



ISO 14064-1

Greenhouse Gas (GHG)

The GHG Report at organization level for the calendar year 2023

Global Green Chemicals Public Company Limited

Head office : 555/1 Energy Complex, Building A, 4th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Thailand

Rayong office : 888 GC Estate Building, 3rd Floor, Map Chalut – Laem Chabang Road, Huai Pong, Mueang Rayong, Rayong 21150 Thailand.

Rayong Plant: 8, 10 Soi G12, Pakomsongkhorat Road, Map Ta Phut, Mueang Rayong, Rayong 21150 Thailand.

Chonburi Plant: 199/1 Moo 2, Khao Sok, Nong Yai, Chon Buri 20190 Thailand

It has been verified at a limited level of assurance according to ISO 14064–1:2018 and ISO 14064–3:2019.

The total greenhouse gas emission in the period 1 January 2023 to 31 December 2023 as following

Category 1: Direct GHG emissions and removals	28,450	tCO ₂ e
Category 2: Indirect GHG emissions from imported energy	73,709	tCO ₂ e
Category 3: Indirect GHG emissions from transportation	20,367	tCO ₂ e
Category 4: Indirect GHG emissions from products used by organization	555,895	tCO ₂ e
The total greenhouse gas emission for Category 1 and Category 2	102,159	tCO ₂ e
The total greenhouse gas emission for Category 1, Category 2, Category 3 and Category 4	678,421	tCO ₂ e
Biogenic CO ₂ emissions	-	tCO ₂ e
HCFC-22	32	tCO ₂ e

For the following activities

- Direct GHG emissions and removals --- Stationary combustion (LPG, Diesel, Fuel oil), Mobile combustion (Diesel, Gasoline) and Fugitive emissions (CH₄, CO₂, HFC-227ea, R-134A, R-32, R-404A, R-407C and R-410A) including HCFC-22
- Indirect GHG emissions from imported energy --- Electricity and Steam
- Indirect GHG emissions from transportation--- Upstream transport, Downstream transport, Business travel and Employee commuting
- Indirect GHG emissions from products used by organization --- Purchased goods and Waste disposal services

Date of Verification Statement: 23 July 2024

This verification statement is not valid without the full verification scope, objective, criteria and conclusion available on page 2 to 3 of this statement.

Signed by

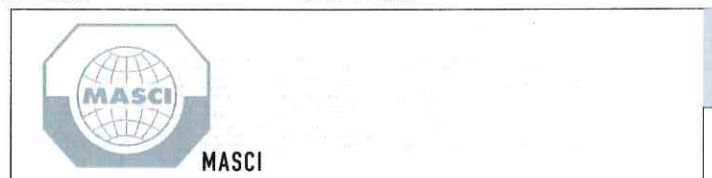
Mr. Jongrak Rojpalasatean
President of Management System
Certification Institute (Thailand)

Signed by

Mr. Teerakul Boonyong
Technical Reviewer

Signed by

Ms. Atchada Ngeimvijawat
Lead Verifier





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Greenhouse Gas (GHG)

Verification Statement related to GHG Report at organization level for Calendar Year 2023 prepared for Global Green Chemicals Public Company Limited (GGC)

Terms of Engagement

Global Green Chemicals Public Company Limited (hereafter referred to as "GGC") has commissioned to Management System Certification Institute (Thailand), Foundation for Industrial Development (hereafter referred to as "MASCI") to carry out a limited level of assurance of the GHG Report at organization level for the calendar year 2023 (hereafter referred to as "GHG Report").

Management Responsibility

GGC is responsible for the preparation and fair presentation of the GHG Report in accordance with ISO 14064-1:2018.

This responsibility includes designing, implementing and maintaining a data and information management system relevant to the preparation and fair presentation of the GHG Report that is free from material misstatement.

MASCI's responsibility is to express a third party opinion on the GHG Report based on our verification. We conduct our verification in accordance with the ISO 14064-3:2019. This International Standard requires that we comply with ethical requirements and plan and perform the verification to obtain a limited level of assurance in accordance with our contract with GGC. Ultimately, the GHG Report has been approved by, and remained the responsibility of GGC.

Verification Objective

The purpose of the verification is to provide interested parties with professional and independent judgment, which is a third party opinion regarding the data and information contained in the GHG Report.

Verification Scope

- Type of GHG included - CO₂, CH₄, N₂O, SF₆, PFCs, HFCs and NF₃ including HCFC-22
- The organizational boundaries were established by using operational control approach.
- The facilities are consist of
 - Head office: 555/1 Energy Complex, Building A, 4th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900 Thailand
 - Rayong office: 888 GC Estate Building, 3rd Floor, Map Chalut – Laem Chabang Road, Huai Pong, Mueang Rayong, Rayong 21150 Thailand
 - Rayong Plant: 8, 10 Soi G12, Pakomsongkhrohat Road, Map Ta Phut, Mueang Rayong, Rayong 21150 Thailand
 - Chonburi Plant: 199/1 Moo 2, Khao Sok, Nong Yai, Chon Buri 20190 Thailand
- The GHG emissions, removals and storage in GHG Report for the period 1 January 2023 to 31 December 2023, which comprise the following:
 - Direct GHG emissions and removals --- Stationary combustion (LPG, Diesel, Fuel oil), Mobile combustion (Diesel, Gasoline) and Fugitive emissions (CH₄, CO₂, HFC-227ea, R-134A, R-32, R-404A, R-407C and R-410A) including HCFC-22
 - Indirect GHG emissions from imported energy --- Electricity and Steam
 - Indirect GHG emissions from transportation--- Upstream transport, Downstream transport, Business travel and Employee commuting
 - Indirect GHG emissions from products used by organization --- Purchased goods and Waste disposal services
- Data and information related to GHG emission reduction and removal enhancement initiatives, projects and targets has not been included.

Verification Criteria

- 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
- ISO 14064-3:2019 Greenhouse gases — Part 3: Specification with guidance for the verification and validation of greenhouse gas statements
- IPCC Fifth Assessment Report (AR5), Global warming potential (GWP) values are applied in this GHG Report
- R-801 MASCI's regulation for GHG validation and verification services

Level of Assurance & Materiality

The conclusion expressed in this verification statement has been formed on the basis of a limited level of assurance and at a materiality threshold of 5%.

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MASCI's Approach

Our verification has been conducted in accordance with ISO 14064-3:2019, Specification with guidance for the verification and validation of greenhouse gas statements, to provide a limited level of assurance for the disclosure of data and information in the GHG Report have been prepared in accordance with ISO 14064-1:2018, Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.

Focusing on the basic principles of ISO 14064-3:2019, Impartiality, Evidence based approach, Fair presentation, Documentation, Conservativeness, and focusing on the basic principles of 14064-1:2018, Relevance, Completeness, Consistency, Accuracy, Transparency

Verification team performed verification activity as per procedure and criteria, including audit trail and source of evidence in line with strategic review and risk assessment, sampling plan, justification for quantifying and selecting the data sets.

Evidence-gathering procedures included but were not limited to:

- 1) Review of historical data in 2022, which has been set as the base year, data and information between 1 January 2023 to 31 December 2023, data and information management procedure, calculation and analyze the amount of greenhouse gas emissions and reduction including relevant data and information,
- 2) Assessment and cross check the activity data and emission factor values i.e. sampling of fuel and energy records to confirm accuracy of source data into calculations, and recalculation of emissions
- 3) Verification of operational activities of facilities [Rayong Plant and Chonburi Plant] to inspect the completeness of the GHG Report and re-perform access controls to onsite records
- 4) Interviews the executives, operators and responsible persons for greenhouse gas data and information to confirm operational behaviour and standard operating procedures

MASCI's Conclusion

Our verification opinion based on the process and procedures conducted and the basis of a limited level of assurance, there is no evidence that the GHG Report

- is not materially correct and is not a fair representation of GHG data and information,
- has not been prepared in accordance with ISO 14064-1:2018.

The total greenhouse gas emission in the period 1 January 2023 to 31 December 2023 as following

Category 1: Direct GHG emissions and removals	28,450	tCO ₂ e
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This verification statement is subject to the provisions of this legal section:

- Management System Certification Institute (Thailand) and their respective officers assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the data and information or advice in this document or howsoever provided, unless that person has signed a contract for the provision of this data and information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.
- This verification statement is only valid when published with the report to which it refers. It may only be reproduced in its entirety.
- In the case of any conflict between the English and Thai language versions of this legal section, the Thai version shall prevail.
- Due to inherent limitations in any internal control, it is possible that fraud, error, or non-compliance with laws and regulations may occur and not be detected. Further, the verification was not designed to detect all weakness or errors in internal controls so far as they relate to the requirements set out above as the verification has not been performed continuously throughout the period and the verification carried out on the relevant internal controls were on a test basis. Any projection of the evaluation of control to future periods is subject to the risk that the processes may become inadequate because of changes in conditions, or that the degree of compliance with them may deteriorate.