



LRQA Independent Assurance Statement

Relating to PTT Global Chemical Public Company Limited in the calendar year 2022.

Terms of Engagement

This Assurance Statement has been prepared for *PTT Global Chemical Public Company Limited*

LRQA was commissioned by *PTT Global Chemical Public Company Limited (GC) (555/1 Energy Complex, Building A, 14th-18th Floor, Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900, Thailand)* to assure its *GHG Report for the calendar year 2022* (hereafter referred to as “the Report”).

The Report relates to direct GHG emissions and *indirect GHG emissions*.

GC’s geographical boundary includes its HO operations located at Bangkok and other sites located at Rayong, Thailand. The main activities of the organization include Petrochemical processing & logistics and the GHG emissions have been consolidated using ‘Operational’ control approach. The operations and the facilities located outside Thailand and where GC has no operational control were excluded from the Report.

Management Responsibility

GC’s management was responsible for preparing the Report and for maintaining effective internal controls over the data and information disclosed. LRQA’s responsibility was to carry out an assurance engagement on the Report in accordance with our contract with GC.

Ultimately, the Report has been approved by, and remains the responsibility of GC.

LRQA’s Approach

Our verification has been conducted in accordance with ISO 14064–3:2019, ‘*Specification with guidance for verification and validation of greenhouse gas statements*’ to provide limited assurance that GHG data as presented in the Report have been prepared in conformance with ISO 14064–1:2018, ‘*Specification with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals*’.

To form our conclusions the assurance engagement was undertaken as a sampling exercise and covered the following activities:

- interviewed relevant staff of the organization responsible for managing GHG emissions data and records at the corporate office at Rayong and its operations at GC’s Branch 2 (Olefins 4 Plant and Utilities plant), Branch 4 (Aromatics 1 plant), Branch 6 (Refinery plant), Branch 11 (Olefins3 plant, LDPE plant, and LLDPE plant), Branch 18 (Phenol plant), Branch 19 (GCO plant), GC Estate, GC-M PTA, Envicco, PTT Asahi, GGC (Rayong), and GCP;
- reviewed processes related to control of GHG emissions at summarised source data; and
- verified historical GHG emissions data and records at an aggregated level for the *calendar year 2022*.

Level of Assurance & Materiality

In accordance with our contract agreement, the assurance was conducted at a limited level of assurance at a materiality of 5% at aggregations level. The opinion expressed in this Assurance Statement has been accordingly formed.



LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that the direct and indirect GHG emissions disclosed in the Report *as summarized in Table 1 below* are not materially correct

and that the Report has not been prepared in conformance with ISO 14064-1:2018.

LRQA's Recommendations

GC should further:

- Improve coverage of the significant indirect GHG emissions and its uncertainty; and
- Periodically validate the GHG reduction plan and made change as appropriate.

Dated: 31 May 2023

A handwritten signature in black ink, appearing to read 'Opart Charuratana'.

Opart Charuratana
LRQA Lead Verifier

On behalf of LRQA (Thailand) Limited
No. 9, G Tower Grand Rama 9, FL. 30, Room H14,
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LRQA Reference: BGK00000950



Table 1. Summary of GC, GHG Emissions Report 2020 and 2022

Scope of GHG emissions	2020 Tonnes CO₂e	2022 Tonnes CO₂e
Direct GHG emissions (Category 1)	5,787,067	6,148,622
Indirect GHG emissions from imported energy (Category 2, Location-based)	17,487	16,783
Indirect GHG emissions from imported energy (Category 2, Market-based without attribute bundle)	1,961,434	2,112,327
<i>Indirect GHG emissions from transportation</i>		
+ <i>Upstream</i>	588,896	540,983
+ <i>Downstream</i>	31,904	22,314
<i>Indirect GHG emissions from products used by the organization</i>		
+ <i>Purchased goods and services</i>	5,707,398	5,642,268
+ <i>Capital goods</i>	Not available	46,032
+ <i>Fuel-and energy- related activities</i>	1,148,852	978,957
<i>Indirect GHG emissions associated with the use of products from the organization</i>		
+ <i>Processing of sold products</i>	2,404,437	2,475,156
+ <i>Use of sold products</i>	25,069,677	22,798,563
+ <i>End-of-life treatment of sold products</i>	589,289	990,880
+ <i>Investment</i>	2,905,669	1,808,187
GC chosed the year 2020 as new based year Location based and Market based are terminologies from Annex E of ISO 14064-1:2018.		

This Assurance Statement is subject to the provisions of this legal section:

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