program or
	assurance	The limited sampling plan shall	agreed with intended user. Less than
		be prepared matching this materiality threshold agreed	+certain percentage (%) means the errors, omissions and misrepresentation
		with intended user covering	is immaterial overstatement. Less than
		only high risk events identified	-certain percentage (%) means the
		in the risk assessment including	errors, omissions and misrepresentation
		sites, facilities, sources and	is immaterial understatement. The
		calculation.	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 assurance level selected for this verification activity is a **Reasonable** assurance level.



# 2 METHODOLOGY

The verification activity consists of the following procedures:

- Sampling test of source data to check data and documents.
- Confirming the calculation is correct.
- On-site inspection of instruments and reported GHG emission.
- Conducting face-to-face interviews and discussions with relevant personnel involved in systems, procedures, and operation control.
- Observe and check relevant documents.

According to ISO 14064-3:2019 and CTI's procedures, we have formulated a verification plan and implemented the verification activities as planned (see the verification plan).

# **2.1 Interviewed Persons**

Name	Job Title
On-site verification	
Chen Peng	Corp. Sales and marketing director
Zhang Hehuan	Corp. Marketing manager
Xue Chenxi	Corp. Marketing specialist
Ji Peirong	WJBP HRA manager
Fu Xiangqi	WJBP Quality manager
Zhang Shuliang	TJBP Production manager
Guo Yue	TJBP HRA manager
Liu Jia	TCBP HRA manager
Wang Huiling	TCBP Quality manager
Ning Xiaoying	GDBP HRA manager
Meng Baosong	GDBP Production manager



# **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 Metho				
Responsibilities for Implementing GHG	Organization Chart			
Management Plan	Greenhouse Gas Management Plan			
Training	Training Manual			
	Procedures Manual			
Methodologies	Protocols Used			
Verifying Emission Estimates				
Direct Emissions from Mobile Combustion	Monthly Utility Bills			
(Applicable Non-applicable)	Fuel Purchase Records			
	Fuel in Stock			
	Vehicle Miles Traveled			
	Inventory of Vehicles			
	Emission Factors			
Direct Emissions from Stationary Combustion	Monthly Utility Bills			
(Applicable Non-applicable)	Fuel Purchase Records			
	Inventory of Stationary Combustion Facilities			
	Emission Factors			
Direct Emissions from Process Activities	Raw Material Inputs			
(Applicable X Non-applicable)	Production Output			
	Calculation Methodology			
	Emission Factors			
Direct Fugitive Emissions:				
Refrigeration Systems	Refrigerant Purchase Records			
(Applicable Non-applicable)	Refrigerant Sales Records			
	Calculation Methodology,			
	Emission Factors			
• CO <sub>2</sub> fire extinguisher	$\bigtriangleup$ CO <sub>2</sub> Purchase Records			
(Applicable Non-applicable)	$\Box$ CO <sub>2</sub> Sales Records			
	Calculation Methodology,			
	Emission Factors			
Cartin Carton	Coloulation Mathedals			
• Septic Systems	Calculation Methodology,			
(Applicable Non-applicable)	Emission Factors			
• Landfills	Waste-in-Place Data			
(Applicable Non-applicable)				



Activity or Emission Source	Document
	Waste Landfilled
	Calculation Methodology
	Emission Factors
• Others:	
Indirect Emissions from Electricity Use	Monthly Electric Utility Bills
(Applicable Non-applicable)	Emission Factors
Indirect Emissions from Cogeneration, Imported	Monthly Utility Bills
Steam, District Heating, District Cooling,	Fuel and Efficiency Data from Supplier
(Applicable Non-applicable)	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**

Before submitting the report, the verification report undergone an independent review. The independent review is carried out by an independent peer reviewer who meets the organization's GHG verification requirements of the CTI Certification Ability Management Program.



# **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	The Organization has established a GHG inventory team, consisting of members from MKT of the group and CS, ACCT, QC, HRA of each branch factory, who have received relevant GHG internal auditor training and implemented the GHG inventory accordingly. Hana Zhang and Dorothy Xue are responsible for data collection, sorting and emission calculation
Is someone responsible for managing and reporting GHG emissions? Is that person qualified to do so?	Yes	A GHG inventory team has been set up to be responsible for the GHG emission project. The team leader is responsible for the management and reporting of GHG emission. The designated representatives of relevant departments have participated in the training and shouldered the responsibility for the project.
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	All production and living activities related to GHG Emission are within the defined boundaries.
Are the exclusion of GHG sources and threshold of materiality defined?	Yes	The threshold to exclude a source is 1%, with a total exclusion amount not exceeding 1% of the total Emission of the Organization. The substantial deviation is set to be: 5%. That is, if an omission, error or misinterpretation results in an organization-level emission deviation within 5%, it is considered to be within the acceptable deviation range and does not affect the Organization's GHG management and/or decision-making.



Verification Checklist	Finding (Yes / No / N/A)	Note
		GHG emissions from air-conditioning, septic systems and fire extinguisher are excluded because the emissions less than 1% of the total emissions.
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	<ul> <li>The information on identified and quantified emission sources is as follows:</li> <li>Category 1: Direct GHG Emission</li> <li>Stationary combustion sources: boiler (other bituminous coal, natural gas), electric welding and cutting (acetylene)</li> <li>Mobile combustion sources: official vehicles (gasoline/diesel), forklift (diesel), hold car (diesel)</li> <li>Sources of fugitive Emission from human activities: septic systems (CH<sub>4</sub>), air-conditioning, fire extinguisher</li> <li>Sources of Emission from industrial process: NA</li> <li>Category 2: Indirect GHG Emission from Imported Energy</li> <li>Purchased electricity</li> <li>Purchased Steam</li> <li>Category 3: Direct GHG emissions form products used by organization NA</li> <li>Category 5: Indirect GHG emissions associated with the use of products from the organization NA</li> <li>Category 6: Indirect GHG emissions from other sources NA</li> <li>GHG emissions from air-conditioning, septic systems and fire extinguisher are excluded because the emissions less than 1% of the total emissions. Refrigerant filling is not involved in this year</li> </ul>



Verification Checklist	Finding (Yes / No / N/A)	Note
<ul> <li>Does the GHG Emission Inventory consider all of the following nominated greenhouse gases?</li> <li>Carbon dioxide (CO<sub>2</sub>)</li> <li>Methane (CH<sub>4</sub>)</li> <li>Nitrous oxide (N<sub>2</sub>O)</li> <li>Hydrofluorocarbons (HFCs)</li> <li>Perfluorocarbons (PFCs)</li> <li>Sulfur hexafluoride (SF<sub>6</sub>)</li> <li>Should any of the above gases be excluded, is there any reason provided?</li> </ul>	Yes	<ul> <li>GHG emissions only include Carbon dioxide (CO<sub>2</sub>), Methane (CH<sub>4</sub>) and Nitrous oxide (N<sub>2</sub>O), excluding Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulfur hexafluoride (SF6)</li> <li>According to the exclusion principle, this inventory is excluded sources of fugitive Emission from human activities (septic systems, air-conditioning, fire extinguisher)</li> </ul>
Has the activity level of each emission source been identified? Is their use clearly stated?	Yes	A customized excel form has been used as the template for information and data collection, and the activity data, emission factors, and calculation process of each emission source are clear and accurate.
Is the activity level of each emission source supported by appropriate data and records (source data)?	Yes	There is an activity data management sheet in excel form, which identifies activity data, units, measurement methods, data levels, recording methods, and original record storage departments.
Were there any outsourcing activities that year?	No	
Were there any mergers, acquisitions and divestitures in the reporting year? If there is a pre-determined baseline, is it adjusted accordingly?	No	
4 Quantification Methodology		
Have you used appropriate calculation methods/procedures to manage GHG emission from the source and justify any change thereto? Is the quantification approach based on credible, accurate and recent reference data? Are they appropriate considering the uncertainties/risks related to emission?	Yes	The selected quantitative methodology is appropriate. The organization has implemented the uncertainty assessment.
Are all emission that are considered insignificant also recorded?	Yes	
Are appropriate methods used to manage and implement the Company's overall GHG Emission reporting items?	Yes	
5 Data Calculation		
Is activity data based on appropriate sources and collected	Yes	

# Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd 2021 Organizational GHG Inventory Verification

Verification Checklist	Finding (Yes / No / N/A)	Note
for the quantification approach?		
Is activity data the most accurate information available?	Yes	
Is the used emission factor most appropriate and why?	Yes	
If the reporter uses alternative emission factors, have they been recorded and reasonably explained?	N/A	
<ul> <li>For each emission source, is there a correct emission result obtained by multiplying the emission factor by the activity level?</li> <li>Considered all emission sources</li> <li>Unit conversion</li> <li>Exclusion and quantity of GHG emission</li> <li>Level of assurance and actual quantitative uncertainty</li> </ul>	Yes	All emission categories and subcategories and all types of GHG Emission have been calculated and summarized individually. All emission sources are considered. No problems found in unit conversion. According to the exclusion principle, this inventory is excluded sources of fugitive Emission from human activities (septic systems, air-conditioning, fire extinguisher)
Are all emission converted into tCO <sub>2</sub> -e?	Yes	
Can the sum of these values represent the Reporter's total emission?	Yes	The total emissions in 2021 were <b>42,873</b> tCO <sub>2</sub> e.
Are the total emission appropriate relative to the scale and operation of the Reporter?	Yes	
Are the emission reported that year significantly different from those of previous years?	No	
If the reporter has more than one facility, is the degree of aggregation or decomposition of the data in the list appropriate?	Yes	The reporter has twelve sites.
Have the cumulative changes in the reported emission been updated since the last baseline? Has the baseline been recalculated?	Yes	
Is the deviation between the verification team's emission estimate and the Reporter's result insubstantial?	No	
6 Base Year		·
Consideration of base year selection, its applicability	Yes	The reporters selects the rolling base year. When GHG emissions inventory for 2021, the 2020 is the company's base year.
If applicable, a description of the approach for adjusting base year emissions for mergers, acquisitions, divestitures, and outsourcing.	Yes	In subsequent GHG inventories re-calculation, the following is to be taken into account: a) closure of an operating unit



Verification Checklist	Finding (Yes / No / N/A)	Note
Any changes implemented consistently (emission decrease as well as increase)?	N/A	<ul> <li>b) creation of a new operating unit</li> <li>c) acquisition of another company or part of another company</li> <li>d) outsourcing of business activities</li> <li>e) changes to organizational or operational boundaries</li> </ul>
Describe the adjustment method for changes in baseline emission due to changes in calculation methods, emission factors, or correction of errors.	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	Yes	
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.

Verification Checklist	Finding (Yes / No / N/A)	Note
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 correctly?	Yes	
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 <sub>2</sub> -e?	N/A	
Please describe the calculation methodology and how it was assessed. Where offsets have not been calculated correctly		
please assess the materiality of this discrepancy. 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?	Yes	2022 Emissions Reduction Initiatives:
Please describe all abatement actions listed		1. Install roof photovoltaic power generation system and promote the use of renewable and clean energy; The Organization successively installed photovoltaic power generation systems for qualified factories and new factories, increased the proportion of green power consumption, and supported the realization of the group's long-term green and low-carbon development goal.
		2. Assemble steam condensate recovery equipment for corrugated board production line to realize steam recycling.
Have the abatement actions been implemented?	Yes	The abatement actions are being implemented as scheduled. CTI will evaluate at the next verification.



# **4 ON-SITE VERIFICATION FINDINGS**

The reported company located in Shanghai Pacific Millennium Packaging & Paper Industries Co., Ltd, and it includes twelve plants located in Tianjin, Qingdao, Shenyang, Suzhou, Zhejiang, Nanjing, Dalian, Changshu, Guangdong, Taicang, Jiangsu and Shandong, 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.

Category	Subcategory	Specific Description of Emission Source
emission sources	Stationary combustion sources	Boiler (other bituminous coal, natural gas) Electric welding and cutting (acetylene)
	Mobile combustion sources	Official vehicles (gasoline/diesel)
		Forklift (diesel)
		Hold car (diesel)
	Sources of fugitive emission from human activities	Not involved.
	Sources of emission from industrial process	Not involved.
	Sources of emission from land use, land use change and forestry	Not involved.
Category 2: Indirect GHG emission from Imported	Imported energy	Purchased electricity
Energy		Purchased steam

Comprehensively consider the technical and cost feasibility, the emission sources of category 3-6 are identified but not quantified in this verification. According to the exclusion principle, this inventory is excluded sources of fugitive Emission from human activities (septic systems, air-conditioning, fire extinguisher)

Relevant GHG inventory responsibilities are stipulated in the procedure documents and GHG inventory report. The preliminary inspection included inventory, records, data calculations, summaries and GHG information management system.

The verification team has conducted on-site inspections of all production processes and physical buildings. Accordingly, the data calculation, summary and data source availability of major emission sources were checked.

A sampling plan based on risk assessment is used as an integral part of the on-site verification plan.

The main findings during field verification are as follows:

findings	Reference standards (ISO 14064-1:2018 or other)
None	/

CTI Certification conducted planning to verification based on agreed <u>reasonable level of assurance</u>, through the sampling and the onsite verification implementation, CTI Certification concluded that the



verified total GHG emission of year <u>2021</u> of <u>Shanghai Pacific Millennium Packaging & Paper</u> <u>Industries Co., Ltd</u> is <u>42,873</u> tCO<sub>2</sub>e. The evidence of verified energy reduction was checked on the spot.

In addition, CTI Certification proposed that <u>Shanghai Pacific Millennium Packaging & Paper Industries</u> <u>Co., Ltd</u> 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.