LRQA Group Independent Assurance Statement

Relating to Petroliam Nasional Berhad (PETRONAS) Greenhouse Gas (GHG) emissions (Scope 1 and Scope 2) – Limited Level of Assurance using an operational control approach for year 2023

This Assurance Statement has been prepared for Petroliam Nasional Berhad (PETRONAS) in accordance with our contract.

Terms of Engagement

LRQA INSPECTION MALAYSIA SDN. BHD. (LRQA) was commissioned by PETRONAS to provide independent assurance of its greenhouse gas (GHG) emissions inventory in the PETRONAS Integrated Report 2024 ("the Report") for the year 2023 against the assurance criteria below to a limited level of assurance and materiality of the professional judgement of the verifier using LRQA's verification procedure that is in accordance with ISO 14064 - Part 3: Specification with guidance for the verification and validation of for greenhouse gas statements.

Our assurance engagement covered PETRONAS' entities related to its Upstream[1], Gas, Downstream businesses and covered all operations globally that are under PETRONAS' operational control (refer Annex A). Our assurance engagement excludes PETRONAS' KLCC (Property) and MISC Group (Shipping) businesses. Our engagement specifically covered the following:

- Verifying conformance of the selected datasets with:
  - PETRONAS Technical Standard (PTS) 18.72.05 Greenhouse Gas Emissions Management, March 2023.
  - Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) for the GHG emissions data[2].
- Reviewing whether the Report has taken account of:
  - The Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Gas Industry issued by American Petroleum Institute (API), 2021[3].
  - The Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions, 2nd Edition, 2011 issued by IPIECA[4], API and the IOGP[5].
- Evaluating the accuracy and reliability of data and information for only the selected emission scopes listed below:
  - Direct (Scope 1) and Electricity Indirect (Scope 2) expressed in tonnes CO_2e.

Our assurance engagement excluded the data and information of PETRONAS' suppliers, contractors and any third-parties mentioned in the Report.

LRQA's responsibility is only to PETRONAS. LRQA disclaims any liability or responsibility to others as explained in the end footnote. PETRONAS' responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Report and for maintaining effective internal controls over the systems from which the Report is derived. Ultimately, the Report has been approved by, and remains the responsibility of PETRONAS.

[1] excludes exploration and decommissioning activities

[2] https://www.ghgprotocol.org/corporate-standard

[3] https://www.api.org/

[4] https://www.ipieca.org/resources/sustainability-reporting-guidance - Petroleum industry guidelines for reporting greenhouse gas emissions - 2nd edition issued by the International Petroleum Industry Environmental Conservation Association (IPIECA)

[5] International Association of Oil & Gas Producers

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that PETRONAS has not, in all material respects:

- met the requirements of the criteria listed above; and
- disclosed accurate and reliable performance data and information as summarized in Table 1.

The opinion expressed is formed on the basis of a limited level of assurance[6] and at the materiality of the professional judgement of the verifier.

Table 1. Summary of PETRONAS GHG emissions for Scope 1 and Scope 2 emissions for year 2023:

Scope	2023 (tCO_2e)
Scope 1 emissions	49,089,940
Scope 2 emissions (Location-based)	694,683

LRQA's Approach

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- conducting GHG data verification through interaction with key personnel from sampled operating units from businesses as under:
    - Upstream – Remote audits at Turkmenistan and Iraq; and onsite audit at SBA
    - Gas -Onsite Remote audits at PFLNG1, PFLNG2 and RGTSU and onsite audit at GPK
    - Downstream – Remote audits at PDB (PNGV), PCOGD, PCMTBE, PCFKSB and onsite audit at MRCSB
- reviewing processes related to the control of GHG emissions data and records;
- interviewing relevant employees of the organization responsible for managing GHG emissions data and records at the operating unit level and corporate level; and
- assessing PETRONAS data management systems and tools (SANGEA and GCON) to confirm they are designed to prevent significant errors, omissions or mis-statements in the Report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal quality control;
- verifying GWPs[7] aligned with IPCC AR4[8] and Imported grid electricity based on emission factors specified in PTS;
- verifying historical GHG emissions data and records at an aggregated level for the year 2023.

Observations and recommendations were provided to PETRONAS management, intended for internal use only. These do not affect our opinion.

LRQA's Standards, Competence and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition and ISO/IEC 17021 Conformity audit – Requirements for bodies providing audit and certification of management systems that are at least as demanding as the requirements of the

6. The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

7 Global Warming Potentials

8 Intergovernmental Panel on Climate Change Fourth Assessment Report

International Standard on Quality Control and comply with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification audits is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

We conducted gap analyses in previous years for PETRONAS on their methodology of reporting Scope 1 and Scope 2 GHG emissions under equity share and Scope 3 Category 11 (GHG emissions from sold products) for 2019-2022. The verification audits are the only work undertaken by LRQA for PETRONAS and as such does not compromise our independence or impartiality.

Signed Dated: 25 March 2025

Ketan Deshmukh
LRQA GROUP LIMITED Lead Verifier
On behalf of LRQA INSPECTION MALAYSIA SDN. BHD., Level 25, Naza Tower, Platinum Park, No.10, Persiaran KLCC, 50088 Kuala Lumpur

LRQA GROUP LIMITED reference: KLR00000809

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Annex A
List of Operating Units

Business Unit	Abbreviation	Asset Entity	Remarks
UPSTREAM	SKA	SARAWAK ASSET	These assets are part of PETRONAS Carigali Sdn Bhd
	PMA	PENINSULAR MALAYSIA ASSET	
	SBA	SABAH ASSET	
	IO	PETRONAS CARIGALI IRAQ HOLDING B.V.	Iraq-Garaaf operated under the development and production service contract
	TO	PETRONAS CARIGALI (TURKMENISTAN) SDN. BHD.	
	CAN	PETRONAS ENERGY CANADA LTD	
	VOB	VESTIGO PETROLEUM SDN BHD	
	INO	PETRONAS CARIGALI (KETAPANG) LTD	
	VO	PETRONAS CARIGALI VIETNAM LIMITED	
GAS	PGB	GAS PROCESSING KERTEH/ GPK	
		GAS PROCESSING SANTONG/ GPS	
		GAS TRANSMISSION/ GT	
		UTILITIES GEBENG/ UG	
		UTILITIES KERTEH/ UK	
	PFLNG1	PETRONAS FLOATING LNG 1 (L) LTD	
	PFLNG2	PETRONAS FLOATING LNG 2 (L) LTD	
	PLC	MALAYSIA LNG SDN. BHD.	
		MALAYSIA LNG DUA SDN. BHD.	
		MALAYSIA LNG TIGA SDN. BHD.	
		PETRONAS LNG 9 SDN. BHD.	
	RGTP	REGASIFICATION TERMINAL PENGERANG	
	RGTSU	REGAS TERMINAL (SG. UDANG) SDN. BHD.	
	TSET	TANJUNG SULONG EXPORT TERMINAL	

DOWNSTREAM	ABFSB	ASEAN BINTULU FERTILIZER SDN BHD	
	PCARO	PETRONAS CHEMICAL AROMATICS SDN BHD	
	PDB (PNGV)	PETRONAS DAGANGAN BERHAD PETRONAS NATURAL GAS VEHICLE	Includes PNGV
	PCASB	PETRONAS CHEMICAL AMMONIA SDN BHD	PCASB and PCLDPE have merged to PCLA in 2022
	PCLDPE	PETRONAS CHEMICAL LDPE SDN BHD	
	PCLA	PETRONAS CHEMICAL LDPE AND AMMONIA	
	PCESB	PETRONAS CHEMICAL ETHYLENE SDN BHD	
	PCFKSB	PETRONAS CHEMICAL FERTILIZER KEDAH SDN BHD	
	PCFSSB	PETRONAS CHEMICAL FERTILIZER SABAH SDN BHD	
	PCMSB	PETRONAS CHEMICAL METHANOL SDN BHD	
	PCMTBE	PETRONAS CHEMICAL MTBE SDN BHD	
	PCOGD	PETRONAS CHEMICALS OLEFINS SDN. BHD.	
		PETRONAS CHEMICALS GLYCOLS SDN. BHD.	
		PETRONAS CHEMICALS DERIVATIVES SDN. BHD.	
	PCPSB	PETRONAS CHEMICAL POLYETHYLENE SDN BHD	
	ENGEN	ENGEN LIMITED	
	MRCSB	MALAYSIA REFINERY COMPANY SDN BHD	
	PLISB	PETRONAS LUBRICANTS INTERNATIONAL SDN BHD	
	PPTSB	PETRONAS PENAPISAN TERENGGANU SDN BHD	
	PETCO	PETRONAS TRADING CORPORATION SDN BHD	
	PRPC	PETRONAS REFINERY AND PETROCHEMICAL CORPORATION SDN. BHD.	Includes PRPC UF (PRPC UTILITIES AND FACILITIES SDN BHD) and PAMER (PROJEK AIR MENTAH RAPID)