VERIFICATION REPORT

ISO 14064-1:2018

Verification of Greenhouse Gas assertions at organization level

Name of client

CLIENT'S LOGO (IF APPLICABLE)

REPORTING PERIOD MM/YYYY – MM/YYYY

General list of abbreviations

CAR	**Corrective Action Request**
CCF	Corporate Carbon Footprint
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CF	Carbon Footprint
CH_4	Methane
CO_2	Carbon Dioxide
CO_2eq	Carbon Dioxide Equivalent
CR	Clarification Request
DEFRA	Department for Environment, Food & Rural Affairs
DOE	Designated Operational Entity
EF	Emission Factor
FAR	Forward Action Request
GHG	Greenhouse Gases
GWP	Global Warming Potential
HFC	Hydrofluorocarbons
N_2O	Nitrous Oxide
OFI	Opportunity for Improvement
PFC	Perfluorocarbons
RFI	Radiative Forcing Index
SF_6	Sulfur Hexafluoride
UNFCCC	United Nations Framework Convention on Climate Change
VCU	Verified Carbon Unit
VER	Voluntary Emission Reduction

Verification Summary:

Lead GHG Auditor:	
GHG Auditors:	
Technical Experts:	
Technical Reviewer:	
Verification Timeframe:	
Objective of the verification:	Limited level of assurance on NAME OF CLIENT based on GHG Inventory Report (Version, Date)
Assurance being provided to:	NAME OF CLIENT
Standard being verified to:	ISO 14064-3:2006 Specification with guidance for the validation and verification of greenhouse gas assertions
Verification criteria employed:	The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition, World Resources Institute and World Business Council for Sustainable Resource Development, March 2004
Verification scope – Gases:	Carbon Dioxide, Methane, Nitrous Oxide, Sulfur Hexafluoride, Hydrofluorocarbons
Organization:	NAME OF CLIENT
Inventory Boundary:	Location:
Reporting Period:	January 1, YYYY – December 31, YYYY (inclusive)
Verification Summary:	

1. Introduction

The Name of client has commissioned Panacea Bioedge Pvt. Ltd. to carry out the verification of the GHG emission inventory of the certified client/ entity according to the International Standard ISO 14064-3:2006 for the period (DD/MM/YYYY – DD/MM/YYYY).

International Standard ISO 14064-1:2006 is applied by Name of client for GHG Inventory calculation and reporting.

This document provides details on the verification scope and process that is planned to conduct a limited level verification of the YYYY organization-wide GHG inventory ("GHG Assertion") for XYZ Ltd. The GHG Assertion made by XYZ Ltd requires the quantification of the emissions produced during calendar/financial year YYYY and related primarily to stationary combustion of fossil fuels and from purchased power, as well as from a number of minor sources. An overview of operations for the organization will be provided in the Verification Report.

A Verification Risk Assessment will be conducted during the verification planning stage; the results of which will be provided as a part of the final Verification Plan. Additionally, the results of the Risk Assessment informed the development of the Sampling Plan.

The Verification and Sampling Plans will be updated through the course of the verification as additional information becomes available. The verification conclusion will be documented in the Verification Statement and the verification findings will be further described in the Verification Report. The Verification and Sampling Plans will be appended to the Verification Report to provide information related to the verification scope and process.

The contract is made only for GHG Emissions verification as per ISO 14064-3 at Organization Level and not for Product Carbon Footprint. Panacea Bioedge will not issue, product specific, GHG Emission certificate or assurance statement. Panacea Bioedge will declare the scope 1, 2, 3 GHG Emissions at Organization level as a part of GHG Assertion statement. The contract is signed by Organizations responsible authority, who is going to report and get verified their GHG Emission. Panacea Bioedge will not sign the contract with consultant. Panacea Bioedge will not provide any consultancy for GHG Calculation for this project. Panacea Bioedge will not provide any other services, which will compromise the conflict of interest situations.

1.1. Objective

The objective of this GHG Emissions verification is to verify the GHG Emissions of the name of certified entity / client through an independent authority. By identifying saving potentials as well as a reduction of emissions based on the name of client wants to reduce their GHG Emissions continuously. If necessary: Description of other objectives of the client.

1.2. Scope

The GHG Emissions verification is based on the report "name of report"/.../ and related documentation prepared by name of client or consultancy, if applicable, the verification audits carried out between DD/MM/YYYY and DD/MM/YYYY on various sites of the name of client, supporting documents handed over to the verifiers as well as information received by means of interviews and background investigation.

The documents and information are reviewed against the requirements and criteria mentioned below. Panacea Bioedge Pvt. Ltd. has employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of the monitoring and reporting.

The verification is carried out on the basis of the following standard:

- International standard ISO 14064-3: 2019

The calculation of the GHG Emissions was carried out according to the following standard:

- ISO 14064-1:2018

As part of the verification the compliance of the requirements out of the standard applied for calculation was checked.

1.3. Verification Team

The verification described in this report was conducted by the following employees of Panacea Bioedge Pvt. Ltd.:

	Name	Company	Function [1]	Qualification Status [2]	Scheme-competence [3]	Sociocultural competence [4]	GHG-Programme Competence [5]
☐ Ms. ☐ Mr.			ATL			☐	☐
☐ Ms. ☐ Mr.			A			☐	☐
☐ Ms. ☐ Mr.			A			☐	☐
☐ Ms. ☐ Mr.						☐	☐
☐ Ms. ☐ Mr.						☐	☐
☐ Ms. ☐ Mr.			TR			☐	☐

Subject to change.

1) ATL: Audit Team-Leader; A: Auditor, TR: Trainee-Auditor; FG: Final approval

2) GHG Auditor Status: A: Auditor; LA: Lead Auditor; SA: Senior Auditor; BR: Area of technical expertise

3) According to A95F101 (e.g. 01, 29/1, 34 etc.)

4) Includes knowledge of language, legal system, special technology skills, etc. of a country

5) where required

2. Methodology

The verification was carried out from DD/MM/YYYY till DD/MM/YYYY. It consisted of the following steps:

- Review of documentation
- Verification audits
- Background investigation
- Corrective Action assessment
- Verification reporting.

Review of documentation: The desk review included the following main documents:

- Report „Name of Report“/ /, provided by Name of Client / Consultant (GHG Invetory report, Version and date)
- Excel-Spreadsheet: „Name of File.xls“/ /

A detailed list of all reviewed documents can be found in chapter 8.

Verification Process:

The PBPL approach for conducting verification of a GHG Assertion follows the tasks outlined in the following diagram. Although these tasks are generally completed sequentially, the order may be modified according to circumstances such as scheduling and data availability.

Pre-Engagement	Approach	Execution of Verification	Completion
1. Selection of Lead Verifier 2. Initiate Conflict of Interest Procedure 3. Pre-Engagement Planning 4. Contract Execution 5. Initiate Verification Tracking	6. Selection of Verification Team 7. Communication with Client/Responsible Party 8. Kick-off Meeting 9. Assess GHG Program & Revise Procedures as Required 10. Draft Verification and Sampling Plan	12. Site Visit 13. Conduct Verification Procedures 14. Issue Clarification & Data Request 15. Revise & Finalize Verification and Sampling Plan 16. Address and Evaluate Outstanding Issues	17. Evaluate Evidence 18. Hold Verification Findings Meeting (if necessary) 19. Draft Verification Report & Statement 20. Technical Review 21. Issue Verification Report & Statement 22. Close Verification File

	11. Verification Risk Assessment		

Pre-Engagement:

Prior to submitting a proposal to conduct this verification, the following pre-planning steps were taken:

- The results of any previous business engagements or verifications with the Responsible Party were reviewed to determine if any previous unresolved conflicts may preclude PBPL from engaging in the verification.
- The client's motivation for completing the verification was established; and
- A Conflict of Interest procedure was initiated that documents whether any perceived or real conflicts were found when considering threats due to:
  - Advocacy
  - Financial Interest
  - Familiarity/Sympathy
  - Intimidation
  - Self-Review
  - Incentives

Following the acceptance of the proposal and signing of a contract for services, the Verification Team was selected. The Verification Team for this engagement is comprised of the individuals identified

Background investigation: Prior, in between and after the verification audits background investigation regarding applicable calculation approaches, emission factors, relevant boundary conditions etc. were carried out in order to plausibly assess and / or verify the reported data.

Approach:

An extensive knowledge of the Responsible Party's business, the relevant industry, and the details of the Corporation (Responsible Party) itself are required to conduct a thorough verification that can lead to a conclusion. The initial information collected about the Responsible Party and its facilities formed the basis of the preliminary draft Verification Plan. The development of the Verification Plan is an iterative process; that is, the process will be completed several times through the course of the verification and the resulting plan will be updated as new information became available.

There are three types of risk associated with the GHG Assertion defined in ISO 14064-3:

- Inherent Risk

- Control Risk
- Detection Risk

The process of designing the Verification Plan involved the development of Verification Risk Assessment for the Responsible Party. The steps in this process include:

- Reviewing the GHG Assertion, and the methodologies employed by the Responsible Party;
- Assessing the likelihood that a material misstatement might exist in the GHG Assertion, if no controls were used to prevent misstatements in the GHG Assertion (i.e. inherent risk);
- Assessing the control environment and the corporate governance process (i.e. control risk); and
- Reviewing each emissions source identified by the Responsible Party, and evaluating the contribution of each source to the GHG Assertion and the associated potential material discrepancy for each.

The results of the Verification Risk Assessment inform the development of the verification procedures, and a summary of the Verification Risk Assessment will be provided in this report. The Verification and Sampling Plans as well as the Verification Risk Assessment will be reviewed by the designated Technical Experts to ensure the verification procedures address each of the risks identified. The draft Verification Plan will be provided to the Responsible Party before proceeding with the verification.

Execution of Verification

With draft Verification and Sampling Plans in place, the verification procedures will be executed. This process involves collecting evidence, testing internal controls, conducting substantive testing, and developing a review file. Over the course of the verification, the draft Verification and Sampling Plans may change; the final Verification and Sampling Plans provided in the Verification Report reflect the verification parameters and procedures that were actually executed.

Site Visits

The site visit will be conducted by Mr._____ from **ddmmyyyy** location:_____ The site visit will be a key step in the planning and execution of the verification. During the course of the site tours, the Verification Team will interview key operations personnel regarding the operations and data management of the Responsible Party.

During the course of the site visit, the Verification Team will:

- interview key site operations personnel regarding the operations and data management of

  - Direct and Indirect emission sources and croess check with the reported data.
  - undertake discussions with the Intra-System Billing

Interviewed persons and interview topics

Interviewed Persons	Interview topics
DD.MM.YYYY - **PLACE**	
- Name (Company) - Name (Panacea Bioedge Pvt. Ltd.)	- XXXX
DD.MM.YYYY - **PLACE**	
- Name (Company) - Name (Panacea Bioedge Pvt. Ltd.)	- XXXX

During the site visit all major GHG emissions sources for the Independence will be reviewed to ensure appropriate identification and categorization. A review of any available overall plant-level process flow and metering diagrams will be followed by physical observation of the facility, collection of relevant data and confirmatory checks (as possible) on meters and other equipment.

Collecting Evidence and Review of Documentation

Sufficiency and appropriateness are two interrelated concepts that are fundamental to the collection of verification evidence. The decision as to whether an adequate quantity (sufficiency) of evidence has been obtained is influenced by its quality (appropriateness).

The Verification Team will review three key forms of evidence including physical, documentary and testimonial:

- Management documentation: policies, programs, and procedures related to the collection, safeguarding, and management of the data supporting the GHG Assertion;
- Records: records comprise time-sensitive data, correspondence, and files;
- Interviews: the interviews will provide information regarding operations and data management and will provide evidence to support the sufficiency of data controls; and

- Computer systems, i.e., those data systems used to capture and manage the GHG-related data and to calculate the GHG Assertion, will also be assessed by the Verification Team as part of this review.

Testing and Assessment of Internal Controls

The Verification Team will develop a sufficient understanding of the GHG information system and internal controls to determine whether the overall data management system is sound and if it supports the GHG Assertion. This assessment sought to identify any weakness or gaps in the controls that pose a significant risk of not preventing or correcting problems with the quality of the data and examining it for sources of potential errors, omissions, and misrepresentations. It will incorporate an examination of three aspects of the Responsible Party's internal controls: (1) the control environment, (2) the data systems, and (3) the control and maintenance procedures.

Assessment of Data

Substantive testing procedures will be used to assess the reasonability and validity of the GHG Assertion. Both quantitative and qualitative analysis will be performed to achieve the desired level of assurance. The verification procedures are described in Section 7 of the final Verification Plan as separate tables for each process or activity involved in the quantification and reporting of the GHG Assertion. The verification procedures include verification activities designed to:

- Review the Responsible Party's GHG inventory boundary, including a review of the completeness of emissions sources identified.
- Review the Responsible Party's data sources to ensure the GHG Assertion is calculated based on metered or estimated data.
- Re-calculate the GHG Assertion, which demonstrates transparency and accuracy; and
- Review the GHG Assertion to ensure the emissions calculated by the Responsible Party have been accurately reported.

Clarification and Data Request

To facilitate information flow between the Verification Team and the Responsible Party, a consolidated request for additional information will be developed through the course of the verification and issued to the Responsible Party. This "Clarification and Data Request" will be used to document information requests and summarize the responses. It will also be used to document the Verification Team's assessment of each response.

Developing a Review File

A review file (the "File") comprised of documents, records, working papers and other evidence collected and created during the review that support the review conclusions will be developed for this verification. This evidence stored in electronic format will serve to provide support for the verification conclusion, provide evidence that the verification was conducted in accordance with the criteria set forth in this document, and aid the Verifier in conducting current and future reviews.

The File will include:

- The GHG Assertion and supporting documentation, to be used for reporting purposes by XYZ Ltd;
- Decisions on the level of materiality and the results of the Verification Risk Assessment;
- Documentation on the Responsible Party's internal controls;
- Descriptions of the controls assessment work and results;
- Documentation of the substantive testing procedures that were carried out and the results;
- Copies of any correspondence with the Responsible Party or other parties relevant to the review;
- The Verification Team's working papers;
- The Clarification and Data Request with documented responses from the Responsible Party; and
- Client data (copies of relevant records, spreadsheets, and other data files).

Completion

This engagement will be formally closed after the verification has been executed and the Verification Report has been finalized.

Preparing the Verification Report

The purpose of the Verification Report is to document the verification findings. All discrepancies are described and compared to the materiality threshold individually and in aggregate. The Verification Statement, which presents the Verification Team's verification conclusion, is included in the Verification Report.

Corrective Action assessment: On the basis of the desk review, evidences presented during the audits as well as from the background investigation necessary corrective action requests

(CAR) as well as forward action requests (FAR) were raised during the verification. All required corrections have been considered in the GHG Emissions calculation.

Verification reporting: This verification report has been prepared on the basis of the revised calculation of the GHG Emissions and the report Name of the report (Version, date).

Technical Review Process

Prior to releasing the Verification Report and Verification Statement, an internal review process is conducted by the Internal Peer Reviewer. This process ensures that:

- All steps identified as being required to complete the verification were completed;
- Any identified material or immaterial discrepancies identified have been either: corrected by the Responsible Party and reflected in the GHG Assertion; or
- documented in the Verification Report, if discrepancies persist at the conclusion of the verification.
- All required documentation detailing the verification process has been prepared, delivered, and retained.

Closing the Engagement

The verification engagement will be closed out upon delivery of the final Verification Report.

Verification Risk Assessment

There are three types of risk associated with the GHG data management system and the GHG Assertion defined in ISO 14064-3:

- Inherent Risk
- Control Risk
- Detection Risk

The assessed level of risk for this verification dictates the degree of rigor planned for the verification procedures described in the accompanying Sampling Plan. Our established audit procedures and documentation systems ensured a thorough treatment of any risk identified, including determination of magnitude and sensitivity of that risk, during the assessment process. A qualitative risk assessment was completed based on observations made by reviewing and assessing accompanying documentation, as well as assessing available information such as the GHG inventory file, interviewing key personnel, and reviewing supporting documents.

The *inherent* risk in XYZ Ltd.'s corporate-wide FY-YYYY-YY GHG Assertion emanates from the large and complex nature of the company, the number of parties involved in managing their

emissions inventory and developing their assertion, the number of emission sources, a large number of natural gas, oil and coal plants used in the process, and a smaller amount of controllable power purchases occurring throughout the year.

Control risk relates to the likelihood that a material misstatement in the XYZ Ltd. GHG Assertion will not be prevented or detected by XYZ Ltd.'s internal control and data management systems.

The largest control risk in relation to the XYZ Ltd. GHG Assertion is likely to be the manual transcription method in which the inventory is prepared (i.e., emissions values are extracted from various sources and manually entered into an Excel spreadsheet; this is true for all emissions sources including the largest ones, namely stationary combustion and controllable purchased power).

The ***detection risk*** is a measure of the risk that the verification evidence collected and reviewed will fail to detect material misstatements, should such misstatements exist. Unlike *inherent* and *control* risks, which are typically attributes of the facility types and technologies employed therein, *detection* risk is variable but can be maintained at a low level by designing an appropriate number of tests, and collecting an adequate sample size. The Verification Team will conduct a number of sampling tests, focused on large fossil electric generation units and controllable purchased power. These tests are outlined in the sampling plan. Overall, the Verification Team's procedures have been designed to minimize detection risk.

Verification Procedures (Sampling Plan)

Summary of Procedures:
Organization Boundaries and Definition
B1: Organization Boundaries, Infrastructure and Activities
B2: Review of Operating Conditions Calculation
C1: True Up and Re-Performance Calculation
C2: Minor Emissions – Methodology and Documentation
Data Sources and Supporting Data
D1: Data Collection and Quality Controls
D2: Data Confirmation against External Sources
D3: Data Migration into Inventory
Assertion
A1: Final Verification Assessment

3. Verification Findings

The following required corrections were determined within the data verification and the audits:

Finding X				
Classification	☐ CAR	☐ CR	☐ FAR	☐ OFI
Description of finding *Describe the finding.*				
Corrective Action #1 *This section shall be filled by the client. It shall address the corrective action taken in details.*				
Audit team Assessment #1 *To be filled out by verifier. In case of non-closure, additional corrective action and further assessments (#2, #3, etc.) shall be added.*				
Conclusion *Tick the appropriate checkbox*	☐ Appropriate action was taken ☐ Additional action have to be taken ☐ To be checked during the next periodic verification ☐ Corrective action recommended but not required.			

Finding X				
Classification	☐ CAR	☐ CR	☐ FAR	☐ OFI
Description of finding *Describe the finding*				
Corrective Action #1 *This section shall be filled by the client. It shall address the corrective action taken in details.*				
Audit team Assessment #1 *To be filled out by verifier. In case of non-closure, additional corrective action and further assessments (#2, #3, etc.) shall be added.*				
Conclusion *Tick the appropriate checkbox*	☐ Appropriate action was taken ☐ Additional action have to be taken ☐ To be checked during the next periodic verification ☐ Corrective action recommended, but not required.			

4. Verification Results

4.1. Principles

ISO 14064 defines five principles that should be upheld in the development of the GHG Assertion. These principles are intended to ensure a fair representation and a credible and balanced account of GHG-related information. The verification procedures developed and executed during the course of this verification will present evidence such that each of these principles is satisfied.

- **Relevance**

Appropriate data sources are used to quantify, monitor, or estimate GHG sources. Appropriate minimum thresholds associated with emissions levels, i.e., from *de minimus* sources, are used to justify the exclusion or the aggregation of minor GHG sources or the number and/or frequency of data points monitored.

- **Completeness**

All sources within XYZ Ltd.'s GHG inventory boundary are included within an identified source category.

- **Consistency**

Uniform calculations are employed between the base year (i.e., year 2000 emissions, for establishing XYZ Ltd.'s baseline emissions levels from which past, and current, GHG emissions reduction target commitments have been made), and current accounting/reporting periods (e.g., years 2010-2020, 2nd period reduction target commitments, also defined in terms of a year 2000 baseline). Emissions calculations for each source are calculated uniformly. If more accurate procedures and methodologies become available, documentation should be provided to justify the changes and show that all other principles are upheld.

- **Accuracy**

Measurements and estimates are presented, without bias as far as is practical. Where sufficient accuracy is not possible or practical, measurements and estimates should be used while maintaining the principle of conservativeness.

- **Transparency**

Information is presented in an open, clear, factual, neutral, and coherent matter that facilitates independent review. All assumptions are stated clearly and explicitly, and all calculation methodologies and background material are clearly referenced.

4.2. System Boundary

The calculation of the GHG Emissions was carried out for Name of the client with Description of the organizational boundaries (sites, activities…).

The system boundary includes emissions from Description of the emission sources.

Not included is Description of the emission sources not considered.

The calculation of the GHG Emissions was carried out for the reporting period between DD.MM.YYYY and DD.MM.YYYY.

4.3. Greenhouse Gases

All Kyoto GHG emissions (CO_2, CH_4, N_2O, SF_6, HFCs, PFCs) have been considered and converted into CO_2eq by using the latest global warming potentials published by the Intergovernmental Panel on Climate Change (IPCC).

CO_2 emissions are the preponderate part of the emission sources considered in the preparation of the CO_2 footprint. The amount of other greenhouse gases, referring to the activities of the Name of the client is negligibly small.

GHG Sources

The following key sources comprise the YYYY GHG inventory categorized by XYZ Ltd. as follows:

Below table shows the sources of GHG emissions with emission factor reference.

Category of GHG Emission	Description
1) Direct GHG emissions and removals	1.a) Direct Emission from stationary combustion.
	1.b) Direct Emission from mobile combustion.
	1.c) Direct process emission and removals arise from industrial process.
	1.d) Direct fugitive emission arise from the release of greenhouse gases in anthropogenic systems.
	1.e) Direct emission and removal from the land use, land use change and forestry.
2) Indirect GHG emissions from imported energy	2.a) Indirect Emission from the imported Electricity
	2.b) Indirect Emission from the imported Energy
3) Indirect GHG emissions from transportation	3.a) Emission from upstream transport and distribution for goods.
	3.b) Emission from downstream transport and distribution for goods.
	3.c) Emission from employee commuting
	3.d) Emission from client and visitors transport

Category of GHG Emission	Description
	3.e) Emission from Business travels
4) Indirect GHG emissions from products used by an organization	4.a) Emissions from Purchase goods.
	4.b) Emissions from capital goods.
	4.c) Emission from the disposal of Solid & Liquid Waste
	4.d) Emission from the use of assets
	4.e) Emission from the use of services that are not described in the above subcategories (consulting, cleaning, maintenance, mail delivery, bank, tec.)
5) Indirect GHG emissions associated with the use of products from the organization	5.a) Emissions or removals from the use stage of the product
	5.b) Emission from the downstream leased assets
	5.c) Emission from the end of life stage of the product
	5.e) Emissions from the investments.
6) Indirect GHG emissions from other sources	–

4.4. Calculation of the Greenhouse Gas Emission

The calculation of the GHG Emissions has been prepared in accordance to the Name of the Standard used for the calculation.

For all activities covered by the agreed system boundary, primary activity data of the year FY/CY YYYY-YY have been applied for the calculation of the GHG Emissions.

The company has selected calculation approaches which lead to accurate, consistent and reproducible results and minimize uncertainty. These quantification approaches are calculations, measurements or combinations of calculations and measurements. All parameters like emission factors were derived from reliable sources.

Within the selection of the emission factors used to calculate the GHG Emissions, conservative values were selected. All default values for the calculation were verified and found to be applicable.

All calculations presented in the Name of the calculation sheet have been checked detailed. In the course of the verification, necessary corrections have been identified and corresponding revisions have been carried out. On the basis of the final calculation spreadsheets the presented GHG Emissions calculation can be assessed as reliable and correct.

In accordance with the ISO 14064-3:2006 a materiality of 5% was defined for the verification of CO_2 emissions. The sampling of the evidences has been chosen to be sufficiently large to ensure that with a probability of 95% the error is less than 5%.

The calculation approach is to be assessed as very conservative.

4.5. Materiality

During the course of the verification, individual errors, omissions or misrepresentations (collectively referred to as discrepancies) or the aggregate of these discrepancies will be evaluated qualitatively and quantitatively. Materiality defines the level at which discrepancies in the GHG Assertion or any underlying supporting information precludes the issuance of a limited level of assurance.

The Verification Team is responsible for applying professional judgment to determine if *qualitative* discrepancies could adversely affect the GHG Assertion, and subsequently influence the decisions of the Intended User, in which case, the discrepancies are deemed to be material.

Quantitative discrepancies will be calculated individually to determine the impact of the discrepancy as a percentage of the GHG Assertion. All discrepancies that are outstanding at the conclusion of the verification will be documented in the Verification Report and classified on an individual basis as either material or immaterial.

Materiality Threshold. In the framework of a corporate entity-wide GHG inventory, the concept of materiality is defined in the context of the overall uncertainty in the reported data. A quantity, in this case errors and/or uncertainties associated with reported results, is typically considered to be “material” if it would influence any decision or action taken by users of the information. This definition of materiality is consistent with verification guidelines and goals for the reliability of reported data.

Materiality is not the same as a *de minimus* emissions threshold for either the exclusion of specific sources from the inventory, or the use of estimated values without ongoing, annual collection of associated activity data. While a *de minimus* exclusion from the inventory would contribute to overall uncertainty, completeness is only one component contributing to overall uncertainty.

A materiality threshold for this limited level of assurance verification was set at 10% for the corporate inventory. Individual discrepancies and the aggregate of individual discrepancies will be analysed to determine if the materiality threshold has been breached.

XYZ LTD.'s current GHG inventory management plan and reporting document ("IMPRD") states that *"...emissions estimated to be less than 1% of the total inventory are considered de minimus unless they are anticipated to change dramatically and grow above this threshold*." The *de minimus* label for emissions sources <1% of the total inventory was selected by XYZ LTD. to delineate a threshold for inventory quantification. Sources that fall within the *de minimus* category can re-use an emissions estimate for up to five years before having to re-calculate the emissions. Note that *de minimus* sources (as defined by XYZ LTD.) are still included in the total inventory quantification, they are just not re-calculated every year.

4.6. Reporting

Based on the compiled data for the monitoring period MM/YYYY–MM/YYYY and the calculation of the GHG Emissions for the according year the Name of client has prepared the report Name of the report.

The GHG emission Inventory Report includes the following relevant information:

- Company profile
- System boundary for the GHG Emissions calculation
- Definition of base year
- Calculation approaches
- Description of the defined monitoring system
- Description of the data gathering process
- Methodologies used to calculate or to measure emissions
- Description of emission sources and allocation of emissions to scopes
- Reporting period

The reported information regarding the GHG emissions are assessed to be relevant, complete, consistent, transparent and accurate.

4.7. Results

The calculation of the GHG inventory (GHG Emissions) of the Name of the client displayed the following results:

Activities/ Emission Source	Amount [t CO_2eq]
[Activity/Emission Source 1]	xxx.xxx,xx
[Activity/Emission Source 2]	xxx.xxx,xx
[Activity/Emission Source 3]	xxx.xxx,xx
[Activity/Emission Source n]	xxx.xxx,xx
Sum	**xxx.xxx,xx**
Sum/0.95 (as per eq. (1))	**xxx.xxx,xx**

Panacea Bioedge Pvt. Ltd. has verified the total amount of GHG emissions of the Name of the client in the year **YYYY** to be **xxx.xxx t CO_2eq** (rounded)**.**

4.8. Uncertainty assessment

For all activities of the Name of the client primary data of the year YYYY has been collected, which could be used to calculate the GHG Emissions. Thus most of these values have a relatively low uncertainty.

Description of the identified uncertainties, and (if relevant) justification of limitations in the verification statement.

4.9. Data Management and Control System Review

A critical element of the verification process was for the Verification Team to gain a thorough understanding of the data management systems and controls employed by XYZ LTD. This understanding necessitated a review of:

- The parties involved and their respective responsibilities;
- The facility data collection and automated data measurement and management systems;
- Software system configuration;

- Post-collection data manipulation;
- Quality assurance procedures employed to detect erroneous or missing data;
- Processes for updating historical data in the event that errors are detected;
- Document control and security systems, including access, and tracking of edits; and
- Changes to the data management system over time or opportunities for improvement.

4.10. Testing Internal Controls

The Verification Team developed a sufficient understanding of the GHG information system and internal controls to determine whether the overall data management system is sound, examining it for sources of potential errors, omissions, and misrepresentations. This assessment incorporated examining three aspects of the company's internal controls:

(1) the control environment,
(2) the data systems, and
(3) the control and maintenance procedures.

The testing procedures documented in the Verification Plan included some procedures to test the effectiveness of the internal controls in place. The results of these tests influence the type and amount of activity data being sampled. Sampling procedures are included in Section 7 of the final Verification Plan.

Conducting Substantive Testing

Substantive testing procedures were used to assess the reasonability and validity of the GHG Assertion where further testing was required to assess internal controls based on the observations and preliminary findings of the Verification Team. The specific procedures are summarized in Section 7 of the final Verification Plan as separate tables for each process or activity involved in the quantification and reporting of the GHG Assertion. Materiality was specified for each specific procedure and aggregate materiality was determined separately. The details of the testing of internal controls and substantive testing undertaken are described in detail in the final Verification Plan.

The verification team developed a thorough knowledge of the data management and control systems utilized in the organization through the review of the IMPRD, observations during the site visit, and interviews with key personnel. The following were the key data systems observed.

Data	Sources
Generation Fuels and Accounting	Monthly purchased power totals for YYYY
Electricity	Monthly Bills
Furnace Oil	Monthly Invoice
Coal	Monthly Invoice
HSD	Monthly Invoice
Commuting	Travel Records

4.11. Discrepancies

The table below details discrepancies found during the verification process for each procedure, a discrepancy title (brief description) and final status.

Procedure	Discrepancy Title	Final Status
Organization Boundaries, Infrastructure and Activities	N/A	No discrepancies detected
Review of Operating Conditions	N/A	No discrepancies detected
True-Up and Re-Performance Calculations	N/A	No discrepancies detected
Minor/*De Minimus* Emissions - Methodology and Documentation	N/A	No discrepancies detected
Data Collection and Quality Controls	N/A	No discrepancies detected
Data Confirmation against External Sources	N/A	No discrepancies detected
Data Migration into Inventory	N/A	No discrepancies detected
Final Verification Assessment	N/A	No discrepancies detected

The sum of the immaterial discrepancies in the GHG Assertion does not result in a breach of materiality (greater than 10% of the total GHG Assertion). This is in line with the uncertainty assessment of NAME OF CLIENT.

5. GHG emission reduction efforts

Description of actions taken by the client to reduce GHG Emissions.

Comparison of actual emissions with those from previous years as well as the base year (if applicable)

6. CONCLUSION

The Name of the client has commissioned the Panacea Bioedge Pvt. Ltd. to carry out the GHG Emissions Verification for the Name of the client according to the international applied Standard ISO 14064 -3: 2006 for the year YYYY.

The objective of this GHG Emissions verification is to verify the GHG Emissions of the Name of the client through an independent authority. By identifying saving potentials as well as a reduction of emissions based on, the Name of the client wants to reduce their GHG Emissions continuously. If necessary: Description of other objectives of the client.

According to ISO 14064-3:2006 reasonable / limited has been selected as level of assurance. Taking into consideration the framework conditions for this certification, the materiality has been determined as 5 %.

Based on the verification carried out according to ISO 14064, consisting of document review, research and a verification audits carried out between DD.MM.YYYY and DD.MM.YYYY on different sited of the Name of the client

Panacea Bioedge Pvt. Ltd., acting as an independent Certification Body, can confirm the GHG Emissions of the Name of the client to be

xxx.xxx t CO_2eq

in the year **YYYY.**

Panacea Bioedge Pvt. Ltd., acting as an independent Certification Body, can confirm **in limited form**

the GHG Emissions of the Name of the client to be

xxx.xxx t CO_2eq

in the year **YYYY** (see chapter 4.6).

as an independent Certification Body, Panacea Bioedge Pvt. Ltd.

cannot confirm

the GHG Emissions of the Name of the client to be

xxx.xxx t CO_2eq

in the year **YYYY.**

Based on the performed assessment it can be stated that the calculation meets the requirements of the Name of the standard applied for calculation, which is the basis of the calculation.

The calculation of the GHG Emissions encompasses the Name of the client with Short description of system boundary (see chapter 4.1).

New Delhi, YYYY-MM-DD

Audit team leader

Panacea Bioedge Pvt. Ltd.

7. Verification Statement

Scope

XYZ Ltd ("Responsible Party") engaged Panacea Bioedge Pvt. Ltd. to review XYZ Ltd.'s 2015 Corporate Greenhouse Gas ("GHG") Inventory, and supporting evidence, detailing the GHG emissions and associated source documents over the period January 1, YYYY to December 31, YYYY inclusive. These components are collectively referred to as the "GHG Assertion" for the purposes of this report.

The Responsible Party is responsible for the preparation and presentation of the information within the GHG Assertion. Our responsibility is to express a conclusion as to whether anything has come to our attention to suggest that the GHG Assertion is not presented fairly in accordance with generally accepted GHG accounting standards, in particular, *The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition, World Resources Institute and World Business Council for Sustainable Resource Development, March 2004.*

Boundary:

Site with address

Methodology

We completed our review in accordance with the ISO 14064 Part 3:2006 *Greenhouse Gases: Specification with guidance for the validation and verification of greenhouse gas* assertions. We planned and performed our work in order to provide a limited level of assurance with respect to the GHG Assertion. Our review criteria were based on *The Greenhouse Gas Protocol* and quantification methodologies referenced in XYZ Ltd.'s GHG Inventory Report. We reviewed the GHG Assertion and associated documentation and believe our work provides a reasonable basis for our conclusion.

Conclusion

Considering a materiality of 5% and a reasonable level of assurance, the Panacea Bioedge Pvt. Ltd., as a verifier of greenhouse gas footprints of the Name of client (in above system limits), confirms that on the basis of the audit the statement of greenhouse gas emissions is substantially correct and is a factual representation of the GHG-related data and information.

Furthermore, it can be confirmed, that the calculation was developed according to the relevant International Standard for the quantitative analysis, monitoring and reporting of greenhouse gases (GHG Protocol). Based on our review, nothing has come to our attention that causes us to believe that the GHG Assertion is materially misstated. The emission estimates were calculated in a consistent and transparent manner and were found to be a fair and accurate representation of XYZ Ltd.'s actual emissions and were free from material misstatement. PANACEA BIOEDGE has verified a total of **XXXXXXX** metric tons of CO2 equivalent (CO2e) emissions for calendar year YYYY.

Herewith it is insured that this verification in good faith includes the whole truth and nothing is concealed. During verification of greenhouse gas emissions, the principle of independence was preserved under the rules of admission and there was no involvement in the preparation of the application.

New Delhi DD.MM. YYYY

Lead Auditor
Panacea Bioedge Pvt. Ltd.

8. Documents

Table 7-1: Documents provided by the project proponent

No.	Document
1.	[Name of document, tool or program containing the GHG Emissions calculation]
2.	[Name of documentation report]
3.	Evidences Consumers
4.	Please fill in further references.

Table 7-2: Background investigation and assessment documents

No.	Document
1.	2011 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
2.	The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, April 2004
3.	IPCC Guidelines for National Greenhouse Gas Inventories, 2006
4.	ISO 14040:2006 – Environmental management – Life cycle assessment – Principles and framework
5.	ISO 14044:2006 – Environmental management – Life cycle assessment – Requirements and guidelines
6.	International Organization for Standardization (ISO): ISO 14064-1: 2006; ISO 14064-2: 2006; ISO 14064-3: 2006
7.	Kyoto Protocol (1997)
8.	PAS 2050:2011 – Specification for the assessment of the life cycle greenhouse gas emissions of goods and services

Annex: GHG Verification Protocol

Table 1: Data Management System/Controls

Expectations for GHG data management system/controls	Verifiers Comments	Final Concl.
1. Defined organisational structure, responsibilities and competencies		
1.1. Position and roles *Position and role of each person in the GHG data management process is clearly defined and implemented, from raw data generation to submission of the final data. Accountability of senior management must also be demonstrated.*		
1.2. Responsibilities *Specific monitoring and reporting tasks and responsibilities are included in job descriptions or special instructions for employees.*		
1.3. *Competencies needed* *Competencies needed for each aspect of the GHG determination process are analysed. Personnel competencies are assessed and training programme implemented as required.*		
2. Conformance with monitoring plan		
2.1. Reporting procedures *Reporting procedures should reflect the monitoring plan content. Where deviations from the monitoring plan occur, the impact of this on the data is estimated and the reasons justified.*		
2.2. Necessary Changes *Necessary changes to the monitoring plan are identified and changes are integrated in local procedures as necessary.*		

Expectations for GHG data management system/controls	Verifiers Comments	Final Concl.
2.3. Remaining Issues *All FARs raised during the previous verifications have to be closed by the PP by appropriate actions.*		
3. Application of GHG determination methods		
3.1. Methods used *There is documented description of the methods used to determine GHG emissions and justification for the chosen methods. If applicable, procedures for capturing emissions from non-routine or exceptional events are in place and implemented.*		
3.2. Information/process flow *An information/process flow diagram, describing the entire process from raw data to reported totals is developed.*		
3.3. Data transfer *Where data is transferred between or within systems/spreadsheets, the method of transfer (automatic/manual) is highlighted - automatic links/updates are implemented where possible. All assumptions and the references to original data sources are documented.*		
3.4. Data trails *Requirements for documented data trails are defined and implemented and all documentation are physically available.*		
4. Identification and maintenance of key process parameters		
4.1. Identification of key parameters *The key physical process parameters that are critical for the determination of GHG emissions (e.g. meters, sampling methods) are identified.*		

Expectations for GHG data management system/controls	Verifiers Comments	Final Concl.
4.2. Calibration/maintenance *Appropriate calibration/maintenance requirements are determined.*		
5. GHG Calculations		
5.1. Use of estimates and default data *Where estimates or default data are used, these are validated and periodically evaluated to ensure their ongoing appropriateness and accuracy, particularly following changes to circumstances, equipment etc. The validation and periodic evaluation of this is documented.*		
5.2. Guidance on checks and reviews *Guidance is provided on when, where and how checks and reviews are to be carried out, and what evidence needs to be documented. This includes spot checks by a second person not performing the calculations over manual data transfers, changes in assumptions and the overall reliability of the calculation processes.*		
5.3. Internal verification *Internal verifications include the GHG data management systems, to ensure consistent application of calculation methods.*		
5.4. Internal validation *Data reported from internal departments should be validated visibly (by signature or electronically) by an employee who is able to assess the accuracy and completeness of the data. Supporting information on the data limitations, problems should also be included in the data trail.*		
5.5. Data protection measures *Data protection measures for databases/spreadsheets should be in place (access restrictions and editor rights).*		
5.6. IT systems		

Expectations for GHG data management system/controls	Verifiers Comments	Final Concl.
IT systems used for GHG monitoring and reporting should be tested and documented.		