

# 2023

Integrated  
Report



50  
YEARS

A large circular collage is the central focus. It features a diverse group of children's faces around the perimeter. The center of the collage depicts a sustainable energy landscape with solar panels, a blue truck, a modern building, and an offshore oil rig. The background of the collage consists of a pattern of green and blue dots.

**Together  
For Our Future**

Passionate about Progress



# PETRONAS Cultural Beliefs



## **Customer Focused**

I deliver solutions from the customer lens



## **Innovate Now**

I challenge norms and push boundaries



## **Be Enterprising**

I seek opportunities and make them happen



## **Speak Up**

I express my views openly



## **Courage to Act**

I take action to progress with pace





Statement of Purpose:

# A Progressive Energy and Solutions Partner Enriching Lives for a Sustainable Future

Welcome to  
the **PETRONAS**  
**Integrated Report 2023**

## Shared Values



### **Loyalty**

Loyal to  
corporation



### **Professionalism**

Strive for  
excellence



### **Integrity**

Honest and  
upright



### **Cohesiveness**

United, trust and respect  
for each other



A large blue and white support vessel is positioned next to a yellow offshore oil rig in the middle of the ocean. The rig has a tall derrick and various platforms. The sky is blue with scattered white clouds.

Delivering Our Role in the

# Energy Transition

At PETRONAS we stand resolute in executing our role in the energy transition. We support energy security, capture new growth opportunities and manage our greenhouse gas emissions. We strike a balance between investments in Core Business, New Business and decarbonisation efforts towards achieving our net zero carbon emissions aspiration.

We strive to have a superior-performing, high-value portfolio that is robust and sustainable in the long run while positively contributing to society.



# Sustainability is Embedded Across Our Business

## Material Topics

### Safeguard the Environment

- Climate Change Risks
- Environmental Management
- GHG Emissions
- Nature and Biodiversity

### Continued Value Creation

- Circular Economy
- Economic Contribution
- Innovation and Technology
- Lower Carbon and Energy Transition Business
- Sustainable Supply Chain

### Positive Social Impact

- Employee Attraction, Retention and Development
- Health and Well-being
- Human Rights
- Safety Management

### Responsible Governance

- Corporate Governance
- Cyber Security and Data Protection
- Ethics and Integrity



### Core Business

*More Energy, Less Emissions*



### New Business

*Capturing New Growth Opportunities*



### Net Zero Carbon Emissions

*Pathway to Net Zero*

 For more information about the PETRONAS Energy Transition Strategy, please refer to page 34.



 For more information about the Material Topics, please refer to page 53.



# Inside This Report

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## Navigation Icons

### PETRONAS Energy Transition Strategy



Core Business



New Business



Net Zero Carbon Emissions

### Key Stakeholders

- |                              |   |  |
|------------------------------|---|--|
| <b>FG</b> Federal Government | <b>E</b> Employees  | <b>CN</b> Communities and Non-Governmental Organisations |
| <b>SG</b> State Governments  | <b>SIC</b> Shareholders, Investors and Credit Rating Agencies | <b>IO</b> International Organisations                    |
| <b>HG</b> Host Governments   | <b>M</b> Media  |  |
| <b>C</b> Customers           | <b>GIP</b> Government-Linked Companies and Industry Partners  |  |

### Six Capitals

- |                             |  |                                |
|-----------------------------|--|--------------------------------|
| <b>FC</b> Financial Capital | <b>MC</b> Manufactured Capital             | <b>IC</b> Intellectual Capital |
| <b>HC</b> Human Capital     | <b>SRC</b> Social and Relationship Capital | <b>NC</b> Natural Capital      |

### Key Risks

- |   |   |
|---|---|
| <b>MR</b> Market Risk                             | <b>TR</b> Technology Risk   |
| <b>GR</b> Geopolitical Risk                       | <b>SR</b> Sustainability Risk                                     |
| <b>FLR</b> Financial Liquidity Risk               | <b>ER</b> Execution Risk  |
| <b>HR</b> Hydrocarbon Reserves and Resources Risk | <b>HSR</b> Health, Safety, Security and Environmental (HSSE) Risk |
| <b>LR</b> Legal and Regulatory Risk               | <b>HCRR</b> Human Capital Risk                                    |





## Theme and Cover Rationale

This year's theme and cover design showcases both our core oil and gas operations alongside cleaner energy solutions to realise the PETRONAS Energy Transition Strategy. This represents how we are bridging the gap between oil and gas and renewable sources to create a balanced energy mix. A collective effort is imperative to rally stakeholders across the value chain to accelerate technological advancements, drive innovation and propel the global energy sector towards a lower carbon future.

We reaffirm our role as a catalyst for positive change. We are fostering collaboration and driving innovation to meet our customers' energy needs and, in doing so, reducing emissions and developing cleaner energy solutions that support social progress and sustainable economic growth.

## Seven Prioritised Areas under United Nations' Sustainable Development Goals



## Cross References



To find more information in the report.



To access more information online on our corporate website:

[www.petronas.com](http://www.petronas.com)



Scan here to access our website.

## Material Topics



Circular Economy



Economic Contribution



GHG Emissions



Lower Carbon and Energy Transition Business



Climate Change Risks



Employee Attraction, Retention and Development



Health and Well-being



Nature and Biodiversity



Corporate Governance



Environmental Management



Human Rights



Safety Management



Cyber Security and Data Protection



Ethics and Integrity



Innovation and Technology



Sustainable Supply Chain



# About This Report

## Dear Stakeholder,

Welcome to the PETRONAS Integrated Report 2023. This report covers our strategy, market conditions and operating environment, financial and operational performance and our future direction. Our aim is to provide a comprehensive and balanced perspective on our value creation journey, demonstrating our commitment as a progressive energy and solutions partner.

## Scope and Boundaries

The PETRONAS Integrated Report encompasses the entire calendar year from 1 January to 31 December 2023, unless specified otherwise. It incorporates all operations and activities within PETRONAS and its subsidiaries (PETRONAS Group), joint operations and associates. The report was published in May 2024.

## Materiality Considerations

The information contained in this report is based on the most significant material issues for our stakeholders and business. We considered various risks, the interests of our key stakeholders and concerns that affect our ability to implement the Group's strategy, create value and achieve financial and non-financial performance to determine our material topics.

## Reporting Frameworks

We are guided by the following national and international guidance, frameworks and standards to help ensure our report is accurate, reliable and comprehensive:

- The International Integrated Reporting Council <IR> Framework
- International Financial Reporting Standards
- Malaysian Financial Reporting Standards
- Sustainability Reporting Guidance for the Oil and Gas Industry by Ipieca, American Petroleum Institute, International Association of Oil and Gas Producers
- Global Reporting Initiative Standards
- World Economic Forum's Stakeholder Capitalism Metrics
- Task Force on Climate-related Financial Disclosures

## Sustainability Reporting

We strive to incorporate Environmental, Social and Governance principles into our business strategies and decisions, considering them essential to deliver long-term stakeholder value. This reflects our commitment to sustainability.

## Connectivity of Information

We revalidated our high-level capitals assessment to determine the linkages, impact and synergies between our financial and non-financial capitals, material topics, stakeholder expectations, strategic objectives, risks and opportunities, providing insights to how we generate value for long-term sustainability.

## Forward-Looking Statements


This report contains forward-looking statements, with words such as "believe", "anticipate", "intend", "seek", "will", "plan", "could", "may", "endeavour" and similar expressions used to represent our judgements and future expectations. These statements involve risk and uncertainty because they relate to future events and circumstances and should be considered in light of various important factors.

Factors that could significantly deviate our actual performance from the forward-looking statements include:

- Alterations to International Financial Reporting Standards and related interpretations, applications and practices affecting past, present and future periods;
- Ongoing and future acquisitions;
- Shifts in domestic and international businesses and market conditions, such as currency and interest rate fluctuations;
- Changes in domestic and international regulatory and legislative environments;
- Shifts in domestic and international operational, social, economic and political conditions;
- Potential labour disruptions and industrial actions; and
- Repercussions of any material litigations.



## Assurance


The financial information contained in this report has been extracted from the consolidated Audited Financial Statements for the financial year ended 31 December 2023 and was audited by KPMG PLT. KPMG PLT has reviewed this report and did not note any material inconsistencies with the said financial statements. 



 Scan the QR to access our  
**Audited Financial Statements 2023**

The Group's greenhouse gas (GHG) emissions encompassing Malaysia and global operations of Upstream, Gas and Downstream businesses, covering the years of 2019 to 2022, have been externally verified, to a limited level of assurance, by LRQA Inspection Malaysia Sdn Bhd, an independent and accredited third-party assurance provider. The verification was performed in adherence with ISO 14064-3. 



 Scan the QR to access our  
**Limited Level GHG Assurance Statement**

## Approval by the Board

The PETRONAS Board of Directors recognises its duty to uphold the integrity of this Integrated Report. In the Board's view, the report reflects the Group's capacity to create value and fairly represents its integrated performance.

To the best of our knowledge, this report has been prepared in accordance with the International Integrated Reporting <IR> Framework.

Approved by the Board of Directors and signed on behalf of the Board.

**Tan Sri Dato' Seri Mohd Bakke Salleh**  
Chairman

**Tan Sri Tengku Muhammad Taufik**  
President and Group Chief Executive Officer

## Point of Contact

We welcome all suggestions and inquiries from our stakeholders and readers to help improve our reports. Please send your feedback to:

**Group Strategic Relations and Communications**  
Level 72, Tower 1, PETRONAS Twin Towers  
Kuala Lumpur City Centre  
50088 Kuala Lumpur Malaysia



[digital.comm@petronas.com](mailto:digital.comm@petronas.com)



# PETRONAS An Overview

Petroleum Nasional Berhad (PETRONAS) is a global energy company committed to producing and delivering energy and solutions needed to advance society responsibly and sustainably.

As Malaysia's national oil and gas company, we safeguard and manage the nation's hydrocarbon resources. Our aim is to maximise value through our integrated business model to meet the energy needs of the nation and our customers across the globe. Our portfolio includes oil and gas, petrochemicals, petroleum products, as well as a range of cleaner energy solutions.

Ensuring sustainable practices across our operations is important to how we conduct our business. Our goal is to achieve net zero carbon emissions by 2050, and we strive to be a valuable partner to our stakeholders in transitioning to a lower carbon energy future in a just and responsible manner.

## Growing Value with Our Integrated Business Portfolio



Presence in  
over **100**  
countries



**Ranked 1<sup>st</sup>**  
Most Valuable  
ASEAN Brand\*



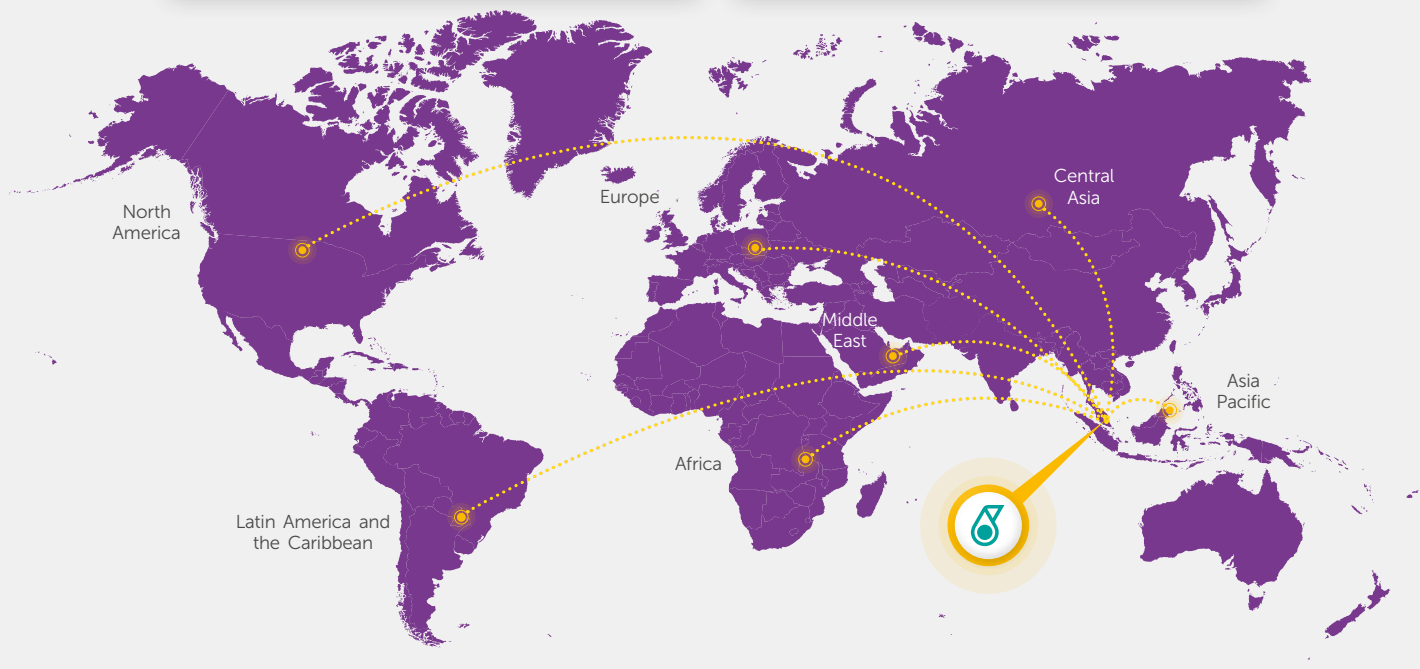
Over **50,000**  
**employees**  
globally



**Top 10**  
Most Valuable Oil  
and Gas Brand\*



**Ranked 139<sup>th</sup>**  
on Fortune Global 500



**Note:** \*Brand Finance annual ranking.



## Upstream

Upstream business explores and develops hydrocarbon resources and operates oil and gas production assets in Malaysia and in over 20 countries. Through Malaysia Petroleum Management (MPM), the country's oil and gas industry shaper and investment enabler, we steer the development of petroleum resources.

We are committed to achieving our Net Zero Carbon Emissions by 2050 Pathway through opportunities presented by the energy transition, particularly in developing carbon capture and storage (CCS) to decarbonise our portfolio and position Malaysia as a leading CCS hub in the region. We are also intensifying our efforts to reduce emissions from all our assets, through zero flaring and venting reduction projects.

- We are establishing **three definitive CCS hubs to position Malaysia as a regional CCS solutions player.**



## Gas

Gas business stands as a one-stop centre for lower carbon energy, offering a comprehensive range of natural gas solutions both in Malaysia and abroad. Our competitive edge is our reliability to meet our customers' needs, distinguishing us as a leader in the industry.

We prioritise operational excellence to ensure the safe and reliable delivery of natural gas and LNG to our customers. We tailor solutions to meet their unique needs and are agile in responding to market dynamics, maximising value throughout our integrated value chain.

As part of our corporate responsibility, we actively pursue initiatives to reduce our carbon footprint while delivering innovative solutions for our customers, solidifying our standing as the preferred partner for lower carbon energy solutions.

- Operate one of the **largest LNG production complexes in the world** and **two floating LNG facilities**, which are the cornerstones of our supply reliability.
- Operate **two LNG regasification terminals in Malaysia** to strengthen the nation's energy security.



## Downstream

Downstream business maximises and transforms our resources into high-quality, value-added products, catering to over 100 markets globally. Our diverse operations span refining, marketing and trading of crude oil and petroleum products, alongside manufacturing and marketing a range of petrochemicals, derivatives and specialty chemicals.

Our extensive retail network offers top-tier fluids, lubricants and innovative convenience business like Setel and Kedai Mesra. Beyond fuel, we provide premium offerings, including handcrafted coffee and a selection of freshly baked pastries for customers at our Café Mesra outlets.

We continue to expand into cleaner energy solutions such as biofuels, circular economy, LNG bunkering, advanced fluids such as the PETRONAS Iona range and electric vehicle (EV) charging facilities to cater to the increasing demand for lower carbon energy solutions, aligned with our Net Zero Carbon Emissions by 2050 Pathway.

- **Largest fuel retail network in Malaysia** with **over 1,000** PETRONAS stations and **97** Café Mesra outlets.
- Malaysia's leading **integrated chemicals producer** and **one of the largest** in Southeast Asia.
- **One of the top global lubricant players** with products available in **over 100 countries**.



## Gentari

Gentari Sdn Bhd (Gentari) is PETRONAS' subsidiary that aims to accelerate the adoption and commercialisation of clean energy and seize opportunities in the evolving energy landscape.

Our long-term vision is to position Gentari as the most valued partner in clean energy solutions, creating significant impact and simplifying the path to net zero for businesses. We are committed to driving tangible change in the energy transition, focusing on solutions that will enable a secure, clean energy-powered future.

- Gentari's approach to clean energy solutions is structured around three core pillars – **renewable energy, hydrogen and green mobility**, offering solutions to assist customers in their decarbonisation efforts.



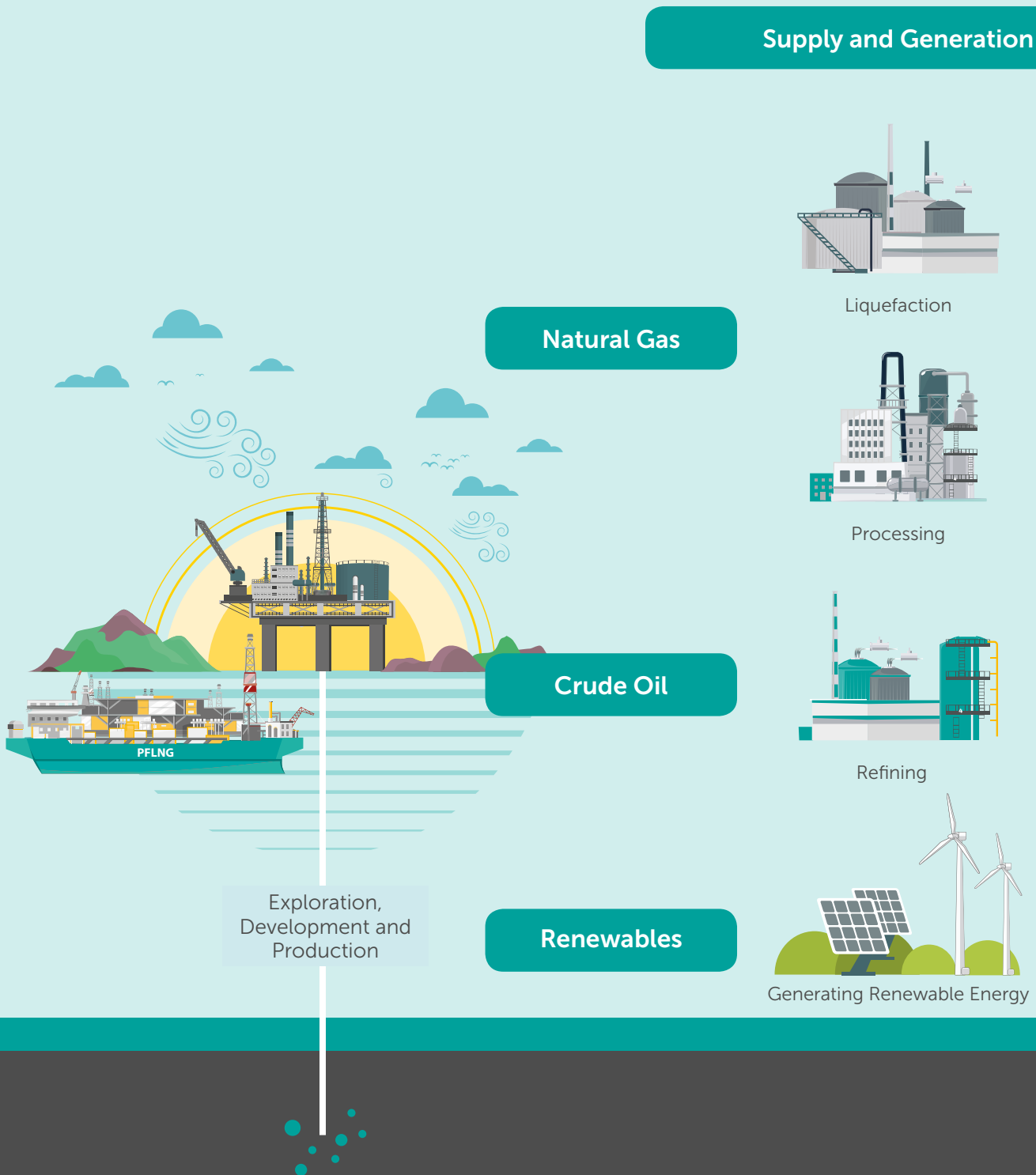
## Other Businesses

Other businesses that complement our core activities include the maritime and logistics subsidiary, MISC Berhad, and property subsidiary, KLCCP Stapled Group, which comprises KLCC Property Holdings Berhad and KLCC REIT.

- MISC Berhad is a global leader in **providing energy-related maritime solutions** with **over 100 owned** and chartered vessels.
- KLCCP Stapled Group is **Malaysia's largest** Real Estate Investment Trust (REIT) and the **only stapled security** in the country, with a portfolio of **iconic, prime assets**, including the **PETRONAS Twin Towers**.



# PETRONAS Energy Solutions



## Products and Solutions



Liquefied Natural Gas



Processed Gas



Liquefied Petroleum Gas



Commodity Chemicals



Specialty Chemicals



Petroleum Products, including Bio-based



Convenience Business



Electricity



Hydrogen



Green Mobility



## Maritime and Logistics



## Carbon Capture and Storage\*



## Properties

\*In development.

## Customers and Users



Power



Industrial



Commercial



Residential



Agriculture



Transportation



Aviation



# The World in 2023

Against the backdrop of the ongoing conflict in Europe, more geopolitical risks emerged as significant new events unfolded. The year began with a China-brokered truce between Saudi Arabia and Iran in March, offering a glimmer of progress in the Middle East despite lingering tensions. However this period of relative geopolitical stability was short-lived. In October, the conflict in the Middle East heightened regional instability, risking a widening conflict, particularly at a time when the global economic recovery remained fragile.

The global economy faced persistent challenges, marked by high interest rates and elevated inflation, impacting the cost of capital. The collapse of several financial institutions in the United States revealed vulnerabilities in the financial system and eroded investor confidence.

Despite conflicts, the upstream sector swiftly adapted to ensure energy security and drove the global shift to net zero carbon emissions. Companies monetised resources quickly, capturing demand as nations sought security of supply. The global liquefied natural gas (LNG) sector saw significant growth in new capacity, with developers making the decision in 2023 to proceed with development of the largest volume since 2019. The United States became the world's largest LNG exporter, surpassing Qatar and Australia, benefitting from Europe's rising demand for imported LNG.

In the oil market, prices dropped below USD80 per barrel in the first half due to recession fears, tight monetary policies, and a slow economic recovery in China. OPEC+ responded with proactive cuts in the second half, lifting prices by about 30 per cent from June to September. Despite fears of a wider conflict in the Middle East, oil supply remained stable.

Oil refining margins faced a downturn from the previous year's robust performance due to higher operating rates and the addition of refining capacity, led by Asia and the Middle East. Concurrently, the chemicals market faced challenges as growing global capacity collided with weakening demand, causing substantial margin compressions.

## 2023 Key Highlights

Companies **monetising oil and gas resources quickly** to capture demand as energy security becomes a priority.

The global liquefied natural gas (LNG) sector saw **significant growth in new capacity**, with developers making the decision in 2023 to proceed with development of the largest volume since 2019.



Automation, artificial intelligence and new technologies helped reshape production for the creation of eco-friendly materials and to drive emissions reduction. In support of large decarbonisation efforts and clean energy solutions, global energy investments reached USD2.8 trillion, with over USD1.7 trillion directed to clean technologies, primarily in the United States, European Union and China. Before the year ended, COP 28 in Dubai saw countries commit to tripling renewable power to 11,000 gigawatt and doubling energy efficiency improvements by 2030.

Rising geopolitical risks led to higher shipping charges as vessels had to re-route amid threats on key waterways. This delayed the delivery of equipment and increased shipping costs.

On the economic front, the threat of slowing global gross domestic product growth further fuelled the cautious sentiment in commodity markets.

Given the increased uncertainty, investments could slow down in 2024 as higher costs challenge eroding margins. The industry will watch for when central banks lower interest rates, which will ease borrowing costs for consumers and businesses.

Environmental regulations are being tightened as the fight against climate change intensifies. Governments and key stakeholders including consumers demand higher standards to protect people and the environment from resource depletion while reducing waste and emissions. As regulations are tightened, opportunities emerge for innovation to improve efficiency and cut down on waste and emissions.

In the oil market, **prices dropped below USD80 per barrel** in the first half due to recession fears, tighter monetary policies and a slow recovery in China's economy.

**Compressed refining margins and chemical spreads** due to higher refining capacity additions and slower chemical demand.



# 2023 Key Highlights



## Financial Performance



### Revenue

**RM343.6** billion

2022: RM372.3 billion\*



### Cash Flows from Operations

**RM114.2** billion

2022: RM135.3 billion



### Profit After Tax

**RM80.7** billion

2022: RM101.6 billion



### Total Assets

**RM773.3** billion

2022: RM710.6 billion

\*Prior year revenue and group costs have been restated to conform with current year presentation with no impact on Profit After Tax.



## Core Business

*More Energy, Less Emissions*

### Achieved **24 oil and gas discoveries**

20 in Malaysia, the largest number of discoveries in the last 10 years, and four internationally.

Portfolio high grading of **our assets** for **lower carbon molecules** in a cost-efficient manner are key considerations, such as our agreements in Angola, Oman, Indonesia, Suriname and the United Arab Emirates.

Achieved **final investment decision** for **21** projects globally, and achieved first hydrocarbon for **28** projects (21 in Malaysia and seven internationally).

Delivered **403 LNG cargoes** from PETRONAS LNG Complex and **38 LNG cargoes** from PFLNG SATU and PFLNG DUA to meet customers' energy needs.

Achieved **record high marketing sales volume** which stood at **26.3 billion**, a **5.6%** increase from preceding year mainly driven by improved demand within the domestic retail and commercial segments.



## Sustainability

Launched **PETRONAS Human Rights Policy** (approved in 2023 and effective in implementation 1 April 2024) grounded in five key principles.



## New Business

*Capturing New Growth Opportunities*

Entered into the **Australian energy market** via acquisition of WIRSOL Energy and renamed as Gentari Solar Australia.

Entered **offshore wind energy** by acquiring the Hai Long project, poised to be one of Asia's largest offshore wind energy projects.

Established a network of close to **570 charging points** across Malaysia, India and Thailand alongside the deployment of over **2,500 electric vehicles (EVs)** through the Vehicle-as-a-Service (VaaS) offering in Malaysia, India, Thailand and Indonesia.

Progressed **hydrogen production** with PETRONAS' Proton Exchange Membrane (PEM) electrolyser for **Malaysia's first multi-fuel station** at Darul Hana, Sarawak.

Reached final investment decision to construct an **advanced chemical recycling plant** in Pengerang, Johor, converting end-of-life plastics into pyrolysis oil for the production of circular plastics. The project is expected to be operational by 2026.



## Net Zero Carbon Emissions

*Pathway to Net Zero*

Successfully reduced GHG emissions by **1.8 million tonnes CO<sub>2</sub>e per year** in 2023 through emissions reduction projects implemented across PETRONAS Malaysia operations which ensures PETRONAS is **on track** to meeting our short-term GHG emissions target.

Achieved the **Gold Standard** from the Oil and Gas Methane Partnership 2.0 for our methane pathway, signifying our efforts to strengthen methane measurements, reporting accuracy, transparency and advocacy in methane emissions reduction.

Identified **three definitive CCS hubs** as flagship projects in line with the National Energy Transition Roadmap.

Crowdsourced **1,500 innovative ideas** worldwide through the inaugural **Race2Decarbonise** hackathon, with deployment for several solutions ongoing in PETRONAS assets.

Led the Business Commission to Tackle Inequality (BCTI) Roundtable Asia in June 2023 drawing upon insights presented in the **BCTI Flagship Report** and its key contents to formulate the right action plans for Asia.

Contributed over **RM850 million** towards social impact efforts, benefitting close to **three million** people around the world.

Closed **100%** grievance cases.

Launched the **"Laying the Foundation for a Just Energy Transition"** report based on findings from a series of roundtable discussions.



## 2023 Key Highlights

# Awards and Recognitions

In 2023, PETRONAS Group received 113 awards and accolades, acknowledging our commitment to excellence across the organisation. These accomplishments covered a wide range of categories, including health, safety and environment, sustainability, governance, executive leadership and stewardship, technology and innovation, talent and capability. These awards and accolades showcase our team's exceptional performance and unwavering dedication to delivering value.

## Executive Leadership and Stewardship



### Asia Pacific Energy Capital Assembly Awards

#### Petroleum Nasional Berhad (PETRONAS)

PETRONAS President and Group CEO, Tan Sri Tengku Muhammad Taufik was named Executive of the Year by the Asia Pacific Energy Capital Assembly. The event also recognised PETRONAS as National Oil Company of the Year and Energy Transition Company of the Year, for its leadership and performance in delivering sustainable energy solutions for a lower carbon future, including achievements with the Kasawari Project and Gentari.



### 2023 PwC Building Trust Awards

#### Petroleum Nasional Berhad (PETRONAS)

PETRONAS' success at The Building Trust Awards 2023 reflects its dedication to transparency, communication and stakeholder engagement, which culminated in strong positive trust perceptions among internal and external stakeholders.

## Communications

### 2023 Golden Flag Award

- Gold Award for Corporate Internal Communication Case
- Gold Award for Best Enterprise Public Relations and Communication Case

### The 19<sup>th</sup> China Golden Awards for Excellence in Public Relations

- Gold Award for Corporate Culture and Internal Communication
- Bronze Award for Corporate Brand Communication



#### PETRONAS Beijing Representative Office

PETRONAS Beijing Representative Office received gold and bronze awards at the 2023 Golden Flag Awards and the 19<sup>th</sup> China Golden Awards for Excellence in Public Relations.

These awards underscore PETRONAS' commitment to driving action and collaboration, setting the pace for a just and responsible energy transition in Asia, that aims for a lower carbon future.

## Corporate Reporting



### Australasian Reporting Awards

#### Petroleum Nasional Berhad (PETRONAS)

- Silver Award for General Reporting
- Silver Award for Sustainability Reporting

#### PETRONAS Chemicals Group Berhad

- Gold Award for General Reporting
- Silver Award for Sustainability Reporting

#### PETRONAS Dagangan Berhad

- Gold Award for General Reporting
- Governance Reporting Award Private Sector

## National Annual Reporting Corporate Awards (NACRA)

### PETRONAS Chemicals Group Berhad

- Platinum for Best Sustainability Reporting
- Silver for Excellence Awards (Companies with more than RM10 billion market capitalisation)

### Petroleum Nasional Berhad (PETRONAS)

- Platinum for Excellence Awards Non-Listed Organisation

## Talent and Capability

### Graduates' Choice Award 2023

#### Petroleum Nasional Berhad (PETRONAS)

- Champion of Oil and Gas Sector
- Champion of Engineering Sector
- Champion of Chemical Sector
- Top 3 of the Overall Category
- Champion for five Consecutive Years in Oil and Gas Category



### People Development Partner Status by the Chartered Institute of Personnel and Development

PETRONAS is the first in Asia to be officially awarded the status by the Chartered Institute of Personnel and Development.



## Technology and Innovation

### SAG Award (Special Achievement in GIS Award) 2023

#### PETRONAS Carigali Sdn Bhd

Winner of the Special Achievement in GIS Award (SAG) under the Technology and Innovation category for exceptional prowess in Geographic Information System (GIS) technology, exemplifying commitment to innovation and excellence at a global scale.

## ADIPEC 2023

### Project Delivery and Technology

- Cryomin and Precipitated Calcium Carbonate, developed by PETRONAS Research Sdn Bhd (PRSB) clinched the Developing Economies Energy Company of the Year award. This recognition is a testament to PETRONAS' commitment in driving transformative change towards achieving its net zero carbon emissions by 2050 aspiration.



### IASA Malaysia Business Technology Architecture Awards

#### Upstream

Won this prestigious award for outstanding efforts in establishing and adopting Enterprise Architecture (EA).

### International Critical Connect World (ICCW)

#### Upstream

Received a commendation from ICCW for being the first in Asia to implement interoperable critical communications solutions in its offshore operations.

### ICChemE Global Awards 2023

#### Winner

- Industry Project Award by PETRONAS Research Sdn Bhd (PRSB) for PETRONAS PEM Electrolyser – the Hydrogen Game Changer
- Research Project Award by Universiti Teknologi PETRONAS (UTP) for Solar Integrated Anaerobic Digester and Aerobic Composter (SIDAC)

### Asian Experience Awards 2023

#### Petroleum Nasional Berhad (PETRONAS)

PETRONAS secured four prestigious awards at the Asian Experience Awards 2023 for its commitment to excellence in innovation and delivering inventive, customer-focused solutions.

- Malaysia Product, Customer, and Digital Experience of the Year award in the Oil and Gas category
- Malaysia Product Experience of the Year award in the Oil and Gas category for ProAssure™ product
- Malaysia Digital Experience of the Year for PETRONAS' innovative high-performance computing
- Malaysia Customer Experience of the Year in the Oil and Gas category for Meeting Experience System



## 2023 Key Highlights

# Events and Conferences

### ▶ January



**World Economic Forum**  
16 – 20 January 2023

PETRONAS participated in the dialogues and networking engagements at the World Economic Forum in Davos to garner support and influence WEF's initiatives to include ASEAN's views for a just and responsible energy transition.

### ▶ March



**International Petroleum Technology Conference (IPTC) 2023**  
1 – 3 March 2023

PETRONAS Executive Vice President and CEO, Upstream, Datuk Adif Zulkifli delivered the keynote address during the opening ceremony.



**CERAWEK 2023**  
6 – 10 March 2023

PETRONAS participated as a Strategic and Agora Partner, advocating Asia's perspectives through insightful topics and content presented by its leadership team.

### ▶ June

## Energy Asia 2023

26 – 28 June 2023



The Prime Minister of Malaysia, officiated the inaugural Energy Asia 2023, hosted by PETRONAS at the Kuala Lumpur Convention Centre.

Themed Charting Pathways for a Sustainable Asia, the conference facilitated constructive dialogues between global leaders and business executives on Asia's pathway to a lower carbon future and how to unleash new potential for the region's energy sector to tackle emissions while pursuing economic growth and equitable social progress.

The three-day conference and exhibition featured a spectacular 159-speaker line-up from 19 industries and over 4,600 delegates from 53 countries.

### ASEAN Energy Sector Methane Leadership Programme

27 June 2023

PETRONAS, in collaboration with ASEAN national oil companies, governmental agencies and international organisations, launched the ASEAN Energy Sector Methane Leadership programme to build the region's capability and capacity in managing methane emissions.



### ▶ July



### LNG 2023

10 – 13 July 2023

The 20<sup>th</sup> International Conference & Exhibition on Liquefied Natural Gas (LNG 2023) held in Vancouver, Canada, provided a unique platform for the global LNG industry and key stakeholders to discuss, debate and showcase the latest industry developments and opportunities. PETRONAS President and Group CEO, Tan Sri Tengku Muhammad Taufik participated in a panel discussion entitled 'LNG's Role in the Energy Trilemma' on the second day of the conference.

## ▶ August



**Oil and Gas Services and Equipment (OGSE) Partners Day 2023 in Kuala Lumpur**  
3 August 2023

PETRONAS hosted the Oil and Gas Services and Equipment (OGSE) Partners Day with local vendors as a platform to collaborate and foster a resilient and sustainable OGSE ecosystem. The one-day event saw over 1,000 key industry players and stakeholders exchanging ideas and exploring innovative solutions that would further strengthen the resiliency of the Malaysian oil and gas industry to navigate the energy transition.

## ▶ September



**Oil and Gas Asia (OGA) 2023**  
13 – 15 September 2023

PETRONAS was the corporate partner for OGA2023. In his keynote address, PETRONAS Senior Vice President of Malaysia Petroleum Management, Datuk Bacho Piong, stressed the importance for countries and companies to continue strengthening collaborations to attract investments that make scaling up and deploying decarbonisation solutions a viable effort. Meanwhile, Vice President and Chief Sustainability Officer, Charlotte Wolff-Bye presented on PETRONAS' pathway to delivering net zero carbon emissions by 2050.

## ▶ October



**ADIPEC 2023**  
2 – 5 October 2023

Our President and Group CEO, Tan Sri Tengku Muhammad Taufik, participated in a panel discussion titled 'Actions for a Net Zero World: Solving the Current Energy Trilemma'.



**International Greentech & Eco Products Exhibition and Conference (IGEM) 2023**  
4 – 6 October 2023

PETRONAS participated in IGEM 2023, Southeast Asia's largest trade event for green technologies and eco solutions. The event was co-organised by the Ministry of Natural Resources, Environment and Climate Change and the Malaysian Green Technology and Climate Change Corporation.



**Commemoration of Sabah Vendors' Participation in Oil and Gas Services and Equipment (OGSE) Industry**  
5 October 2023

PETRONAS and the Sabah State Government recognised local vendors and service providers for their contributions to the growth of the oil and gas industry in the state. PETRONAS President and Group CEO, Tan Sri Tengku Muhammad Taufik, presented commemorative awards to 25 Sabahan vendors, witnessed by Sabah State Finance Minister Datuk Seri Panglima Masidi Manjun.

## ▶ November



**Just Energy Transition Roundtables**  
2 November 2023

PETRONAS, in partnership with PricewaterhouseCoopers (PwC), launched the Laying the Foundation for a Just Energy Transition report to share findings compiled from a series of hosted roundtable discussions to understand how a just energy transition can be shaped in Malaysia.

## ▶ December



**Commemoration of Sarawak Vendors' Participation in Oil and Gas Services and Equipment (OGSE) Industry**  
6 December 2023

PETRONAS and the Sarawak State Government commemorates the accomplishments of local Oil and Gas Services and Equipment vendors and service providers who have contributed to the growth of the oil and gas industry in the state.

PETRONAS Vice President of Group Procurement, Puan Freida Amat presented commemorative award to 49 Sarawakian vendors.



**Dear Stakeholders,**

The year 2023 was a challenging one for the company. Across the globe, many lives were impacted by the prolonged disruptions caused by geopolitical conflicts, the rising cost of living, energy and climate-related crises.

**Tan Sri Dato' Seri Mohd Bakke Salleh**  
Chairman



# Letter from the Chairman

With the heightened turbulence and uncertainties, it was imperative for PETRONAS to continuously adapt and transform to provide energy that meet the needs of the present without compromising future generations.

Hence, the Group remained steadfast in delivering the PETRONAS Energy Transition Strategy to create long-term sustainable value for stakeholders as we also do our part for a lower carbon future.

On behalf of the Board, I am proud of the PETRONAS family for the unwavering delivery of the *Amanah* as we strive to fulfil the trust of our stakeholders as their progressive energy and solutions partner.

## Delivering Our Purpose

For an organisation like PETRONAS, we uphold our commitment to Malaysia as the national oil company and the pursuit of value as an international energy player.

Guided by our purpose, namely, to be a progressive energy and solutions partner enriching lives for a sustainable future; we aim to solve energy-related issues that fuel progress in a manner benefitting the societies we serve. Our strategy has kept us on track to seize opportunities in the energy transition as PETRONAS continues to pursue growth to fulfil its purpose and climate ambitions.

In 2023, PETRONAS recorded a commendable financial performance. We discharged our responsibilities to our stakeholders in the form of cash payments, tax, export duties, state sales tax and dividends. After careful consideration of the Group's affordability to fund operations, service debts and meet obligations of the present and invest in future growth, PETRONAS has made the scheduled dividend payment of RM40 billion to the Government of Malaysia.

PETRONAS also continued to make its contribution of RM2 billion to the National Trust Fund during the year in review. We remain the sole contributor to the Fund since it was established in 1988 to ensure future generations continue to benefit from the country's finite natural resources. Cumulatively, PETRONAS has contributed RM13 billion to the Fund.

Even as the operating landscape continues to be increasingly volatile and uncertain, PETRONAS remains resolute in pursuing growth through strengthened governance, integrity and compliance aligned with the PETRONAS Code of Conduct and Business Ethics and the PETRONAS Four Sustainability Lenses.



## Creating Positive Social Impact

At the heart of the organisation is PETRONAS' commitment to nation-building by carefully selecting where we can make the most significant positive impact on society.

We do this through investments in education (Powering Knowledge), community well-being and development (Uplifting Lives) and the environment (Planting Tomorrow). With targeted initiatives rolled out in Malaysia and in countries where we operate, a total of 720 programmes have benefitted almost three million people.

As we strive to play an increasing role in supporting the progress of society by working closely with various local agencies and relevant Ministries, I am pleased to share that PETRONAS has contributed about RM850 million in social impact programmes for the year.

## Letter from the Chairman



PETRONAS is grateful and honoured to have the strong support of our stakeholders as we strive to continue realising their aspirations through commercial arrangements.

We are determined to find new opportunities and measures to fuel society's progress responsibly and sustainably through long-term partnerships and collaboration. For instance, PETRONAS has established several signature programmes focusing on capability-building through education, industry and entrepreneurship training. These include:

- PETRONAS Education Sponsorship Programme
- *Program Duta Guru*
- PETRONAS Vocational Institution Sponsorship and Training Assistance (VISTA) Programme
- *Program Memampankan Ekonomi Asas Rakyat* (MEKAR)

With these programmes and many more in place, PETRONAS is committed to helping nurture an ecosystem that provides opportunities for all members of society, whether Bumiputeras, women or youths to empower themselves with skills for a better quality of life.



In line with this commitment, the Board has recently approved the PETRONAS Human Rights Policy. The policy further strengthens our processes and systems to create a safe and secure working environment, respecting human rights across our value chain in a manner that complies with the relevant laws and regulations of Malaysia and the countries where we operate.

### Forging Partnerships in the Energy Transition

As the energy transition unfolds, it has become even more apparent that the obligations of the energy industry are to ensure the energy security of today and to work towards the sustainable energy systems of the future.

Therefore, it is imperative that the oil and gas industry and its services and equipment sector collectively strive to deliver more energy with less emissions.

For a just energy transition to be successful, players in the oil and gas ecosystem must form mutually beneficial partnerships to accelerate technology uptake by learning from each other but also to improve the feasibility of large-scale projects by sharing the risks.

As a catalyst for Malaysia's oil and gas ecosystem, PETRONAS is committed to strengthening the resilience of the local Oil and Gas Services and Equipment (OGSE) sector to become globally competitive and technically competent in new and novel technologies that support the transition.

PETRONAS has developed various programmes that promote collaboration at different stages of the value chain for the local OGSE sector, including:

- Vendor Development Programme (VDP) and VDPx
- Vendor Financing Programme
- Special OGSE Financing Programme
- Sustainability-related programmes





PETRONAS believes that the energy transition offers challenges and opportunities that can be effectively realised through partnerships forged towards common goals. To this end, the Board remains very much encouraged by the notable milestones achieved through the Annual Strategic Dialogues, Joint Working Committees, and Joint Coordination Committees with our valued stakeholders.

PETRONAS is grateful and honoured to have the strong support of our stakeholders as we strive to continue realising their aspirations through commercial arrangements.

## Looking Ahead

With an operating landscape that remains volatile and shows no sign of easing in the coming year, the PETRONAS Energy Transition Strategy is purposefully designed to strike the right balance between providing energy security and moving us closer to a lower-carbon future.

PETRONAS will continue to focus on reinvesting with discipline and exercising prudent financial management as it progresses in its growth trajectory. We will continue to advocate for a just, orderly, and equitable energy transition and do our part to see this goal through for the benefit of stakeholders in Malaysia and the countries in which we operate.

I would like to express my deepest gratitude to all members of the PETRONAS family for upholding the organisation's Shared Values and for fulfilling its purpose as a progressive energy and solutions partner.

I take the opportunity here to thank Datuk Seri Asri Hamidon, Encik Ainul Azhar Ainul Jamal, Encik Thayaparan S Sangarapillai,

and Dato Razali Mohd Yusof for their leadership and contribution as members of the PETRONAS Board of Directors. I would like to express my sincere appreciation for their services and wish them every success in their new undertakings.

I am pleased to welcome Encik Azizan Zakaria and Datuk Johan Mahmood Merican as our new Board Members. Their combined wealth of experience and astute insights will be valuable for PETRONAS.

On behalf of the Board, I would like to extend my sincere appreciation to Tan Sri Tengku Muhammad Taufik, President and Group CEO of PETRONAS and his Executive Leadership Team for delivering our business strategies with pace and agility while upholding high standards of safety and integrity.

In closing, I would like to thank our valued stakeholders—the Federal Government of Malaysia, State Governments, and the Governments of our host countries, industry partners, and customers for your trust and continued support of PETRONAS. The relationships we have forged over the years reflect our long-term commitment to create value and recognise the aspirations of all parties.

As PETRONAS commemorates its 50<sup>th</sup> anniversary in 2024, I look forward to the furtherance of our co-operation for many more years to come.

**Tan Sri Dato' Seri Mohd Bakke Salleh**  
Chairman.



### **Esteemed Stakeholders,**

In 2023, the world faced significant volatility. The entire year was marked with seismic shifts in policies, legislation and geopolitics which significantly impacted the global economy. The fundamentals supporting supply and demand as the general determinants of energy equilibrium were so severely distorted, making capital and resource allocation for energy players across the globe a Herculean undertaking.

#### **Tan Sri Tengku Muhammad Taufik**

President and Group Chief Executive Officer

## **Letter from the President and Group Chief Executive Officer**

Across the world, countries struggled to balance addressing the evident need for a secure and affordable energy supply today, against the necessity of developing a clear and measurable pathway towards a sustainable lower-carbon future that we have collectively pledged to achieve as a global community.

Delivering the energy needed to tackle the energy trilemma is a complex existential challenge – but one where PETRONAS is responding with a clear strategy and agility to be part of the solution for a just and responsible energy transition.

The Group navigated 2023 with relentless focus and executed the PETRONAS Energy Transition Strategy, paired with strong operational performance across our integrated energy portfolio. We are committed to deliver more value responsibly and sustainably for our stakeholders guided by our purpose to be their progressive energy and solutions partner enriching lives for a sustainable future.



Delivering the energy needed to tackle the energy trilemma is a complex existential challenge – but one where PETRONAS is responding with a clear strategy and agility to be part of the solution for a just and responsible energy transition.

## Safety

In 2023, PETRONAS recorded a resilient operational and financial performance, credited to the unwavering dedication and service of more than 54,000 members of the PETRONAS family who continue to uphold safety as a top priority.

While we continued to make progress in our Health, Safety and Environment (HSE) performance – regrettably, two incidents occurred in our operations that resulted in the loss of lives. PETRONAS is determined to do better. We must continuously reinforce a strong safety culture across our operations to create a safe working environment where everyone goes home safely.

## Delivering More Value Responsibly and Sustainably

At PETRONAS, we believe it is about getting the balance right with a pragmatic pathway to deliver more energy with less emissions to realise a just and responsible energy transition.

As a Group, we continue to be disciplined in our investments to develop hydrocarbons with measurable and effective decarbonisation initiatives, while also building our capacity in the cleaner energy space and specialty chemicals.

We are making steady progress under our Energy Transition Strategy by continuously exercising prudent financial management and doubling down on efforts to strengthen our portfolio.

As a result, I am pleased to share that the Group registered Profit After Tax (PAT) of RM80.7 billion on the back of RM343.6 billion in revenue. EBITDA stood at RM128.6 billion for the year under review.

PETRONAS will continue to deliver with discipline to keep energy flowing for economic growth and the energy security of those we serve by ensuring the necessary foundation is in place as we prepare to be part of a decarbonised energy system.

Among the highlights in 2023 include:

- Achieved top quartile exploration performance for most discovered resources in 2023 – over 1 billion barrels of oil equivalent (bboe) of new resources in Malaysia.
- Progressing towards startup of LNG Canada in 2025 and bringing on stream Malaysia's first nearshore LNG production facility in Sabah as LNG will play a critical role as a destination fuel for the energy transition.
- Reached Final Investment Decision (FID) to construct an advanced chemical recycling plant in our Pengerang Integrated Complex that is expected to commence operations in 2026.
- Identified three definitive carbon capture and storage (CCS) hubs in Malaysia, which includes the Kasawari Carbon Dioxide Sequestration Project offshore Sarawak. This project is expected to reduce 3.3 million tonnes of carbon dioxide equivalent (million tonnes CO<sub>2</sub>e) per year, with the first injection scheduled in 2026.
- 2.9 gigawatts of renewable energy capacity installed and under construction.
- Grew our Vehicle-as-a-Service fleet in Malaysia, India and Indonesia with more than 3,000 electric vehicles (EVs).
- Advanced approximately 200 kTPA of hydrogen opportunities beyond the feasibility stage.
- Recorded GHG emissions of 45.6 million tonnes CO<sub>2</sub>e for our Malaysian operations through intensified efforts in flaring and venting reductions, energy efficiency and electrification – on track to meet near-term target of capping emissions at 49.5 million tonnes CO<sub>2</sub>e by 2024 in our domestic operations.

PETRONAS has crafted a clear strategy for the energy transition. Our aim now is to execute this strategy even as we continue improving our operational performance to create long-term sustainable value for our stakeholders, while building the foundations that will shift us closer to a lower-carbon future.



## Letter from the President and Group Chief Executive Officer

### Realising Shared Goals through Collaboration

Energy transition is a journey of change that cannot be achieved overnight, nor is it a journey that can be undertaken by any one country or any one business on its own. For a just energy transition to be successful, holistic and far-reaching, collaborations must take place at all stages within an energy ecosystem.

In this stride, PETRONAS is honoured to collaborate with forward-looking partners at home and abroad who share the same desire and commitment to this agenda.

- Under the National Energy Transition Roadmap (NETR), PETRONAS will lead two emissions abatement projects for the country, namely CCS and hydrogen as well as the development of future fuels. CCS has been recognised as a lever to reduce Malaysia's GHG intensity under the Malaysia Budget, NETR and New Industrial Master Plan (NIMP 2030).
- Memorandum of Cooperation (MoC) with Japan's Ministry of Economy, Trade and Industry (METI) and Japan Organization for Metals and Energy Security (JOGMEC) to strengthen collaboration on cross-border CCS projects.
- Memorandum of Understanding (MoU) with IHI Corporation to collaborate on developing the ammonia value chain and commercialise ammonia-powered gas turbines in Malaysia. With this collaboration, we hope to accelerate the adoption of clean hydrogen as a viable energy transition lever.
- Partnership with Idemitsu Kosan Co., Ltd. to enhance shared capabilities across the sustainable aviation fuel supply chains and optimise a route to market.
- Collaboration with PLUS to launch Malaysia's first EV fast charging modular and portable station with a battery energy storage system at the Behrang Lay-by.
- Multistakeholder collaboration under the ASEAN Energy Sector Methane Leadership Program to further strengthen the capabilities and capacities of companies to expedite methane emission reductions across the energy value chain in Southeast Asia.

In 2023, PETRONAS partnered with S&P Global to organise the inaugural Energy Asia conference driven by one simple belief: the world cannot achieve net zero without Asia achieving net zero.

This region is expected to be among the epicentres of global economic growth due to advancing industries and the rapid urbanisation of a growing population. Given varying degrees of wealth and economic development, Asia's energy needs require a customised approach.

The three-day conference aimed to promote inclusiveness in its dialogues, representing a broad range of interests from different industries, sectors, and communities in Asia. With some of the best minds convened at the conference, I believe we are progressing towards having Asia's voice represented in discussions about energy security, climate change, and net zero.

Energy Asia was launched by the Prime Minister of Malaysia and welcomed more than 3,000 delegates, over 200 speakers, and 46 sponsors representing 18 industries from across 27 countries. I look forward to more meaningful collaborations to bring forth the solutions we need for the region as we convene in June 2025 for the second edition of Energy Asia.



## Outlook

PETRONAS' accomplishments to date would not have been possible without the strong support of all stakeholders.

Realising these milestones is a feat that takes time and effort – and I would like to put on record that PETRONAS values the trust of our stakeholders as we discharge our duty as established under the Petroleum Development Act 1974 while living up to the expectations and responsibilities of being an international energy player.

Anchored to our Shared Values, PETRONAS remains resolute in our commitment to ensure the Group delivers results responsibly with the highest standards of good governance, integrity and compliance.

As we look ahead, while PETRONAS' performance has proven resilient in a volatile operating environment, we anticipate that uncertainties and risks from the events in 2023 will carry through into 2024.

We will focus on reinvesting with discipline, remain steadfast in delivering more value responsibly and sustainably for our stakeholders, but at all times, we will resolutely exercise prudent management of our financial commitments and debt obligations.

Finally, I want to express my deepest appreciation to the PETRONAS family for their commitment and resilience in overcoming obstacles in the ever-changing and volatile energy landscape. I extend my sincere gratitude to our Chairman, Tan Sri Dato' Seri Mohd Bakke Salleh, and the PETRONAS Board of Directors for their steadfast leadership amid heightened uncertainties. Additionally, I want to commend the PETRONAS Executive Leadership Team for their unwavering resolve in the face of adversity.

PETRONAS' employees have always understood the sheer scale and gravity of their responsibilities in being a part of this sacred institution. The scope of our obligations goes far beyond simply making a profit as an energy and solutions partner. Indeed, they are measured in the way we enrich the lives of Malaysians and the communities where we operate as we work together to deliver a sustainable future. We remain unwavering in upholding our Amanah, which has stayed the same since PETRONAS was first incorporated as a company – and this commitment will not change for the foreseeable future.

As we approach our 50th anniversary in 2024, I hope that, together with our stakeholders, we can build on this long-standing relationship for greater success and prosperity as we strive towards 'Continuing a Legacy Together for Our Future'.

**Tan Sri Tengku Muhammad Taufik**

President and Group Chief Executive Officer



### Dear Stakeholders,

We take a balanced approach in strengthening our Core Business and capturing new growth opportunities for New Business while responsibly managing our carbon emissions, demonstrating our clear ambition for a just transition.

#### Liza Mustapha

Executive Vice President and  
Group Chief Financial Officer

# Letter from the Executive Vice President and Group Chief Financial Officer

## The Financial Year in Review

PETRONAS faced a volatile operating environment in 2023, marked by persistent interest rate hikes by major central banks as well as the overall weakening economic growth and demand in the global oil markets, primarily in China and Europe. This outweighed the impact of supply tightness from OPEC+ cuts and supply disruption risks due to the ongoing geopolitical tensions, resulting in unfavourable average realised prices for the year.

In response, we continued to exercise strict capital discipline and robust portfolio management, leveraging on our strong integrated value chain as well as operational and commercial excellence. Our commitment to execute the PETRONAS Energy Transition Strategy ensures we take a balanced approach in strengthening our Core Business and capturing new growth opportunities for New Business while responsibly managing our carbon emissions, demonstrating our clear ambition for a just transition. This allowed us to turn challenges into opportunities presented to us during the year.

As a result of these efforts, the Group delivered a resilient financial performance despite the challenges. Our Profit After Tax for FY2023 was RM80.7 billion, a 21 per cent decrease from FY2022 of RM101.6 billion on the back of lower revenue realised.



## Revenue

**RM343.6**  
billion

2022: RM372.3 billion\*

We recorded revenue of RM343.6 billion in FY2023 against RM372.3 billion in FY2022. The eight per cent decrease is primarily due to the unfavourable average realised prices, partly cushioned by the higher sales volume mainly from petroleum products and foreign exchange impact.

Our Earnings Before Interest, Taxes, Depreciation and Amortisation for FY2023 was RM128.6 billion representing a 25 per cent decrease from RM170.7 billion in FY2022, in line with the lower profit recorded.

## Profit After Tax

**RM80.7**  
billion

2022: RM101.6 billion

### Resilient Financial Position

We foresee increasing challenges in accessing capital markets especially for energy players, as such it is imperative for PETRONAS to maintain an effective cash management strategy to navigate through the unpredictability of the energy market and rising operating costs compounded by the possibility of a global economic slowdown.

## Total Assets

**RM773.3**  
billion

2022: RM710.6 billion

We were thus resilient in delivering positive Cash Flows from Operations (CFFO) of RM114.2 billion this year notwithstanding a 16 per cent decrease from FY2022 in line with lower profit. This was sufficient to cover expenses to enable safe business operations, financial commitments and debt obligations while at the same time support growth investments, payments to our shareholders and community well-being.

Total assets strengthened to RM773.3 billion as at 31 December 2023 against RM710.6 billion as at 31 December 2022 mainly contributed by capital investments during the year as well as higher cash, fund and other investments balances.



We were thus resilient in delivering positive CFFO of RM114.2 billion this year notwithstanding a 16 per cent decrease from FY2022 in line with lower profit.

### Capital Allocation

Our Core Business remains our biggest cash generator which allows us to fund and pursue our energy transition journey and net zero carbon emissions targets. PETRONAS' priority is to strike the right balance between growth in our Core Business and New Business while managing our emissions responsibly. It is also imperative that we further unlock value and extract resources responsibly to sustain the domestic oil and gas value chain which serves as the backbone to the Malaysian economy.

In FY2023, our overall Capital Expenditure (CAPEX) stood at RM52.8 billion, a RM2.7 billion increase compared to the previous year. This includes significant domestic investments to ensure energy security for Malaysia and PETRONAS' customers.

Domestic CAPEX increased by 41 per cent to RM26.2 billion from RM18.6 billion, making good progress in the development of the Nearshore Floating LNG Facility in Sabah as well as our maiden carbon capture and storage facility in Sarawak. These projects will allow us to further strengthen our Core Business and at the same time step-out into New Business areas.

Although CAPEX was equally split between domestic and international, the allocation for international CAPEX saw a 16 per cent decrease from FY2022 to RM26.6 billion.

\*Prior year revenue and group costs have been restated to conform with current year presentation with no impact on Profit After Tax.

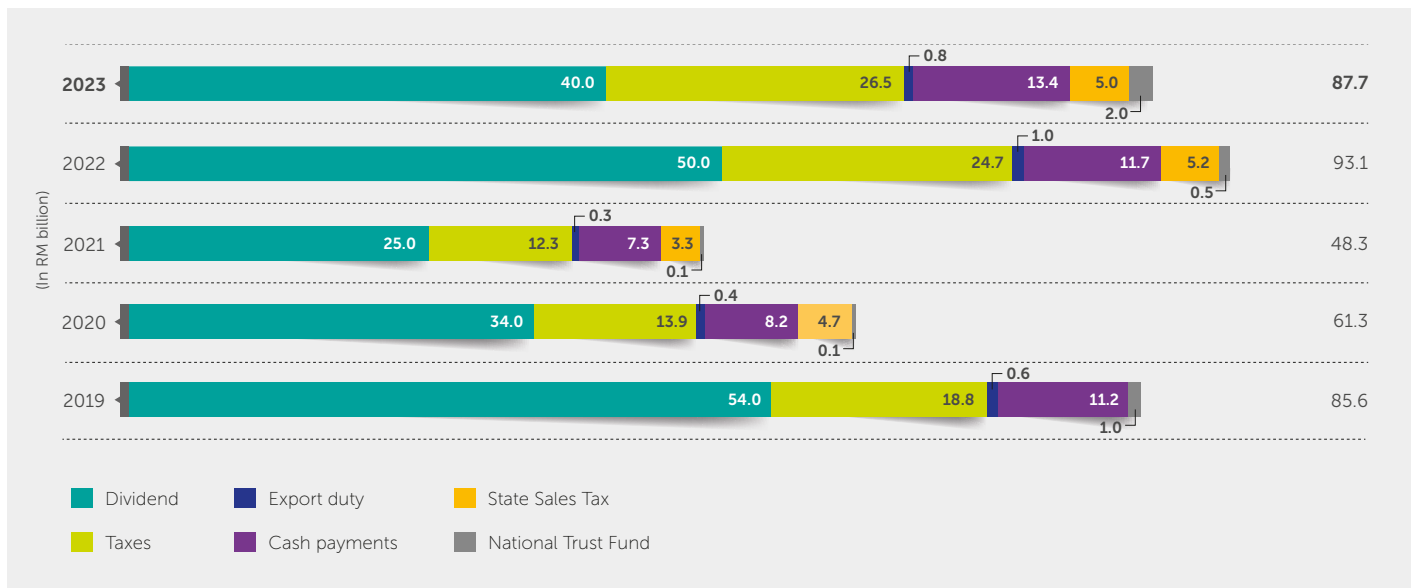
## Letter from the Executive Vice President and Group Chief Financial Officer

Capital investment allocation over the next five years (from FY2024 to FY2028) is expected to increase by 43 per cent from the last five years (FY2019 to FY2023). More than 50 per cent of this amount will be allocated to core activities to sustain the delivery of energy security, while the remaining will be spent predominantly on new businesses and net zero carbon emissions efforts.

In supporting the PETRONAS Energy Transition Strategy, we remain committed towards allocating 20 per cent of PETRONAS' total CAPEX over the five years starting from 2022 to 2026 for decarbonisation projects and expansion into cleaner energy solutions. This is in support of our Net Zero Carbon Emissions by 2050 Pathway announced in November 2022. In 2023, 16 per cent was spent for this purpose, of which two-thirds were related to renewables and green mobility. This was an increase from two per cent spent the previous year and includes the undertaking of enterprise decarbonisation initiatives to reduce GHG emissions to the targeted level of 49.5 million tonnes CO<sub>2</sub>e for PETRONAS' Malaysia operations. We will continuously monitor and reallocate budget for decarbonisation efforts based on requirement and opportunities.

### Contributions to the Government

Our cash contributions to the Federal and State Governments of Malaysia in the form of dividends, taxes and cash payments, including contributions made to the National Trust Fund (*Kumpulan Wang Amanah Negara*) amounted to RM87.7 billion. In FY2023, the Federal Government of Malaysia received total dividends of RM40 billion.



\*Contributions to the Federal and State Governments of Malaysia are based on cash paid during the year.

To date, our cumulative contributions to the Federal Government of Malaysia, state governments and National Trust Fund amount to RM1.46 trillion.

## Governance and Transparency

Our prudent financial and liquidity management, fiscal discipline, coupled with a conservative balance sheet and strong credit ratings enabled us to maintain access to capital to support our ambition and future-proof our portfolio as well as navigate the energy transition journey.

PETRONAS' credit ratings remain strong with a rating of A2, A- and BBB+ from Moody's, Standard & Poor's (S&P) and Fitch respectively. Our standalone credit profile is four notches above our credit ratings as assessed by S&P and Fitch, which affirms our solid business fundamentals and resilience to weather volatile market conditions.

Our adherence to the best principles of corporate governance in line with the Malaysian Code on Corporate Governance is showcased by the following:

- Our financial statements are audited by global accounting firms and comply with Malaysian and International Financial Reporting standards, at par with other Fortune Global 500® companies.
- We safeguard our profitability by managing our commodity price risk exposures via hedging.
- We were awarded the Platinum Awards in Excellence Awards (Non-Listed Organisation) category for three consecutive years (2021, 2022 and 2023) for our annual issuance of Integrated Report by the National Annual Corporate Report Awards.
- We adopted the Task Force on Climate-related Financial Disclosures framework in the FY2022 Integrated Report for the first time, with readiness for full adoption by FY2024.

We further advanced our commitment towards our Net Zero Carbon Emissions by 2050 Pathway by strengthening and aligning ESG reporting to industry standards:

- Continuing adherence to GHG Protocol on emissions accounting. We obtained independent third party verification to demonstrate credibility of our data.
- Closing the gaps on Global Reporting Initiative Standards.

Our strong commitment towards governance and transparency will facilitate our energy transition journey in alignment with Malaysia's National Energy Transition Roadmap.

## Outlook for 2024

We expect to see slower global demand going forward as businesses and consumers become more cautious towards spending and investments following the macroeconomic headwinds which affected the global economy at the end of 2023. Supply risks will be further heightened by the increased geopolitical tensions. At the same time, the shift towards cleaner energy solutions continues.

Our key financial targets for FY2024 will be to maintain our strong financial position, safely delivering commercial and operational excellence, scale up investments in decarbonisation projects and New Business as well as ensuring access to funding. We aim to further intensify efforts to future-proof our portfolio to counter increasing headwinds while remaining focused on pursuing our growth and sustainability agenda, delivering energy security while navigating energy transition in a just and orderly manner.

### Liza Mustapha

Executive Vice President and Group Chief Financial Officer





## Dear Stakeholders,

2023 set yet a new record for global warming. In response, our commitment remains steadfast to accelerate and scale up our efforts towards a lower carbon energy future that supports nature and biodiversity conservation as well as social progress.

### Charlotte Wolff-Bye

Vice President and  
Chief Sustainability Officer

# Letter from the Vice President and Chief Sustainability Officer

## Responding to the Global Climate Challenge

The targets of the Paris Agreement are becoming increasingly distant as global greenhouse gas (GHG) emissions continue to rise. Within this decade, global GHG emissions need to drop by 42 per cent below 2010 levels to avoid irreversible tipping points in our climate system.

In response, the COP 28 climate summit held in Dubai in 2023 closed with an agreement by governments on the need to “transition away from fossil fuels in energy systems in a just, equitable and orderly manner”. The agreement provides a clearer direction for the global energy transition and recognises each country’s unique circumstances as we pursue climate action. Commitments were also agreed on tripling renewable energy capacity and doubling energy efficiency improvements by 2030, as well as accelerating lower emission technologies such as Carbon Capture and Storage (CCS) and hydrogen.

Also at COP 28, PETRONAS joined forces with over fifty other industry players in the Oil and Gas Decarbonisation Charter (OGDC), a pledge that aligns with our own Net Zero Carbon Emissions by 2050 Pathway. This initiative means companies representing over 40 per cent of global oil and gas production will demonstrate action on their climate commitments and report on progress.

International collaborations such as the OGDC are critical to achieving climate goals. This is why PETRONAS has been the convening force behind another initiative – the ASEAN Energy Sector Methane Roundtable. In 2023, this collaboration launched the Methane Leadership Programme, a multi-stakeholder initiative that aims to expedite methane emission reductions across the energy value chain in Southeast Asia.

Domestically, PETRONAS will lead the CCS, hydrogen and future fuels flagship catalyst projects under Malaysia’s National Energy Transition Roadmap which was launched in August 2023.

## Progressing on Our Sustainability Journey

To strengthen our commitment to emission reductions, we integrated our Net Zero Carbon Emissions by 2050 Pathway into the PETRONAS Energy Transition Strategy. Now our focus is on developing clear action plans across our value chains, ensuring both environmental responsibility and sustainable business growth.

Solidifying our sustainability governance, we formalised PETRONAS' commitment to net zero carbon emissions by 2050, position on nature and biodiversity, and respect for human rights into top level policies. Additionally, we instituted a dedicated Sustainability Executive Leadership Team which sets strategic direction, drives implementation and monitors sustainability performance across the Group.

We continue to strengthen our sustainability-related disclosures in accordance with the Integrated Reporting Council Framework, Global Reporting Initiative and the recommendations of the Taskforce for Climate-related Financial Disclosures.

We are making progress in reducing emissions from our operations and from the energy we buy, our Scope 1 and Scope 2 GHG emissions.

Our near-term target is to cap GHG emissions at 49.5 million tonnes CO<sub>2</sub>e from PETRONAS Malaysia operations by 2024. As of the end of 2023, our emissions stood at 45.16 million tonnes CO<sub>2</sub>e.

Overall, we have reduced our global GHG emissions by 14.5 per cent compared to 2019 levels, putting us on track to achieving our target of reducing absolute emissions by 25 per cent by 2030 using 2019 as our baseline. Meanwhile, our methane emissions from PETRONAS Groupwide natural gas value chain operations have reduced by 58 per cent against our 2025 target of a 50 per cent reduction from 2019 levels.

Unfortunately, in 2023 we saw a negative or flat trend in some of our key environmental management performance indicators such as hazardous waste, freshwater withdrawal and air emissions. We are committed to reversing these trends and we are developing a Groupwide position on resource efficiency which will serve to strengthen and align our environmental management efforts.

## Protecting Nature and Biodiversity

In 2023, we focused on starting the implementation of PETRONAS' position on nature and biodiversity. Additionally, we supported the Malaysia government in developing a roadmap and action plans on nature and biodiversity and signed a Memorandum of Understanding with the Malaysia Forest Fund to explore opportunities for developing and investing in high-quality nature-based solutions.

## Enabling a Just Transition

A just transition to a lower carbon future requires a collaborative whole-of-society approach. This was one of the key conclusions from "Laying the Foundation for a Just Energy Transition", a report that captures the key insights gathered from a series of roundtable sessions which we co-hosted with PwC Malaysia throughout 2023.

Our workforce will be a key enabler of a just transition and we are building a sustainability culture within PETRONAS. The impact of our efforts was reflected in the 2023 PETRONAS Organisational Culture Survey where "Actioning Sustainability" was one of the top three strengths. To build off this, we received approval in 2023 to develop a so-called Capability Lab for upskilling employees as part of the PETRONAS Decarbonisation programme. We are excited to be launching our first cohort in 2024.

Finally, I am proud to say that our human rights journey took a significant step forward in 2023 when we received Board approval for the PETRONAS Human Rights Policy which will be effective from 1 April 2024.

## The Road Ahead

We know that we have a significant role to play in the energy transition, both in Malaysia and in other countries where we operate. As we navigate this transition together, we must ensure that no one is left behind and that we extend our efforts to conserve and protect nature and biodiversity. We are making steady progress towards achieving our ambitions and we remain resolute in our efforts to contribute towards a sustainable future.

### Charlotte Wolff-Bye

Vice President and Chief Sustainability Officer



# PETRONAS

## Energy Transition Strategy

In 2023, we remained resolute in executing the PETRONAS Energy Transition Strategy, which focuses on enabling a balanced and orderly transition towards a lower carbon future.

We are committed to investing in our Core Business to provide more energy with less emissions to meet the growing demand for energy, especially in Asia, where oil and gas still account for a considerable part of the energy mix. Playing to our strengths, PETRONAS is committed to meeting this energy demand by delivering lower carbon molecules in a cost effective manner. We have started to realise early results from our efforts to diversify our portfolio, unlocking revenue from New Business, namely renewable energy and specialty chemicals. At the same time, we exercise discipline in pursuing the right investments with commerciality as a key driver. We are progressing towards our net zero carbon emissions targets and have reduced emissions as planned, putting us on track to meet our short term targets. Beyond financial aspects, climate considerations have also become an integral part of investment decisions and business practices.

PETRONAS firmly supports the global goal of a lower carbon future and advocates for a just transition that recognises the unique challenges and economic requirements of the various energy markets. We will continue to collaborate across the industry and foster knowledge exchange with our partners and stakeholders, actively working towards mutually beneficial outcomes.

Our strategy demonstrates our commitment to be a part of the energy transition, balancing the dual role of supporting energy security and delivering responsible energy solutions for continuous growth. Together, we aspire to attain an equitable lower carbon future.





## Core Business

➔ *More Energy, Less Emissions*

### Strategy and Focus

Our Core Business strategy is centred on providing more energy with reduced emissions, acknowledging the role of oil and gas in the energy mix, particularly natural gas as a destination fuel. With a significant portion of our portfolio in gas, we have an advantageous position to meet the world's growing energy needs while steering towards a lower carbon future.

Our Core Business continues to be an anchor for PETRONAS as it is expected to generate steady cashflows to help finance our decarbonisation efforts and investments in New Business. Innovation, decarbonisation and sustainability remain integral to our investments in Core Business as we firmly believe that by responsibly managing our operations, we can contribute to a more sustainable energy future.

Core Business also serves as the key economic pillar and source of foreign direct investment. At the same time, sustaining our Core Business is essential to sustain the vibrancy of Malaysia's Oil and Gas Services and Equipment ecosystem and adjacent industries.

The four primary areas in PETRONAS Core Business are:

- **Upstream Malaysia:** Intensify oil and gas exploration, development and monetisation in Malaysia to serve domestic energy demands, maximise the integrated value chain and sustain the vibrancy of the domestic oil and gas ecosystem.
- **Upstream International:** Sustain production levels and high-grade international oil and gas portfolio to deliver lower carbon molecules in a cost efficient manner.
- **LNG:** Maintain LNG market leadership by maximising value from existing assets as well as pursuing new supply nodes.
- **Downstream:** Strengthen operational excellence, commercial excellence and value extension to fully capture the market.



## Outlook and Priorities

### Short-Term

- **Upstream Malaysia:** Continue to focus on replenishing resources and maximise integrated value chain to meet increasing domestic energy demand.
- **Upstream International:** Monetisation of high-value oil and gas resources in focused regions, in the Americas, Middle East and Southeast Asia.
- **LNG:** Maximise LNG value from existing assets and supply portfolio as well as deliver identified growth projects in Canada and Sabah, Malaysia.
- **Downstream:** Sustain operational and commercial excellence to maximise value extension and capture expanding market.

### Medium to Long-Term

- **Upstream Malaysia:** Future-proof Upstream Malaysia business to meet growing energy demand, strengthen domestic integrated value chain and sustain the vibrancy of the domestic oil and gas ecosystem.
- **Upstream International:** Continue to sustain production and high-grade oil and gas portfolio to deliver lower carbon molecules in a cost efficient manner.
- **LNG:** Maintain LNG market leadership and continue to mature opportunities for new LNG supply nodes.
- **Downstream:** Maximise value through product diversification in response to changing customer preferences.

# PETRONAS Energy Transition Strategy

## New Business

➔ Capturing New Growth Opportunities



### Strategy and Focus

PETRONAS is committed toward the energy transition in a landscape marked by rapid changes in customer preferences and evolving policies. Our strategy is not just about adapting to these changes; but proactively shaping our future in the energy sector. This commitment involves strategic diversification to future-proof our portfolio while maintaining our core strengths in traditional energy sources.

Nine New Business have been identified and pursued to strengthen the robustness of our portfolio. Early results in New Business growth and progressive transition of our portfolio have been observed especially in renewable energy and specialty chemicals. These milestones were made possible through disciplined investments and maturation of projects in the pipeline both organically and through synergies and partnerships.

Our immediate focus is to strategically scale renewable energy, hydrogen, green mobility, specialty chemicals, carbon capture and storage (CCS) and bio-based value chain to meet the demands of a changing energy landscape. At the same time, we are also actively maturing opportunities in circular economy, convenience business and advanced materials. Gentari drives our ambitions in renewable energy, hydrogen and green mobility.

On the domestic front, PETRONAS is championing specific flagship projects identified in the National Energy Transition Roadmap and collaborating with the Federal and State Governments as well as policymakers to support the sustainable growth of the domestic energy industry.

- **Renewable Energy:** Capitalise on large and fast-growing markets to build installed capacity.
- **Hydrogen:** Prioritise investments in early positions and establish local teams, especially in priority markets.
- **Green Mobility:** Grow our investments in charging points and Vehicle-as-a-Service (VaaS) across key markets in Asia Pacific.
- **Specialty Chemicals:** Build strong specialty chemicals business by focusing on innovation, profitability and growth through accessing new capabilities, markets and geographies while strengthening the existing product portfolio.
- **Carbon Capture and Storage (CCS):** Mature CCS to decarbonise PETRONAS' portfolio and design for regional demand to position Malaysia as a leading CCS hub in the region.
- **Bio-based Value Chain:** Scale up bio-based products and offerings aligned with customer preferences, leveraging strategic partnerships.



## Outlook and Priorities

### Short-Term

- **Renewable Energy:** Focus on acquiring platforms to capture value-accretive opportunities in the renewable energy sector, with a focus on Malaysia and India.
- **Hydrogen:** Maturation of opportunities towards final investment decision in priority markets.
- **Green Mobility:** Establish a strong supply chain through the growth of electric vehicle charging points, with a focus on Malaysia, India and other Asia Pacific markets.
- **Specialty Chemicals:** Develop a transformation strategy leveraging on current capabilities and establishing an innovation hub to become a global specialty chemicals leader.
- **Carbon Capture and Storage:** Focus on Kasawari carbon sequestration project delivery and technology partnerships as one of the emission abatement levers for PETRONAS.
- **Bio-based Value Chain:** Continue to mature pathways into biofuels production through co-processing in existing facilities.

### Medium to Long-Term

- **Renewable Energy:** Aim towards being the leading next-generation commercial and industrial, and utility-scale renewable energy developer.
- **Hydrogen:** Scaling up as a hydrogen producer and go-to industry partner.
- **Green Mobility:** Aim to be Asia Pacific's leading green mobility solutions partner.
- **Specialty Chemicals:** Expand specialties portfolio to become a differentiated player and strengthen capabilities in applicative science to provide better solution to customers.
- **Carbon Capture and Storage:** Design value chains and commercial models to meet regional demand.
- **Bio-based Value Chain:** Transition from conventional products to scale-up sustainable offerings to meet market demand.



## Net Zero Carbon Emissions

➔ *Pathway to Net Zero*

### Strategy and Focus

Our commitment to the Net Zero Carbon Emissions by 2050 Pathway is a pledge to decarbonise our portfolio which requires a multifaceted strategy that embraces innovation, collaboration and responsible stewardship of resources. The established pathway to achieve net zero carbon emissions by 2050 considers technological limitations and evolving policies whilst balancing the need to be profitable. Key abatement levers to reduce Scope 1 and Scope 2 emissions have been identified, and we are dedicated to achieving our short- and medium-term targets, with a focused allocation of resources for effective delivery.

PETRONAS has achieved meaningful milestones in our sustainability journey. We are on track to achieving our near-term emission targets, through existing and planned emissions reduction projects. Beyond climate, we have also established our position on nature and biodiversity and human rights policy in our commitment to step up our sustainability approach.

We advocate for the advancement of carbon capture and storage as an enterprise decarbonisation solution and promote sustainability efforts through knowledge sharing across the industry. This work is integral to our contribution to Malaysia's national climate goals and the global effort to accelerate climate action.

- **Elevated Greenhouse Gas Emissions Reporting:** Implement comprehensive reporting and accounting methods for a total view of emissions across the Group, adhering to international frameworks as well as maturing our understanding of Scope 3 emissions in our value chain.
- **Zero Flaring and Venting Reduction:** Minimise and eliminate routine flaring and venting in oil field developments and seek solutions to end routine flaring at existing sites by 2030.
- **Methane Emissions Reduction:** Systematic enhancement of methane emission management through the adoption of the Oil and Gas Methane Partnership 2.0 framework.



### Outlook and Priorities

#### Short-Term

- **Greenhouse Gas Emissions Target:** Focusing efforts to meet the short-term target of capping emissions to 49.5 million tonnes CO<sub>2</sub>e for PETRONAS Malaysia operations by 2024.
- **Methane Emission Management:** Working towards meeting 50 per cent methane emissions reduction target by 2025. Focusing on capacity and capability building to strengthen ASEAN energy companies' plans, targets and financing options for reducing methane emissions.
- **Greenhouse Gas Measurement and Quantification:** Conducting materiality screening for all categories of Scope 3.
- **Maturing Sustainability Efforts:** Increasing understanding and assessing business impact on nature and biodiversity.

#### Medium to Long-Term

- **25 per cent Greenhouse Gas Emissions Reduction Target by 2050:** Developing business activities in support of emissions reduction milestones in support of net zero carbon emissions by 2050.
- **Carbon Capture and Storage as Key Abatement Emission Lever:** Developing carbon capture and storage as a means of reducing emissions for PETRONAS assets.
- **Electrification:** Focusing on sourcing renewable energy and developing infrastructure for the electrification of PETRONAS operations and processes.
- **Elevating Greenhouse Gas Emissions Reporting:** Disclosing material categories of Scope 3.
- **Elevating Sustainability Efforts:** Maturing approach and understanding of nature-based solutions, biodiversity and human rights.



Scan this QR code to read more on PETRONAS' Pathway to Net Zero Carbon Emissions by 2050.



Further information on the net zero carbon emissions can be referred to in the Business Review section.



# Value Creation Model

## PETRONAS Energy Transition Strategy



**Core Business**  
More Energy,  
Less Emissions



**New Business**  
Capturing New  
Growth Opportunities



**Net Zero Carbon Emissions**  
Pathway to Net Zero

## Our Capitals

### Input

#### FC Financial Capital

- RM773.3 billion in total asset value

#### MC Manufactured Capital

- Property, Plant and Equipment: RM326.4 billion

#### HC Human Capital

- A diversified workforce of **54,105 employees** across the globe
- **RM330 million** invested in training and development

#### IC Intellectual Capital

- **RM644 million** invested in technology
- **195** research and development laboratories
- **USD120 million** capital invested in technology startups

#### NC Natural Capital

- **16 per cent** capital expenditure spent on decarbonisation projects and cleaner energy solutions
- **9.35 billion** barrel of oil equivalent (Bboe) 2P Reserves

#### SRC Social and Relationship Capital

- More than **RM850 million** invested in Social Impact activations covering education, community well-being and development and environment

Read more on page 40.

## ... Enable Value-Adding

### Material Topics

#### Safeguard the Environment

- Climate Change Risks
- Environmental Management
- GHG Emissions
- Nature and Biodiversity



#### Continued Value Creation

- Circular Economy
- Economic Contribution
- Innovation and Technology
- Lower Carbon and Energy Transition Business
- Sustainable Supply Chain



#### Positive Social Impact

- Employee Attraction, Retention and Development
- Health and Well-being
- Human Rights
- Safety Management



#### Responsible Governance

- Corporate Governance
- Cyber Security and Data Protection
- Ethics and Integrity



Read more on page 53.

### Market Landscape

- Geopolitics
- Economy
- Energy Transition
- Exploration and Production
- Gas and LNG
- Oil Market
- Chemicals
- Environmental Regulation

Read more on page 12.

**Supported By A Robust Governance Framework:** Highest standard of governance and effective board leadership

## Activities That Create ...

## ...Value For Our Stakeholders.

### Activities



#### Upstream

Cost Efficiency



#### Gas

Overall Equipment Effectiveness



#### Downstream

Overall Equipment Effectiveness



#### Project Delivery and Technology

OTOBOS and Technology Solutions



#### Gentari

Deliver Cleaner Energy Solutions



#### Other Businesses

- Maritime and Logistics – Sustainable maritime transportation solutions
- Property – Financial sustainability

### Key Risks

- Market
- Financial Liquidity
- Legal and Regulatory
- Sustainability
- Health, Safety, Security and Environmental
- Geopolitical
- Hydrocarbon Reserves and Resources
- Technology
- Execution
- Human Capital

Read more on page 59.

### Outputs and Outcomes

#### Financial Capital

- **RM80.7 billion** Profit After Tax
- **RM40 billion** dividend to shareholder

#### Manufactured Capital

- **32.9 million** metric tonnes (MMT) of overall LNG sales
- **10.4 million** metric tonnes (MMT) of petrochemicals production volume
- **296.1 million** barrels of petroleum product sales volume

#### Human Capital

- **48,752** employees completed training and development programmes
- **58.2** average total hours of training per employee (hours/person)

#### Intellectual Capital

- **50** new products and softwares launched
- **1** proprietary chemical formulations
- **35** patents secured
- **880** projects were executed according to on time, on budget, on scope (OTOBOS)
- **20** technology solutions piloted or deployed

#### Natural Capital

- **2,431 thousand** barrels of oil equivalent (boe) per day crude oil, condensates and natural gas production
- **1.8 million** tonnes CO<sub>2</sub>e per year of GHG emissions reduced through emissions reduction projects.
- **57,424** tonnes total hazardous waste reused, recycled and recovered

#### Social and Relationship Capital

- More than **3 million** beneficiaries worldwide from PETRONAS' Social Impact activations

Read more on page 40.

### Stakeholders

FG SIC E  
SG GIP IO  
C CN

FG IO M  
SG SIC GIP  
C

FG IO SIC  
SG E

FG SIC  
SG GIP  
E IO

FG SIC  
SG GIP  
E IO

FG E GIP  
SG SIC CN  
C M IO

Read more on page 42.

# Performance by Capital

## FC Financial Capital

We practice prudent financial management and strict capital discipline guided by our strategy, which places the organisation in a strengthened position to remain resilient in a volatile operating environment. Maintaining a strong financial position can enable our other capitals to contribute to the organisation's performance and provide value to our stakeholders.

### Inputs

- RM773.3 billion in total assets
- RM443.5 billion shareholders' equity
- RM114.2 billion cash flows from operations (CFFO)

Outputs/Outcomes	2022	2023
Revenue (RM billion)	372.3	343.6
Profit/Loss After Tax (RM billion)	101.6	80.7
Dividend to Shareholder (RM billion)	50.0	40.0
CAPEX (RM billion)	50.1	52.8
EBITDA (RM billion)	170.7	128.6

### Actions to Enhance Outcomes

- Continued to exercise prudent financial management and firm discipline in capital allocation to navigate the volatile market environment and rising operating costs.
- Ensured effective implementation of strategy by leveraging the Group's integrated value chain.
- Practised robust portfolio high-grading exercise to manage risks and asset and liability management.
- Adopted high standards of governance and strive to report transparently, in line with the Task Force on Climate-related Financial Disclosures recommendations.

### Trade-Offs

- With the increased urgency to accelerate the energy transition, we intensified our efforts to reduce emissions in our Core Business and pursued cleaner energy solutions. Our cleaner energy solutions will generate lower, albeit more stable returns and contribute towards delivering our Net Zero Carbon Emissions by 2050 Pathway.

## MC Manufactured Capital

We utilise our diverse range of assets from our integrated business portfolio to deliver energy while meeting evolving market demands and advancing delivery of the net zero carbon emissions by 2050 ambition. Continuous investments in new technologies support our efforts to reduce emissions and drive business growth.

### Inputs

- 5 refineries
- 19 petrochemical manufacturing sites
- 4 LNG plants
- 2 LNG floating facilities
- 5 gas processing complexes
- 1 utility plant
- 2 regasification terminals

Outputs/Outcomes	2022	2023
LNG sales (million metric tonnes)	34.2	32.9
Malaysia's average sales gas volume (million standard cubic feet per day)	2,938	2,214
Total petrochemical production volume (million metric tpa)	10.0	10.4
Petroleum products sales (million barrels)	258.2	296.1
Petrochemical product sales (million metric tonnes)	8.3	9.4

### Actions to Enhance Outcomes

- Continued to ensure proper maintenance of our assets to deliver operational and commercial excellence to meet growing demand.
- Customised solutions and expanded our product portfolio to meet customers' growing expectations and capture new value from lower carbon energy solutions.
- Strengthened our presence in key markets to future-proof the business and deliver targets.

### Trade-Offs

- To achieve net zero carbon emissions by 2050, we need to form strategic partnerships and invest in cleaner energy solutions and innovative technologies. However, this may have long-term trade-offs, including impacts on Natural, Social and Relationship, Human and Financial Capitals.
- Investments in Manufactured Capital are necessary to advance our decarbonisation and cleaner energy efforts. This move is expected to positively impact all capitals.

## IC Intellectual Capital

We drive internal innovation and leverage our intellectual capital to develop proprietary technologies, system procedures and protocols. We also adopt external innovation technologies through corporate venture capital activities and foster the Malaysian innovation ecosystem, which enables us to deliver sustainable value and growth.

### Inputs

- RM644 million invested in technology
- 195 research and development laboratories
- 267 dedicated researchers
- USD120 million capital invested in technology startups

Outputs/Outcomes	2022	2023
Number of new products and solutions launched	14	32
Number of registered trademarks	126	139
Number of technical solutions piloted/deployed	143	174
Number of proprietary chemical formulation	3	1
Number of patents secured	31	35
Number of technology startups	5	8
Number of technology solutions piloted/deployed	15	20

### Actions to Enhance Outcomes

- Accelerated deployment and execution of research and development, technology delivery projects, as well as technology solutions from startups.
- Intensified review of intellectual property portfolio to maximise potential returns.
- Increased efforts in lower carbon emitting technology and innovation towards realising Net Zero Carbon Emissions by 2050 Pathway.
- Pursued opportunities to commercialise our technology and digital solutions.
- Strengthened our investment portfolio in startups and venture capital funds.
- Supported startup companies in their early stages through capacity building, business mentoring, market access, and test bed opportunities through business matching to accelerate the development of Malaysia's technology startup ecosystem.

### Trade-Offs

- Investing in technology and innovation to improve the quality of our operations and lower our emissions. However, the rapid pace of technological advancements demand faster pace of innovation for our products and solutions to remain relevant.
- While these investments will impact our Financial Capital, they will increase the value of our Natural, Manufactured, Financial, Social and Relationship capitals in the long term, through improved efficiency, productivity, operational excellence and commercialisation, and contribute to the development of Malaysia's technology startup ecosystem.



## HC Human Capital

Our diverse and high-performing workforce is essential to delivering our strategic priorities. We invest in nurturing agile, innovative, future-ready skilled employees.

### Inputs

- 54,105 total PETRONAS employees
- 29 per cent of PETRONAS employees are women
- RM330 million invested in training and development
- 7,386 total PETRONAS new hires

Outputs/Outcomes	2022	2023
Employee attrition rate (%)	6.6	6.4
No. of employees completed training and development programmes	48,007	48,752
Average total hours of training per employee (hours/person)	39.1	58.2
Lost Time Injury Frequency (Number of cases per one million man-hours)	0.13	0.11
Fatal Accident Rate (Number per 100 million man-hours)	1.36*	0.69

\*Prior year number has been restated due to revision on 2022 man-hours.

### Actions to Enhance Outcomes

- Accelerated upskilling and reskilling efforts, focusing on the five key capability development priorities to equip existing and future talents with the skills and capabilities needed to support the delivery of Core Business, New Business and Net Zero Carbon Emissions by 2050 Pathway. These include talent reshaping for junior executives to meet business expectations and requirements and embedment of sustainability in our way of working.
- Enriched the learning content on myLearningX, a Groupwide internal training platform to empower a self-learning culture across the organisation.
- Revised the flexible working arrangement to enhance organisational alignment and stronger collaboration, as well as improve employee well-being and productivity.
- Improved Employee Value Proposition to enhance overall employees' experience.

### Trade-Offs

- Operating effectively and efficiently in a rapidly changing energy landscape will require investment to shift our talents from resource-based to market-based skills.
- Revised our strategy and growth ambition will require continuous investment to attract and retain a highly competent talent pool amid global competition for skilled talents.
- Managing these trade-offs will impact our Financial Capital in the short term but will positively impact Human Capital in the medium to long term to deliver business effectively and benefit Financial Capital.

## SRC Social and Relationship Capital

We aim to consistently establish meaningful connections with our stakeholders and communities where we operate through specific initiatives. While this also supports our license to operate, we remain steadfast in building trust and supporting our communities by forging strong relationships as part of our license to operate.

### Inputs

- Over RM850 million invested in education (Powering Knowledge), community well-being and development (Uplifting Lives) and environment (Planting Tomorrow) aimed at uplifting the livelihoods and living standards of local communities where we operate.

Outputs/Outcomes	2022	2023
Total contribution to flood relief efforts (RM million)	6.8	2.9
No. of beneficiaries from various PETRONAS programmes ('000)	1,500	2,960
Number of scholarships awarded to Malaysians	587	615
Scholars recruited by PETRONAS (%)	90	90

### Actions to Enhance Outcomes

- Continued to engage and collaborate with various host authorities, state agencies and Non-Governmental Organisations to uplift communities.
- Increased investment in various science, technology, engineering and mathematics (STEM) programmes and technical vocational trainings to nurture future talents with the skills to positively contribute to their communities.
- Increased the number of scholarships awarded to deserving students to pursue tertiary education at leading local and international universities.
- Continued engaging and supporting the growth of local suppliers and small and medium-sized enterprises to contribute to the nation's economy.

### Trade-Offs

- While this may have impacted our Financial Capital, it has enhanced our position as a responsible corporate citizen among our stakeholders which indirectly serves all our other capitals.

## NC Natural Capital

Given our reliance on a wide range of natural resources, we are committed to continuously work to minimise our environmental impact and invest in technologies that support emission abatement and development of cleaner energy solutions to achieve net zero carbon emissions by 2050.

### Inputs

- 9.35 Bboe 2P Reserves
- 217 producing fields
- 318 offshore platforms
- 30 floating facilities
- 84.1 million m<sup>3</sup> total freshwater withdrawal

Outputs/Outcomes	2022	2023
Crude oil, condensates and natural gas production (thousand barrels of oil equivalent per day)	2,434	2,431
GHG emissions (million tonnes CO <sub>2</sub> e)	54.07	53.64
GHG emissions reduction from projects (million tonnes CO <sub>2</sub> e per year)	0.6	1.8
Nitrogen oxides emissions (tonnes)	62,790	101,695
Sulphur oxides emissions (tonnes)	60,116	60,212
Hazardous waste disposed (tonnes)	76,485	96,310
Oil in water content (tonnes)	487	327
Renewable energy in operations and under development (gigawatt)	1.0	2.9

### Actions to Enhance Outcomes

- Intensified emissions-abated oil and gas production to address energy security.
- Increased the implementation of emissions reduction projects such as reducing flaring and venting, increasing energy efficiency, electrification and developing CCS.
- Increased renewable energy capacity to provide customers with cleaner energy solutions which contributes to reduced carbon footprint.

### Trade-Offs

- As we progress in our Net Zero Carbon Emissions by 2050 Pathway, efforts to reduce and offset any residual carbon emissions in the future from our operations will result in higher costs. Nevertheless, this will contribute towards reducing our carbon footprint, strengthen long-term business resilience and improve Natural Capital.

# Engaging with Stakeholders

## Preserving, Creating and Growing Shared Value Together

Our stakeholders are instrumental to our success. We are mindful of their expectations in our decision making, as we are realising our business ambitions and advancing our PETRONAS Energy Transition Strategy. The PETRONAS Stakeholder Management Guideline informs our approach to engaging stakeholders, enabling mutually beneficial relationships.



### Level of Engagement

- Awareness building
- Collaboration or value creation
- Management or engagement
- Partnerships and strategic alignment
- Mature relationship

### Frequency

- AR As Required
- W Weekly
- M Monthly
- E Every Two Months
- Q Quarterly
- T Twice Yearly
- Y Yearly

## FG Federal Government

### Why We Engage

### → Level of Engagement

Establishing a solid and trusting relationship with the Federal Government of Malaysia is the cornerstone of our collaboration with ministries, agencies and regulators in ensuring effective business operations and seamless project delivery. Nurturing close rapport with key ministries and regulators strengthens our reputation as a responsible energy solutions partner for the nation. It presents synergies to advance mutually beneficial key commercial objectives and contribute to nation-building. PETRONAS remains committed as the nation's trusted partner in realising the Federal Government's aspiration for the nation's progress.

### Key Interests

- Compliance with laws and regulations
- Nation-building agenda
- Ethical business practices
- Health and safety
- Sustainable development
- Social development
- Human capital development
- Local employment opportunities
- Environment and climate change

### Our Response

- Advised on energy policy initiatives, National OGSE Blueprint 2021-2030, Chemical Industry Roadmap 2030, Gas 360 with the Ministry of Natural Resources, Environment and Climate Change and *Suruhanjaya Tenaga* (Energy Commission).
- Supported nation-building initiatives and contributed aid and assistance for national-level crises such as flood aid contributions and response.
- Partnered for social development projects.
- Participated as a thought partner in policy shaping discussions, in energy-related areas including energy transition (National Energy Policy, National Energy Transition Roadmap, National Gas Roadmap), carbon capture and storage and energy security.
- Provided regular updates on issues affecting the economy and our operations.
- Strengthened our collaborations with the government on net zero carbon emissions targets and sustainability ambitions.
- Operated safe and stable facilities in an environmentally compliant manner.
- Ensured safety as key priority.
- Worked closely with regulators and authorities to shape and improve industry standards and regulations..

### Value Created for Stakeholders

- Developed energy transition plans to ensure nation's energy security whilst generating revenue for the nation.
- Established clear understanding and positioning of the energy market landscape.
- Provided human capital development through employment opportunities.

### Engagement Platform/Frequency

- Face-to-face engagements
- Statutory reporting, meetings and briefings
- Periodical performance briefings
- Participated in government-related initiatives
- National OGSE Steering Committee
- Roundtable discussions

#### Capitals:

#### Key Risks:

#### Material Topics:



## Engaging with Stakeholders

### SG State Governments

#### Why We Engage

The trust and support of Malaysian State Governments enable continued collaboration to generate opportunities for local industries and empower local communities, ultimately spurring the state and, by extension, the country's economy. Continuous engagements on our operations help to broaden their understanding of the challenges we face and help to minimise business disruptions. We respect the conditions set out by the state government, and operate in accordance with all regulatory requirements to ensure seamless safe operations.

➔ **Level of Engagement** 

#### Key Interests

- State economic growth
- Participation of locals in the industry and employment opportunities
- Specific industry growth, for example fishing industry
- Gas supply to support industry growth
- New energy and sustainability
- Social development
- Energy growth aspiration
- Biodiversity conservation

#### Our Response

- Collaborated with State Governments through established platforms such as Annual Strategic Dialogue, Joint Working Committee and Joint Coordination Committee.
- Supported the State Governments' local economic development initiatives through partnerships with Yayasan PETRONAS to elevate socio-economic and community welfare.
- Participated in State Government initiatives such as transformation projects, state energy roadmap, state investment campaigns and biodiversity preservation projects such as Rigs-To-Reef.
- Organised business dialogues with state governments for business opportunities.
- Contributed to flood assistance.

#### Value Created for Stakeholders

- Increased industry participation by state governments to spur state economic development.
- Social empowerment through human capital investments and upliftment through employment opportunities.
- Business opportunities for the development of local industries.
- Partnered with the State Government to capture opportunities in the energy transition.

#### Engagement Platform/Frequency

- Face-to-face engagements
- Annual Strategic Dialogues
- Engagements to brief and provide updates to various state ministries
- Joint Coordination Committee and Joint Working Committee meetings
- Participation in state government programmes
- Site visits



#### Capitals:



#### Key Risks:



#### Material Topics:



## HG Host Governments

### Why We Engage

### → Level of Engagement

We proactively engage with host governments where we operate to foster diplomatic relations, strategic partnerships and the ability to navigate geopolitical risks effectively. These efforts enable our operations to remain sustainable and thrive in the ever-evolving global business environment. Continuous engagements with host governments ensure we understand the countries' complex regulatory and legal frameworks to obtain or preserve our license to operate. This ensures our presence remains welcomed by the host government and minimal disruptions to our international operations.

### Key Interests

- Operational efficiencies
- Business resilience
- Community development
- Greenhouse gas emissions
- Human capital development
- Compliance with country laws and regulations
- Ethical business practices
- Health and safety
- Human rights

### Our Response

- Actively engaged and continuously collaborated with host governments, authorities and embassies to build strong relationships.
- Participated in energy transition dialogues with host governments through thought leadership platforms for example, Energy Asia and discussions during courtesy calls.
- Proactively collaborated with the Ministry of Foreign Affairs, Malaysia and host governments to gain knowledge and insights on the concerns of the host country and where diplomatic ties can be strengthened to preserve PETRONAS' social license to operate.
- Promoted Malaysia as an investment destination by organising site visits to PETRONAS' plants.
- Bridged the bilateral and multilateral diplomatic ties between Malaysia and countries where we operate through regular stakeholder engagements and fostered government-to-government and business-to-government ties with Upstream countries.
- Activated social impact programmes in the communities of the countries we operate in.

### Value Created for Stakeholders

- Economic growth for host countries.
- Socio-economic and community development.
- Human capital development and employment opportunities in the countries we operate.
- Enhanced diplomatic relations between countries we operate in and provide added value in economic terms, especially in investments.
- Strengthened economic cooperation in areas of shared interest between Malaysia and host countries where we operate.

### Engagement Platform/Frequency

- Face-to-face engagements and virtual meetings
- Reporting, meetings and briefings
- Participated in host government-related initiatives
- Site visits



#### Capitals:



#### Key Risks:



#### Material Topics:



# Engaging with Stakeholders

## C Customers

### Why We Engage

Customer feedback is invaluable as we strive to deliver superior, innovative products and services with timely product delivery and reliable after-sales support. We aim to meet the ever-changing needs of our customers, address environmental considerations through innovative solutions and ultimately support our growth agenda.

➔ **Level of Engagement**

### Key Interests

- Product pricing, availability, safety and quality
- Innovative products and services
- Loyalty programme privileges and benefits
- Product management optimisation
- Cutting-edge solutions and services
- Exclusive loyalty programme benefits
- Brand reputation and advocacy
- Strategic networking opportunities
- Seamless customer experience
- Sustainability initiatives

### Our Response

- Offered improved hydrocarbon products and innovative solutions for enhanced customer experience.
- Developed and executed impactful marketing campaigns such as festive programmes and Mesra Bonanza loyalty rewards campaign.
- Launched a cardless Mesra Rewards loyalty programme in Malaysia.
- Hosted annual reception with long-term key customers to show appreciation and strengthen relationships.

### Value Created for Stakeholders

- Strengthened our retail network and expanded our offerings to fulfil our customers' needs.
- Continuously expand the Setel mobile application's features, offering a seamless payment experience across the daily touchpoints of our customers' journey.
- Fulfilled all contractual commitments despite market challenges.
- Concluded sale and purchase agreements and price reviews for liquefied natural gas buyers in key markets.

### Engagement Platform/Frequency

- Face-to-face meetings with customers
- Events, dialogues, roadshows and engagements
- Social media
- PETRONAS corporate website
- Customer feedback system
- Marketing activities and outreach programmes
- Online customer surveys
- Customer appreciation programmes

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#### Capitals:

FC IC MC SRC

#### Key Risks:

MR FLR TR SR GR  
HCR HSR

#### Material Topics:

SM HW IT SC EM  
HR CE CDP



## E Employees

### Why We Engage

### → Level of Engagement

Our people are our most valuable asset. As an organisation, we prioritise their safety, well-being and development. A psychologically safe and inclusive environment that fosters innovative thinking has helped us to achieve our growth pursuits and propel us towards being the workforce of the future, ensuring business sustainability.

#### Key Interests

- Talent attraction and retention
- Flexible working arrangements
- Opportunities for career progression
- Learning and development and on-the-job learning opportunities
- Safe and healthy work environment
- Diversity and inclusion
- Right behaviour and mindset
- Ethical and sustainable business practices

#### Our Response

- Reinforced and strengthened a generative health, safety and environment culture across PETRONAS operations.
- Revised the flexible working arrangement to inculcate a work environment that promotes collaboration, inclusivity and innovation.
- Empowered employees to take charge of their career via myCareerX, an integrated HR platform that provide opportunities to explore other roles available across PETRONAS.
- Enhanced internal digital learning platforms and continued to provide upskilling and reskilling opportunities to maximise employee potential.
- Continued holistic wellness support programmes to safeguard employees' mental health and well-being, while leveraging PETRONAS Organisation Culture Survey and Employee Performance Management system to create a psychologically safe environment for employees to speak up.
- Enhanced awareness on diversity and inclusion through recruitment efforts of differently-abled persons and partnerships to build a neurodiversity ecosystem in Malaysia, including recruitment of neurodiverse talents into PETRONAS.
- Strengthened the culture of integrity to safeguarded the organisation and employees through enhanced declaration of activity and asset declaration tool, myAsset.
- Strengthened Human Rights Policy, which was approved in 2023 for implementation on 1 April 2024 with enhanced grievance mechanism platform for employees.
- Provided platform to encourage empowerment and develop young talents in PETRONAS via the Young Professionals Club.

#### Value Created for Stakeholders

- Provided growth opportunities via learning and development programmes, supported by conducive work-life integration platforms to nurture talent.
- Encouraged the spirit of innovation and creativity such as Race2Decarbonise hackathon to accelerate the move towards a lower carbon future.
- Established a safe and flexible work environment for both professional and personal development.

#### Engagement Platform/Frequency

- |  |  |
|--|--|
| • Townhalls  |  |
| • Internal digital communications                            |  |
| • Upskilling sessions (in-person, virtual, hybrid)           |  |
| • Annual health survey                                       |  |
| • Organisational culture survey                              |  |
| • Social media   |  |
| • PETRONAS corporate website                                 |  |
| • Knowledge-sharing engagements and forums                   |  |
| • Exhibitions  |  |
| • Engagements with leaders, conversations with line managers |  |

#### Capitals:



#### Key Risks:



#### Material Topics:



# Engaging with Stakeholders

## SIC Shareholders, Investors and Credit Rating Agencies

### Why We Engage

Consistent and clear communications regarding financial and strategic information builds trust and confidence, enabling business growth, by providing continued access to capital and reducing the cost of borrowing. Market intelligence and insights through frequent stakeholder engagement enables us to tap into opportunities and adapt to new trends within the financial and capital markets, which contributes to our long-term strategic priorities.

➔ **Level of Engagement**

### Key Interests

- Business and industry outlook
- Environmental, social and governance
- Energy transition
- Financial positions and shareholders' returns

### Our Response

- Provided timely and comprehensive reporting.
- Periodic engagements through quarterly financial results announcements.
- Demonstrated robust fundamentals and delivered resilient financial performance.
- Increased disclosure in sustainability to enhance transparency, aligned with international frameworks and standards.

### Value Created for Stakeholders

- Timely guidance on PETRONAS' performance, business strategies and industry outlook.
- Clarity on PETRONAS' sustainability journey, including on our progress towards our Net Zero Carbon Emissions by 2050 Pathway.

### Engagement Platform/Frequency

- |  |  |
|--|--|
| • Stakeholder engagements                              |  |
| • Quarterly and annual results announcements           |  |
| • Analyst briefings                                    |  |
| • Announcements and disclosures via corporate websites |  |
| • Annual general meetings                              |  |

#### Capitals:

#### Key Risks:

#### Material Topics:

## M Media

### Why We Engage

### → Level of Engagement

Continuous engagement with the media increases PETRONAS' visibility and shapes the perception of its target audience, including media, industry and the public. It helps create and communicate impactful content to build brand strength, safeguard reputation and enhance media rapport and mutual accessibility.

#### Key Interests

- Governance
- Financial performance
- Products and services
- Leadership
- Sustainability and Net Zero Carbon Emissions by 2050 Pathway

#### Our Response

- Implemented robust media strategies and plans.
- Ensured timely communication and dissemination of information.
- Provided access and platforms for open and constructive engagements or conversations.
- Collaborated and supported initiatives with media partners.

#### Value Created for Stakeholders

- Credible partners in communicating accurate and timely information.
- Advocate for transparency, ethical business conducts and practices, business performance, environmental, social and corporate governance, health and safety commitments, innovation and technology.

#### Engagement Platform/Frequency

- Media luncheons to announce launch of PETRONAS campaigns
- Media sponsorships to support media causes and accolades
- Appreciation dinner for media partners
- Press releases, statements, announcements, responding to media queries
- Media interviews and annual dialogue sessions with leaders

#### Capitals:



#### Key Risks:



#### Material Topics:





# Engaging with Stakeholders

## GIP Government-Linked Companies and Industry Partners

### Why We Engage

We continue to collaborate closely with industry partners to elevate industry standards and develop new technology and solutions for a sustainable energy industry. Alliances with GLCs and other industry partners are key to collectively align with national goals and fulfill our environmental and social responsibilities. Through these engagements, we contribute to economic growth and sustainable business practices.

➔ **Level of Engagement** 

### Key Interests

- Governance and integrity
- Business continuity and industry relevance amid the energy transition
- Health, safety and environment
- Local participation in the industry
- Industry requirements, regulations and policies
- Business opportunities
- Capability development in oil and gas

### Our Response

- Partnered with industry players, via project development agreements on carbon capture and storage and promote opportunities in Malaysia's oil and gas exploration blocks through the Malaysia Bid Round.
- Leveraged thought leadership platforms for engagement with industry partners, showcasing PETRONAS' technological advancements and new value chain opportunities, particularly carbon capture and storage.
- Continued vendor communications and engagement programmes and business opportunities platform via Oil and Gas Services and Equipment (OGSE) Partners Day, exhibitions and the annual PETRONAS Activity Outlook publication.
- Partnered with local banks for the Vendor Finance Programme.
- Strengthened the OGSE supply chain through programmes and initiatives.
- Continued to develop capabilities of homegrown energy companies through Vendor Development Programme (VDP) and Vendor Development Programme X (VDPx).
- Partnered with S&P Global to organise Multi-stakeholder Dialogues and inaugural Energy Asia conference.

### Value Created for Stakeholders

- Industry growth.
- Improved industry standards and regulations.
- Supported economic growth in OGSE sector.
- Alignment of initiatives to optimise scope.
- Strengthened resilience and competitive OGSE sector.
- Gained insights in new businesses such as carbon capture and storage via events such as Energy Asia, International Petroleum Technology Conference (IPTC), Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) and Indonesia Petroleum Association (IPA).
- Created positive social impact on the coastal communities through various social impact activations with Petroleum Arrangement Contractors, for example, Nippon in Sarawak and Hibiscus Petroleum and Hess in Terengganu.

### Engagement Platform/Frequency

- Face-to-face and virtual meetings (formal and informal) such as courtesy calls
- Familiarisation visits with stakeholders
- Official events such as MoU signings and launches
- Forums and exhibitions



#### Capitals:



#### Key Risks:



#### Material Topics:



## CN Communities and Non-Governmental Organisations

### Why We Engage

We contribute to uplifting the well-being of communities by collaborating with relevant Non-Governmental Organisations (NGOs). Community engagement helps earn public trust, which is essential for our long-term success.

### → Level of Engagement

#### Key Interests

- Education
- Community well-being and development
- Governance and integrity
- Health, safety and environment
- Compliance with relevant legislation
- Sustainability
- Ethical practices
- Human rights

#### Our Response

- Conducted Walk4Trees Community Peer Learning Forum organised by Yayasan PETRONAS and Global Environment Centre which brought together local community representatives from 14 planting sites across Malaysia.
- Held national symposium of flagship education programme – *Program Duta Guru* (Teacher Ambassador Programme).
- Continued humanitarian and flood-relief activations for communities affected by natural disasters.
- Collaborated with NGOs for the protection and preservation of wildlife and the environment through PETRONAS Planting Tomorrow and wildlife conservation programmes.
- Developed B40 (low income) community upliftment through MEKAR programmes, well-being development such as MyLady Assistance scheme, Social Enterprise Education Lab (SEEd.Lab) and Homeward Programme.
- Initiated used cooking oil collections with the community at PETRONAS retail stations.
- Provided a grievance mechanism for members of communities and other stakeholder group to raise concerns.

#### Value Created for Stakeholders

- Through the various programmes conducted by Yayasan PETRONAS' collaborations with NGOs, we contributed to improving community well-being and livelihoods, protecting and preserving wildlife, environment and social causes.
- The *Program Duta Guru* (Teacher Ambassador Programme) has empowered teachers to be highly capable science, technology, engineering and mathematics (STEM) educators in schools that serve a majority of B40 students.

#### Engagement Platform/Frequency

- Social impact activations
- Periodic briefings
- Regular engagements with local communities
- PETRONAS signature social impact programmes: Powering Knowledge, Uplifting Lives and Planting Tomorrow

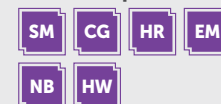
#### Capitals:



#### Key Risks:



#### Material Topics:



# Engaging with Stakeholders

## 10 International Organisations

### Why We Engage

We build long-term partnerships based on common goals and work closely with key international organisations to advocate inclusive participation, discussions and actions for a just and responsible energy transition. This strategic engagement enhances PETRONAS' global footprint and effectiveness in navigating the complexities of the industry business landscape.

➔ **Level of Engagement**

### Key Interests

- Opportunities and barriers to a just energy transition
- Capacity and capability building
- Sharing of global best practices, standards and frameworks

### Our Response

- Built partnerships and promoted exchanges among key stakeholders in advancing climate actions in conjunction with the United Nations Framework Convention on Climate Change Conference of the Parties (COP) 28.
- Elevated ASEAN leadership in methane emissions management as the initiator and lead collaborator of the ASEAN Energy Sector Methane Leadership Programme.
- Strengthened internal capacity by engaging the World Business Council on Sustainable Development to train and upskill senior leaders on sustainability topics.
- Partnered with PwC Malaysia to engage external stakeholders in roundtable discussions on a just energy transition in Malaysia.
- Demonstrated visible leadership in nature-based solutions by hosting an event which brought together international organisations and nature-based solutions project developers and policymakers to explore the broader trends in the global carbon market and share valuable insights on how the global effort to decarbonise is influencing the region's nature-based solutions market.
- Established collaborative networks through a partnership with International Emissions Trading Association (IETA) which builds capability and capacity in carbon markets and carbon pricing in Malaysia and beyond.
- Co-chaired the World Economic Forum ASEAN Leaders for Just Energy Transition where many global leaders are also members.

### Value Created for Stakeholders

- Fostered multi-stakeholder collaborations to lay the foundations for a fair, inclusive and just transition towards a lower carbon economy.
- Promoted cross-learning and knowledge transfer in nature and biodiversity, human rights, methane emissions management, sustainability and carbon markets via participation in capacity-building programmes.

### Engagement Platform/Frequency

- Face-to-face engagements
- Thematic dialogues, panels and roundtable discussions
- Virtual meetings
- Capacity-building programme



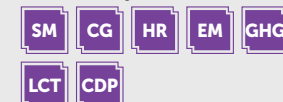
#### Capitals:



#### Key Risks:



#### Material Topics:



Scan this QR code to read more about PETRONAS' memberships and associations.



# Material Topics

## Materiality Process and Matrix

In our commitment to sustainable practices, we champion purposeful and informed value creation that adapts to stakeholder needs and environmental changes beyond routine checklists.

This year, we revalidated our material topics, ensuring alignment with our commitment to sustainability, strategic endeavours and transparent disclosure practices. We apply a dual perspective, combining an inside-out assessment with an outside-in evaluation. This approach is pivotal in informing a holistic and integrated strategy to effectively manage both risks and opportunities that lie at the centre of our operations.

## Materiality Assessment Revalidation



### Step 1: Identification

We studied regulatory changes, media reports and the Sustainability Accounting Standards Board (SASB) to identify material sustainability topics. SASB was particularly valuable as it aligns with the new International Sustainability Standards Board (ISSB).



### Step 2: Stakeholder Engagement

We obtained detailed feedback from a variety of external stakeholders, including investors, financial institutions and rating agencies to assess the impact of material topics on our business. The assessments conducted throughout the year provided valuable insights, guiding our materiality assessment. Stakeholders' concerns, queries and responses were documented as inputs for the assessment.



### Step 3: Prioritisation

We prioritised strategies and focus areas through initiatives, commitments and discussions at the Executive Leadership Team and Board levels. Material topics were ranked based on alignment with risk elements in PETRONAS Corporate Risk Profile.



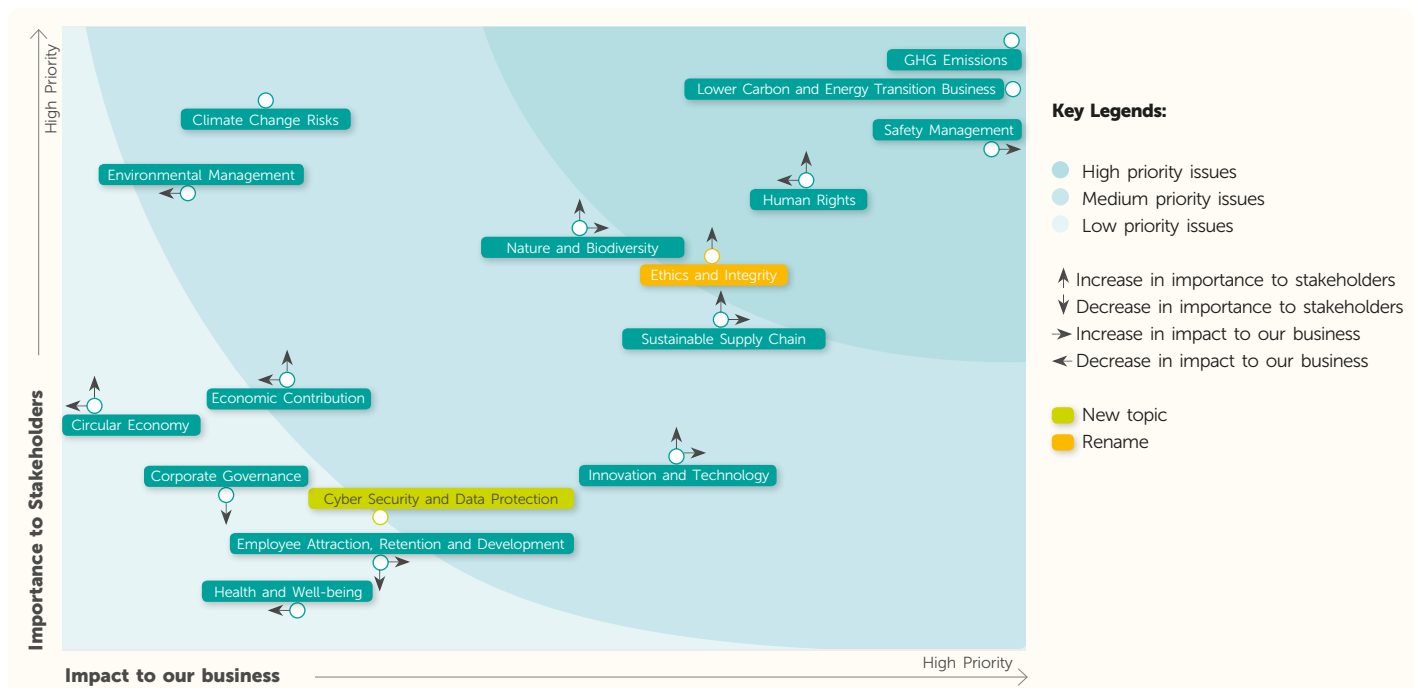
### Step 4: Endorsement

We submitted revalidation results to the Sustainability Committee, formerly known as the Sustainability Council, for approval by the Vice President and Chief Sustainability Officer.

## Materiality Analysis

### 1. Updated Materiality Matrix and Topics

Following the revalidation exercise, we found that all 15 material topics in 2022 remain relevant to our business. As we continue to observe and assess our business approach and stakeholders' priorities, we renamed one topic and added one new topic to reflect the significance of impact and the importance.



## Material Topics



## 2. Movement of Material Topics

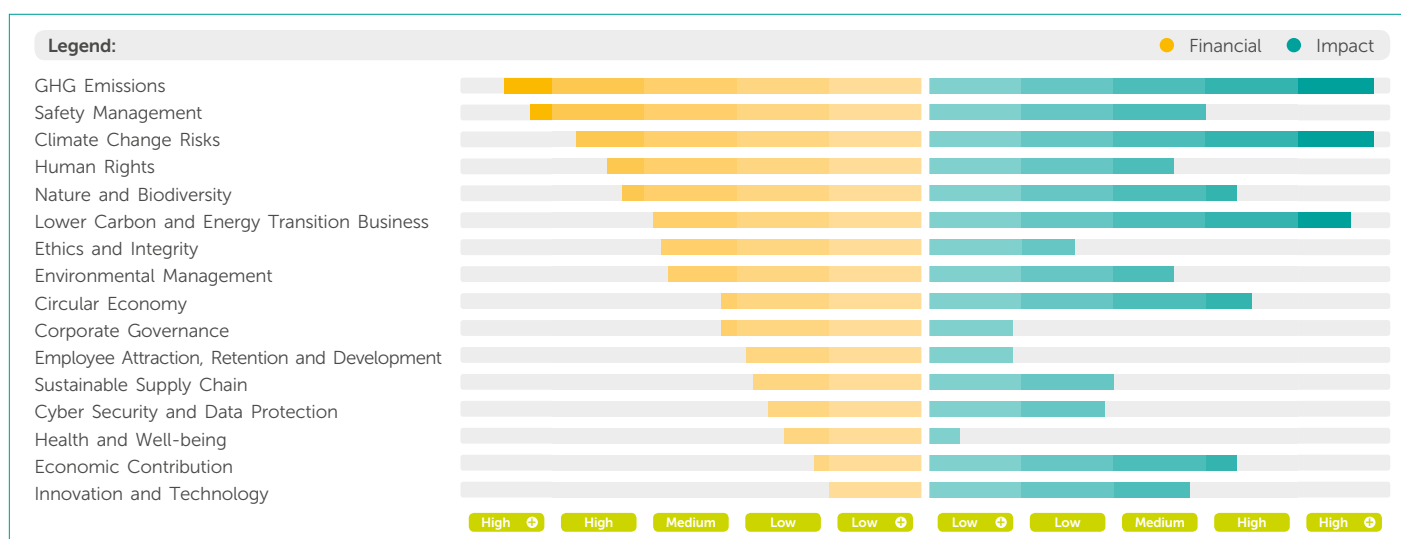
In the pursuit of achieving net zero carbon emissions by 2050, we witnessed the shift in stakeholders' focus and changes to the prioritisation of these material topics as we continue adapting our business to the evolving business landscape.

We undertook various efforts in the areas of Nature and Biodiversity, Sustainable Supply Chain and Innovation and Technology. These efforts included a Memorandum of Understanding with Malaysia Forest Fund, detailed discussions and innovation showcases at the inaugural Energy Asia conference, the launch of the Methane Leadership Programme, as well as the innovation challenges of Race2Decarbonise and FutureTech.

## 3. Double Materiality

The concept of double materiality refers to how information disclosed by the company can be material both in terms of its implications for the company's financial performance, as well as the company's impact on stakeholders and the physical environment. As the demand for transparent and comprehensive reporting continues to grow, the double materiality concept serves as one of the methods to communicate on our sustainability performance. It aligns with the broader concept of interconnectedness of financial and sustainability matters.

Our double materiality analysis utilises diverse external data sources, such as regulatory filings, news articles and social media. We identify emerging environmental regulations, societal concerns and investor priorities using a data-driven platform. This approach guides our responsive strategy toward stakeholder issues, ensuring that PETRONAS aligns with evolving expectations.



Similar to 2022, Greenhouse Gas (GHG) Emissions, Safety Management and Climate Change Risks remained top of the list of our material topics. Managing our GHG emissions is a critical focus as we contribute towards action on climate change and at the same time prepare for potential implementation of carbon pricing and the introduction of other regulation, including the European Union Carbon Border Adjustment Mechanism (CBAM). Effective safety management has always been a top priority in our operations. The effects of climate change has increased the risk towards our assets with the potential to lead to supply chain disruptions and increased insurance costs, among others.

The 16 material topics in 2023 are as follows:

## GHG Emissions

We consistently enhance our measurement and quantification methods to effectively address GHG emissions from our operations, thereby reducing the impact on the environment. We also intensify collaboration with stakeholders across the energy ecosystem to gain a deeper comprehension of energy utilisation within our company and across our value chain.

### Capitals:



### Key Risks:



### Key Stakeholders:



## Safety Management

Prioritising safe operations, means providing a secure and productive working environment for our employees and contractors, free of incidents and accidents.

### Capitals:



### Key Risks:



### Key Stakeholders:



## Climate Change Risks

We acknowledge the challenges posed due to climate change, both in terms of its physical impacts and the transition to a lower carbon economy. We are actively exploring measures to adapt and build resilience, while also implementing governance systems in line with the Task Force on Climate-related Financial Disclosures recommendations to effectively identify and manage climate-related risks and opportunities.

### Capitals:



### Key Risks:



### Key Stakeholders:



## Human Rights

We are committed to respecting human rights in all our business activities and relationships, issues such as forced labour, human trafficking, modern slavery, fair working conditions and non-discrimination are monitored to ensure that we are operating responsibly wherever we are. In April 2024, we launched our Human Rights Policy formalising and thereby, strengthening our commitment to human rights.

### Capitals:



### Key Risks:



### Key Stakeholders:





# Material Topics

## NB Nature and Biodiversity

As climate and nature issues are intertwined, it is important that our GHG emissions abatement and growth of cleaner energy solutions are in unison with the conservation and protection of nature and biodiversity. The PETRONAS Nature and Biodiversity Position guides our plans and the operationalisation of our recently established Nature and Biodiversity Centre of Excellence. We established the Nature and Biodiversity Centre of Excellence and plan to assess our readiness to align with Taskforce on Nature-related Financial Disclosures (TNFD) recommendations.



## LCT Lower Carbon and Energy Transition Business

Our Net Zero Carbon Emissions by 2050 Pathway informs our lower carbon and energy transition activities and ventures. This includes prioritising natural gas and exploring opportunities in renewable energy, hydrogen, green mobility, specialty chemicals and biofuels. Our aim is to strike a balance between energy security, affordability and sustainability, leveraging on the latest policies, goals, measurement tools and technologies to facilitate this transition.



## EI Ethics and Integrity

We stand resolute against any form of corruption or unethical conduct. This commitment extends throughout our entire value chain, encompassing employees, partners, suppliers, contractors and all intermediaries. We actively promote responsible business practices and strict adherence to established standards and guidelines. The PETRONAS Anti-Bribery and Corruption Policy and the PETRONAS Code of Conduct and Business Ethics (CoBE) serve as our guiding principles, and sets the bar for ethical business conduct.



## EM Environmental Management

Environmental management is essential in addressing our impact on the physical environment. The environmental effects of our operations, emphasising sustainable resource management, emissions reduction, waste and water practices and responsible asset decommissioning.



## CE Circular Economy

Our goal is to minimise the environmental footprint of our product by minimising waste and cutting down material usage. We are committed to combating plastic pollution through recycling and reusing, fostering innovation and reducing waste. Embracing the circular economy model, we aim to establish a closed-loop system where waste serves as input for new processes. Our focus is on building a sustainable future, preserving natural resources and lowering our carbon footprint while generating value.

### Capitals:



### Key Risks:



### Key Stakeholders:



## CG Corporate Governance

We uphold our commitment to maintaining the highest standards of corporate governance, recognising its crucial role in enhancing business resilience and fostering long-term growth. Ensuring the highest level of governance across structures, policies and strategies relating to sustainability remained one of our top priorities.

### Capitals:



### Key Risks:



### Key Stakeholders:



## EAR Employee Attraction, Retention and Development

Investing in skilled talent is vital for long-term business resilience in a rapidly changing energy landscape and ensuring a just transition. We aim to attract and retain top talent through flexible work arrangements, opportunities for growth and market-based compensation based on capability, experience and performance. We are committed to fostering an inclusive workplace where everyone is treated equally.

### Capitals:



### Key Risks:



### Key Stakeholders:



## SC Sustainable Supply Chain

We pay close attention to our overall supply chain management, product stewardship and procurement as these mitigate risks that impact the environment, society and economy. This ensures the sustainability and safety of our products throughout the entire life cycle. To improve supply chain resilience, we continuously strengthen our efforts to nurture and support local suppliers where possible and applicable. We also share global work practices with regional and local entities to enrich the local economy.

### Capitals:



### Key Risks:



### Key Stakeholders:



# Material Topics

## CDP Cyber Security and Data Protection

Cyber security and data protection play pivotal roles in safeguarding organisations against a myriad of cyber threats and ensuring the integrity and confidentiality of sensitive information.



## HW Health and Well-being

Ensuring the safety and well-being of all employees and contractors is paramount to us, extending our commitment to fostering a culture of health and safety within our workforce and the broader community. Through comprehensive risk assessments, robust controls and a variety of health and wellness programmes, we proactively address overall well-being of our employees.



## EC Economic Contribution

Our commitment lies in fostering both business growth and community prosperity. We achieve this by creating economic value through our offerings, paying taxes and wages and providing opportunities for society. During crises, we extend assistance through financial aid, volunteer work and efforts. Our tax practices adhere strictly to local regulations, ensuring transparency and responsibility.



## IT Innovation and Technology

We acknowledge the importance of innovation and technology in delivering our commitment. We promote an innovative culture that encourages creative thinking in both product design and operations. This boosts our competitive edge and enhances our brand reputation. Through advanced technologies and digital innovations, we develop new business processes that elevate customer and stakeholder experiences. Our approach integrates innovation and technology across all operations and services to fuel our business growth and expand our offerings.





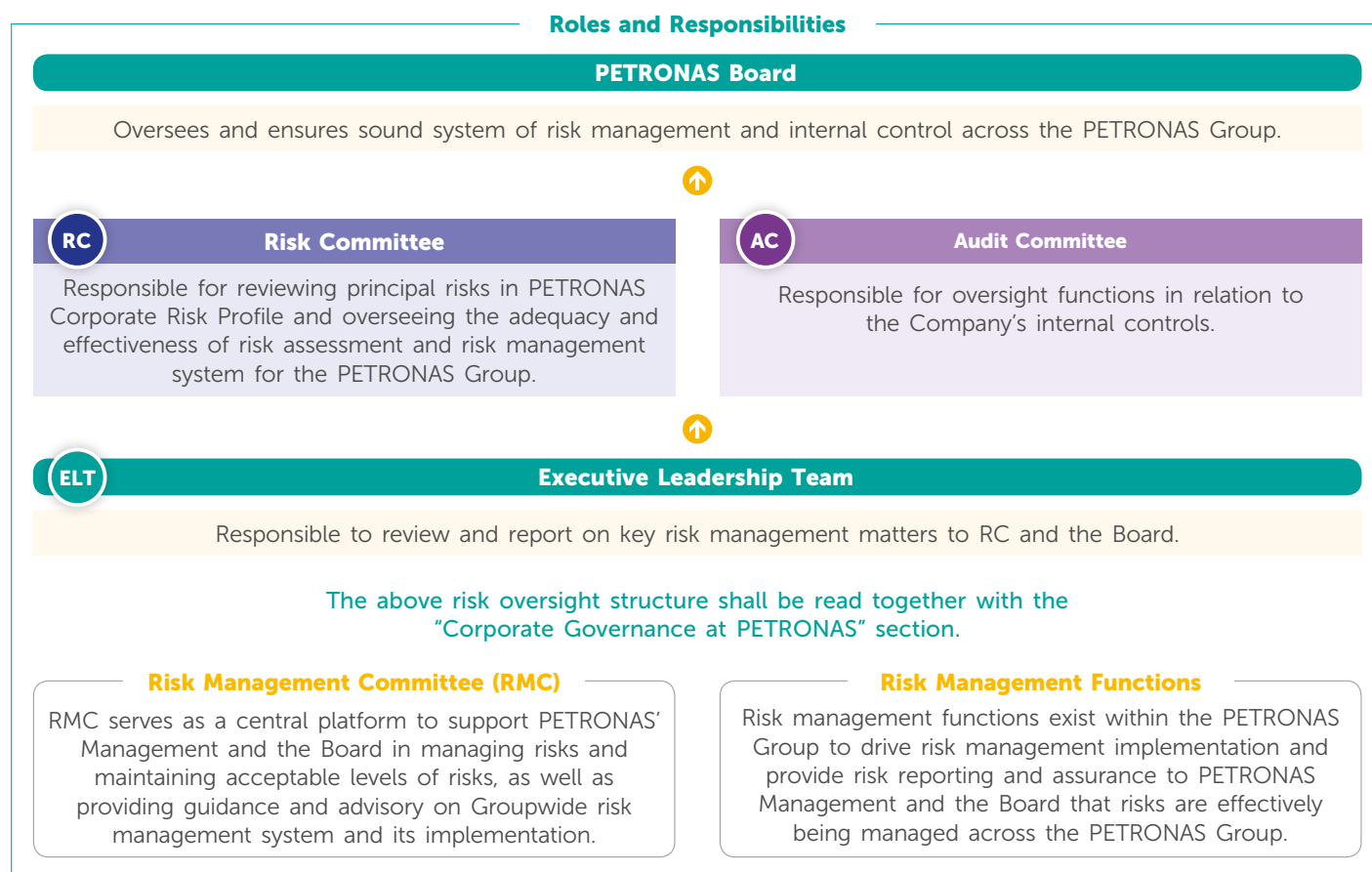
# Risks Linked to Creating Value

At PETRONAS, we recognise that navigating volatile market conditions, technological disruptions and the complexities of the energy transition requires a robust and dynamic approach to risk management. Our commitment to identifying, assessing and mitigating risks is critical to delivering our strategies and protecting our assets and operations. We consider risks that can impact our business ambitions and strategic objectives. This approach allows us to meet our stakeholders' expectations while steadfastly progressing PETRONAS' strategies and contributing positively to the global energy landscape.

## Robust Risk Management Practices

PETRONAS has a risk management and internal control system that is applied across the Group to manage risk exposure and capitalise on opportunities to create sustainable value. This system provides reasonable but not absolute assurance against material misstatement or loss.

The PETRONAS Board, along with the Risk Committee (RC), the Audit Committee (AC) and the Executive Leadership Team (ELT), oversee the adequacy and effectiveness of our risk management and internal control system. In addition to these committees, risk oversight is supported by the Risk Management Committee (RMC) and respective risk management functions.



## How We Manage Risks

The PETRONAS Risk Policy provides a foundation for risk management in PETRONAS, including promoting the implementation of best practices in risk management and risk-based decision making, as part of value protection and value creation process for the organisation. A risk-based decision making approach provides a balanced view of exposures to achieve business objectives, thus fortifying our stance as a risk resilient organisation.

## Risks Linked to Creating Value

Complementing our risk policy is the PETRONAS Resiliency Model which provides an integrated approach for effective risk management throughout the organisation. It focuses on three areas of business resilience, namely Enterprise Risk Management, Crisis Management and Business Continuity Management.

### PETRONAS Risk Policy and PETRONAS Resiliency Model

➤ **PETRONAS is committed to becoming a risk resilient organisation.**

➤ **PETRONAS shall continuously strive to implement:**

- Risk management best practices to protect and create value within the set boundaries.
- Risk-based decision-making by providing a balanced and holistic view of exposures to achieve business objectives.

➤ **Managing risk is everyone's responsibility.**

#### Enterprise Risk Management

Structured and holistic approach to identify, assess, manage and monitor risks. The aim is to REDUCE the likelihood and impact of identified risks to enhance the organisation's ability to achieve its strategic objectives.

#### Crisis Management

Comprehensive set of processes that aims to prepare the organisation to RESPOND and manage crises to protect people, environment, asset and reputation.

#### Business Continuity Management

Holistic management process that aims to build the capability of an organisation to RECOVER and continue delivering products or services at acceptable predefined levels following a prolonged disruptive incident.

### Enterprise Risk Management

Enterprise Risk Management (ERM), governed by the PETRONAS ERM Framework, is a systematic process of identifying, assessing, treating, monitoring and reviewing of risks. It supports our ability to reduce the likelihood and/or mitigate risks that may impact our business objectives through the implementation of mitigations and monitoring of risk profile and risk appetite.

In intensifying our efforts to be a risk-resilient organisation, risk profile and the corresponding risk mitigations and key risk indicators are monitored at both corporate and respective business levels across the Group.

Our risk appetite guides strategic decisions, reflecting our position, propensity and willingness to accept and manage risks within tolerable limits in strategic, financial, operational and reputational areas while complying with legal and regulatory standards. The risk appetite for each area is determined by its respective tolerance and threshold levels.

At the corporate level, the PETRONAS Corporate Risk Profile and Risk Appetite are monitored and reported quarterly to the RMC, ELT, RC and Board.

Additionally, we also conduct risk assessments at key decision points to:

- Ensure that decisions impacting our business operations and strategies are made with careful consideration of risk-reward trade-offs.
- Create risk-reward conversations at respective decision platforms and/or approving authority.

### ERM Framework



### Crisis Management and Business Continuity Management

Crisis Management (CM) and Business Continuity Management (BCM) are integrated processes, governed by PETRONAS CM and BCM Frameworks, which aim to prepare our domestic and international operations to respond to crises and recover from any business disruptions.

Under CM, we adopt a three-tiered response protocol that demarcates the roles and responsibilities of emergency site management, operating unit management, corporate and internal or external response agencies and/or authorities. This allows us to focus on responding to crises and minimising the impact to the business.

Meanwhile, under BCM, we focus on building our capabilities to recover and restore critical business functions to continuously deliver products or services at acceptable predefined levels and minimise disruptions to stakeholders.

In promoting continuous improvement and capability building, we conduct testing and exercises on crisis and business disruption scenarios periodically to ensure the effectiveness of our response and recovery strategies, as identified in the respective crisis and business continuity plan.

### CM and BCM Frameworks





# Risks Linked to Creating Value

## Risk Management in 2023

We managed our risk across the following material risks which are crucial to our business and nature of operations. The risks discussed below could have a material effect, directly or indirectly, on the implementation of our strategy and business operations.

### MR Market Risk

#### What It Means

PETRONAS Group performance is exposed to macroeconomic headwinds, geopolitical tensions, currency swings and supply fluctuations from key oil producers, contributing to volatility in commodity prices.

Additionally, shifts in customers' preferences and government policies towards cleaner and renewable energy sources and sustainable products driven by the decarbonisation agenda stemming from climate change will potentially displace demand for traditional oil and gas products, requiring PETRONAS to diversify into new areas beyond our core business.

#### Impact on Value

- **Price and Demand:** Escalating geopolitical tensions and slowdown in economic activities in major economies have influenced fluctuations in commodity prices and customers' demands, impacting our project viability, financial performance and shareholder returns.
- **Currency Fluctuations:** As a Malaysian company with global operations and market presence, movement in the major currencies against the Malaysian Ringgit could significantly impact our capital investment and long-term financial returns.
- **Increased Competition:** Increasing attention on climate change and rising expectations to transition toward lower carbon economy would continue to influence customer preferences leading to increased competition in the energy industry, lower returns for traditional oil and gas businesses and thereby affecting our value chain.
- **Fulfilment of Contractual Obligations:** The changes in market dynamics would affect our revenue, cost of operations and counterparties' ability to deliver their contractual obligations to the Group as commercial arrangements are pegged to commodity prices. Consequently, this could impede our growth prospects and have a long-term impact on the sustainability of our business operations.

#### Impact on Capitals

- **Financial Capital:** Changes in market environment can disrupt steady returns and challenge the Group's future growth and business sustainability.
- **Manufactured Capital:** Challenges to identify assets that form the core engine to support current and future operating models may be at risk due to changing market demands and regulations.
- **Intellectual Capital:** Rapid technological and market shifts can render existing intellectual capital redundant.
- **Natural Capital:** Changes in market environments and outlook may render prospective oil and gas investments and asset life extension efforts uneconomical.

#### Mitigation Strategies

- Optimise resource allocation and ensure adaptability to market changes by undertaking regular strategic reviews and resource prioritisation.
- Drive proactive and timely intervention through continuous monitoring and review of portfolio composition and counterparty performance.
- Protect value and margin against adverse price movement by undertaking hedging activities.
- Implement prudent financial risk management in accordance with principles in PETRONAS Financial Policy and PETRONAS Financial Standards.
- Advocate our business strategies and instill awareness, ensure buy-ins and obtain support by conducting engagement with stakeholders, including governments, banks, financiers and investors.

#### Tactical Opportunities

- The volatile commodity market provides opportunities for PETRONAS to actively pursue trading opportunities and provide additional value by capturing pockets of favourable volatility. Furthermore, heightened ESG awareness provides an opportunity for the inclusion of ESG-linked products in hedging and trading activities in line with the global energy market's trajectory towards sustainability.
- Shifts in customers' preferences create opportunities for PETRONAS to strategically diversify to capture new market, including venturing into cleaner energy business segments and offering other ESG-related product offerings.
- Geopolitical uncertainties may alter business activities and open avenues into new markets, supply bases and partnerships.
- Accelerating utilisation of digital and cost management tools to mitigate the impact of price volatility also creates trading opportunities for PETRONAS to generate value.

#### Risk Movement

Slowdown in economic activities attributed to persistent interest rate hikes in the US and Europe as well as slow recovery of China's economy amid property crisis and weak manufacturing activity; and escalated geopolitical tensions such as in the Middle East and Ukraine have created uncertainties in the value chain and impacted the supply and demand for our products. These factors will continue to evolve, and any significant event will have direct impact to our business. We will continue to manage this risk through the approved mechanisms and monitor the key signposts for early intervention.

#### Material Topics:



#### Stakeholders:



#### Capitals:



## FLR Financial Liquidity Risk

### What It Means

Our business activities require significant capital investments, sufficient operating cash flows and/or sufficient external financing for operations and growth projects. Influencing factors include market risk, strategic reviews which focuses on ESG and climate change, and changing operational and stakeholder requirements.

#### Impact on Value

- **Affordability and Capital Availability:** Our inability to maintain optimum liquidity position can affect business agility and future growth, as well as our ability to meet shareholders' expectations.
- **Credit Rating and Borrowing:** Credit rating downgrades and non-compliance to ESG and climate change requirements could increase our borrowing costs and limit our access to capital markets.
- **CAPEX Concentration:** Increase in capital allocation in New Business and decarbonisation, may adversely impact our business portfolio and revenue stream due to delay in our return realisation that can be attributed to lower return compared to traditional oil and gas, ability to attain the right talent and timely deployment of technology.

#### Impact on Capitals

- **Financial Capital:** Regulatory changes, market conditions and stakeholder demands can impact our financial and liquidity position, affecting our ability to ensure sustainable cash flow, gain access to financing and safeguard long-term value creation for stakeholders.

#### Mitigation Strategies

- Strengthen execution and implement prudent financial risk management in accordance with principles in PETRONAS Financial Policy and PETRONAS Financial Standards.
- Fortify management oversight on overall liquidity management strategies to achieve financial objectives and support the Group's business growth including asset and liability management strategies through the establishment of Asset Liability and Liquidity Management Committee.
- Drive proactive and timely interventions through regular monitoring and reviewing of our liquidity position against our risk appetite on liquidity and indebtedness levels.
- Protects value and margin against adverse price movement by undertaking hedging activities.
- Improve PETRONAS' responsiveness in safeguarding the Group's financial sustainability by implementing relevant liquidity crisis management and business continuity measures aligned with the established Liquidity Risk Contingency Protocol.
- Ensure readiness for external funding and borrowing through continuous engagements with stakeholders, including governments, banks, financiers and investors.

#### Tactical Opportunities

- Increasing awareness and financier's commitment towards energy transition and net zero carbon emission pledges demonstrated through establishment of alliances such as the Net Zero Banking Alliance provides opportunity for PETRONAS to leverage on external funding sources in pursuing cleaner energy transition solutions.

### Risk Movement

Financial Liquidity Risk indicators remain stable despite market volatility and varying degrees of stakeholders' requirements which can be attributed to effective implementation of the existing controls and mitigations including strict capital discipline and robust portfolio management.

#### Material Topics:



#### Stakeholders:



#### Capitals:



# Risks Linked to Creating Value

## LR Legal and Regulatory Risk

### What It Means

As a global energy company, PETRONAS navigates complex legal and regulatory landscapes, with the need to adhere to diverse laws with extra-territorial effects, namely ethics and integrity, including anti-bribery and corruption, sanctions, export control, competition and data privacy. Our business also requires adherence to a multitude of regulatory requirements at the operational level. We are also exposed to various claims, suits and legal proceedings involving shareholders, labour, issues related to intellectual property, climate change, tax and other matters. Our large workforce may unintentionally or intentionally not comply with regulatory and compliance requirements, impacting the broader organisation, including operations, financials and reputation.

#### Impact on Value

- **Litigation Uncertainties:** Adverse litigation and dispute resolution outcomes can negatively affect our operations, financial condition and reputation.
- **Emerging Regulations:** The accelerated pace of energy transition exposes us to the need to adapt and comply with emerging regulations and policies which could increase compliance costs and impact our license to operate.

#### Impact on Capitals

- **Financial Capital:** Legal and regulatory breaches and inability to meet regulatory requirements can lead to financial penalties, reduced access to external financing and increase our cost of doing business.
- **Social and Relationship Capital:** Legal and regulatory breaches can damage relationships with key stakeholders and erode trust and our credibility.
- **Human Capital:** Non-compliance to critical and operational legal areas may impact our position as a favoured employer and potential loss of talents if liable from committed offense.

#### Mitigation Strategies

- Strengthen legal and regulatory governance by implementing governance, compliance and legal frameworks such as the PETRONAS Code of Conduct and Business Ethics and Legal Compliance Framework, including in the area of ethics and integrity.
- Increase awareness and competency of our workforce through regular communications, awareness and training sessions on critical and operational legal areas.
- Drive proactive interventions through regular monitoring and reviewing of our legal and regulatory and anti-corruption compliance against our risk appetite.
- Implement identified action plans to realise our Net Zero Carbon Emissions by 2050 Pathway with specific short-, medium- and long-term targets and manage other ESG-related regulatory impacts on business operations.
- Promote the highest standards of integrity and instill the culture of "courage to act" and openness in the conduct of our business and operations through implementation of effective whistleblowing management.

### Risk Movement

Legal and Regulatory Risk remains inherent to our business but is managed through implementing the Legal Compliance Framework and PETRONAS Integrity Management System. Additionally, we regularly review the relevant legal compliance controls to ensure adherence to current laws and regulations.

#### Material Topics:



#### Stakeholders:



#### Capitals:



## SR Sustainability Risk

### What It Means

PETRONAS recognises the scientific consensus on climate change and the rising expectations to transition to a lower carbon economy from our stakeholders at global, local and organisational levels. In response, we have pledged a commitment towards our Net Zero Carbon Emissions by 2050 Pathway and focused efforts on embedding sustainability into our strategies, business plans and operations. With the accelerating pace of the energy transition, we are exposed to various challenges and scrutiny including adapting and complying with emerging regulations and policies, and regional variations of such, while ensuring our efforts are done in a just and equitable manner, and with minimal impact to the environment, including nature and biodiversity, in the areas where we operate.

#### Impact on Value

- **Capital Market Access:** Inability to meet financiers' and investors' Environmental, Social and Governance (ESG) requirements for their financing decisions may limit and constrain our access to capital, affecting our overall growth and competitive edge.
- **Competitive Standing:** Ineffective ESG management impacting ability to become counterparty of choice and inability to capture opportunities on energy transition timely could diminish our competitive standing in the energy industry, impacting our business value chain.
- **Energy Transition Challenges:** Inability to offer competitive low carbon energy solutions may impact our contributions to Malaysia's national energy transition efforts, affecting its energy security, affordability and sustainability.

#### Impact on Capitals

- **Financial Capital:** Delivering our commitments on climate change and developing low carbon solutions, exposes us to higher capital and additional operating costs to implement the necessary measures.
- **Manufactured Capital:** Physical impacts of climate change may cause damage to our assets and disrupt operations.
- **Social and Relationship Capital:** Inability to demonstrate credible climate action, including transitioning to low carbon business in a just and equitable manner, respecting human rights and minimising environmental impact where we operate could result in eroded trust and damage to our reputation.
- **Human Capital:** Transitioning to low carbon business and heightened competition in the specific new field will require specialised skilled individuals that need to be acquired as part of our talent acquisition and development strategy. The inability to promote a 'just transition' and promote human rights may detrimentally affect operations and enterprise reputation.
- **Natural Capital:** Inability to implement credible actions on nature and biodiversity as part of our Net Zero Carbon Emissions by 2050 Pathway could affect our long-term resilience.

#### Mitigation Strategies

- Implement identified action plans to realise our Net Zero Carbon Emissions by 2050 Pathway with specific short-, medium- and long-term targets, supported by internal governance, monitoring and dedicated resources, including investment into new skills through training and formal vocational and tertiary education.
- Execute business plans through Gentari, which offers renewable energy, hydrogen and green mobility.
- Systematically elevate our business activities according to international standards for human rights through the establishment of a Human Rights Policy and associated implementation.
- Increase our capital expenditure to scale up decarbonisation efforts and lower carbon energy solutions.

#### Tactical Opportunities

- Rising expectations to transition to a lower carbon economy offers business prospects in areas including biofuels, specialty chemicals, circular economy, hydrogen and renewable energy value chains.
- Deployment of emissions reduction and lower carbon solutions present opportunities for new partnerships, collaborations and investment opportunities.
- Exploring new revenue streams in carbon capture and storage and energy efficiency solutions.

### Risk Movement

Continued heightened expectations from investors, customers and regulators increases scrutiny on energy companies to demonstrate tangible emission reductions and business model changes. In response, we have intensified our efforts to communicate and demonstrate our energy transition journey. Throughout the year, we remain committed to implement greenhouse gas reduction projects to meet our short-term targets, grow our cleaner energy solutions business through Gentari, and strengthen our internal governance processes and capacity for sustainability including the establishment of a new PETRONAS Carbon Commitment, Nature and Biodiversity Centre of Excellence and PETRONAS Human Rights Policy.

#### Material Topics:



#### Stakeholders:



#### Capitals:





# Risks Linked to Creating Value

## HSR Health, Safety, Security and Environmental (HSSE) Risk

### What It Means

PETRONAS business operations expose us to a variety of health, safety, security and environmental (HSSE) risks stemming from challenges related to project execution, technical integrity and regulatory compliance, as well as security threats such as physical attacks, criminality, civil unrest and maritime incidents. Additionally, the accelerated pace of technological advancement has heightened security threats from non-conventional sources such as drones and the evolution from cyber to physical security threats. These risks require vigilant management of reputation, assets, people, including our employees, contractors and partners and natural resources.

#### Impact on Value

- **Operational Incidents:** Any HSSE incidents that result in injuries, loss of life or damage to assets and the environment may disrupt our operations, impacting our reputation and rectification costs.
- **Security Threats:** Security threats can adversely affect our business operations, the safety of our personnel and assets and cause environmental harm.

#### Impact on Capitals

- **Financial Capital:** HSSE incidents can result in penalties, damage of assets and operational disruptions, impacting our financial position.
- **Social and Relationship Capital:** HSSE incidents can erode stakeholders' trust and damage our reputation.
- **Natural Capital:** Inability to contain HSSE incidents can damage the environment, challenging our commitment to be a responsible steward of natural resources.
- **Human Capital:** HSSE incidents can result in personnel injuries, loss of life and cause reputational damage to our status as a favoured employer.
- **Manufactured Capital:** HSSE incidents may damage and impact security of our assets.

#### Mitigation Strategies

- Strengthen HSSE governance with dedicated HSE and Security Management Systems, supported by the HSE Mandatory Control Framework (MCF) and Minimum Security Standards (MS2).
- Enhance competency and assurance of our employees, contractors and partners leveraging digital solutions and technology for operational discipline.
- Strengthen competency of our security practitioners through the establishment of Security Academy.
- Enhance the culture of accountability by reinforcing positive behaviours and promoting a collective commitment to HSE excellence through the relevant measures and tools.
- Optimise security readiness through continuous digital protective security monitoring and predictive analysis platforms.
- Strengthen organisational resiliency through implementation and periodic review of the relevant HSSE crisis management measures.

### Risk Movement

HSSE Risk remains inherent to our business but is managed through continuous enhancement of our efforts, processes and approaches to mitigate major incidents and comply with legal requirements to address evolving security threats which aim to safeguard our people, asset, reputation and the environment. This includes strengthening our Accountability and Behavioral Reinforcement programme, implementing security exercises and drills and enhance management oversight through Management HSE visit to nurture Generative HSSE culture.

#### Material Topics:



#### Stakeholders:



#### Capitals:



## GR Geopolitical Risk

### What It Means

PETRONAS' global footprint exposes us to various political, legal and fiscal developments at the locations where we operate. Developments in these areas have the potential to directly or indirectly impact our commercial and operational strategies, as well as our financial position. Our global business activities are subjected to regulations and directives from states, national and host governments concerning limitations on production volumes and exports, pricing and trade policies, local content prioritisation, environmental protection controls and possible nationalisation of assets, expropriation and cancellation rights. Additionally, the risk of armed conflicts and civil unrest may influence asset review and reprioritisation.

#### Impact on Value

- **Operational Disruption and Contractual Changes:** Diverse political and legal environments, coupled with geopolitical crises that can lead to disruption in business operations and changes in contractual terms and agreements that would impact our financial stability and growth potential.

#### Impact on Capitals

- **Financial Capital:** Limited attention to geopolitical developments may subject our business to penalties and litigations, disrupt our business operations, impacting our cash flows and financial position.
- **Manufactured Capital:** Escalation of geopolitical incidents may cause disruptions in the supply chains and damage our assets in the affected locations.
- **Human Capital:** Escalation of geopolitical incidents may compromise safety and security of our employees in the affected locations.
- **Social and Relationship Capital:** Inability to manage key relationships in foreign countries, observe and adhere to host and local authorities' requirements may damage our reputation, erode stakeholders' trust and affect our license to operate.

#### Mitigation Strategies

- Execute effective and robust country risk management by conducting risk assessments and due diligence in supporting our decisions on international investments.
- Strengthen organisational resiliency through implementation and periodic review of the relevant crisis management and business continuity measures.
- Drive proactive exposure management through periodic monitoring and reviewing of geopolitical landscapes and our investment portfolio and concentration against our risk appetite.
- Improve the quality of life and socio-economic outcomes for communities nationwide and in the countries where we operate by implementing relevant social programmes.

#### Tactical Opportunities

- Shifts in political landscapes are altering energy flows, opening opportunities in non-traditional markets to bridge supply-demand gaps and enhance energy security.

### Risk Movement

Geopolitical risk remains uncertain amidst the dynamic and volatile geopolitical landscape, including at countries where PETRONAS has operations. This risk is being managed through various controls and intervention plans to help us address and navigate through the evolving and dynamic business landscapes.

#### Material Topics:



#### Stakeholders:



#### Capitals:



# Risks Linked to Creating Value

## HR Hydrocarbon Reserves and Resources Risk

### What It Means

Our ability to supply oil and gas depends on finding and effectively managing sufficient reserves and resources to meet our commitments. This involves exploration success, project maturation, reservoir performance, asset acquisition or reprioritisation, and commercial factors. However, our exploration activities face technical challenges and limited information, while production fields contend with issues like declining pressure and equipment reliability. Additionally, changes in policies can also affect our asset value.

#### Impact on Value

- **Supply Shortfalls:** Insufficient supply can lead to third party sourcing at a premium cost or otherwise failure to meet customer demands, resulting in contract non-performance, loss of trust and market share erosion.
- **Project Management Challenges:** Ineffective management of exploration, projects, field performance and asset acquisition or reprioritisation can lead to project delays, deferrals or cancellations, increasing costs and reduced revenue.

#### Impact on Capitals

- **Financial Capital:** Inability to monetise resources can jeopardise the Group's financial stability.
- **Intellectual Capital:** Challenges in developing and embedding new technologies and innovations can result in low-value and underperforming assets.
- **Manufactured Capital:** Unresolved technical challenges may impact our ability to effectively manage reserves and resources, reduce asset efficiency and disrupt operations.

#### Mitigation Strategies

- Strengthen resources path to monetisation through execution of area development plan, acceleration of resources maturation and increase reserves base across the funnel according to established plan.
- Improve reservoir and field performance through execution of robust operational excellence programmes and adopt value improvement practices for field development leveraging technology and digitalisation.
- Drive production sustainability efforts, including leveraging carbon capture and storage technology development for high-carbon dioxide fields.
- Establish robust petroleum resource management by conducting the Annual Review of Petroleum Resources, as per the reserves and resources management system requirement for stringent monitoring.

#### Tactical Opportunities

- Technical challenges prompt us to form strategic partnerships with industry players to co-create solutions, sharing risks and rewards to boost the local economy.
- Leveraging fit-for-purpose technologies will not only improve our projects and assets efficiency but may also improve their value.

### Risk Movement

Hydrocarbon reserves and resources indicators remain stable, attributed to our focused interventions on ensuring effective management of reserves and resources to meet our contractual commitments.

#### Material Topics:



#### Stakeholders:



#### Capitals:



## TR Technology Risk

### What It Means

Our digital footprint is continuously expanding through the implementation of various digital solutions in both information and operational technology domains, enabling new opportunities and enhancing business processes. The increased reliance on digital solutions in our business processes can make our organisation more vulnerable to cyber attacks. These attacks are becoming more sophisticated, exploiting vulnerabilities not only in our digital infrastructure but also in our broader business value chain. The attacks, often manifested through identity theft and unauthorised third-party access, pose significant threats to the confidentiality, integrity and availability of our data and systems. In addition, the rapid pace of technological advancements presents a risk of obsolescence, challenging our long-term competitiveness.

#### Impact on Value

- **Cyber Security Threats:** Cyber attacks, if not detected early, can disrupt our operations, compromise safety of our staff, and result in legal and regulatory fines, damaging our reputation.
- **Technological Obsolescence:** Ineffective development and deployment of technology can materially impact our strategic delivery and operational excellence.

#### Impact on Capitals

- **Manufactured Capital:** Inability to innovate and adapt to technological advancements timely may cause disruptions to our operations.
- **Intellectual Capital:** Ineffective innovation and adaptation to technological advancements may render intellectual assets to become obsolete.
- **Financial Capital:** Inability to innovate and adopt new technologies may affect our competitiveness and financial returns.
- **Social and Relationship Capital:** Inability to implement adequate cyber defence measures may damage our reputation and erode stakeholders' confidence.

#### Mitigation Strategies

- Strengthen robust digital and ICT governance, focusing on Cyber Security, Enterprise Architecture and Enterprise Data, including administer and enforce Enterprise Cyber Security Governance Framework, PETRONAS Cyber Security Incident Response Procedure and Cyber Security Ransomware Crisis Management.
- Improve organisational resiliency through implementation and periodic review of the relevant ICT and cyber security crisis management and business continuity measures.
- Increase our competitive advantage through execution of dynamic in-house research and innovation solutions, leveraging PETRONAS Technology Management System.
- Enhance our innovation culture through establishment of innovation platforms for staff to mature innovative ideas and embed technology consideration in investments strategy and decisions particularly for new businesses leveraging technology venture capital arm.
- Protect our innovation and Intellectual Property (IP) through establishment and periodic review of IP policies at enterprise level.
- Establish and ensure availability of capable resources to develop and deploy technology by recruiting top-tier experts for research and development and continuously upskill our researchers.

#### Tactical Opportunities

- Innovative practices and new technology will nurture an ecosystem that could create value for the organisation, accelerate growth efforts and support decarbonisation initiatives.
- Rapid technological advancements present opportunities for monetisation allowing us to monetise matured technologies and innovative solutions.

### Risk Movement

Technology Risk continues to evolve and remains uncertain, reflecting the dynamic operating landscape. Despite the increased sophistication of technological threats, continuous efforts are in place to strengthen technology management and cyber resilience as well as information security through vigilant and innovative implementation of our controls and defense mechanisms. This includes adoption of up-to-date technology and leveraging AI-based solutions to stay abreast of emerging threats and innovations.

#### Material Topics:



#### Stakeholders:



#### Capitals:





# Risks Linked to Creating Value

## ER Execution Risk

### What It Means

Our overall business, financial and operational performance are predominantly dependent on the successful delivery of complex, long-term, capital-intensive projects, maintaining optimal level of asset and technical integrity, providing value added solutions to our customers. Therefore, we are exposed to various challenges including technical issues and disruptions in our supply chain that could impact our ability to deliver on our commitments to the stakeholders.

#### Impact on Value

- **Project Delivery Delay:** Delays in delivery of capital-intensive projects could adversely impact our business strategy, operations and financial condition.
- **Supply Chain Uncertainties:** Disruptions in the supply of materials and services may lead to operational issues, delay in project execution and affect our commitments and reputation. In addition, the inability to adequately assess and ensure our vendor capability and competency may also affect our project delivery and business operations.

#### Impact on Capitals

- **Financial Capital:** Ineffective execution of projects and operational discipline can impact our future earnings, cash flows and financial stability.
- **Intellectual Capital:** Lack of innovation in our execution may lead to outdated intellectual property and improper technological application, resulting in economic loss.
- **Social and Relationship Capital:** Operational disruption, product quality and reliability issues, and disruption in supply chain, including challenges from our vendors and partners, may damage our reputation and erode stakeholders' confidence.
- **Manufactured Capital:** Inadequate and improper project execution as well as management of assets and technical integrity may result in a decline in the operational performance and damage our assets and facilities.

#### Mitigation Strategies

- Execute effective and robust projects and operational activities through implementation of the relevant frameworks and standards for managing projects, plants and facilities, technical designs and specifications and procurement such as PETRONAS Group Project Management System, PETRONAS Asset Management System, PETRONAS Procurement Standard and Plant and Facility Risk Management Guideline.
- Strengthen organisational resiliency through implementation and periodic review of the relevant crisis management and business continuity measures.
- Foster innovative partnerships with Malaysian financial institutions for vendor financing and nurture our local vendors through the identified vendor development programmes.
- Enhance the competency of our employees through the relevant capability development programmes and collaboration with contractors, peers and partners.

### Risk Movement

Execution Risk continues to evolve and remain uncertain, given the continued disruptions to supply chain driven by geopolitical events. The risk is managed through the implementation of our robust procurement strategy and business continuity measures that are periodically reviewed to ensure our adaptability to the changing environment.

#### Material Topics:



#### Stakeholders:



#### Capitals:



## Human Capital Risk

### What It Means

Our people are the most valuable asset in achieving our business objectives, especially in today's rapidly evolving global energy landscape. Talent attraction, development and retention remain our key challenges in creating a capable workforce of the future, given heightened competition for niche skilled talents. Adapting our approach to creating the right ecosystem, which includes having the right mix of capable talents, mindset and behaviour reinforcement, is essential to ensuring our business remains agile and innovative.

#### Impact on Value

- **Talent Pipeline:** Inability to attract and retain skilled talent can weaken our talent pipeline and ability to remain competitive.
- **Strategy Delivery:** Inability to create and have the right mix of a capable workforce may affect the timely execution of our strategies and aspirations, leading to potential opportunity loss in mature and developing markets, impacting our long-term sustainability.

#### Impact on Capitals

- **Human Capital:** Failure to retain our position as an employer of choice may impact our ability to attract and retain talent timely.
- **Social and Relationship Capital:** Failure to retain our position as an employer of choice may impact our reputation, eroding stakeholders' confidence.
- **Intellectual Capital:** Failure to recruit, develop and align talent requirement with business priorities may impact our capacity to sustain and innovate solutions.
- **Manufactured Capital:** Failure to recruit, develop and align talent requirement with business priorities can lead to suboptimal strategy delivery and operational disruption.

#### Mitigation Strategies

- Improve our attractiveness as employer of choice through the implementation of a differentiated hiring approach and reposition our Employee Value Proposition.
- Enhance the competency of our workforce to future-proof our talents by intensifying upskilling and reskilling efforts in strategic Capability Development Priorities areas.
- Strengthen and ensure sustainable talent pipeline through education sponsorships and on-the-job training.
- Build a thriving work environment through the implementation of various organisational culture programmes and activities anchored on PETRONAS Cultural Beliefs, Shared Values, and Diversity and Inclusion.
- Enhance leadership capabilities in building leaders of the future through structured assessment and development programmes.

#### Tactical Opportunities

- Heightened competition for talents also create opportunities for us to establish partnerships with government agencies and learning institutions for access to resources and research and development.

### Risk Movement

Human Capital Risk indicators remain stable despite the observed challenges in acquiring, retaining and developing talents, particularly in areas related to core and new business. This can be attributed to our focused efforts to address talent requirements including enhancing our appeal to prospective talents to deliver the energy transition and business strategies.

#### Material Topics:



#### Stakeholders:



#### Capitals:



# Business Review



**Datuk Adif Zulkifli**

Executive Vice President and  
Chief Executive Officer, Upstream



Upstream business faced a volatile year in 2023, with fluctuating oil and gas prices, increasing demand amid geopolitical tensions and the global push towards energy transition. Despite these challenges, we remain steadfast in our commitment towards the energy security for Malaysia and our customers worldwide. We responded by focusing on sustainable supply, cost optimisation and emissions reduction.

Throughout the year, we made successful exploration discoveries through an innovative “clustered exploration” approach, a unique prospecting style suited for highly matured geological provinces, which grew Malaysia’s resource base. We continue to utilise seismic surveys to explore and map the hydrocarbon potential of a new area of exploration to attract future prospective investors. Focused execution in delivering key projects and activities continues to safeguard energy security and guarantee the vibrancy of our oil and gas industry. Internationally, we continuously improve our portfolio as we undertake a series of high-grading efforts, driven by a focus on superior value and delivering differentiated barrels that are cost efficient and lower carbon.

We continue to make strides in developing carbon capture and storage (CCS) projects as a key solution to support sustainable energy security, aligned with national and regional goals while creating new economic opportunities in the process. Significant advancements have been made in CCS, particularly with projects like Kasawari CCS, to help deliver the energy security needed in a sustainable manner. We have also forged partnerships to advance CCS and progressed into the next phase through Development Agreements and other similar arrangements related to technological development and aspects of the value chain, like liquefied carbon dioxide carriers and storage capacity. These partnerships are instrumental in delivering our energy transition and achieving Net Zero Carbon Emissions by 2050 Pathway.

## Upstream



Recorded a total daily production average of

**2,431**

thousand barrels of oil equivalent (boe) per day.



**10.9**

3-year average 1P Reserve Life Index (RLI).



Achieved 1<sup>st</sup> hydrocarbon

for **28**

projects.



Reached final investment decision for

**21** projects.



Made **24**

exploration discoveries.



Advanced to

**3** definitive

CCS hubs in Malaysia.

## Key Focus Areas and Results

Focus Area	What We Did in 2023	Results	Stakeholders
Core Business	<b>Sustainable Supply</b> <ul style="list-style-type: none"> <li>Intensified oil and gas exploration, development and production to meet energy security needs and replenish reserves for future demand.</li> <li>Strengthened collaboration with East Malaysian state governments to develop the local energy sector.</li> </ul>	<ul style="list-style-type: none"> <li>Produced 2,431 thousand barrels of oil equivalent (boe) per day.</li> <li>Achieved first hydrocarbon in 28 projects.</li> <li>Reached final investment decisions (FID) on 21 projects.</li> <li>Signed nine exploration blocks and three discovered resource opportunities as part of Malaysia Bid Round 2022.</li> <li>Kicked off the development of an integrated sour gas evacuation facility in Sarawak.</li> </ul>	<div>FG SG GIP</div> <div>C SIC M</div>
	<b>Portfolio Expansion, High-Grading and Diversification</b> <ul style="list-style-type: none"> <li>Targeted international growth and local portfolio expansion through acquisitions, new discoveries and decommissioning of current facilities.</li> </ul>	<ul style="list-style-type: none"> <li>Signed petroleum arrangements in Angola, Indonesia, Brazil and Oman.</li> <li>Secured two exploration blocks in Suriname.</li> <li>Made 24 exploration discoveries, domestically and globally.</li> <li>Decommissioned six facilities in Malaysia safely.</li> <li>Completed the portfolio high-grading exercise for Myanmar and Chad while advancing discussions on South Sudan exit with the host government.</li> </ul>	<div>FG GIP C</div> <div>IO CN M</div>
	<b>Health and Safety</b> <ul style="list-style-type: none"> <li>Fostered Generative HSE Culture at all our areas of operations.</li> </ul>	<ul style="list-style-type: none"> <li>Completed two national level emergency exercises in collaboration with <i>Majlis Keselamatan Negara</i> (National Security Council) and <i>Angkatan Tentera Malaysia</i> (Malaysian Armed Forces), in ensuring continuous crisis and emergency preparedness.</li> <li>Organised 75 Upstream Leadership visits reaching over 1,500 Upstream staffs.</li> <li>Developed the Barrier Risk Centralised Solution (BRiCS) online system which provides a clear line of sight to the Safety Critical Elements (SCE) integrity status for each location and facilities and coordinated its rollout to over 1,000 staff.</li> <li>Heightened Process Safety Compliance through 28 sessions, reaching 2,000 staff in facilities.</li> </ul>	<div>FG SG</div> <div>E GIP</div>



# Upstream

## Key Focus Areas And Results

Focus Area	What We Did in 2023	Results	Stakeholders
New Business	<b>Advancements in Carbon Capture and Storage</b> <ul style="list-style-type: none"> <li>Progressed carbon capture and storage (CCS) projects as part of our commitment to emissions reduction.</li> </ul>	<ul style="list-style-type: none"> <li>Advanced to three definitive hubs in Malaysia.</li> <li>Initiated five efforts with like-minded partners to progress the advancement of the full CCS value chain for PETRONAS.</li> <li>Inked an MoU with ExxonMobil to develop the offshore pipelines and facilities for the Northern hub pre-feed.</li> </ul>	FG SG IO GIP M
	<b>CCS Advocacy with Lawmakers</b> <ul style="list-style-type: none"> <li>Engaged in extensive advocacy efforts to establish carbon capture and storage as a viable business in Malaysia.</li> </ul>	<ul style="list-style-type: none"> <li>Increased the awareness of policymakers and legislators resulting in the enhancement of the "Pelan Tindakan" to build up CCS as a new business in Malaysia.</li> </ul>	FG SG
NZCE Pathway	<b>Zero Routine Venting</b> <ul style="list-style-type: none"> <li>Emissions reduction efforts implemented to achieve Zero Routine Venting (ZRV) of hydrocarbon by 31 December 2023.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved 100 per cent Zero Routine Venting in 22 identified oil facilities in Malaysia.</li> </ul>	FG SG IO
	<b>Digital Transformation</b> <ul style="list-style-type: none"> <li>Implemented digital solutions to enhance operational efficiency and emissions reporting.</li> </ul>	<ul style="list-style-type: none"> <li>Enabled seamless Greenhouse Gas (GHG) reporting for PETRONAS Carigali's operated blocks in Malaysia with the deployment of the Upstream GHG Digital Platform as part of its first phase with plans to expand to all assets by 2025.</li> <li>Optimised maintenance and asset integrity activities through Asset Performance Management (APM) with eight projects at the Dulang, Samarang and Kumang pilot sites.</li> <li>Operationalised Wells Integrated Operations and scaled to five projects in Malaysia Assets, contributing to more than a 30 per cent increase in Process Cycle Efficiency (PCE) for design and execution.</li> </ul>	C CN E

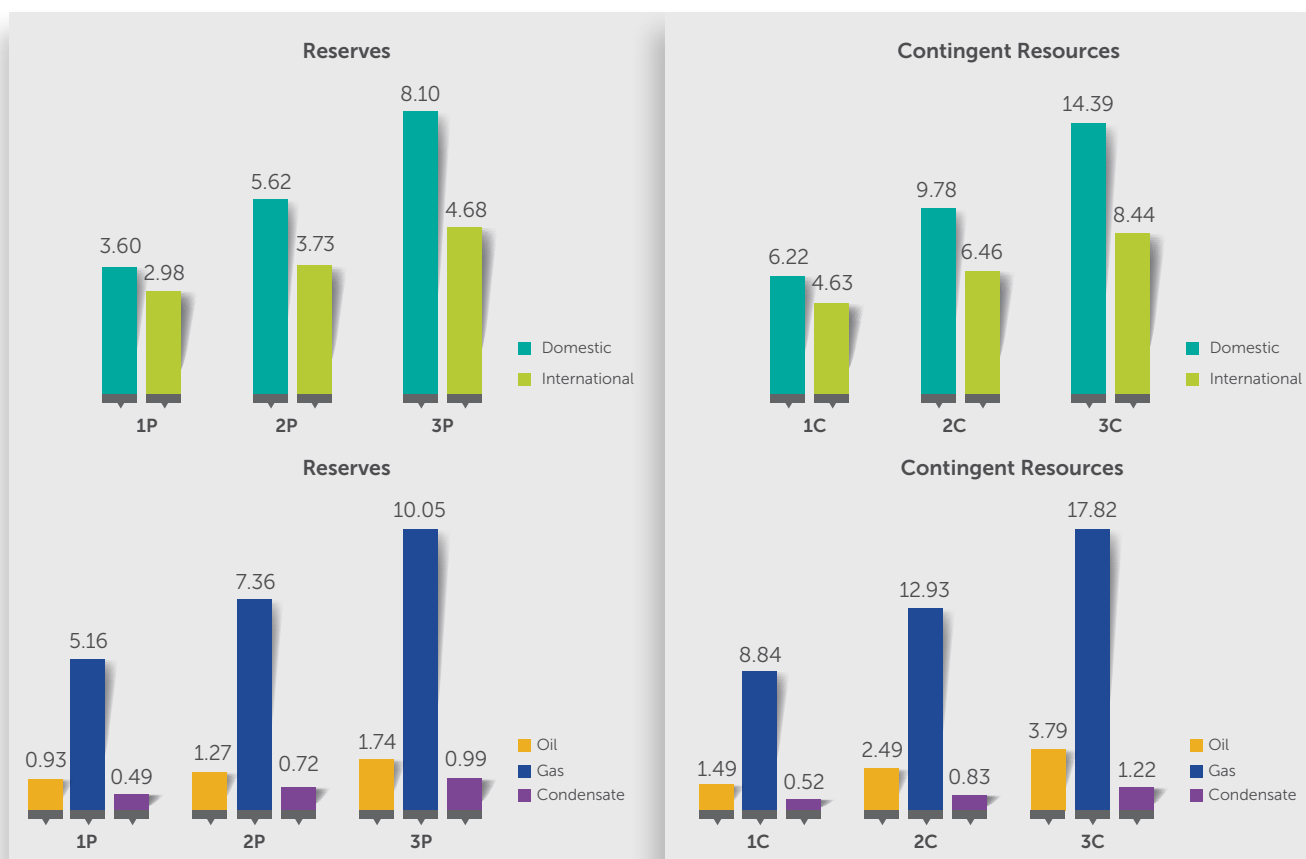
## Governance and Disclosure (Reserves and Resources)

As at 1 January 2024, PETRONAS' total petroleum 2P Reserves stood at 9.35 Bboe, an increase of one percent from 2022. The improvement in Reserves performance was primarily due to the maturation of Contingent Resources (CR) to Reserves. PETRONAS' total 2C Contingent Resources stood at 16.25 Bboe, an increase of five percent from 2022, primarily contributed by the successful exploration discoveries that added 1.49 Bboe of 2C to our portfolio, and supported by our expansion internationally in Angola and Indonesia. Our strong business performance reflected positively in all key performance Reserves and Resources indicators.

### (i) ARPR 1.1.2024 Reserves and Contingent Resources

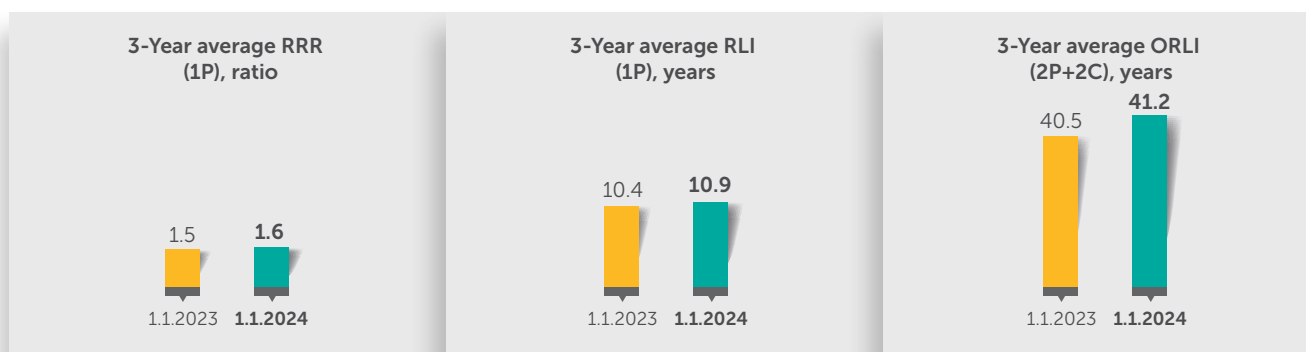
Unit: Bboe

Unit: Bboe



**Note:** Totals may not add up due to the rounding of figures.

### (ii) Reserves and Resources Performance Indicators



Upstream

Highlights and Achievements

Highlights	What We Achieved
Targeted international portfolio expansion	<ul style="list-style-type: none"><li>➔ Inked key agreements in <b>Angola, Indonesia, Brazil</b> and <b>Oman</b></li><li>➔ Expanded presence in Suriname through <b>two Production Sharing Contracts (PSC)</b></li></ul>
Increased Malaysia’s attractiveness as an investment destination among global players	<ul style="list-style-type: none"><li>➔ Signed <b>nine</b> exploration blocks and <b>three</b> discovered resource opportunities in Malaysia Bid Round 2022</li><li>➔ Offered <b>ten exploration</b> blocks and <b>two clusters</b> of Discovered Resource Opportunities as part of Malaysia Bid Round 2023</li></ul>
Increased prospect of reserves	<ul style="list-style-type: none"><li>➔ <b>Made 24 exploration discoveries</b>, the highest over the last five years</li></ul>
Reduced Upstream’s emissions by 17 per cent in Malaysia-operated assets	<ul style="list-style-type: none"><li>➔ <b>Completed six emissions reduction projects</b></li></ul>
Increased efforts to reduce emissions through the development of the carbon capture and storage sector	<ul style="list-style-type: none"><li>➔ Advanced to <b>three definitive CCS hubs</b> in Malaysia</li></ul>



## Challenges

Challenge	Mitigation Action	Results
<b>Health, Safety, Security and Environment (HSSE) Threats</b> Sustaining effective HSE and security practices to deliver a sustainable business performance.	<ul style="list-style-type: none"> <li>• <b>PETRONAS Upstream Generative HSE Culture (GC):</b> Charted and propagated pervasive culture through reinforcement of leadership roles and inculcated personal accountability and behaviour at all levels.</li> <li>• <b>Enhancement of Security Practices:</b> Minimised exposure to critical plant disruptions, civil unrest, extremist and maritime threats, among others.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Generative Culture initiatives:</b> Introduced new initiatives under GC Leadership Programme (establishment GC Shaping HSE Culture Playbook, GC Guidebook and GC in Me), intensified Upstream Process Safety Culture and developed Lateral Learning (LAT) module.</li> <li>• <b>Security Contingency Plan (SCP):</b> Established SCP to enhance the information in hand with regards to the country's latest situation in addressing security threats including intrusions.</li> </ul>
<b>Delivering GHG Reduction Targets</b> Delivery of Upstream emissions reduction efforts is crucial in meeting greenhouse gas targets.	<ul style="list-style-type: none"> <li>• <b>Greenhouse Gas (GHG) Emissions Reduction:</b> Operationalised efforts in meeting emissions reduction targets.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Energy Intensity (EI):</b> Completed strategy, targets and plans on the summary of individual's energy consumption for a facility in effort to reduce the combustion emissions.</li> <li>• <b>Structured Energy Trending and Performance Assessment for Combustion Engine (SETPACE):</b> Improved GHG emissions accuracy in performance planning through SETPACE assessment.</li> <li>• <b>Physical Emissions Reduction and Carbon Capture and Storage Projects:</b> Intensified efforts in delivering physical emissions reduction and carbon capture and storage projects.</li> </ul>
<b>Project Delivery Challenges</b> Increasing challenges in executing capital projects safely, on time, on budget, on schedule, on volume.	<ul style="list-style-type: none"> <li>• <b>Project Delivery Excellence:</b> Elevated performance conversations, identification of quick wins and structural changes to support effective delivery of planned projects.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Global Portfolio Valuation:</b> Undertook annual project rationalisation in matching company's priorities and work programme with available resources.</li> <li>• <b>Vessel Resources Management:</b> Established line of sight through resource planning and optimisation base on project vessel demand and availability outlook.</li> </ul>
<b>Geopolitical Instability</b> Growing geopolitical threats continues to influence business operations.	<ul style="list-style-type: none"> <li>• <b>Strengthened Business Disruption Preparedness:</b> Rigorously reviewed geopolitical landscape and monitored escalation of pervasive threats to ensure business resiliency.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Signpost Monitoring Process:</b> Continued to improve streamlined efforts and strengthen collaboration on monitoring possible geopolitical threats.</li> <li>• <b>Security Contingency Plan (SCP) and Business Continuity Plan (BCP):</b> Reviewed and assessed the adequacy of both plans for selected countries.</li> </ul>

## Opportunities

- **Growing Exploration:** PETRONAS Upstream is focused on efforts to revitalise Malaysia's exploration landscape with timely maturation of resources and development of reserves.
- **Sustaining Production Opportunities:** Sustaining domestic production with focus on superior value from producing assets to generate competitive returns.
- **Strengthen Global Portfolio:** Internationally, PETRONAS Upstream remains focused in sustaining production in a differentiated manner by delivering barrels that are cost efficient and lower carbon.
- **Intensify Carbon Capture and Storage (CCS) Solution:** PETRONAS Upstream is committed to initiatives to position Malaysia as a regional carbon capture and storage hub and unlocking the potential of high carbon dioxide gas fields.



## Upstream

### Our Approach to Sustainability

Upstream recognises its role in delivering PETRONAS Energy Transition Strategy, emphasising value creation, energy security, and meeting global energy demand by leveraging its gas-dominant portfolio to enable the transition to a lower-carbon economy. We are committed to sustainable practices, including GHG emissions reduction, social progress, and preserving nature and biodiversity. This commitment is underscored by an emphasis on ethical conduct and strong governance to ensure long-term resilience and stakeholder trust.

Throughout 2023, Upstream implemented a range of impactful initiatives across Upstream's areas of operations domestically and globally. Below are some examples of the efforts:

#### ➔ Uplifting Lives Programme



Distributed Fish Aggregating Devices (anchored or floating devices that are placed strategically at sea to create an artificial concentration point for a variety of fishes) to 1,650 beneficiaries from fisherman communities in Sabah and Terengganu which has reduced encroachment incidents at our offshore facilities by 67 per cent compared to 2019.

#### ➔ Responsibly Sourced Gas certification

PETRONAS Canada's natural gas assets are now 100 per cent certified as responsibly sourced through Equitable Origin's EO100™ Standard for Responsible Energy Development. The RSG certification reaffirms that PETRONAS Canada is well-positioned to provide global markets with the responsible and secure energy the world needs – now and for the long-term.



 For more information on our sustainability contributions, please refer to pages 108-197.

## ► Our Outlook

### Short-Term Outlook

In Malaysia, to contribute towards the security of supply, our approach includes intensifying exploration activities of new plays and matured areas while expediting appraisal programmes to replenish our resources to sustain production and provide optionality.

Upstream is focused on growing resources and meeting production targets at lower costs and lower emissions, and addressing energy demands while positioning carbon capture and storage (CCS) as a pivotal business.

In the short term, from 2024 to 2025, we will continue to revitalise the Malaysian exploration and production (EP) landscape.

Timely maturation of resources and development of reserves and optimum recovery from our producing assets remain vital to deliver base production. Key projects like Kasawari, Rosmari and Majoram are critical for energy security in key demand centres.

We are making progress in decarbonising our operations aligned with our Net Zero Carbon Emissions (NZCE) by 2050 Pathway. Advancement in carbon capture and storage, particularly with the Kasawari CCS project, is aimed at decarbonising our operations and unlocking gas resources to meet the demand center. Another two projects are in the pipeline to unlock significant investments and contribute to environmental goals. We aim to position Malaysia as a regional centre for CCS solutions, fostering collaborative partnerships.

Internationally, our focus is on sustaining production in a differentiated manner and generating competitive returns. This includes monetising high-value oil resources in our focused regions namely the Americas, Middle East and Southeast Asia. We are working to unlock value from Abu Dhabi's hydrocarbon resources and execute low-carbon production in S pia, Brazil. We are also leveraging gas resources in Canada and potentially in Argentina and Indonesia to deliver enterprise value upsides through an integrated liquefied natural gas (LNG) business model.

### Medium- to Long-Term Outlook

Looking forward, Upstream is committed to safeguarding production supply by meeting production targets and maximising shareholder value by decarbonising our value chain. We are committed to delivering this through innovation and technology deployment and close collaboration with industry partners in Malaysia and our international operations.

We aim to open up more fields in Malaysia, to pursue our ambition of being a regional centre for CCS solutions through the Lang Lebah field in Sarawak and the Bujang, Inas, Guling, Sepat and Tujoh (BIGST) fields in Peninsular Malaysia. The Lang Lebah field is expected to capture approximately 2 million tonnes CO<sub>2</sub>e annually, which will be stored in the Golok Cluster depleted field. The gas supply from the BIGST fields, the first carbon capture and storage project in Peninsular Malaysia, is another key project for energy security, given the significant potential that exists within the cluster.

Internationally, we will continue to manage our portfolio by focusing on superior value and quality resources. Our strategy includes delivering cost efficient and lower carbon barrels with environmental, social and governance (ESG) considerations integral to our operations and decision-making processes.



### Adnan Zainol Abidin

Chief Operating Officer,  
Executive Vice President and  
Chief Executive Officer, Gas

Gas business achieved significant milestones and demonstrated resilience in 2023. We continued to strengthen our position as a one-stop-centre for lower carbon energy solutions and a reliable provider of natural gas.

We capitalised on favourable market conditions to increase our liquefied natural gas (LNG) sales volume and value. We also demonstrated our unwavering commitment to our customers by navigating operational challenges with resilience to fulfill our delivery commitments.

Leveraging on our robust LNG portfolio, we overcame obstacles and continued delivering stable LNG supply, going above and beyond to fulfil our commitments. Internationally, we made progress with the completion of Phase 1 of our LNG project in Canada and locally, with the development of Malaysia's first nearshore floating LNG facility in Sabah. In the longer term, we will continue to mature opportunities to grow our supply nodes in other regions of the world to ensure a robust portfolio.

Most importantly, we recorded zero fatalities in occupational health and safety, an improvement from the previous year and a testament to our commitment to protect the well-being of our workforce.

In line with PETRONAS' Net Zero Carbon Emissions by 2050 Pathway, we remain committed to reducing greenhouse gas (GHG) emissions across our natural gas value chain. We aim to reduce emissions from our operations, focusing on decarbonisation and electrification initiatives while ensuring natural gas continues to provide energy security as the world shifts toward cleaner energy sources.

# Gas



Delivered **403** LNG cargoes from PETRONAS LNG Complex and **38** LNG cargoes from PFLNG SATU and PFLNG DUA to meet customers' energy needs.



Completed **2,214** million standard cubic feet per day (MMscfd) of average sales gas volume delivered in Peninsular Malaysia.



Achieved Overall Equipment Effectiveness (OEE) of **95.1%** across all business segments under Gas business.



Achieved gross LNG sales of **32.9** million metric tonnes (MMT) while driving for commercial excellence.

## Key Focus Areas and Results

Focus Area	What We Did in 2023	Results	Stakeholders
Core Business	<b>Secured Natural Gas and LNG Sales</b> <ul style="list-style-type: none"> <li>Sustained our position as a preferred and leading natural gas and LNG producer and supplier.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved gross LNG sales of 32.9 MMT.</li> <li>Delivered 2,214 MMscfd of average sales gas volume in Peninsular Malaysia.</li> </ul>	
	<b>Achieved World-Class Operational Efficiency and Portfolio Growth</b> <ul style="list-style-type: none"> <li>Ensured safe and reliable natural gas and LNG production while pursuing growth projects.</li> </ul>	<ul style="list-style-type: none"> <li>Overall Equipment Efficiency (OEE) of 99.7 per cent for PETRONAS Gas Berhad (PGB) and 93.5 per cent for PETRONAS LNG Complex (PLC).</li> <li>Developing Malaysia's first nearshore LNG production facility, located at the Sipitang Oil and Gas Park in Sabah.</li> </ul>	
	<b>Leveraged Digitalisation for New Value Creation</b> <ul style="list-style-type: none"> <li>Unlocked additional value from existing natural gas production through plant modernisation initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>Introduced the first Enterprise Private 5G ecosystem at PETRONAS Gas Berhad's Regasification Terminal in Sungai Udang, with subsequent installations at Gas Processing Kertih, PETRONAS Petroleum Industries Complex and Malaysia LNG.</li> <li>Implemented PETRONAS LNG Complex (PLC) Project ARIES and Gas Processing and Utilities Playbook, leading to improvements in Recovery Factor (RF) and additional sales gas production respectively.</li> <li>Ensured reliable and uninterrupted gas supply across Peninsular Malaysia through live monitoring of the gas network at the PETRONAS Gas Control Centre.</li> </ul>	
	<b>Delivered Innovative and Accessible LNG Solutions</b> <ul style="list-style-type: none"> <li>Ensured reliable supply of LNG deliveries to customers in Malaysia and across the globe while in line with our pursuit of commercial excellence.</li> </ul>	<ul style="list-style-type: none"> <li>Delivered more than 12,900 LNG cargoes from PETRONAS LNG Complex to date, whilst sustaining contribution margins across the value chain.</li> <li>Completed 6,322 Virtual Pipeline System (VPS) and LNG bunkering deliveries, in line with commitment to promote greater usage of lower carbon energy.</li> </ul>	



## Gas

Key Focus Areas and Results			
Focus Area	What We Did in 2023	Results	Stakeholders
New Business	<b>Grew CO<sub>2</sub> Business</b> <ul style="list-style-type: none"> <li>Unlocked new value from the by-products of natural gas, achieved through sales of piped CO<sub>2</sub> from Gas Processing Plant in Kertih, Terengganu, to customers' plants in the vicinity.</li> </ul>	<ul style="list-style-type: none"> <li>Secured 189,538 metric tonnes (MT) sales volume in 2023.</li> </ul>	<div>FG C SIC</div>
Net Zero Carbon Emissions	<b>Achieved Reduction in GHG Emissions</b> <ul style="list-style-type: none"> <li>Reduced the GHG emissions of the LNG production process through fuel gas consumption optimisation and utilised digital solutions to monitor and reduce emissions.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted real-time monitoring of GHG emissions at our Gas Processing and Utility plants.</li> </ul>	<div>FG C SIC</div>

## Highlights and Achievements

Highlights	What We Achieved
Zero Fatalities	<p>➔ Maintained the highest standards in <b>Occupational Health and Safety</b> with zero fatalities.</p>
Financial Resilience	<p>➔ <b>Surpassed revenue</b> and <b>profitability targets</b> despite downward price challenges, demonstrating <b>strong financial performance</b>.</p>
Portfolio Growth	<p>➔ <b>Progressed ahead of schedule</b> for the development of Malaysia's first nearshore LNG facility located in Sabah, which is planned for completion by the second half of 2027.</p> <p>➔ <b>Completed Phase 1</b> of LNG Canada with the plant startup planned to take place middle of 2025.</p> <p>➔ Strengthened LNG trading capabilities by <b>growing LNG storage capacity</b> via an <b>LNG floating storage unit (FSU)</b> located at the PETRONAS LNG Regasification Terminal in Pengerang, Johor, Malaysia.</p>

## Challenges

### Challenge

#### Managing Supply

Ensuring sustainability of feedstock supply and plant performance affecting LNG production.

#### Managing Domestic Demand

Managing gas demands in Peninsular Malaysia and elevated gas costs affecting profitability.

#### Growth Risk

Expanding supply nodes and entering new markets.

### Mitigation Action

- **Stakeholder Engagement:** Managed stakeholders and customers through courtesy calls and management visits.
- **Maintenance and Inspection Enhancement:** Improved maintenance plans and intensified inspections at the LNG facility.
- **Continuous Refinement of Marketing Strategies:** Optimised effectiveness of marketing efforts to secure sales.
- **Proactive Demand Handling:** Handled feedgas demand effectively, especially from power sector customers.
- **Continuous Contract Negotiations:** Engaged in ongoing contract discussions for price and volume offtake.
- **Investment Due Diligence:** Instilled investment discipline with a robust stage approach.
- **Commercial Term Exploration:** Ensured attractive commercial terms via bespoke customer value propositions.

### Results

- Successfully delivered all LNG cargoes despite the affected supply from the Sabah-Sarawak Gas Pipeline.
- Achieved higher revenue and profitability than budgeted.
- Enhanced value from the LNG chain by leveraging on analytics and trading capabilities.
- Streamlined and optimised gas and LNG production across all assets to mitigate production shortfalls and fulfil customer needs.
- Completed the Project Delivery of LNG Canada Phase I.
- Progressed ahead of schedule for Malaysia's first nearshore LNG facility in Sabah.
- In pursuit of new LNG supply nodes globally.

## Opportunities

- **Expansion through New Supply Nodes:** Continue to progress on the joint feasibility study for an integrated LNG project in Argentina.
- **Leveraging Carbon Capture and Storage (CCS):** The National Energy Transition Roadmap (NETR) includes carbon capture, utilisation, and storage (CCUS) as a key component of Malaysia's energy transition strategy. PETRONAS' Gas Business is also actively shaping the energy transition landscape by looking into feasible opportunities for carbon abatement at our LNG production and gas processing facilities.

## Gas

### Our Approach to Sustainability

- **Decarbonisation Efforts:** Reduced GHG emissions from Gas operations through:
  - Flaring reduction.
  - Optimisation of fuel gas consumption through digital initiative.
  - Simulation modelling for efficient plant operations.
  - Reduce emissions from LNG cargo ships through fuel optimisation.
- **Operational Excellence:** Sustained world-class operational excellence to deliver reliable lower carbon energy.
- **Customer-Centric Solutions:** Provided solutions to increase accessibility to lower-carbon energy to support the energy transition.



For more information on our sustainability contributions, please refer to pages 108-197.



## ► Our Outlook

### Short-Term Outlook

In the current challenging energy landscape, coupled with geopolitical uncertainties, Gas business is focused on reinforcing its role as a reliable and customer-centric provider of lower carbon energy solutions. By embracing innovation and new technologies, we are committed to growing our supply portfolio while maximising the value of our existing assets and infrastructures.

#### Key focus areas for the short-term

##### Asset Value Maximisation

#### Details

Enhancing the value of our assets through operational and commercial excellence, with a strong emphasis on health, safety, security and environment (HSSE).

##### LNG Supply Expansion

Efforts are underway to expand our LNG portfolio, which include growth projects like LNG Canada Phase 1, and the nearshore LNG facility in Sabah.

##### Customised Market Solutions

Actively exploring new business opportunities by tailoring solutions to meet customer needs, expanding our market reach.

### Medium- to Long-Term Outlook

As we look towards the medium- and long-term future, the demand for gas and LNG is expected to remain robust across various energy transition scenarios. This sustained demand, supported by resilient prices, is likely to drive new investments and growth in the sector.

#### Key focus areas for the medium- to long-term

##### Global LNG Portfolio Growth

#### Details

Anticipating continued growth in global LNG demand, we aim to maintain market leadership by enhancing our customer-centricity and by leveraging on our robust LNG track record in reliability and commercial excellence.

##### Expansion into Adjacent Gas Value Pools

With the growth in gas-based power generation, we are expanding our power generation business and exploring opportunities emerging from the energy transition.

##### Emissions Reduction Solutions

Initiatives to decarbonise our operations are underway, with various carbon abatement solutions being explored to future-proof our business.





**Datuk Sazali Hamzah**

Executive Vice President and  
Chief Executive Officer, Downstream

Downstream business showcased resilience, driving operational excellence and maximising resources across our value chain. We navigated challenges and seized opportunities in a recovering market, with demand nearing pre-COVID-19 levels across all units. Our production volumes in petroleum and petrochemical products saw an uptick due to stable plant operations and reliability. Significantly, our marketing arm recorded a rise in sales volume for the retail and commercial segments, fuelled by economic recovery.

Looking forward, our commitment is to strengthen our foothold into specialty chemicals, expand convenience business such as Café Mesra and Setel, and grow our presence in the Asian lubricant market, focusing on customer-centric solutions to drive long-term value creation in a changing world. We are also actively exploring growth opportunities in cleaner energy solutions, including biofuels, circular economy and next-generation fluids with the PETRONAS Iona range, aligning with the evolving global energy demands.

# Downstream



**26.3 billion**  
litres of overall marketing  
sales volume.



**87.2%**  
Overall Equipment  
Effectiveness (OEE).



Sanctioned the construction  
of an **advanced  
chemical recycling  
plant** in Pengerang, Johor.



Achieved **final  
investment decision  
(FID) to fully acquire  
maleic anhydride  
plant** in Gebeng, Pahang  
from BASF PETRONAS  
Chemicals Sdn Bhd.

Key Focus Areas and Results			
Focus Area	What We Did in 2023	Results	Stakeholders
Core Business	<b>Stable and Efficient Operations</b> <ul style="list-style-type: none"> <li>Sustained safe, stable and efficient operations across all units, meeting energy security needs.</li> </ul>	<ul style="list-style-type: none"> <li>Improved Overall Equipment Effectiveness (OEE) to 87.2 per cent from 85.9 per cent last year.</li> <li>Enhanced operational efficiency and reliability.</li> </ul>	<div>C E SIC</div>
	<b>Biofuels Development</b> <ul style="list-style-type: none"> <li>Partnered with Idemitsu Kosan Co., Ltd. to explore co-marketing including sales and delivery of produced Sustainable Aviation Fuel (SAF) to the aviation industry overseas.</li> <li>Initiated a Used Cooking Oil (UCO) collection drive in selected regions to promote responsible waste management and circular economy practices.</li> <li>Signed Memorandum of Understanding (MoU) with The Malaysian Palm Oil Board to study the viability and accessibility of domestic UCO and palm waste as feedstocks for the production of SAF.</li> </ul>	<ul style="list-style-type: none"> <li>Initiated collaboration with Idemitsu Kosan Co., Ltd. to establish a robust SAF sales and distribution network, ensuring SAF accessibility to airlines.</li> <li>Collected 137.95 tonnes of UCO nationwide at selected retail stations and refining plants, through collaboration with the Ministry of Plantation and Commodities to supply feedstock for SAF production. This initiative enhanced public awareness of waste management and circular economy through ongoing UCO collection campaigns.</li> </ul>	<div>GIP CN</div>
	<b>Specialty Chemicals Division</b> <ul style="list-style-type: none"> <li>Established a dedicated division for specialty chemicals to strategically drive growth.</li> </ul>	<ul style="list-style-type: none"> <li>Perstorp completed the construction of Sayakha plant in India in 2023 for the production of Pentaerythritol and ISCC PLUS certified Voxstar™ M40 to strengthen its market position in the Asia Pacific region.</li> <li>BRB significantly expanded its global footprint and capabilities in 2023, achieving key certifications for food safety in Malaysia and started full operations of its new Linde Ammonia Concept plant in the Netherlands, while strengthening its market presence in the UK and South Korea.</li> </ul>	<div>C SIC</div>
	<b>Circular Economy Advancement</b> <ul style="list-style-type: none"> <li>Reached a final investment decision for the construction of an advanced chemical recycling plant in Pengerang, Johor, set for operation by the first half of 2026.</li> </ul>	<ul style="list-style-type: none"> <li>Initiated the construction phase of the plant that will enable PETRONAS Chemicals Group Berhad to convert end-of-life plastics into pyrolysis oil, which can be used as chemical feedstock in the production of sustainable plastics.</li> </ul>	<div>CN</div>

## Downstream

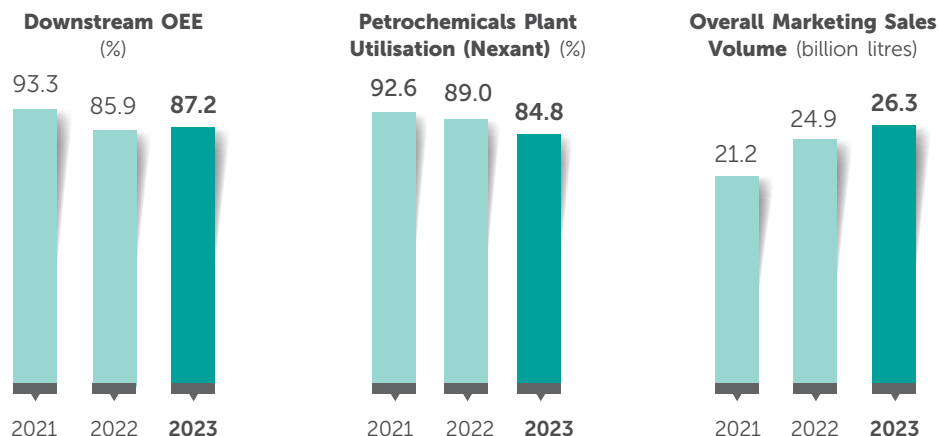
### Key Focus Areas and Results

Focus Area	What We Did in 2023	Results	Stakeholders
<b>New Business</b>	<b>Convenience Business Expansion</b> <ul style="list-style-type: none"> <li>Expanded the convenience business to cater to customer's needs through diversified product and service offerings at PETRONAS fuel retail stations and beyond.</li> </ul>	<ul style="list-style-type: none"> <li>Operated 97 Cafe Mesra outlets as of December 2023 in strategic locations nationwide including PETRONAS fuel retail stations and beyond, bringing its product and service offerings closer to customers for greater convenience.</li> <li>Launched Setel Lite and integrated DuitNow QR in the Setel app, strengthening Setel's position as a preferred e-wallet for motorists, bringing convenience through motorist-centric features beyond fuel.</li> </ul>	<div>FG C</div>
<b>Net Zero Carbon Emissions</b>	<b>Emissions Reduction Initiatives</b> <ul style="list-style-type: none"> <li>Implemented various Scope 1 and Scope 2 emissions reduction initiatives, including optimisation of fuel burning equipment and combustion process, generation and utilisation of renewable electricity sources, and energy efficiency enhancement.</li> </ul>	<ul style="list-style-type: none"> <li>Reduced GHG emissions from Downstream operations to support PETRONAS' target of capping emissions to 49.5 million tonnes carbon dioxide equivalent (CO<sub>2</sub>e) by 2024.</li> </ul>	<div>FG C</div>

### Highlights and Achievements

We have maintained stable OEE but recorded a reduction in petrochemicals plant utilisation (Nexant) for the past three years due to planned turnaround and maintenance activities, as well as unscheduled plant shutdowns. Retail and Commercial segments meanwhile boosted overall marketing sales volume on the back of economic recovery.

#### Performance Highlights for 2023



## Challenges

### Challenge

#### Evolving Customer Preferences

Shifts in customer's preferences towards sustainably produced products and offerings.

#### Geopolitical Instability

Geopolitical tensions leading to supply disruptions, volatility of commodity prices and increased scrutiny on sanction laws.

### Mitigation Action

- **Sustainability Initiatives:** Implementing initiatives in line with the Net Zero Carbon Emissions by 2050 Pathway, focusing on operational emissions reduction and cleaner energy solutions.
- **Business Future-Proofing:** Diversifying into high-margin products and offerings to meet stakeholder demands.

- **Sourcing strategy:** Accelerate nearshoring sourcing strategy and global sourcing partnership to reduce geographic dependence, ensuring security of supply and cost competitiveness.
- **Compliance Review:** Rigorous review of counterparties to ensure compliance to relevant sanction laws.

### Results

- **Biofuel in Formula One:** Collaborated with Mercedes-AMG PETRONAS Formula One Team using biofuel in its fleet across nine races, leading to savings of 339 tonnes CO<sub>2</sub>e and a 67 per cent emissions reduction during the Formula One European Season.
- **Electric Vehicle Charging Expansion:** Grew the number of Gentari-branded electric vehicle chargers to 51, strategically placed at PETRONAS fuel retail stations to enhance customers' accessibility.
- **PETRONAS Syntium Hybrid Launch:** Met the increasing demand for sustainable vehicle solutions with the hybrid engine fluids, PETRONAS Syntium Hybrid.
- **AireBlue™ Launch:** Offered road users access to a cleaner diesel exhaust alternative through the Kedai Mesra network.
- **PETRONAS Iona and thermal management fluid enhancement:** Increased engine energy efficiency without compromising performance while delivering sustainable mobility for consumers.
- **Lubricant:** Increased supplier base with competitive prices.
- **Counterparty Screening:** Conducted additional screening methodology in determining the 'Ultimate Beneficial Owner' of counterparties as an added safeguard to the existing practices.

## Opportunities

- **Innovative Energy Solutions Demand:** Downstream is poised to meet the rising demand for innovative energy solutions, tapping into the growing global trend towards sustainable energy practices.
- **Retail Market Expansion:** With the retail market rebounding, Downstream is well-positioned to capitalise on the increased demand for diverse convenience business products and services.
- **Shift Towards Green Mobility:** Downstream will continue to expand strategic collaborations with Gentari and other industry players to enhance the eco-friendly transportation ecosystem in the country, making electric vehicle adoption more affordable and accessible.



## Downstream

### Our Approach to Sustainability

- **Mangrove Conservation Programme:** PETRONAS Refinery and Petrochemicals Corporation Sdn Bhd, in partnership with Pengerang Terminals (Two) Sdn Bhd and PETRONAS Chemicals Group Berhad has planted an additional 15,500 mangrove trees to reach the target of 30,000 trees in Pulau Tanjung Surat, Johor, contributing to reforestation and shoreline protection.
- **Be Green Initiative Expansion:** PETRONAS Chemicals Group Berhad expanded Be Green, its flagship social impact programme, internationally for the first time starting with Indonesia, to drive awareness on responsible waste management and the practice of 3R (Reduce, Reuse and Recycle).
- **4R (Reduce, Reuse, Recover, Recycle) Initiative:** PETRONAS Lubricants Brazil recycled eight tonnes of label liner waste per month to produce 180 recycled paper towel rolls (equivalent to 706 kilograms) for use in its blending plant in Contagem, Brazil.
- **Social Enterprise Education Lab (SEEd.Lab):** SEEd.Lab, which has impacted over 15,000 lives since 2020, launched Cohort 3 with 50 social entrepreneurs to address societal and environmental challenges.
- **ESG Performance Recognition:** PETRONAS Chemicals Group Berhad and PETRONAS Dagangan Berhad's high rating on the FTSE4Good Bursa Malaysia Index and top 25 per cent ESG ranking in the FTSE Bursa Malaysia EMAS Index demonstrate a strong commitment to environmental, social, and governance excellence.



For more information on our sustainability contributions, please refer to pages 108-197.



## ► Our Outlook

### Short-Term Outlook

Our focus is on agility and alignment with the broader PETRONAS organisation. We are committed to creating long-term value while addressing today's global energy demands and preparing for future needs.

Our targeted investments leverage our unique business strengths, future-proofing our portfolio and creating new revenue streams. Our strategy involves strengthening operational and commercial excellence and extending value to fully capture the market, especially in key growth areas in the new energy solutions space. These include:

- Advancing into biofuels to be supported by our upcoming first biorefinery in Pengerang, Johor
- Maximising value through asset-backed trading
- Delivering innovative solutions through the expansion of PETRONAS Iona range while enhancing product performance to promote the shift towards e-mobility
- Growing our convenience business to diversify product offerings beyond fuel.
- Strengthening our foothold in specialty chemicals as part of our portfolio diversification strategy.
- Advancing towards circular economy through the New Plastics Economy initiatives; and
- Driving growth and maximising the potential of the Pengerang Integrated Complex (PIC) through strategic partnerships and investments.

### Medium- to Long-Term Outlook

At Downstream, we aim to drive business value through the development of sustainable solutions. Our priority is to align with new policy developments, increased private sector commitment, rising consumer awareness, technological advancements in the societies we serve and address the energy transition in a just and responsible manner. We are committed to measuring, reducing and offsetting our carbon emissions to realise our Net Zero Carbon Emissions by 2050 Pathway and meeting the climate goals set out under the Paris Agreement. We will continue to reduce emissions from our operations through decarbonisation levers in support of PETRONAS' target of a 25 per cent reduction by 2030.



# Project Delivery and Technology

Completed the **largest offshore installation** in Malaysia for Kasawari Gas Field Development.



**RM3.3 billion**



realised value creation through the delivery of projects, technical and digital solutions.

Progressed deployment of our proprietary Proton Exchange Membrane (PEM) electrolyser for **hydrogen production**.



Crowdsourced over **1,500 ideas**



through the global **Race2Decarbonise** hackathon towards meeting enterprise short-term abatement target.



**Ir. M Yusri M Yusof**  
Senior Vice President\*,  
Project Delivery and Technology



With innovation being integral to the energy landscape amid accelerated global energy transition, PETRONAS' Project Delivery and Technology (PD&T) Division has been pivotal in driving our groupwide business and sustainability ambitions.

PD&T as PETRONAS' Centre of Excellence is the technology and engineering nexus offering deep expertise and innovative solutions to advance the Group's core business and growth areas.

As a safe, reliable and progressive solutions partner, PD&T recorded transformative growth while shaping and safeguarding operations across the value chain towards realising the aspirations of the enterprise and its stakeholders.

This achievement is due to the visionary leadership of Datuk Ir Bacho Piong who led PD&T previously.

The division delivered notable milestones in line with PETRONAS' Energy Transition Strategy demonstrating passion and commitment towards making impact in the energy landscape through our expanding innovation ecosystem.

In 2023, we pushed for wider adoption of PETRONAS' proprietary solutions through commercialisation. The efforts to create value and touch lives with our technology were intensified through the formation of Group Technology and Commercialisation.







Meanwhile, the deployment of key technology and delivery of capital projects, together with our pursuit of active collaborations to foster innovation, have propelled us along the pathway to a lower carbon future.

**Note:**

\* Appointment as at 1 January 2024.



## Key Focus Areas and Results

Focus Area	What We Did in 2023	Results	Stakeholders
Core Business	<b>Key Strategic Value Projects</b> <ul style="list-style-type: none"> <li>Spearheaded significant advancements in key technology and capital projects.</li> </ul>	<ul style="list-style-type: none"> <li>Completed the largest offshore installation for the Kasawari Gas Field Development Project.</li> </ul>	
	<b>Project Delivery Excellence</b> <ul style="list-style-type: none"> <li>Continued delivering projects on time, on budget, on scope.</li> </ul>	<ul style="list-style-type: none"> <li>Managed 830 projects valued at RM12.3 billion annual CAPEX.</li> </ul>	
	<b>Operational Excellence</b> <ul style="list-style-type: none"> <li>Spurred innovation via digital and technology advancement to improve efficiency, productivity and operational excellence.</li> </ul>	<ul style="list-style-type: none"> <li>Piloted Malaysia's first 5G private network to enable advanced digital initiatives and optimise operational performance.</li> <li>Achieved significant enterprise value creation through AlphaLNG, for gas and LNG production, cargo scheduling, price and cost optimisation.</li> </ul>	
New Business	<b>Hydrogen Innovation</b> <ul style="list-style-type: none"> <li>Progressed in-house hydrogen technology.</li> </ul>	<ul style="list-style-type: none"> <li>Progressed deployment of PETRONAS' proprietary Proton Exchange Membrane (PEM) electrolyser for hydrogen production.</li> </ul>	
	<b>Strategic Carbon Capture and Storage Implementation</b> <ul style="list-style-type: none"> <li>Deployed innovative carbon capture and storage (CCS) technologies for effective carbon management.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved successful Factory Acceptance Testing for Rotating Packed Bed for Integrated Cryomin Onshore Plant.</li> </ul>	
	<b>Specialised Product Innovation</b> <ul style="list-style-type: none"> <li>Developed specialty chemicals and circular economy technology for businesses.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved end-to-end R&amp;D capabilities ranging from innovative chemistry creation and technology piloting such as graphene and high performance catalysts for sustainable aviation fuel.</li> </ul>	

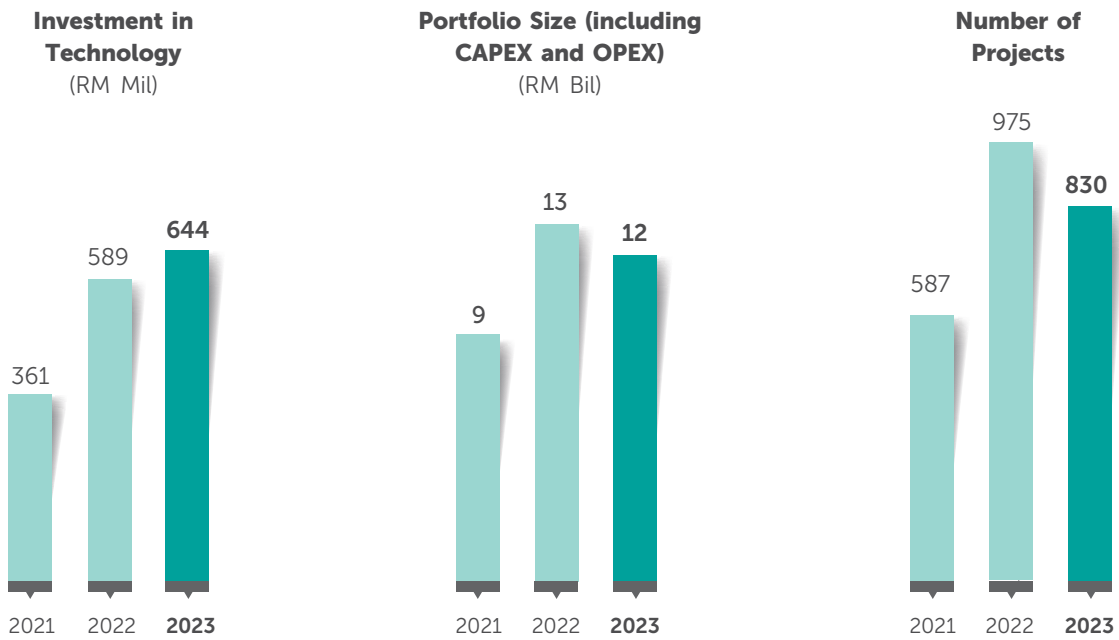


## Project Delivery and Technology

Key Focus Areas and Results			
Focus Area	What We Did in 2023	Results	Stakeholders
New Business	<b>Technology Commercialisation</b> <ul style="list-style-type: none"> <li>Commercialised technology and digital solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Transformed refinery waste by-products into premium materials such as graphene used for coating (ProShield+), composite and battery (ProCharge+).</li> <li>Commercialised digital solutions such as VOLANT, a unique integrated setup to facilitate high speed connectivity; and STEAR, an AI-powered logistic solution for business efficiency and GHG emissions reduction.</li> </ul>	GIP
	<b>Enterprise Decarbonisation Focus</b> <ul style="list-style-type: none"> <li>Accelerated asset decarbonisation through initiatives towards flaring or venting reduction, energy efficiency and emissions accounting by leveraging technology.</li> </ul>	<ul style="list-style-type: none"> <li>Deployed Structured Energy Trending and Performance Assessment for Combustion Engine, a decarbonisation programme through fuel gas optimisation for stationary combustion; and a vent-to-flare conversion project to achieve zero routine venting at the Temana platform.</li> <li>Crowdsourced 1,500 innovative decarbonisation ideas worldwide through PETRONAS' first decarbonisation hackathon, Race2Decarbonise.</li> </ul>	
Net Zero Carbon Emissions	<b>Methane Emission Management</b> <ul style="list-style-type: none"> <li>Strengthened methane emissions management in line with international principles and collaborations, including ASEAN initiatives and partnerships for methane emissions reduction.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved the United Nations Environmental Programme Oil and Gas Methane Partnership 2.0 Gold Standard on methane emissions management pathway.</li> </ul>	C GIP
	<b>CCS Innovation</b> <ul style="list-style-type: none"> <li>Defined CCS hubs development and technology milestones in line with the National Energy Transition Roadmap.</li> </ul>	<ul style="list-style-type: none"> <li>Advanced the development of three CCS hubs in Malaysia.</li> <li>Achieved commercial readiness for flue gas membrane contactor.</li> </ul>	

Highlights and Achievements

Performance Highlights for 2023



## Project Delivery and Technology

Challenges		
Challenge	Mitigation Action	Results
<b>Volatility, Uncertainty, Complexity and Ambiguity</b> Conditions that impact the ability to deliver business commitments.	<ul style="list-style-type: none"> <li>• <b>Delivery Structure Review and Agile Processes:</b> Enhanced efficiency and responsiveness through comprehensive review of our delivery structure. Enhancements included implementing agile business processes for adaptability and facilitating changes to meet commitments.</li> <li>• <b>Opportunities from Trades Agreement:</b> Capitalised on opportunities to strengthen and diversify vendor network, optimise fabricators, streamline supply chain and foster growth of local contractors' ecosystem.</li> </ul>	<ul style="list-style-type: none"> <li>• Established an optimised approach with phased planning for enhanced delivery.</li> <li>• Revised critical cross-functional work processes for data and target adaptability.</li> <li>• Collaborated on a study to understand the impact of free trade agreements groupwide.</li> <li>• Initiated a comprehensive study to enhance the project delivery ecosystem encompassing market consolidation.</li> </ul>
<b>Talent Development</b> Managing capability and capacity gaps.	<ul style="list-style-type: none"> <li>• <b>Talent Improvement Programme:</b> Developed a programme aimed at building a workforce with a broad range of skills and perspectives.</li> <li>• <b>Conscious Inclusion Programme:</b> Implemented a Diversity and Inclusion awareness programme; and conducted a benchmarking study on neurodiverse capability development to build skills and encourage intentional inclusion.</li> </ul>	<ul style="list-style-type: none"> <li>• Executed a comprehensive Talent Reshaping Programme.</li> <li>• Completed a conscious inclusion programme and benchmarking study to establish a capability framework and identified partner for collaboration.</li> <li>• Pilot programme for neurodivergent talents.</li> </ul>
<b>Cyber Security</b> Managing exposure to cyber security threats in digital activities.	<ul style="list-style-type: none"> <li>• <b>Cross-Unit Cyber Security Collaboration:</b> Strengthened collaboration for an integrated defence against cyber threats.</li> <li>• <b>Robust ICT Business Continuity Measures:</b> Implemented business continuity measures and conducted tabletop exercises for cyber security scenario evaluation.</li> </ul>	<ul style="list-style-type: none"> <li>• Deployed Enterprise Cyber Security Governance Framework in the operational technology environment.</li> <li>• Implemented Ransomware Crisis Process.</li> </ul>

Opportunities
<ul style="list-style-type: none"> <li>• <b>Technology Stewardship in Energy Transition:</b> PD&amp;T is advancing technologies required to deliver the PETRONAS Energy Transition Strategy.</li> <li>• <b>Diverse Talent Utilisation:</b> PD&amp;T will continue to develop a diverse workforce with the talents and expertise necessary to create value and unlock opportunities.</li> <li>• <b>Strategic Collaborations for Growth:</b> PD&amp;T will actively foster more significant synergies with strategic partners to propel PETRONAS' Core and New Business growth.</li> </ul>

## Our Approach to Sustainability

- **Eco-Conscious Initiatives:** Reduced single-use plastics in PD&T projects and facilities, avoiding 67 tonnes of plastic waste. Additionally, PD&T conducted 39 community and environmental conservation programmes. These social impact programmes reached 4,748 people, collected 924 kilograms of waste, released 650 turtles and planted 569 trees.
- **Social Performance Enhancement:** Improved technical capabilities and internal controls focusing on forced labour and social risk assessment for vendors and partners in PD&T's managed projects in alignment with national regulations and plans.



For more information on our sustainability contributions, please refer to pages 108-197.

## ► Our Outlook

### Short-Term Outlook

At PD&T, we aim to advance PETRONAS' Core Business and New Business growth by excelling in project delivery and asset operations, providing expertise leadership, technological and engineering advancements, and sustaining and scaling up our digital ecosystem.

Our primary focus in the short term includes:

- Intensifying and accelerating decarbonisation by taking comprehensive measures to progress the energy transition.
- Ensuring that technology investments support key business growth priorities in CCS, renewable energy, hydrogen and advanced materials.
- Driving the commercialisation of matured technologies and digital solutions.

Among the key projects in our pipeline are the Kasawari Gas Field Development and the Kasawari CCS project. We will also scale up proprietary technologies and advance PETRONAS' hydrogen plans.

### Medium- to Long-Term Outlook

As PETRONAS' Centre of Excellence and preferred solutions partner for the energy industry and beyond, we will continue identifying innovative solutions to maintain our competitive edge. We will leverage our expertise in project delivery, technology, technical and digital solutions, while ensuring safe and efficient operations throughout the value chain.

We will also promote, advocate and oversee enterprise decarbonisation and enterprise electrification to support PETRONAS in achieving its emissions reduction targets.

In accelerating our energy transition journey, we have fortified our Five-Year Strategic Plan 2024-2028 to drive sustainable growth, focusing on three key thrusts:

- Ensure continuous safety, reliability and efficiency improvements through distinctive technology solutions.
- Unlocking and accelerating commercialisation opportunities to generate new revenue for the Group.
- Intensifying research advancements supporting PETRONAS' Energy Transition Strategy in the identified focus areas:
  - Driving renewables:** Supporting the growth of hydrogen to fast-track the energy transition.
  - CCS:** Advancing engineering for carbon capture technologies.
  - Circular economy:** Repurposing waste into new products.
  - Advanced materials:** Strengthening asset integrity, extending service life and reducing overall carbon footprint.
  - Improving decarbonisation:** Managing and reducing greenhouse gas emissions from assets.
  - Advancing specialty chemicals:** Ensuring progress in producing and utilising specialty chemicals beyond oil and gas into everyday consumer products.

Moving forward, we will continue to pursue technological and digital advancement throughout our value chain to ensure we meet the Group's business goals and realise our Net Zero Carbon Emissions by 2050 Pathway.





**Sushil Purohit**  
Chief Executive Officer,  
Gentari

The energy transition's accelerated pace in 2023, supported by a diverse coalition of stakeholders, underscores a unified commitment to sustainable energy. Poised to amplify PETRONAS' ambitions in renewable energy, hydrogen and green mobility, we are contributing to the PETRONAS Energy Transition Strategy and the Net Zero Carbon Emissions by 2050 Pathway.

We aspire to be the leading next-generation commercial and industrial, and utility-scale renewable energy developer, a scale hydrogen producer and go-to industry partner, and to be Asia Pacific's leading green mobility solutions partner.

Our initiatives and collaborations in 2023 have been positive. We have achieved a total of 2.9 gigawatt installed and under construction global renewable energy capacity, marked our entry into Australia and the offshore wind segment, and significantly enhanced our green mobility footprint in Malaysia, India and Thailand. This progress is a testament to Gentari's dedication to advancing cleaner energy solutions and playing a pivotal role in the global pursuit of a net zero future.

# Gentari

First entry into Australia through the acquisition and rebranding of **Gentari Solar Australia**, and the offshore wind segment via the **Hai Long project** off the Changhua coast.

**2.9**  
**gigawatt (GW)**  
installed and under construction global renewable energy capacity.



Progressing towards actual hydrogen assets, with approximately **200 KTPA of hydrogen opportunities** that have advanced beyond the feasibility stage.


















Cumulative installation of close to 570 charging points globally and deployment of more than **2,500 EVs** under Vehicle-as-a-Service (VaaS)

## Key Focus Areas and Results

Gentari is set to amplify PETRONAS' ambitions in renewable energy, hydrogen and green mobility, contributing to the PETRONAS Energy Transition Strategy and the Net Zero Carbon Emissions by 2050 Pathway.

Focus Area	What We Did in 2023	Results	Stakeholders
Renewable Energy	<p><b>Acquisition of Gentari Solar Australia</b></p> <ul style="list-style-type: none"> <li>Acquired and rebranded WIRSOL Energy to Gentari Solar Australia, adding 422 megawatt of gross capacity to Gentari's overall renewables portfolio.</li> </ul> <p><b>Acquired Stake in Hai Long</b></p> <ul style="list-style-type: none"> <li>Completed the acquisition of 49 per cent ownership in Northland Power Inc.'s stake of the Hai Long project located off the Changhua coast.</li> </ul> <p><b>Project Commissioning with Amplus</b></p> <ul style="list-style-type: none"> <li>Achieved final investment decision of more than 300 megawatt.</li> </ul> <p><b>Partnership with ReNew</b></p> <ul style="list-style-type: none"> <li>Explored the development of 5 gigawatt in renewable assets including solar, wind and energy storage. Investment for a 49 per cent equity stake in ReNew's 403 megawatt project.</li> </ul> <p><b>Cross-border Project via Vanda RE</b></p> <ul style="list-style-type: none"> <li>Received conditional approval for a new cross-border renewable energy project from Singapore's Energy Market Authority to establish a green electricity trading corridor between Singapore and Indonesia.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved a total of 2.9 gigawatt installed and under construction global renewable energy capacity – of which 1.6 gigawatt is installed capacity – marking significant growth globally with entry into new markets.</li> </ul>	<div> <div>FG</div> <div>C</div> </div>

# Gentari

Key Focus Areas and Results			
Focus Area	What We Did in 2023	Results	Stakeholders
Hydrogen	<b>JFSA with Tenaga Nasional Berhad</b> <ul style="list-style-type: none"> <li>Commenced Joint Feasibility Study Agreement (JFSA) to advance studies for hydrogen business development.</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 200 kilotonnes per annum (KTPA) of hydrogen opportunities have progressed beyond the feasibility stage.</li> <li>Strengthened Gentari's position in the hydrogen industry through seven key partnerships.</li> </ul>	 
	<b>JFSA with City Energy</b> <ul style="list-style-type: none"> <li>Commenced JFSA to supply hydrogen to Singapore via pipeline.</li> </ul>		 
	<b>MoU with Sembcorp Energy</b> <ul style="list-style-type: none"> <li>Accelerated the expansion of renewable energy and the supply of low-carbon hydrogen in Southeast Asia.</li> </ul>		 
	<b>MoU with IHI Corporation</b> <ul style="list-style-type: none"> <li>Collaborated on piloting a 100 per cent ammonia-powered gas turbine in Malaysia.</li> </ul>		 
	<b>Partnership with Asahi Kasei and JGC</b> <ul style="list-style-type: none"> <li>Received approval from Japan's Ministry of Economy, Trade and Industry (METI) on New Energy and Industrial Technology Development Organization (NEDO) funding in joint venture with Asahi Kasei and JGC for production of green hydrogen with 60 megawatt alkaline water electrolyser.</li> </ul>		 
	<b>Investment Agreement with AM Green</b> <ul style="list-style-type: none"> <li>Entered into strategic partnership to produce up to 5 metric tonnes per annum (MTPA) of green ammonia in India for export to key markets.</li> </ul>		  
	<b>Feasibility Study Grant in Alberta, Canada</b> <ul style="list-style-type: none"> <li>Received a CAD2 million grant for project feasibility studies in Alberta Industrial Heartland.</li> </ul>		 

Key Focus Areas and Results			
Focus Area	What We Did in 2023	Results	Stakeholders
Green Mobility	<b>Modular Electric Vehicle Charging Station</b> <ul style="list-style-type: none"> <li>Launched Malaysia's first modular and portable electric vehicles (EV)s fast charging station in collaboration with EV Connection Sdn Bhd (EV Connection) with battery energy storage system (BESS) at PLUS Highway.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved cumulative installation of close to 570 total charging points globally and deployed more than 2,500 EVs under the Vehicle-as-a-Service (VaaS) offering, enhancing green mobility footprint regionally.</li> </ul>	<div>FG C GIP</div>
	<b>Collaboration with KPJ Healthcare</b> <ul style="list-style-type: none"> <li>Promoted sustainable transportation in the Malaysian healthcare sector through the installation of electric vehicle charging facilities at 10 KPJ Healthcare premises.</li> </ul>		<div>FG C GIP</div>
	<b>MoU with Evolt Technology</b> <ul style="list-style-type: none"> <li>Explored green mobility infrastructure collaborations in Southeast Asia.</li> </ul>		<div>FG C GIP</div>
	<b>Tripartite Roaming Agreement</b> <ul style="list-style-type: none"> <li>Activation of a roaming network with EV Connection and Yinson GreenTech to enable cross platform access electric vehicle charging on Setel, JomCharge and chargEV.</li> </ul>		<div>GIP</div>
	<b>Partnerships for Decarbonisation in India</b> <ul style="list-style-type: none"> <li>Initiated a collaboration with MoEVing Urban Technology and Gati Ltd to support decarbonisation of India's transportation sector. Additionally, collaborating with Amazon to decarbonise its Indian transportation network through electrification of its third party delivery service partners' transport vehicles.</li> </ul>		<div>GIP</div>
	<b>MoUs for Green Mobility Infrastructure</b> <ul style="list-style-type: none"> <li>Partnered with JLand Group, Lotus Cars Malaysia, Sunway Group, Sarawak Energy Berhad, and BMW Malaysia.</li> </ul>		<div>GIP</div>



# Gentari

## Highlights and Achievements

### Renewable Energy

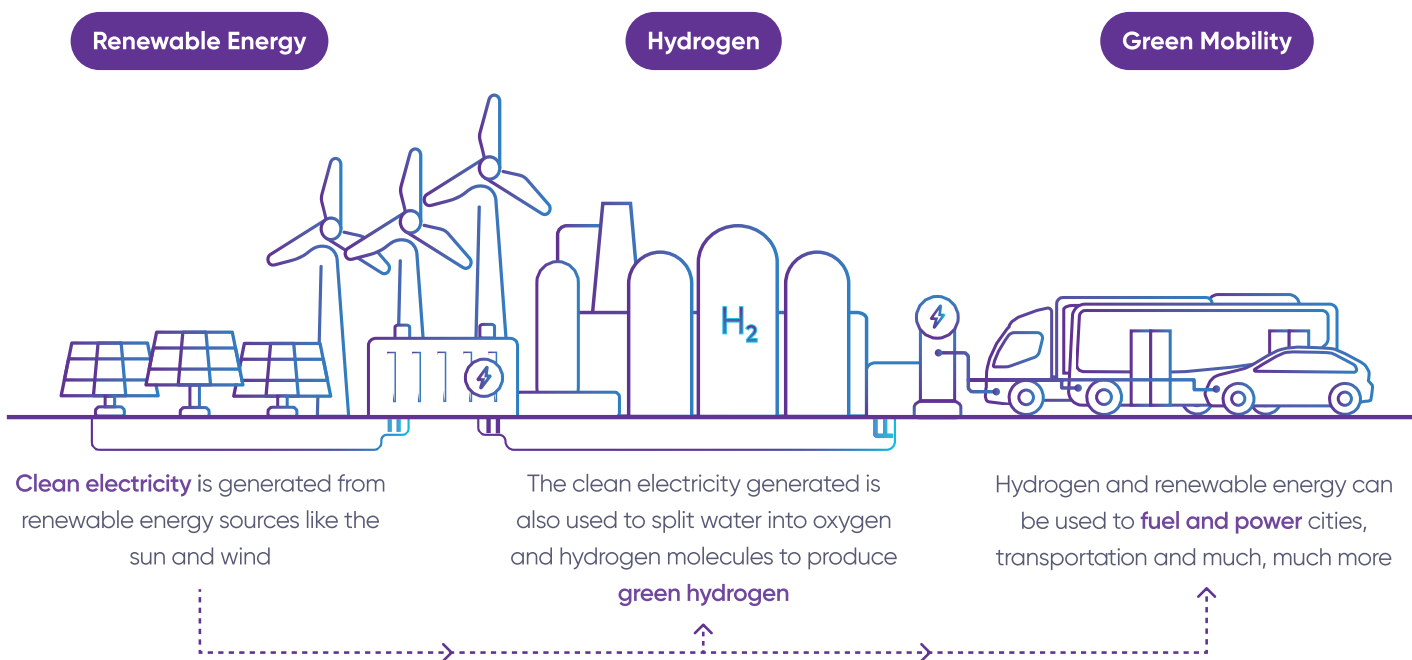
Through the addition of 0.5 gigawatt installed capacity in 2023, we have brought our total installed capacity to 1.6 gigawatt. Our renewable energy portfolio reflects an optimistic outlook with a robust pipeline of 1.3 gigawatt under-construction projects spanning solar and wind technologies. We continue to expand and diversify our portfolio in 2023 by entering the Australian market through Gentari Solar Australia and venturing into the offshore wind segment by completing the acquisition of 49 per cent ownership in Northland Power Inc.'s stake of the Hai Long project off the Changhua coast.

### Hydrogen

In 2023, the emphasis was on developing projects for hydrogen supply and securing early commitments from customers. Locally, we are forming strategic partnerships in Sarawak to pave the way towards Malaysia's first green hydrogen hub. On a regional scale, we have advanced projects converting renewable energy to hydrogen in India and established key partnerships across the Asia Pacific region. Currently, we have progressed around 200 KTPA of hydrogen opportunities beyond the feasibility stage.

### Green Mobility

Gentari is a key green mobility player in the region as evidenced by its significant achievements in 2023. We have become Malaysia's leading on-the-go DC charging point player and secured the top position in the three-wheeler VaaS segment in India. Through 21 MoUs and agreements, we fostered partnerships with major vehicle OEMs and charging point providers.



## Challenges

Challenge	Mitigation Action	Results
<b>Policy and Regulations</b> Dynamic and changing policies and regulations.	<ul style="list-style-type: none"> <li>• <b>Stakeholder Engagement and Policy Influence:</b> Mobilised local teams for stakeholder management and actively participated in shaping policy.</li> <li>• <b>Strategic Local Partnerships:</b> Partnered with influential local entities to navigate regulatory landscapes.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Strategic Partnerships:</b> Established partnerships domestically and internationally across businesses and government entities for shared value.</li> </ul>
<b>Macro Environment</b> Uncertainties in the evolving cleaner energy landscape, including green financing availability and interest rate fluctuations.	<ul style="list-style-type: none"> <li>• <b>Risk and Portfolio Management:</b> Monitored and rebalanced portfolio risks, advocated for green financing access.</li> <li>• <b>Geopolitical Strategy:</b> Established signposts for geopolitical developments to navigate macro uncertainties.</li> </ul>	<ul style="list-style-type: none"> <li>• Provided cleaner energy solutions to our customers with the facilitation of innovative green financing. Through balanced debt and equity financing, up to 1.3 gigawatt renewable energy capacity was successfully funded and deployed.</li> <li>• Undertook robust portfolio management to address geographical and technological risks.</li> </ul>
<b>Capturing Synergies</b> Challenges in realising synergistic benefits amidst fast-changing market dynamics.	<ul style="list-style-type: none"> <li>• <b>Comprehensive Value Creation and Resource Allocation:</b> Formed value creation plans and allocated resources for effective synergy capture.</li> <li>• <b>Post-Acquisition Excellence:</b> Institutionalised processes to ensure post-acquisition success.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Business Growth:</b> Positioned businesses to advance our mission of becoming the leading next-generation C&amp;I and utility-scale renewables developer, a scale hydrogen producer and go-to industry partner, and the leading green mobility solutions partner in Asia Pacific.</li> </ul>
<b>Building Talents</b> Acquiring the right capabilities in an evolving cleaner energy landscape.	<ul style="list-style-type: none"> <li>• <b>Talent Development and Attraction:</b> Focused on building core capabilities and attracting niche talents for global operations.</li> <li>• <b>Competency and Culture Integration:</b> Developed key competencies and institutionalised a cohesive culture.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Workforce Strengthening:</b> Grew workforce from 330 to 601, with diverse expertise across multiple industries.</li> </ul>

## Opportunities

Gentari is scaling its business verticals through targeted growth vehicles, focusing on core markets, early investments, and building local teams.

- **Renewables:** Emphasising expansion in Asia Pacific, Gentari aims to grow and capture value accretive renewable energy projects and explore BESS opportunities.
- **Hydrogen:** The focus is on advancing supply-side hydrogen projects as well as customer commitments to offtake hydrogen.
- **Green Mobility:** Gentari seeks to strengthen market leadership and expand services in key markets across Asia Pacific, including our current core markets of Malaysia and India.

## Gentari

### Our Approach to Sustainability

#### Contributions

- **PETRONAS Electrification:** Achieved installation of 62.6 MWp across PETRONAS assets, contributing to the Group's increasing use of sustainable energy sources.
- **Efficient Governance Practices:** Established robust and efficient governance practices aimed at upholding integrity.
- **Fleet Electrification:** Approximately 110 EVs delivered for PETRONAS operations, contributing to the reduction of carbon footprint in transportation.
- **Hydrogen as Clean Fuel:** Explored the use of green hydrogen and ammonia, including co-combustion, to expand the use of sustainable fuel alternatives within PETRONAS.



For more information on our sustainability contributions, please refer to pages 108-197.

### ► Our Outlook

#### Short-Term Outlook

In renewable energy, Gentari focuses on expanding commercial and industrial projects across Asia Pacific, with plans to grow utility-scale solar and wind projects in Malaysia and the region. These plans include embarking on offshore wind projects and developing energy storage capabilities for reliable supply.

The hydrogen business is developing projects in Malaysia, India, Canada and other competitive locations, targeting early adopters and expanding through strategic partnerships. Advocacy for supportive hydrogen industry policies and regulations is also a key focus.

In green mobility, Gentari aims to expand charging points in Malaysia, India, Thailand and potentially Indonesia while establishing a strong VaaS fleet in these regions. Enhancing value-added services for customers is also part of the strategy.

#### Medium- to Long-Term Outlook

Gentari is poised to amplify PETRONAS' ambitions in renewable energy, hydrogen and green mobility, contributing to the PETRONAS Energy Transition Strategy and Net Zero Carbon Emissions by 2050 Pathway. Central to this strategy is a commercial and industrial, and utility-scale renewable energy business, supplying green electrons to the grid and supporting clean hydrogen production.

Gentari's expansion in the electron value chain will offer comprehensive green mobility solutions backed by a network of public charging points, solidifying Gentari's role as a key player in the cleaner energy sector.



# Other Businesses



PETRONAS' other businesses, including MISC Group and KLCCP Stapled Group, stayed resilient and steadfast in contributing to PETRONAS' overall financial performance despite market volatility and high inflation in 2023.

As a key solutions provider to PETRONAS, MISC is committed to providing sustainable maritime transportation solutions and contributing to the PETRONAS Net Zero Carbon Emissions by 2050 Pathway.

MISC recorded a 2.9 per cent increase in revenue at RM14.27 billion compared to RM13.87 billion in 2022. The increase is mainly due to higher progress in both new and ongoing projects in the Marine and Heavy Engineering segment and benefitting from elevated charter rates in the Petroleum and Product Shipping, and Gas Assets and Solutions segments. We deployed excess cash to support projects under construction, optimising financing costs while maintaining liquidity.

In 2023, MISC achieved a 24 per cent reduction in its fleet average GHG intensity (for gas and petroleum fleets) compared to 2008 levels and a 7 per cent reduction from its 2022 performance. This improvement resulted from a decrease in GHG emissions intensity to 5.84 grammes carbon dioxide equivalent over tonne nautical mile (gCO<sub>2</sub>e/t-nm) in 2023 from 6.30 gCO<sub>2</sub>e/t-nm in 2022. The reduction was achieved mostly due to new higher efficiency vessels introduced to its fleet, and ongoing commercial and operational efficiency interventions on its existing fleet. During the year, MISC introduced two new eco-efficient liquefied natural gas carriers (LNGCs), Seri Damai and Seri Daya, recognised with the prestigious Green Ship status. The company also introduced two new LNG dual-fuel very large crude carriers (VLCCs), Eagle Ventura and Eagle Vellore, into its petroleum fleet.

In their steady progression towards sustainability, MISC was also recognised with the "Sustainability-Linked Deal of the Year for Asia" by Marine Money, for its USD527 million Senior Secured Term Loan for six very large ethane carriers. Other notable achievements include The Edge ESG Award 2023 – Silver Award in the Equities Category (Transport & Logistics) and The Star ESG Positive Impact Awards 2022 in the Large Companies Tier for the Environmental Category: Sustainable Ecosystems, both acknowledging MISC's excellence in ESG, along with PwC's "The Building Trust Awards 2023" recognition for outstanding efforts in building stakeholder trust.

Meanwhile KLCCP Stapled Group has produced solid results with profits going up by 17 per cent to RM1.1 billion from RM0.9 billion in 2022 due to the improved performance across all business segments. Notably, all segments have surpassed expectations, driven by increased footfall and consumer spending in our malls, higher hotel occupancy, and the expansion of operations in car park and facilities management.



Other Businesses

Maritime and Logistics

MISC Group is a world leader in international energy-related maritime solutions and services, playing a pivotal role in the energy value chain by efficiently transporting gas and petroleum products and supplying maritime assets for offshore extraction activities related to oil and gas resources. It maintains its position as one of the highest-rated shipping companies, with holdings ratings by Moody's Ratings of Baa2 and S&P Global Ratings of BBB+. In its commitment to provide sustainable maritime transportation solutions, MISC is actively increasing its use of cleaner energy solutions to minimise emissions and ensure alignment with evolving local and international maritime regulations.

Highlights and Achievements

Highlights	What We Achieved
Sustainability	<div><div>→</div>Achieved <b>24 per cent</b> reduction in our fleet average GHG intensity compared to 2008.</div> <div><div>→</div>Continued its efforts to give back to the community through the cadet sponsorship programme at <i>Akademi Laut Malaysia</i> (ALAM,) with an investment of <b>RM29.6 million</b> for <b>829 cadets</b> in 2023.</div> <div><div>→</div>Completed supply chain ESG self-assessment for <b>55 per cent</b> of its critical suppliers.</div>
Talent Excellence	<div><div>→</div>Invested <b>RM54.9 million</b> in continuous learning and development programmes for its employees.</div> <div><div>→</div>Recorded <b>92.6 per cent</b> high-performing talent retention.</div>

► Our Outlook

MISC is dedicated to building a supportive ecosystem through collaborations for a lower carbon future. This includes exploring innovative solutions such as zero-carbon emission vessels, carbon capture and storage technologies, liquefied carbon dioxide (LCO<sub>2</sub>) and ammonia carriers, floating CO<sub>2</sub> storage units (FCSU) and FCSU-I and other cleaner energy solutions.

Our short-term strategy includes:

- Expanding our conventional business operations responsibly.
- Optimising portfolio returns.
- Capitalising on selected asset monetisation opportunities.
- Emissions reductions of existing assets.
- Facilitating a transition into the cleaner energy sector.

For short- and medium-term goals, MISC aims to deliver sustainable financial returns while reducing GHG emissions. Our key targets include:

- 50 per cent improvement in cash flows from operations (compared to 2022 baseline of approximately USD1.2 billion).
- 25 per cent of cash flows from operations from cleaner energy solutions.
- An overall 50 per cent reduction in GHG emissions in shipping operations.

We aim to mobilise our workforce to pivot for a sustainable future aligned with the MISC 2050 Vision, aiming to advance towards a net zero and circular economy.

## Property

KLCCP Stapled Group is a PETRONAS subsidiary, comprising KLCC Property Holdings and KLCC Real Estate Investment Trust (REIT). It owns, manages, develops and invests in a portfolio of premium assets comprising office, retail and hotel properties in the heart of Kuala Lumpur. This is complemented by asset management services such as facilities management and car park management. The KLCCP Stapled Group generates additional revenue streams for PETRONAS, diversifies its business portfolio beyond oil and gas, and aligns its properties with PETRONAS' Net Zero Carbon Emissions by 2050 Pathway.

## Highlights and Achievements

- ➔ **Office:** Premium Grade-A office with **100 per cent** occupancy.
- ➔ **Retail:** Brought in **35** new tenants adding to the almost **600** tenants introduced since the mall opened in 1998.
- ➔ **Hotel:** Attained the **highest revenue per available room** since the hotel opened in 1998.
- ➔ **Management Services:** KLCC Parking secured the operations of additional **1,680** car parking bays.
- ➔ **Awards and Recognitions:** Conferred **23** awards and accolades, solidifying our leadership position in the industry.

## ► Our Outlook

KLCCP Stapled Group is focused on strengthening its operational and commercial excellence, and elevating the customer experience. Anchoring on its strategic framework, the Group will drive progress in exploring opportunities and accelerating its growth while remaining committed to its sustainability agenda and net zero carbon emissions by 2050 aspiration.



# Sustainability at PETRONAS

## Safeguard the Environment

We continue to accelerate our climate actions to realise our Net Zero Carbon Emissions by 2050 Pathway. Throughout 2023, we continued to stay the course to advance our performance.

Aligned to:



# Climate Change and Greenhouse Gas Emissions

## Why It Is Important

Climate change, collective multilateral agreements around decarbonisation and technological advancements are driving forces behind the energy transition that is destined to move the world economy towards a lower carbon future. This is in alignment with global efforts to reduce emissions as managing the climate has become an integral part of the energy transition.

As the custodian of Malaysia's oil and gas resources, we intend to seize the opportunities and provide the world with the energy it needs today with consideration for the climate goals of the Paris Agreement. We focus on developing new technologies and value chains, which are not only to mitigate emissions but to also to pave the way for new business opportunities.

With the PETRONAS Net Zero Carbon Emissions by 2050 Pathway, we are committed to addressing emissions from our operations and working towards cleaner energy targets. We continue to make significant investments to reduce our own environmental impact and work across our value chain and with partners to drive a broader energy system change.

## Our Approach

PETRONAS' aim is to achieve net zero carbon emissions by 2050, anchored on our Energy Transition Strategy and in line with our Statement of Purpose: "A progressive energy and solutions partner, enriching lives for a sustainable future".

We have set a near-term target to cap operational emissions to 49.5 million tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) by 2024 in Malaysia and achieve 25 per cent absolute emissions reduction Groupwide by 2030, based on 2019 emissions data. Delivery of these targets is anchored on our business context, national policies, international frameworks and scientific consensus on climate change that supports the ambitious goals outlined in the Paris Agreement.



We are guided by international principles, frameworks and standards. Scan the QR code for more information.

### Guided by international principles, frameworks and standards

- Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (2015)
- ISO 14064-1-2018; ISO 14064-2-2019; ISO 14064-3:2019
- Ipieca Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions – 2<sup>nd</sup> Edition (2011)
- American Petroleum Institute (API) Compendium of GHG Emissions Methodologies for the Natural Gas and Oil Industry (2021)
- Ipieca Sustainability Reporting Guidance for the Oil and Gas Industry (2020)
- United Nations Environmental Programme (UNEP) Oil and Gas Methane Partnership 2.0 (OGMP2.0) Reporting Framework
- Task Force on Climate-related Financial Disclosures (TCFD)

Ensuring we remain committed to maintaining our standards in managing greenhouse gas (GHG) emissions, we are governed by high-level internal governance documents such as the PETRONAS Carbon Commitments that embed accountability for the operationalisation of net zero carbon emissions by 2050 across the PETRONAS Group. We continue strengthening our reporting practices to be aligned with internationally recognised principles, frameworks and standards, including the Task Force on Climate-related Financial Disclosures framework recommendations. Since 2022, we also report through the CDP (formerly the Carbon Disclosure Project) disclosure platform.



We are guided by international principles, frameworks and standards. Scan this QR code to read more about our sustainability disclosures.



## Safeguard the Environment

### ► Task Force on Climate-related Financial Disclosures

Our strategic climate risk management is aligned with the disclosure guidelines recommended by the Task Force on Climate-related Financial Disclosures (TCFD), enabling effective management of climate-related risks and opportunities in pursuit of our net zero goals. The framework's thematic areas include:

#### Governance

Recognising climate change as a pressing business issue, the Board is taking an active role in climate-related matters to ensure Groupwide strategy is applied consistently throughout the business. As more deliberate actions are adopted throughout PETRONAS, climate-related discussions at the Board continue to be critical in shaping the long-term strategic direction.



#### Key Activities by the Board on Climate-Related Matters in 2023

Reviewed the PETRONAS Corporate Risk Profile on a quarterly basis.

Appraised the business plan consisting of decarbonisation guiding principles, GHG emissions reduction, methane emissions reduction and capital expenditure.

Approved the long-term incentive plan for senior leadership that includes a performance measure linked to the delivery of the Net Zero Carbon Emissions by 2050 Pathway.

Held quarterly conversations with global experts on sustainability-related topics which included nature and nature-based solutions, physical climate risks and climate change adaptation.

Approved internal policy on PETRONAS Commitment to Net Zero Carbon Emissions by 2050 and PETRONAS Position on Nature and Biodiversity.



The role of the Board in climate-related matters can be referred to the Corporate Governance section on page 221.



Scan this QR code to read more about Sustainability Governance in PETRONAS.

## Strategy

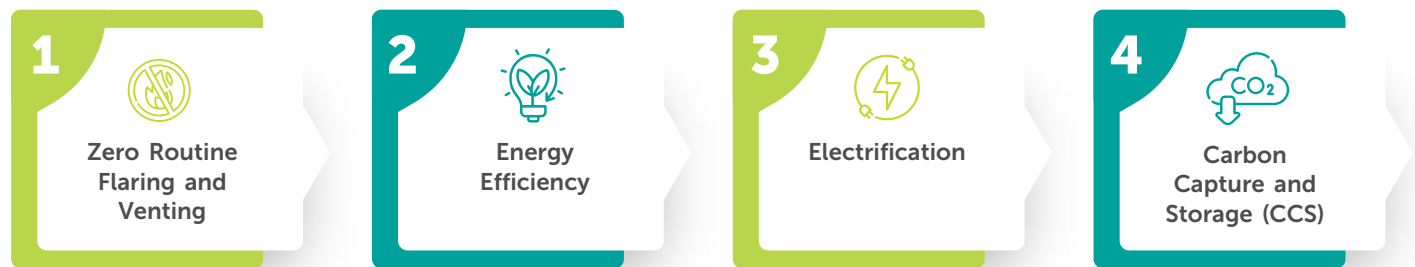
### Climate-related Risks and Opportunities

The PETRONAS Energy Transition Strategy responds to anticipated changes in both customer demand and climate-risk considerations.

A central tenet to the strategy is the Net Zero Carbon Emissions by 2050 Pathway which establishes our short-, medium- and long-term operational emissions reduction and targets for our Core Business as well as our aspirations and targets for New Business growth in the areas of renewable energy and energy solutions.

For more information about the PETRONAS Energy Transition Strategy, please refer to page 34.

Our short- and medium-term emissions reduction targets will be achieved through four key emissions abatement levers:



For more information about the four emission abatement levers, please refer to pages 72-107 of the Business Review.

For this disclosure, we have adopted the Task Force on Climate-related Financial Disclosures dual categorisation of climate-related risks, transition risks and physical risks. The potential material impacts of the risks are assessed based on the process described on pages 113-114 (R1 – R3 section).

### Transition Risks

At Group level, we have identified the following risks that have emerged through rising general awareness about climate science, the effects of climate change and the resultant increase in expectations of a low carbon energy transition.

#### a) Climate-related Market Risk

##### What It Means

Our current portfolio is exposed to volatile commodity prices and fluctuations in demand driven by an acceleration of the energy transition towards low carbon. The root cause triggered by changes in climate systems caused by global warming, with estimates ranging between ~1.4°C to ~2.6°C temperature increases by year 2100. Key drivers for price and demand shifts are regulatory changes, shifts in customer preferences, energy substitutes and technological advancements that directly influence market and operating conditions as well as investor sentiment.

##### Potential Material Impacts

- **Diminished revenue, cash generation and return realisation:** Accelerated energy transition spurred by concerns over climate change will impact oil and gas prices, and margins as consumer preferences shift and renewable energy sources gain more prominence. Additionally, the energy transition is likely to drive market sentiments against oil and gas which may, in the long term, impact the future prices of commodities such as oil and natural gas. This would in turn affect the value of our property, plant and equipment.

## Safeguard the Environment

### b) Climate-related Compliance Risk

#### What It Means

With the accelerating pace of energy transition, PETRONAS is exposed to various challenges and scrutiny including adapting and complying with emerging regulations and policies.

#### Potential Material Impacts

- **Impact on business/strategy/financial planning:** Climate-related regulatory requirements, such as a price on carbon through tax or emission trading schemes, emission caps and targets, incentives for research and development, application of alternative sources of energy and technological solutions, will serve as additional factors in strategy development, investment evaluations and operations planning, thus impacting cost allocation and risk-reward trade-offs considerations.
- **Compliance complexity:** Our business operations in diverse and constantly evolving regulatory environments may lead to compliance gaps, fines and litigation.
- **Cost increase:** Government policy introducing limits or cost to fossil fuels extraction, production and consumption as well as emissions of such activities may increase the cost of operations, cost of capital and establish additional needs for capital expenditure. Such may be further amplified by a change in financiers' appetite in providing funding as well as attractive terms to fund oil and gas activities.

### c) Climate-related Reputation Risk

#### What It Means

In 2022, PETRONAS announced our Net Zero Carbon Emissions by 2050 Pathway to demonstrate our commitment to sustainability as well as to direct the organisation towards the necessary shifts and changes that would be needed to achieve such target. The pathway, performance and associated disclosures are subject to scrutiny by stakeholders.

#### Potential Material Impacts

- **Damage in Reputation:** Inadequacy of efforts to communicate and educate stakeholders on the company's strategy and investment plans may negatively impact reputation and erode trust among stakeholders.
- **Erosion of trust in delivery capability:** Inability to perform necessary investments and project delivery to meet stated targets may affect overall confidence in PETRONAS' capability to deliver its strategy.

#### Resilience to Transition Risk

We continuously monitor the risks inherent to our business and adapt progressively to the evolving changes in energy demand and requirements to maintain resilience.

Our approach to manage the implication of transition risks to our organisation is highlighted in the Risks Linked to Creating Value section.

Read more on the PETRONAS Energy Transition Strategy here on page 34. These measures are also aligned with the mitigations of the identified principal risks in the PETRONAS Corporate Risk Profile.

#### Physical Risk

Physical risks resulting from climate change can be in the form of acute or chronic risks due to climate events such as the rise in sea levels and average global temperature, water shortages and intense precipitation. Our physical assets and ongoing projects are exposed to physical risks as we have presence in more than 30 countries globally. Thus, we are not and will not be spared from the direct and indirect damages brought about by the impact of climate-related physical risk. This is evident from the series of incidents we experienced in the past at our operations across the globe.

While actions are ongoing to understand and manage the physical impact of climate-related risks, we continuously assess implications to our assets, taking into consideration the changing outlook for geographical locations where we are present. The continuous assessment outcome serves as an imperative to strengthen our existing mitigation strategy in ensuring the resiliency of our organisation towards climate-related physical risks.

## Potential Material Impacts

In 2023, we commenced risk assessments on the physical impacts of climate change of our international portfolio of assets and projects. The Shared Socio-economic Pathway 2-4.5 climate models that informed the Intergovernmental Panel on Climate Change 6<sup>th</sup> Assessment Report was chosen as the most plausible path as an intermediary greenhouse gas scenario.

Based on the assessments conducted of 1,309 assets under operational control globally, seven key climate hazards were identified that may, by 2050, pose high, very high and extreme risks through extreme precipitation, lightning, drought, heat wave, storm surge, and fluvial and pluvial floods. The results revealed that most of the high-risk sites are in Malaysia. A prioritisation approach was established to further validate the outcomes of the risk assessment, followed by site visits to confirm the hazards and conduct deeper vulnerability assessments of critical assets to inform adaptation plans.

## Resilience to Physical Risk

Proactive mitigations to known physical impacts of climate change are included in technical requirements and procedures to guide asset design and operations.

Efforts are ongoing to improve our management capability of climate-related physical risks, which encompass strengthening of systems and processes, human resource capability, and climate-related financial quantification and data analysis to inform comprehensive assessments of financial impact of the risk to our organisation.

In addition, PETRONAS has collaborated with the Malaysian authorities in the development of the National Communication 4 (NC4) that is submitted to the United Nations Framework Convention on Climate Change (UNFCCC). Our contribution included a vulnerability assessment for our assets in Malaysia covering temperature, precipitation, flood, drought and sea level rise.

## Risks and Opportunities Quantification on Financial Performance

We maintain previously used quantification methods for assessing the impact of risks and opportunities to our business, employing three distinct scenarios published by the International Energy Agency (IEA): the Stated Policies Scenario (STEPS), Announced Pledges Scenario (APS), and Net Zero Emissions by 2050 Scenario (NZE). These scenarios were selected for their comprehensive consideration of global energy compositions and carbon dioxide emission levels. They offer three distinct climate pathways, projecting temperature increases ranging from below 2°C to 2.7°C by 2100, while also providing detailed regional data breakdowns.

The time horizons used were short- (2024), medium- (2030) and long-term (2050). We have identified opportunities in renewable energy, hydrogen and green mobility based on their impact on our earnings before interest, taxes, depreciation and amortisation (EBITDA) for the New Business for FY2030.



Scan this QR code to read more about chosen scenarios and the corresponding climate outcomes.

## Climate-related Risk Management

We apply a Groupwide approach to the management of risk through the PETRONAS Risk Policy, described on page 60, complemented by the PETRONAS Resiliency Model, which is part of the Enterprise Risk Management Framework, described on pages 60-61. The policy and framework provide an integrated and holistic view of the overall system towards effective risk management. Our Enterprise Risk Management Framework includes the tools and processes involved to systematically assess, manage and monitor all types of risks, including climate-related risk.

## Risk Assessment Process

The risk identification and assessment processes set out in our Enterprise Risk Management Framework are as follows:

- We identify potential risks that could affect the achievement of our objectives at strategic, business and operational levels. The identification of risk includes reviewing the external and internal environment and identifying the causes and impacts of the risk. To support risk identification and assessment processes across the organisation, we have established a risk library as one of the internal risk references. This centralised repository contains a collection of common and emerging risks that may affect our business, including climate-related risk, among others. This risk repository supports risk identification as part of robust risk assessment.



## Safeguard the Environment


### Risk Management Process

Our risk management framework requires us to undertake the following activities, as part of the organisation's overall risk management process for the Group:

- Determine the appropriate risk treatment strategy as follows; minimise the risk with appropriate controls, accept the risk by developing response and/or recovery plan, transfer the risks to third party or avoid the risk.
- Identify and implement mitigation measures that are aligned with the chosen risk treatment strategy in addressing the potential risks.
- Identify and monitor key risk indicator as the mechanism to alert for any potential exposure to the risk.
- Periodically report the status of the identified mitigations and key risk indicator to Management and Board on the latest development surrounding the identified risks, and if required, seek steer on the risk response strategy.

### Embedding Sustainability at the Executive Level

To ensure effective delivery of Net Zero Carbon Emissions by 2050 Pathway, we have embedded net carbon intensity as one of the senior leadership performance measures linked to sustainability elements that constitute 20 per cent of long-term incentive plans.

 Refer to PETRONAS' Pathway to Net Zero Carbon Emissions 2050 booklet for further information.

### Carbon Footprint Assessment for Projects

PETRONAS' carbon footprint assessment process helps us to estimate a project's GHG emissions during its operational phase and calculates the carbon cost associated with those emissions. This assessment is reiterated at various phases of the project life cycle to ensure the correct reference case is used to determine the commercial return and technical design, while complying with relevant internal and external requirements and contributing towards the attainment of targets.

### Integration into the Overall Risk Management

Recognising the exposure of climate-related risks to our business operations and strategies, the causes and impact of climate change has been taken into consideration and reflected in the development of relevant principal risks such as Sustainability Risks, Financial Liquidity Risks and Market Risks that are periodically monitored and reported to Management and Board. This allows our Management, Board committees and Board to have a comprehensive view on the overall state of risk management strategy in an integrated manner, and ensure that climate-related risks responses are properly incorporated into the relevant key business and operational activities. Our risk profile is also periodically reviewed to help us identify the latest exposure and effective risk responses in addressing the risks.

We are also strengthening our climate-related risk management efforts and corresponding disclosures to ensure they align with sustainability frameworks and standards. Our efforts are positioned to align with the Task Force on Climate-related Financial Disclosures recommendations and the World Economic Forum's Stakeholder Capitalism Metrics.

We have been addressing climate change for almost a decade with our Climate Change Position and Framework which is the impetus of our climate change risk assessments that have been conducted since 2015.

However, increasing general awareness about climate risk and stakeholder expectations that energy companies align their climate risk assessments with global sustainability standards and frameworks have led us to progressively review and enhance our climate-related risk assessment approach.

### Risks and Opportunities Quantification on Financial Performance

We have identified opportunities in renewable energy, hydrogen and green mobility, and their projected impact on our EBITDA for the New Business in 2030. These risks and opportunities are based on three International Energy Agency (IEA) scenarios described on page 113 on Risks and Opportunities Quantification of Financial Performance.

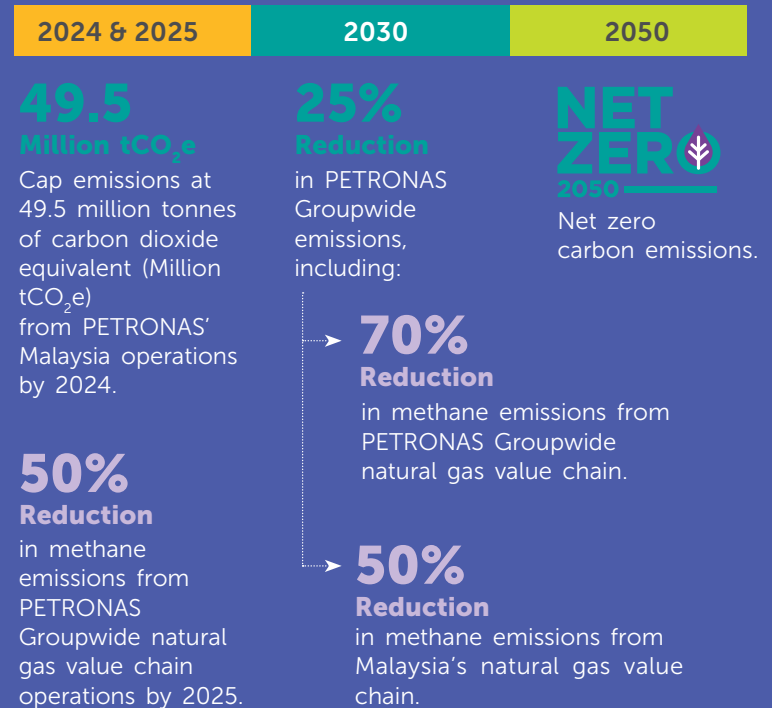
## ► 2023 GHG Performance

A year into the PETRONAS Net Zero Carbon Emissions by 2050 Pathway implementation, we are on track to meet our short-term target of capping GHG emissions from Malaysia operations to 49.5 million tonnes CO<sub>2</sub>e by 2024. GHG emissions from Malaysia operations recorded 45.16 million tonnes CO<sub>2</sub>e (2022: 46.10 million tonnes CO<sub>2</sub>e), which is 2 per cent lower compared to the previous year.

Groupwide operational control GHG emissions dropped by 0.43 million tonnes CO<sub>2</sub>e (2022: 54.07 million tonnes CO<sub>2</sub>e), constituting a 0.8 per cent reduction from 2022. Our equity share emissions dropped by 1.36 million tonnes CO<sub>2</sub>e (2022: 47.73 million tonnes CO<sub>2</sub>e), equivalent to a 2.85 per cent reduction on the previous year. As for methane, we are also on track to meet the 50 per cent reduction target by 2025 for PETRONAS Groupwide natural gas value chain and methane global commitments through collaborations with partners and technology providers.

Our methane emissions reduction target of 50 per cent by 2025 for PETRONAS Groupwide natural gas value chain by 2025 is also within reach, where we recorded about 58 per cent reduction from 2019 levels. This has mainly been achieved by leveraging flare and vent reduction projects in Upstream and Gas.

### Our Greenhouse Gas Emissions Reduction Targets (Scope 1 and Scope 2) and Ambitions



## 2023 GHG Emissions Management

In support of climate goals, stakeholders increasingly demand enhanced transparency around economy-wide emissions. Business is expected to elevate and advance corporate GHG emission disclosures to encompass Scope 1, 2 and 3.

- Scope 1: direct emissions from company – owned or controlled facilities and operations
- Scope 2: indirect emissions from energy we purchase
- Scope 3: other indirect emissions that are a consequence of our activities, but occur from sources not owned or controlled by PETRONAS

At PETRONAS, we are on a continuous journey to strengthen our quantification, measurement and disclosure of our GHG emissions, in accordance with the international guideline GHG Protocol Corporate Standard. Our practice of disclosing Scope 1 and 2 emissions is relatively mature and subject to third-party assurance. We recognise the importance and complexity of Scope 3 emissions to the oil and gas industry, which requires considerations of complex intercompany arrangements and transactions internally, complex assumptions involving external counterparties and parts of the value chain, where the company has limited visibility given the low maturity of GHG emissions reporting in Malaysia as well as internal and external data availability.

## Safeguard the Environment

We are taking a progressive approach to measure, report and understand our impact. In 2023, we began reporting our Scope 3 emissions for 2022, starting with Category 11 (use of sold products), for both operational control and equity share approach.

Based on guidance from Ipieca<sup>1</sup> and benchmarking with peers, Category 11 is the most material for PETRONAS. In 2023, we continued to mature our understanding of Scope 3 emissions in our value chain and are currently undertaking a materiality assessment based on a quantification study for all Scope 3 categories.

### GHG Measurement and Quantification

In 2022, PETRONAS completed a pilot accounting exercise on GHG emissions for the equity share boundary, including Scope 3 (Category 11) emissions. To ensure reporting becomes routine and part of the annual disclosure process, we have revised PETRONAS Technical Standards of GHG Emissions Management. Among key revisions are the inclusion of Scope 3 (Category 11) under operational control; and Scope 1, Scope 2 and Scope 3 (Category 11) under equity share boundary.

Enhanced tools have been developed and rolled out to businesses to support this objective. For Scope 3 (Category 11), data from financial systems have been used to calculate Category 11.

Additionally, we have collaborated with several equity partners to obtain production data in absence of GHG emissions data. We will continue this effort to enhance reporting of GHG emissions as per equity share boundary.

There is a continued effort to upskill those involved in GHG management. In 2023, more than 250 people were trained in GHG emissions monitoring, reporting and verification to improve the quality of GHG emissions data reported internally and externally. The GHG fraternity has also been trained in Scope 3 GHG emissions accounting, acknowledging its importance to stakeholders.

<sup>1</sup> Estimating petroleum industry value chain (Scope 3) greenhouse gas emissions <https://www.ipieca.org/resources/estimating-petroleum-industry-value-chain-scope-3-greenhouse-gas-emissions-overview-of-methodologies> (Ipieca, 2016).

<sup>2</sup> Categories here refer to Category 1 (purchased goods and services), Category 2 (capital goods), Category 3 (fuel- and energy-related activities), Category 4 (upstream transportation and distribution), Category 5 (waste generated in operations) and Category 6 (business travel) as described in Corporate Value Chain (Scope 3) Accounting and Reporting Standard <https://ghgprotocol.org/corporate-value-chain-scope-3-standard> (GHG Protocol, 2011).

<sup>3</sup> Spend-based method estimates emissions by collecting data on amount spent (e.g., bills, invoices) and multiplying it by relevant secondary (e.g., industry average) emission factors [https://ghgprotocol.org/sites/default/files/2023-03/Scope3\\_Calculation\\_Guidance\\_0%5B1%5D.pdf](https://ghgprotocol.org/sites/default/files/2023-03/Scope3_Calculation_Guidance_0%5B1%5D.pdf) (GHG Protocol, 2013).

<sup>4</sup> Average-data method estimates emissions by collecting data on the mass (e.g., kilograms or pounds), or other relevant units and multiplying by the relevant secondary (e.g., industry average) emission factors [https://ghgprotocol.org/sites/default/files/2023-03/Scope3\\_Calculation\\_Guidance\\_0%5B1%5D.pdf](https://ghgprotocol.org/sites/default/files/2023-03/Scope3_Calculation_Guidance_0%5B1%5D.pdf) (GHG Protocol, 2013).



## Accelerating Methane Emissions Management

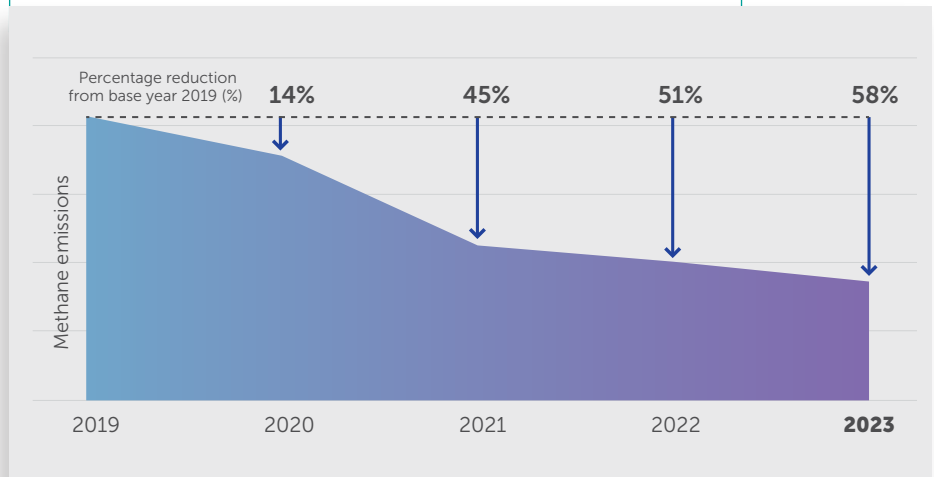
As a potent greenhouse gas, methane contributes significantly to climate change if not actively reduced. With our global commitments, our efforts have progressed under the World Bank's Zero Routine Flaring Initiative by 2030, which has significantly contributed to methane emissions reductions from our operations. Our achievements and improved practices within our operations have prepared us for potential regulations regarding methane management. We received the Gold Standard from Oil & Gas Methane Partnership 2.0 (OGMP 2.0) on our methane pathway in 2023. This was achieved partly as a result of progress made in measurement and reporting, which aligns with the Methane Guiding Principles (MGP).

We are improving our methane emissions quantification methods and reporting for PETRONAS' operated facilities, in alignment with the OGMP 2.0 Reporting Framework. Our efforts will assist us in our endeavour to meet the Oil and Gas Decarbonisation Charter goal of near zero methane intensity by 2030.

Our first report to OGMP 2.0 in May 2023, included a five-year implementation plan towards achieving OGMP 2.0 Gold Standard for both operated and non-operated assets. Methane numbers reported cover all common emission sources in Upstream and Gas assets.

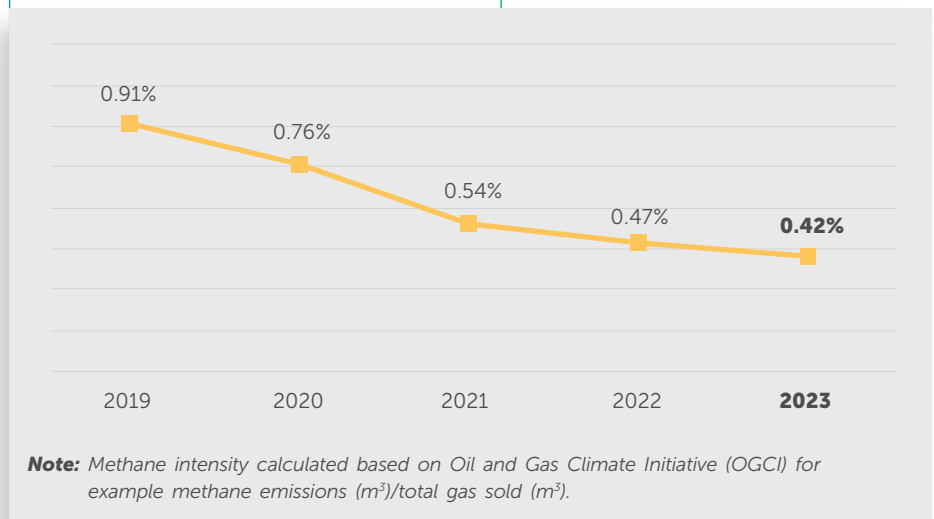
While gas flares and vents remain the most material sources of methane emissions across PETRONAS operations, we completed three vent and one flare reduction projects in Upstream business and three flare reduction projects in Gas business in Malaysia, amounting to 0.73 million tonnes CO<sub>2</sub>e per year of GHG reduction in 2023. Based on our detail quantification, other material sources of methane emissions are from pneumatic devices, compressors and combustion.

### Methane Emissions Reductions from PETRONAS Groupwide Natural Gas Value Chain



Boundary: PETRONAS Groupwide natural gas value chain, covering Upstream and Gas businesses

### PETRONAS Methane Intensity Outlook



Boundary: PETRONAS Groupwide natural gas value chain, covering Upstream and Gas businesses



## Safeguard the Environment

### Accelerating Methane Actions through Strategic Collaborations

In 2023, PETRONAS focused on strategic collaborations to advance our sustainability goals, particularly in the area of methane emissions management and energy transition. These partnerships, both regional and global, are centred on innovative solutions and capacity building to address environmental challenges. Significantly, we signed a Memorandum of Collaboration (MoC) with Japan Organization for Metals and Energy Security (JOGMEC) in March 2023 to unlock the potential of cleaner energy production and methane abatement opportunities. With a view to contribute to the energy transition and achievement of decarbonisation goals in both Japan and Malaysia, this MoC aims to promote technology development and joint studies on GHG emissions management, focusing on methane measurements and routine flaring reductions.

Other strategic collaborations include the ASEAN Energy Sector Methane Roundtable that PETRONAS has been convening since 2021, which delivered the launch of the ASEAN Energy Sector Leadership Programme (MLP) in June 2023.

ASEAN Energy Sector Methane Leadership Programme

Collaborators:

ASEAN energy operators, government agencies, international organisations

Initiative

An 18-month programme delivered through masterclasses and workshops, focusing on capacity and capability building to strengthen ASEAN energy companies’ plans, targets and financing options for reducing methane emissions. The programme is also in support of the Global Methane Pledge that over 100 countries have endorsed.

PETRONAS continues to lead methane advocacy as the designated regulator for oil and gas Upstream operations in Malaysia and has spearheaded collaboration efforts on methane emissions management advocacy and engagement in the ASEAN region. This includes hosting two ASEAN Energy Sector Methane Roundtables in 2023. Their details are:

In Conjunction With/When	What We Achieved
Energy Asia 2023 in June 2023	Focused on effective regulation for ASEAN methane emissions reduction, driving internal change and financing methane emissions reduction projects.
48 <sup>th</sup> ASCOPE Council Meeting in November 2023 (virtual)	Focused on ASEAN methane emissions reduction aspirations within the context of COP 28 and driving actions through collaboration and partnerships among ASCOPE members.

Additionally, we continue to leverage existing partnerships between Malaysia’s Petroleum Arrangement Contractors (PACs) contractors to enhance knowledge-sharing on methane measurement technologies for improved methane emissions management for Malaysian operations. This is in alignment with the Methane Guiding Principles and the UNEP OGMP 2.0.

## Digitalisation: Technology as an Enabler for Effective Emissions Quantification, Reporting and Monitoring

Digital technology will enable more effective GHG emissions management. In 2023, we focused on improving GHG calculation tools at operating business levels to reduce manual entry and linking back the output to the enterprise database to enhance transparency.

In 2023, Gas business successfully launched a near real-time, hourly, monitoring dashboard of GHG emissions at Gas Processing and Utility plants, where emissions monitoring links key emission sources, such as flare, vent and combustion with the plants. Instruments and enhanced infrastructure allows optimisation of fuel gas consumption that facilitates GHG emissions reductions.

In the Upstream business, a GHG digital platform has been deployed to enable seamless GHG emissions reporting for PETRONAS Carigali Sdn Bhd's operated blocks in Malaysia. This new system will reduce manual data entry errors and the need for extensive quality assessment and controls as well as link back to the enterprise GHG database for aggregated key performance indicator tracking, reporting and disclosure.

PETRONAS has a centralised data repository for all GHG emissions data including methane emissions and flare. In 2023, several enhancements were made in improving data controls and linking corporate and operating businesses, such as PETRONAS' subsidiary MISC Berhad to the system.

### Measurement Tools

PETRONAS has collaborated with several providers to test different technologies for their emissions measurement and quantification capabilities, and their feasibility to be deployed in PETRONAS operations. Such technologies include satellite imaging, drone-based sensors with light detection and ranging (LiDAR) or tunable diode laser absorption spectroscopy (TDLAS) sensors, fixed and handheld quantitative optical gas imaging (QOGI) and flare multi-spectral cameras, ultrasonic clamp-on flowmeter, flare efficiency measurement tool and portable flame ionisation detector.

We continue to improve methane quantification for fugitive emissions, by moving from estimates using production values to a more detailed quantification method at component or at source level, as part of our effort in strengthening methane emissions reporting in line with OGMP 2.0 stipulations.

Technology Used	Details
<b>Portable Quantitative Optical Gas Imaging (QOGI) cameras</b>	<ul style="list-style-type: none"> <li>To measure methane emissions through leak detection and repair exercises from local vents, fugitive emissions, compressor seals, gas dehydration and hydrocarbon tanks.</li> </ul>
<b>Combination of physical sensors with cloud-based systems</b>	<ul style="list-style-type: none"> <li>To provide real-time insights into our methane emissions profile to initiate the piloting of methane quantification technologies.</li> </ul>
<b>Ultrasonic clamp-on flowmeter</b>	<ul style="list-style-type: none"> <li>To measure the flowrate of instrument gas from pneumatic headers and main vents.</li> <li>To optimise the engineering calculations by internal experts to determine flare destruction efficiency.</li> </ul>
<b>Structured Energy Trending and Performance Assessment for Combustion Engine</b>	<ul style="list-style-type: none"> <li>To develop a forecasting tool for combustion decarbonisation as part of improving GHG emissions accuracy. This project by Upstream business is expected to provide better clarity on combustion emissions, leading to more effective diagnostics to reduce GHG emissions.</li> </ul>

## Safeguard the Environment

### Continuous Efforts to Reduce GHG Emissions

With net zero carbon emissions by 2050 short-term and mid-term targets in place, PETRONAS is continuously looking for opportunities to reduce GHG emissions. In 2023, the completed GHG emission reduction projects contributed to 1.8 million tonnes CO<sub>2</sub>e per year. Since 2013, we have reduced 19.9 million tonne CO<sub>2</sub>e of GHG emissions per year from our operations. GHG emissions reductions projects are calculated as per ISO 14064-2:2019.

#### Flaring or Venting Reduction

The reduction from flaring and venting reduction projects contributed to 0.752 million tonnes CO<sub>2</sub>e per year.

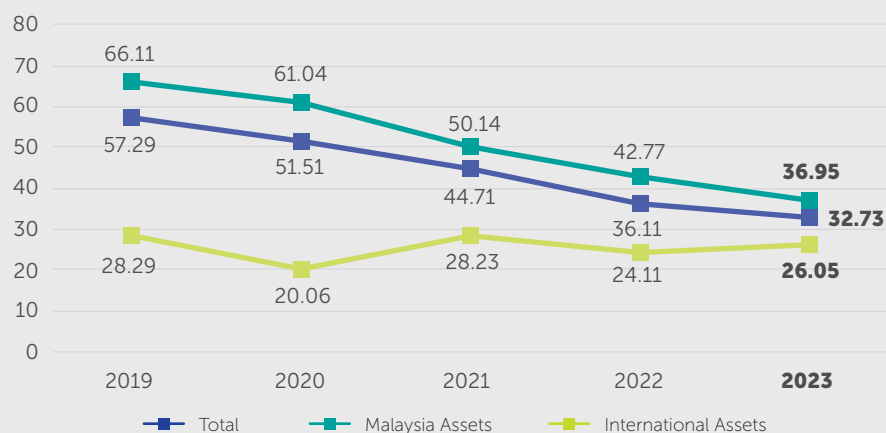
#### Energy Efficiency

The reduction from energy efficiency projects contributed to 1.058 million tonnes CO<sub>2</sub>e per year.

#### Electrification

The reduction from electrification projects contributed to 0.001 million tonnes CO<sub>2</sub>e per year.

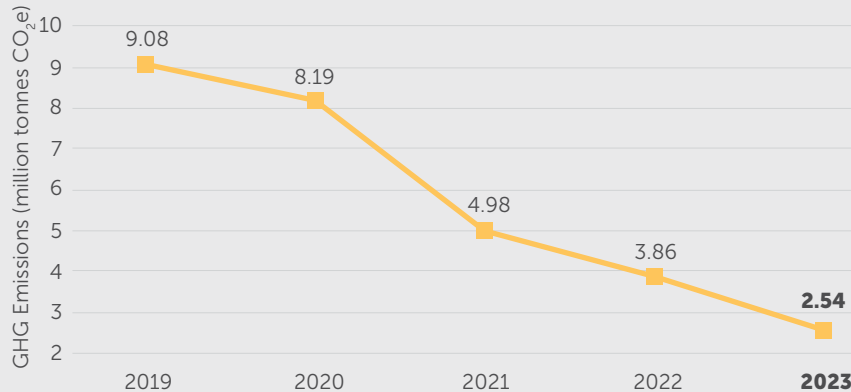
### Upstream GHG Emissions Intensity under Operational Control Approach (tonnes CO<sub>2</sub>e/kboe)



Upstream GHG emissions intensity has reduced by 43 per cent from 57.29 tonnes carbon dioxide equivalent per kilo barrel of oil equivalent (tonnes CO<sub>2</sub>e/kboe) in 2019 to 32.73 tonnes CO<sub>2</sub>e/kboe in 2023. This improvement has been driven by PETRONAS' internal zero routine flaring and venting requirements.

## Towards Achieving Zero Continuous Venting

### Upstream GHG Emissions Venting Reduction under Operational Control Approach



Continuous venting is the major source (16.07 per cent in 2019) of GHG emissions for PETRONAS. The zero continuous venting requirement embedded in PETRONAS Carbon Commitment and Net Zero Carbon Emissions by 2050 Pathway has effectively reduced continuous venting as shown in the graph. In line with these commitments, GHG emissions from hydrocarbon venting has shown a reduction trend of 72 per cent from 9.08 million tonnes CO<sub>2</sub>e in 2019 to 2.54 million tonnes CO<sub>2</sub>e in 2023. To further accelerate methane reduction, Upstream has set a target for zero continuous venting by 2024 as part of its Reinventing Upstream 2.0 initiative.

## Developing Solutions to Improve Our Emissions Footprint across the Value Chain

In addition to accelerating our decarbonisation efforts, we also position ourselves as enablers, reducing emissions for our customers while ensuring our future growth.

### Carbon Capture and Storage

For more details, refer to pages 9, 36, 72-79, 93-94 and 97.

### Sustainable Aviation Fuel

For more details, refer to page 26, 87 and 93.

### Advanced Sustainable Fuel in Formula One

For more details, refer to page 89.

### Used Cooking Oil

For more details, refer to page 87.

### Electric Vehicle Charging Expansions

For more details, refer to page 89.

### Product Line Enhancement

For more details, refer to page 89.

### Race2Decarbonise

For more details, refer to page 94.

## GHG Emissions Data External Verification Exercise

PETRONAS has set 2019 as the base year for tracking progress towards achieving the targets of our Net Zero Carbon Emissions by 2050 Pathway. As part of our efforts to increase accuracy, credibility and completeness of our reported GHG emissions data, PETRONAS has embarked on a three-year GHG verification exercise based on ISO 14064-3: 2019 that is conducted by LRQA Limited, as the independent verifier.

A limited level of assurance for PETRONAS global operations (Upstream, Gas and Downstream) covering Scope 1 and 2 GHG emissions under the operational control boundary was completed in March 2024 covering 2019 to 2022 data. Therefore, GHG data for 2019 to 2022 have been restated upon the completion of the verification process.

In 2024, PETRONAS will continue to verify Scope 1, Scope 2 and Scope 3 (Category 11) GHG emissions under the operational control and equity share boundary, for both Malaysia and International Operations which is expected to be completed in 2025.



## Safeguard the Environment

### Waste and Environmental Management

#### Why It Is Important

We continuously work towards improving operational excellence to reduce our environmental impact and to use natural resources conscientiously. PETRONAS has in place internal standards to guide our assets in managing air emissions, wastewater, waste, water use and spill prevention.

Pollution prevention and resource conservation measures are increasingly built into the design of our facilities. Advancement in sensor technology and process controls enable us to better monitor the performance of our pollution control equipment. Additionally, on-line sensors are increasingly used for real-time monitoring of air emissions and wastewater discharges. We monitor environmental performance indicators and leverage on digital tools to track the generation, treatment and disposal of our hazardous waste.

#### Our Approach

##### Collaborative Strategy and Standards

We implement site-specific environmental management plans to safeguard the environment in our operations and project development. Our approach involves collaborating with authorities and stakeholders, including suppliers and vendors, and investing significantly in fostering a culture of environmental compliance across our supply and value chains. We encourage adoption of sustainable practices to reduce environmental impact.

##### Guided by International Principles, Frameworks and Standards

- Host country standards for the design and operation of pollution prevention and control equipment
- Global Reporting Initiative (GRI) 2021 Standards
- World Bank/International Finance Corporation (IFC) Group Environmental, Health and Safety Guidelines (EHS Guidelines)
- World Resources Institute's (WRI) Aqueduct Water Stress Atlas

#### ► Responsible Waste Management

We tailor our waste management strategies to the specific types, quantities and frequency of waste, ensuring appropriate handling, treatment and disposal. Regular performance reviews help track progress. Our operational waste management focuses on drill cutting waste, oily sludge, waste solvents, and more, aligning with the Global Reporting Initiative (GRI) Standards and specific host country requirements.

Our operations are obliged to follow the non-hazardous waste management requirements governed by local authorities and the host country.

We also include these requirements in the contracts for third parties managing hazardous waste. Before awarding the contract to the third party, each company is evaluated based on their capability to manage specific types of waste and the compliance of their facilities towards regulations. Once we award the contract, periodic assurance and verification is conducted at each facility to ensure compliance with the contract and legislation.

By practising circular economy principles, we aim to reduce waste and extend the life cycle of materials through waste valorisation. Our waste-to-products strategy, converting waste into valuable base materials, targets waste and pollution elimination at the source. This systemic approach is integral to our commitment to minimise our carbon footprint and steward natural resources.

Waste	2022	2023
Total Hazardous Waste Generated (tonnes)		
Malaysia	82,051	<b>66,444</b>
International	62,569	<b>85,593</b>
Total	144,620	<b>152,037</b>
Total Hazardous Waste Reused, Recycled, and Recovered (3R) (tonnes)		
Malaysia	63,133	<b>52,147</b>
International	10,510	<b>5,277</b>
Total	73,643	<b>57,424</b>
Total Hazardous Waste Disposed (tonnes)		
Malaysia	24,449	<b>20,023</b>
International	52,036	<b>76,287</b>
Total	76,485	<b>96,310</b>

In 2023, our total hazardous waste disposed was 96,310 tonnes, compared to 76,485 tonnes in 2022. The increase was due to limited waste recycling or recovery facilities in some international operations, which resulted in much of the waste generated being sent for disposal.

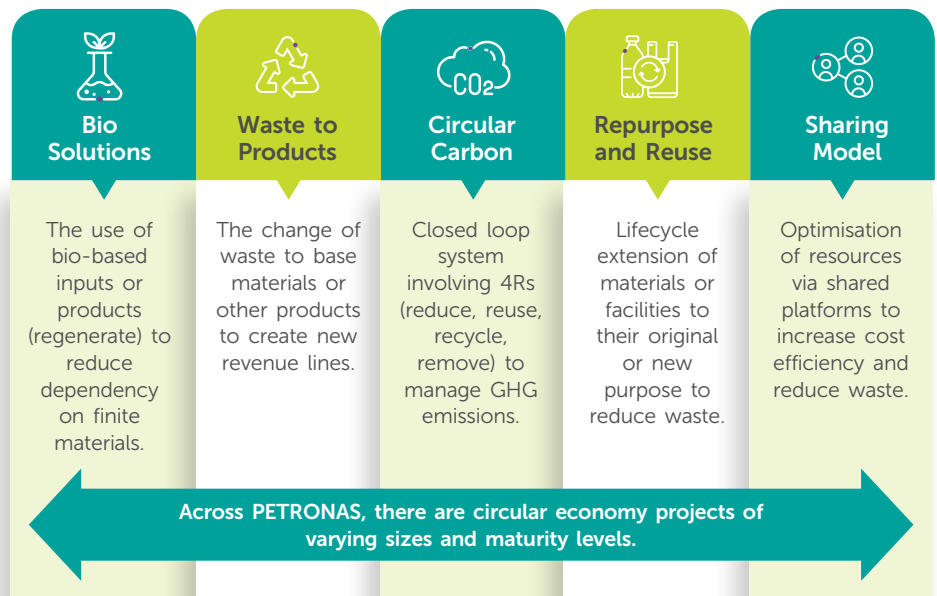
## Circular Economy

A circular economy is a systemic approach that moves away from a linear (take-make-waste) economy. Embracing a circular economy is critical in resource stewardship and environmental management to foster a regenerative and sustainable future.

The circular economy practices in our operations support responsible waste management, address plastic pollution, safeguard water resources and mitigate environmental impact. By promoting repurpose, reuse, repair and recycle, we can extend the lifecycle of materials, minimising waste and environmental impact.

PETRONAS' circular economy is integral to our approach to sustainability, which is embedded across the Group to create value to enable a low-waste future, steward natural resources and minimise our carbon footprint.

### Five Approaches to Adopt Circular Economy in PETRONAS



## New Plastics Economy

By incorporating responsible waste management and addressing the challenges posed by plastics, particularly single-use plastics, we are moving towards a New Plastic Economy. On top of the direct benefit of minimising waste, this shift aims to promote innovation and create new business opportunities. It supports a circular supply chain, reduces carbon footprint and conserves raw materials.

### PETRONAS' Four New Plastics Economy Workstreams



## Safeguard the Environment



### Value Created in 2023

#### Responsible Waste Management

In 2022, we started a pilot test in Malaysian Refining Company Sdn Bhd (MRCBS) to use carbonisation technology to treat hazardous waste generated from the refining process. We completed the Phase 2 pilot in 2023 with an additional treatment capacity of 576 litres.

For the Phase 2 pilot test, we tested seven types of hazardous wastes from the refinery processes, utilising carbonisation technology to significantly reduce the amount of waste (~80 per cent weight average), supported by proven laboratory results. The recovered hydrocarbon (>99 per cent oil volume) was reused as fuel to reduce dependency on fuel oil, aligning with the circular economy approach in waste management.

#### Single-Use Plastic Phase Out

##### What We Did

- **Eliminated the use of unnecessary single-use plastics for all company meetings and events.**
- **Phased out problematic and unnecessary single-use plastics.**
- **Participated in efforts to combat plastic pollution.**
- **Developed systemic plastic collection and recycling mechanisms, with the aim to stop plastic waste from polluting and leaking back into the environment.**

##### What We Achieved

- Rolled out PETRONAS Positioning of Plastics for Groupwide implementation.
- Eliminated approximately 540,000 pieces per year of food packaging single-use plastics for offices in Kuala Lumpur.
- Adopted plastic circularity starting with single-use plastics.
- Shaped positive behaviour for improved plastic waste management.

#### Operation Clean Sweep®

PETRONAS Chemicals Group Berhad (PCG) became the first producer in Malaysia to sign up for Operation Clean Sweep®, in 2022, this programme had been recognised as the plastic industry's signature voluntary programme to reduce plastic resin loss to the environment. In 2023, PCG continued collaborating with the Malaysian Plastics Manufacturers Association (MPMA) to drive the adoption of Operation Clean Sweep® and rolled out the programme to our logistics providers to further reduce plastic loss during product handling and transport.

## ► PETRONAS' Environmental Focus Areas

In our commitment to environmental stewardship, apart from greenhouse gas emissions and waste management, PETRONAS also focuses on other areas of significant impact, namely air emissions, water management, oil spill prevention and decommissioning.

### Air Emissions

Our strategy for managing air emissions involves an online monitoring platform that evaluates risks and provides early warnings for increasing emission trends. This strategy includes measuring Sulphur Oxides (SOx) and Nitrogen Oxides (NOx) through continuous monitoring and periodic sampling.

#### Performance in 2023

Air Emissions	2022	2023
Total Sulphur Oxides Emissions (tonnes)	60,116	<b>60,212</b>
Total Nitrogen Oxides Emissions (tonnes)	62,790	<b>101,695</b>

Total nitrogen oxide emissions increased in 2023 to 101,695 tonnes from 62,790 tonnes. This increase was due to the high nitrogen oxide value from PETRONAS LNG Complex in Bintulu's combustion process and updated 2023 reporting scope by a subsidiary.

#### Leveraging Predictive System to Monitor Air Emissions

- EMI-CON is a solution that leverages PETRONAS' proprietary technology and expertise to monitor and control boiler emissions in real time. It uses a predictive emissions monitoring system that models the emission levels of the boiler based on process parameters and flue gas analysis. It also guides the operations personnel on how to optimise energy efficiency of the boiler. EMI-CON has been deployed at two boilers at PETRONAS Chemicals Ethylene Sdn Bhd and PETRONAS Chemicals Fertiliser Kedah, achieving cost savings of RM942,000 per year and a total emissions reduction of 1,398 tonnes CO<sub>2</sub>e per year.

## Water Management

We focus on water accounting, understanding water availability and enhancing water utilisation efficiency. Our policies, standards and practices are geared towards effective freshwater resource use and the responsible stewardship of water resources through water circularity practices with regular tracking in water-stressed areas.

For our domestic operations, 76 per cent of the freshwater withdrawal is sourced from the municipal water supplier, whereas for our operation in Pengerang, the water is supplied by PRPC Water Sdn Bhd.

#### Performance in 2023

We completed the Water Availability Risk Assessment for PETRONAS assets in Gurun, Kedah and Gebeng, Pahang. Notably, Project Rhea, which was executed at PETRONAS Chemicals Methanol Sdn Bhd in collaboration with Suez Water and Process Technology, resulted in the recovery of 140 tonnes of low-quality process condensate through the practice of water circularity. This was achieved through the introduction of a mobile water treatment plant that ensured an 85 per cent water recovery rate, providing 105 cubic meters of treated water daily for plant operations. Our efforts in minimising freshwater withdrawal include optimising water usage during operational activities and reusing Reverse Osmosis (RO) rejected water for non-operational activities.

Water	2022	2023
Freshwater Withdrawal (million cubic metres per year)		
Upstream	5.0	<b>8.5</b>
Downstream	63.2	<b>63.4</b>
Gas	10.6	<b>11.2</b>
MISC and others	2.8	<b>1.1</b>
Total	81.6	<b>84.1</b>
Freshwater Withdrawal (million cubic metres per year)		
Malaysia	76.8	<b>75.7</b>
International	4.8	<b>8.4</b>




In 2023, our total freshwater withdrawal was 84.1 million cubic metres compared to 81.6 million cubic metres in 2022. The increase was due to the operationalisation of a new process train at Iraq operations.



## Safeguard the Environment

### Oil Spill Prevention

Our Oil Spill Response processes, including the Oil Spill Response Assessment (OSRCA) and Oiled Wildlife Response, are designed to enhance response capability and preparedness. We emphasise both prevention and effective response, ensuring asset integrity, adherence to standard operating procedures and comprehensive training for our personnel in oil spill recovery and response.

	Prevention	Mitigation
 <b>Operation</b>	Adherence to standard operating procedures and team capabilities.	Adequacy of Oil Spill Response Plan.
 <b>Asset</b>	Ensure asset integrity and functionality via periodic and regular inspection to enforce maintenance of equipment and facility.	Adequate and reliable equipment for responding to oil spill emergencies and crises.
 <b>Assurance</b>	Conduct internal and external assessments such as Oil Spill Response Assessment for first line and second line assurance.	Trained personnel in handling oil spill recovery and response.

### Performance in 2023

This year, we advanced our oil spill prevention capabilities, reflecting our commitment to environmental stewardship and operational safety. Our focused efforts in this area were multifaceted, encompassing assessments, training and international collaborations, all aimed at enhancing our preparedness and response to potential oil spill incidents.

	Oil Spill Response Capability Assessment	International Collaboration	Upskilling and Training	Regional Forums and Workshops
<b>What We Did</b>	Conducted comprehensive assessments of oil production units to evaluate oil spill response capabilities.	Engaged with host country authorities in PETRONAS international operations to verify their Oil Spill Response Organisation (OSRO) capabilities.	Implemented a series of webinars, classroom sessions, site visits and workshops for skill enhancement.	Organised regional forums and workshops focusing on Oil Wildlife Response throughout Malaysia.
<b>Value Created</b>	Established a robust data foundation on oil spill response readiness Groupwide.	Strengthened global partnerships and aligned international response standards.	Enhanced the expertise and readiness of personnel in managing oil spill incidents.	Increased awareness and preparedness for wildlife protection during oil spill incidents.

Furthermore, in addressing challenges encountered in oil spill prevention, we adopted proactive measures to ensure continuous improvement and effectiveness in our response strategies.

Spillage	2022	2023
Number of Hydrocarbon Spills into the Environment over One Barrel (Number of cases)	2	5

In 2023, we experienced an increase in number of cases of hydrocarbon spills over one barrel, whereby four out of five cases were due to pipe leaks. Through our spill prevention procedures, all spill incidents recorded were contained within our operation sites, resulting in no major spill to the environment. To prevent recurrence of incidents, we conducted site-specific environment reach out programmes to upskill our frontliners and further strengthen our environmental compliance and spill prevention. Additionally, we rolled out Digital Flange Integrity Tools (Digi-FIT) at targeted operation sites to prevent leaks and ensure process compliance.

## Decommissioning

Our strict conduct and adherence to the Decommissioning Options Assessment for each project help ensure an environmentally stable and safe decommissioning option for execution. We conduct feasibility studies on transforming identified structures to be decommissioned into artificial reefs to achieve the end-state of sustainable Rigs-to-Reef, contributing towards a circular economy. These efforts include engaging communities and other stakeholders to gather inputs, address concerns and enhance transparency in Rigs-to-Reef.

### Value Created in 2023

#### Collaboration with the Department of Fisheries

- The Rigs-to-Reef initiative has enriched marine ecology, advanced ecotourism, and recreational industries with the discovery of an abundance of fish around the artificial reefs (Baram-8, Dana, and D-30). These reefs have revitalised fishing grounds, providing fishermen in Miri, Sarawak, with a more consistent and sustainable source of income, improving livelihoods and generating economic stability for the community.
- PETRONAS, along with Sumitomo Corporation and the Department of Fisheries, converted scrap tubulars into artificial reef structures and completed the Tubular-to-Reef pilot project. In October 2023, we installed the proof-of-concept structures at Pulau Kapas, Terengganu and Pulau Sibul, Johor. The project provides a sustainable, cost-effective, and environmentally friendly alternative for disused tubulars and contributes to the circular economy.
- Rigs-to-Reef provide additional security and protection against illegal encroachments while deterring illegal trawling and fish bombing activities.

#### Engagements with the Malaysian Oil, Gas & Energy Services Council

We conducted frequent engagement with the Malaysian Oil, Gas & Energy Services Council (MOGSC) Decommissioning Workstream, culminating in a workshop on 7 September 2023 where the following topics were discussed:

- Mid-term decommissioning outlook to ensure preparedness of industry players to undertake the increasing volume of projects.
- Feedback from industry players encompassing areas such as the maturity of decommissioning yards in Malaysia, improvements for long-term contracting, human resource capacity and capability, and others.



### Decommissioning Completed

- Completed plug and abandonment for 45 wells and decommissioning for six facilities.
- Facilitated the reuse of Tanjong Baram topsides for the South Furious 30 Waterflood Project II (SF30 WF) off the coast of Sabah.
- Facilitated the reuse of the Kikeh's subsea x-mas tree for the Kikeh Phase 3B development project off the coast of Sabah.

### Regional and International Industry Collaborations

- Collaborated with the International Association of Oil & Gas Producers (IOGP) Decommissioning Committee's Expert Groups on Asset Retirement Obligations, Habitat Retention on Reefing Guidance, Floating Production Storage and Offloading Decommissioning Framing and Methane Seepage.
- PETRONAS co-chaired the IOGP Decommissioning Asia Pacific (APAC) Sub-Committee, which included the organisation of the Decommissioning Industry Workshop on 17-18 October 2023 and the IOGP Summit on 19 October 2023.
- Commenced work on the revision draft of the ASEAN Council on Petroleum (ASCOPE) Decommissioning Guideline based on inputs from the Exploration and Production Task Force, which is slated for publication in 2024.
- Actively promoted and advocated for collaboration between ASCOPE and IOGP to sign a Memorandum of Cooperation.

## Safeguard the Environment

### Nature and Biodiversity

#### Why It Is Important

In 2022, the international community adopted the Kunming-Montreal Global Biodiversity Framework that includes goals and targets to protect nature, reduce biodiversity loss, restore ecosystems and protect indigenous rights by 2030. The framework is now translated into legislation and action plans across jurisdictions. PETRONAS Position on Nature and Biodiversity acknowledges the impact and dependence of our operations on nature and biodiversity and provides a framework to act.

Nature and biodiversity are crucial for sustaining life on Earth and in many of PETRONAS' operations. They underpin vital services from carbon sequestration in forests, wetlands and soil to supporting diverse habitats and community livelihoods where PETRONAS is concerned. At the same time, climate change and pollution caused by human activities also threaten nature and biodiversity. The intertwined nature of these two major planetary crises calls for an integrated approach to address nature and biodiversity loss, degradation and climate change.

Our commitment to reversing biodiversity loss involves the establishment and operationalisation of the PETRONAS Centre of Excellence (CoE) on Nature and Biodiversity. The CoE is an important element towards implementing the five areas of actions listed in PETRONAS Position on Nature and Biodiversity and meeting our aspirations of a visible leadership role in the conservation of nature and biodiversity.

#### Our Approach

Governed by the PETRONAS Position on Nature and Biodiversity and in support of our overall Net Zero Carbon Emissions by 2050 Pathway, we strive to demonstrate visible leadership on nature and biodiversity at home in Malaysia, and in the countries where we operate.

Assessing and managing our impact and dependency on nature and biodiversity in or near Protected Areas (PAs) and Key Biodiversity Areas (KBAs) as set out by our internal systems and guidelines.

We apply a risk-based approach in the implementation of the position. In 2023, we commenced Biodiversity and Ecosystem (BES) risk profiling for all our operational sites, supported by the Integrated Biodiversity Assessment Tool (IBAT) and PETRONAS risk assessment matrix. This activity aims to identify assets with a risk categorisation of "Very High" and "High". Based on the assessment results, we will conduct site visits to validate the risk profiling, which will serve as a basis for developing Biodiversity Action Plans for relevant locations.

#### PETRONAS Position on Nature and Biodiversity

Upon the establishment of the PETRONAS Position on Nature and Biodiversity to establish plans and ensure internal alignment on nature and biodiversity matters, 2023 saw the shaping of the necessary work processes, systems and establishment of a central database to ensure smooth implementation of this position. With that, the five areas of action are determined to demonstrate leadership in biodiversity conservation which would include applying the right expertise and resources.

- **Area 1:**  
Establishing voluntary exclusion zones
- **Area 2:**  
Managing nature and biodiversity risks
- **Area 3:**  
Promoting nature and biodiversity through partnerships and collaborations
- **Area 4:**  
Supporting public policy to protect nature and biodiversity
- **Area 5:**  
Promoting high quality nature-based climate solutions

## Value Created in 2023

### Contributions from PETRONAS' Position on Nature and Biodiversity

Area of Action	Value Created
<b>Area of Action 1: Establishing voluntary exclusion zones</b>	<ul style="list-style-type: none"> <li>PETRONAS contributes to the protection and preservation of cultural and natural heritage within the voluntary exclusion zones, with internal efforts undertaken to align relevant governance documents and business processes with the Position.</li> </ul>
<b>Area of Action 2: Managing nature and biodiversity risks</b>	<ul style="list-style-type: none"> <li>PETRONAS aims to conserve nature and biodiversity by managing risks to ensure no or minimal impact is caused by our operations. In 2023, PETRONAS initiated a multi-year project leveraging external expertise and are focusing on four areas: Biodiversity and Ecosystem Services (BES) Risk Profiling and Assessment for international operations; Biodiversity Action Plan development; biodiversity survey; capacity building and internal upskilling.</li> </ul>
<b>Area of Action 3: Promoting nature and biodiversity through partnerships and collaborations</b>	<ul style="list-style-type: none"> <li>PETRONAS is active in engaging with our industry peers and international organisations in promoting knowledge sharing and learning of best practices such as through Ipieca-IOGP Biodiversity and Ecosystem Services (BES) Peer-to-peer Workshop, and knowledge sharing programme with Tenaga Nasional Berhad and PTT Exploration and Production Public Company Limited.</li> <li>PETRONAS also continued to support biodiversity conservation through projects such as Yayasan PETRONAS Walk4Trees Planting Programme and ecoCare Environmental Education Centre at Kertih, Terengganu. These programmes are aimed at supporting the restoration of habitats and educating communities on the importance of ecosystem protection and conservation.</li> </ul>
<b>Area of Action 4: Supporting public policy to protect nature and biodiversity</b>	<ul style="list-style-type: none"> <li>PETRONAS plays an active role in supporting global policies on nature and biodiversity. In demonstrating leadership from the private sector on nature and biodiversity, PETRONAS is part of the Malaysia Platform for Business and Biodiversity and National Biodiversity Advisory Group that supports Malaysia's ambition to implement the Kunming-Montreal Global Biodiversity Framework.</li> </ul>
<b>Area of Action 5: Promoting high quality nature-based climate solutions</b>	<ul style="list-style-type: none"> <li>PETRONAS signed a Memorandum of Understanding with the Malaysia Forest Fund, to strengthen its agenda on exploring, developing and investing in high-quality nature-based solutions projects in Malaysia. This initiative aligns with efforts to realise its Net Zero Carbon Emissions by 2050 Pathway.</li> </ul>





# Positive Social Impact

PETRONAS collaborates with our employees, suppliers and communities making a concerted effort to embed sustainability and promote responsible growth in our practices.

Aligned to:



## Health and Safety

### Why It Is Important

Operating in the energy industry where there is considerable risk of exposure to hazardous conditions, we aim to create a safe working environment through a strong generative health, safety and environment (HSE) culture, ensuring everyone goes home safely.

At PETRONAS, we prioritise the physical and mental well-being of our employees and contractors. Our comprehensive well-being programmes and proactive interventions support physical, mental and emotional health, fostering a high-performing workplace where employees are empowered to thrive both professionally and personally.

### Our Approach

PETRONAS is committed to HSE excellence in all our activities, wherever we operate. We align our HSE Management System and HSE Mandatory Control Framework with the International Organisation of Standardisation's (ISO) 14001:2015 and ISO 45000:2018 to support our HSE policy. This management system and control framework applies to operations where PETRONAS has operational control at all phases of work activities.

PETRONAS' HSE culture has evolved significantly, particularly in response to the COVID-19 pandemic. Our focus is on three key areas:

- **Culture:** We strengthen the implementation of the Generative HSE Culture (GC) programme at all levels through the Accountability and Behaviour Reinforcement Programme across our operations to reinforce HSE leadership and instil personal accountability.
- **Compliance:** We drive compliance and operating discipline to manage risks and safeguard our license to operate. We also leverage self-regulation to reinforce HSE compliance.
- **Competency:** We intensify human, asset and systems capabilities and HSE competency in delivering sustainable HSE performance.

Our HSE performance is evaluated regularly through periodic monitoring of key performance indicators. We also leverage digital solutions for improved monitoring and reporting of HSE performance.

### Performance in 2023

In 2023, we achieved a 18 per cent reduction in Lost Time Injury (LTI) cases and a 10 per cent reduction in Total Recordable Cases (TRC). We also observed a 33 per cent decrease in major and minor fires.

Despite our best efforts, we regrettably recorded two fatalities in our operations.

In all cases, thorough investigations were conducted with relevant authorities to determine the root causes and actions to prevent recurrence. HSE Accountability and Behaviour Reinforcement is continually applied to ensure that we take a fair and consistent approach to encouraging and rewarding desired HSE behaviours and addressing undesired HSE behaviours.

PETRONAS has taken proactive measures to prevent recurrence of incidents. We established the Organisational Learning From Incidents portal, a comprehensive resource that serves as a one-stop centre to improve accessibility and availability of materials from past lessons learned and incident management governance documents.

We also observed an increase in employee Total Recordable Occupational Illness Frequency (TROIF) during the year compared to 2022. As part of our intervention to avoid recurrences, we adopted strict actions, which included inspecting caterers and upskilling competency of our key personnel.

## Positive Social Impact

### Culture

PETRONAS maintains a robust health, safety and environment (HSE) culture to protect our people, enhance productivity and reinforce our reputation in the industry. In 2023, we implemented various key initiatives to strengthen our HSE culture:

#### ➔ Culture Maturity Survey

- The organisation-wide HSE survey measures the progress of our HSE culture performance and identifies areas for improvement. It also determines the level of HSE culture maturity in our businesses and operating assets, providing an understanding of our strengths and improvement areas while realigning our HSE strategies and interventions.
- As a proactive organisation, HSE is deeply ingrained as a core value, strongly emphasising the health and well-being of our employees, contractors and visitors. Our goal is to advance to a 'Generative' level, characterised by supportive leadership and empowered employees who proactively address HSE issues, reflecting high self-sufficiency and commitment to HSE.
- Since its introduction in 2017, PETRONAS' HSE culture has demonstrated significant progress, evolving from a 'Calculative' to a 'Proactive' level in 2021. In 2023, we once again engaged 40,000 PETRONAS employees and targeted contractors across our business and operations, maintaining a Proactive score of 4.03 on the culture maturity ladder scale with an 88 per cent response rate, indicating a consistent trend in HSE culture maturity since its first introduction.

#### ➔ GC Leadership Programme

- The Generative HSE Culture Leadership Programmes (GCLP) focus on instilling a Generative Culture in HSE practices among leaders at all levels. This programme is for a wide range of leaders from those at the frontlines to top management, fostering a leadership environment where health and safety are core values and the well-being of employees and contractors takes priority.
- In 2023, we delivered the training programme to a significant portion of our leadership team:



#### ➔ Rakan HSE Engagement

- The *Rakan* HSE (HSE Friends) engagement initiative focuses on reinforcing the five Generative HSE Culture Behaviours and further enhancing Generative Culture knowledge through the sharing of best practices. It also provides a platform to address workplace challenges.
- In 2023, 88 participants from 16 operations attended our *Rakan* HSE engagements, comprising *Rakan* HSE graduates, leaders and contractors across three regions, achieving an overall rating of 4.72.

## GC Network of Excellence

GC Network of Excellence (GC NeXt) is designed to foster open and psychologically safe conversations, and promote the exchange of real experiences between leaders and frontline supervisors across our business and operations. We facilitated five sessions on the five Generative HSE Culture Behaviours, bridging the gap between leaders and frontline supervisors.

### The Five Generative HSE Culture Behaviours



## HSE Accountability and Behaviour Reinforcement

In 2023, we rolled out the revised Standardised HSE Accountability and Behaviour Reinforcement Guideline, incorporating the Constructive Reinforcement for Contractor Company guardrail. We introduced this programme in 2021 to elevate the HSE culture towards the Generative level.



## Positive Social Impact

### MESTIFit4Health

Our MESTIFit4Health programme incorporates diverse risk assessments and health data analyses to ensure the holistic well-being of our employees. The programme has been implemented at PETRONAS since 2018 and has fostered a culture of healthy living as a fundamental pillar for the organisation's success.

MESTIFit4Health continued to deliver positive results in its five key areas of focus:

	Objectives	Initiatives and Achievements
(M) Move Right	Encouraging an active lifestyle and overall physical well-being.	<ul style="list-style-type: none"> <li>• <b>Walk4Trees Challenge:</b> Embedding PETRONAS' commitment to the environment and its corporate social responsibility, the programme surpassed the target of four billion steps, where our collective steps led to the planting of 20,000 trees.</li> </ul>
(E) Eat Right	Ensuring workplace safe practices through stringent food and water hygiene standards.	<ul style="list-style-type: none"> <li>• <b>Caterer Inspections:</b> Verified and inspected 317 of our food suppliers to ensure continuous compliance with our Food and Water Safety standards.</li> <li>• <b>Upskilling:</b> Enhanced competency of our key personnel in managing food suppliers and implementation of best food and water hygiene standards.</li> </ul>
(S) Sleep Right	Strengthening and expanding our Fatigue Management System to reduce fatigue-related incidents.	<ul style="list-style-type: none"> <li>• <b>Fatigue Management System:</b> Launched and successfully rolled out the new Fatigue Management System mobile app across various sectors with zero interruptions to operations.</li> </ul>
(T) Think Right	Supporting employees' mental well-being through a holistic wellness model that addresses psychosocial risk factors.	<ul style="list-style-type: none"> <li>• <b>MIND-A-CARE Ambassadors:</b> Successfully developed 290 mental health first aiders who detect signals of mental distress and guide the affected employees in reaching out for early psychological support.</li> <li>• <b>Leadership Upskilling:</b> Trained 142 leaders in psychological safety in collaboration with PETRONAS Leadership Centre.</li> <li>• <b>Resilience Coaching:</b> Implemented the Individualised Coaching for Resilience Enhancement (i-C4RE), curated to strengthen mental resilience. The programme benefitted 417 employees in 2023.</li> </ul>
(I) Individual Right	Empowering staff to make informed health decisions and prevent substance misuse.	<ul style="list-style-type: none"> <li>• <b>Awareness and Enforcement:</b> Intensified awareness on the management of substance misuse and included new responsibilities for PETRONAS Auxiliary Police as enforcers.</li> <li>• <b>Digitalisation:</b> Developed a digital platform to monitor the real-time data for substance misuse initiatives for our workforce and contractors.</li> </ul>

## Strategic Collaborations for Health and Well-being

PETRONAS is committed to improving standards of health and well-being through strategic partnerships with governmental agencies and other external stakeholders.

Strategic Partnership	Impact and Achievements
<b>Ministry of Health, Malaysia</b>	<ul style="list-style-type: none"> <li>• <b>Support for Sustainable Health Goals:</b> Continuously engage the Minister of Health, Malaysia as part of our commitment in achieving Sustainable Development Goal 13: Good Health and Well-being.</li> </ul>
<b>National Centre of Excellence for Mental Health, Ministry of Health, Malaysia</b>	<ul style="list-style-type: none"> <li>• <b>Knowledge Exchange and Potential Collaboration:</b> Aligned our wellness and mental well-being interventions with the national agenda for mental health by the Ministry of Health, Malaysia.</li> </ul>
<b>1<sup>st</sup> Oil and Gas Health and Well-being Conference 2023</b>	<ul style="list-style-type: none"> <li>• <b>Industry Best Practices and Innovation:</b> Created a platform to showcase the current occupational health best practices to increase awareness of the efforts and innovations in employee health and wellness among those involved in the industry.</li> </ul>
<b>National Anti-Drug Agency (AADK)</b>	<ul style="list-style-type: none"> <li>• <b>Memorandum of Understanding:</b> Implemented a drug-free workplace programme <i>Tempat Kerja Bebas Dadah</i> (TEKAD) with collaboration on training, awareness, enforcement and rehabilitation assistance.</li> </ul>



## Positive Social Impact

### Compliance

To embed safety precautions throughout our businesses and operations, we have scaled up our efforts to improve safety performance by proactively implementing various best practices which include industrial hygiene, process safety, safety management, self-regulation, crisis and incident management, and HSE capability.

### Industrial Hygiene

One of our topmost priorities will continuously be protecting the health of our employees and contractors, both at the workplace and at home, through sustainable governance, robust intervention and capability development.

We align with the Sustainable Development Goals (SDG) namely in preventing ill health due to workplace health hazards (SDG 3.9) and protecting employee's rights for a healthy work environment (SDG 8.8). We safeguard employees' health beyond regulatory compliance and aim to implement best practices for a sustainable outcome in maintaining a passionate, productive, high-performing workforce. This encompasses continuous efforts to address all possible workplace health hazards and their associated risks such as chemical, physical (noise, radiation, thermal, vibration and pressure), biological, ergonomic and psychosocial health hazards.

### Key Initiatives in 2023:

Initiative	Impact and Value Created
<b>Hazardous Chemical Management System: eCHEMS</b>	<ul style="list-style-type: none"> <li>Approximately 40 per cent time reduction in the overall chemical management process with our centralised digital eCHEMS covering chemical screening, chemical receiving and verification of documents. Efforts include:               <ul style="list-style-type: none"> <li>The adoption of artificial intelligence to automate the verification of safety data sheets (SDS) and labels.</li> <li>Data upload of 554 chemical registers covering 12,436 chemicals.</li> <li>Full utilisation of eCHEMS in managing chemical request up to chemical receiving for a total of 80 chemicals.</li> </ul> </li> </ul>
<b>Ventilation in Confined Space</b>	<ul style="list-style-type: none"> <li>Enhanced governance on ventilation in confined spaces by revising Company standards related to the ventilation plan, and incorporating revised standards into the module in the e-Permit To Work (e-PTW) system.</li> </ul>
<b>Noise Risk Reduction Programme</b>	<ul style="list-style-type: none"> <li>Mitigation of noise-related risk with noise engineering control initiatives with the potential to reduce sound pressure levels up to 90 to 99 per cent for identified facilities with high-noise sources.</li> <li>Enhance governance of the Hearing Conservation Programme by reviewing and revising company standards.</li> </ul>
<b>HSE Integrated Risk Assessment</b>	<ul style="list-style-type: none"> <li>Rolled out a digital tool to conduct health risk assessments and facilitate its operationalisation to meet regulatory and company standards. HSE Integrated Risk Assessment was actively utilised with a total of 29 risk assessments registered in 2023.</li> </ul>
<b>Ergonomics Management System: e-RGO</b>	<ul style="list-style-type: none"> <li>Enhanced office ergonomic tool for self-assessment on posture at office workstation covering self-assessment for a work from home setup, protecting workers' health.               <ul style="list-style-type: none"> <li>A total of 12,637 office occupants completed the self-assessment out of which 13 per cent identified and corrected improper posture.</li> <li>Initiated 39 ergonomic-related case management triggered by office occupants.</li> </ul> </li> </ul>

Initiatives under the Industrial Hygiene scope achieved notable improvement towards compliance with regulatory and company standards towards safety and well-being of workers, including:

- ➔ Carried out health risk assessment initiatives that led to substantial cost savings of up to **RM24.1 million**.
- ➔ Achieved **97 per cent** compliance in First Line Assurance in the areas of chemical management, hearing conservation and radiation management with significant improvement in several key requirements such as respiratory protection, chemical screening, chemical register and safety data sheet, hearing protection zone warning signs, functionality and availability of radioactive survey meter and maintenance of engineering control (local exhaust ventilation).

- ➔ Maintained good collaboration with regulators, associations and industries through our participation in trainings and conferences to build industrial hygiene capability for the nation.
- ➔ Industrial Hygiene Community of Practice (CoP) received the **Best CoP award** out of **78 candidates**.

## Process Safety

Our management review of process safety performance has shown tangible improvements in our Process Safety culture across our operations. Moving forward, a more focused effort will be made towards a Generative Culture level.

Our efforts to substantially reduce Process Safety Events (PSE) affirmed our steadfast dedication to safety within our operations.

### Key Initiatives in 2023:

Focus Area	What We Did
<b>Governance</b>	<ul style="list-style-type: none"> <li>Implemented Fire Prevention and Mitigation Framework (FPMF) and Process Safety and Loss of Primary Containment (LOPC) Reduction Initiative, focusing on detailed analysis, direct intervention and peer reviews.</li> <li>Enhanced standards and guidelines with lessons learned from past incidents, including upskilling sessions for our operations.</li> <li>Established a task force for aligning governance requirements and integrating safety review processes for start-ups and operations.</li> </ul>
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Rolled out Digital Flange Integrity Tools (Digi-FIT) across our operations to prevent joint leaks and ensure process compliance.</li> <li>Improved process efficiency and management of process safety risk via enhanced HSE Integrated Risk Assessment, monitoring for Safety Review of Management of Change in Integrated Process Safety Solution and frequent assessment of control barriers via deployment of Enterprise Barrier Management.</li> <li>Developed digital training modules for process safety onboarding and safety review.</li> </ul>
<b>Competencies</b>	<ul style="list-style-type: none"> <li>Conducted site engagements to enhance staff understanding and adoption of process safety behaviours.</li> <li>Collaborated with the Centre for Chemical Process Safety (CCPS) and Japan Society of Safety Engineering (JSSE) as thought leaders in process safety.</li> <li>Promoted Integrated Process Safety Management for better collaboration in steering process safety requirements.</li> </ul>





## Positive Social Impact

### Safety Management

Safety management at PETRONAS in 2023 focused on enhancing human performance and improving frontline supervision, supported by digital efforts to drive safety improvements.

#### Key Initiatives for 2023:

Initiative	What We Did
<b>Work Leader Competency Development</b>	<ul style="list-style-type: none"> <li>Assessed active site work leaders with 1,200 personnel covered. 18 per cent received coaching or job reassignment based on competency gaps identified to ensure only competent work leaders supervise work at the site.</li> <li>Standardised work leader capabilities requirements and made them part of the HSE requirements in tender documents and our technical standards.</li> <li>Implemented Groupwide work leader training materials for consistent proficiency.</li> </ul>
<b>Contractors HSE Frontliners Programme</b>	<ul style="list-style-type: none"> <li>Engaged 220 participants across 27 sites focusing on a merit-demerit system.</li> <li>Enhanced site inspection quality through upskilling on myLearningX.</li> </ul>
<b>Digital Unsafe Act, Unsafe Condition Systems</b>	<ul style="list-style-type: none"> <li>Observed improvements in safety culture and site discipline in our operations and increased Unsafe Act, Unsafe Condition observations by 30 per cent to 622,078.</li> <li>Enhanced Stop Work Authority (SWA) usage by 222 per cent to 6,617 for a better demonstration of psychological safety to stop unsafe works and practices immediately at the site.</li> </ul>
<b>ePTW+ 2.0</b>	<ul style="list-style-type: none"> <li>Successfully deployed digital ePTW+ 2.0 at 18 sites to streamline permit-to-work (PTW) processes for Groupwide implementation. The system received positive feedback from users.</li> <li>Improved process compliance with permissive features that would enhance site compliance.</li> <li>Achieved 40 per cent time-saving and improved document retention at sites compared to manual permit-to-work process.</li> </ul>

	2022	2023	
<b>Lost Time Injury (LTI)</b>	38	31	<ul style="list-style-type: none"> <li>Emphasised the importance of selecting competent contractors with reliable equipment for a safe working environment.</li> </ul>
<b>Total Recordable Cases (TRC)</b>	100	90	<ul style="list-style-type: none"> <li>Incorporated human factor analysis in all incident investigations in 2023 to understand and address violations and mistakes.</li> <li>Ensured safety by continuously enhancing site compliance and effective supervision.</li> </ul>
<b>Fire incidents</b>	89	60	<ul style="list-style-type: none"> <li>Implemented a fair process in HSE Accountability and Behavioural Reinforcement for violations-related incidents.</li> </ul>

## Self-Regulation

In 2023, PETRONAS focused on Self-Regulation Programme implementation to ensure the readiness of our operations for self-regulation certification through compliance with Special Scheme of Inspection regulations and conformance to plant management system requirements. This approach ensures a higher level of compliance with legal and safety standards and facilitates the implementation of effective measures to manage occupational hazards and reduce incidents.

### Key Initiatives for 2023:

Focus Area	Initiative and Value Created
<b>Regulatory and Governance</b>	<ul style="list-style-type: none"> <li>Established supplementary regulatory requirements for the Special Scheme of Inspection Regulations (SSI Scheme B) by developing the Industry Code of Practice for Plant Management System, as well as requirements and criteria for Self-Regulation Qualified Third Party Auditor.</li> <li>Aligned our internal governance and initiatives with self-regulation requirements by mapping Group HSE initiatives and PETRONAS Technical Standards with Special Scheme of Inspection and plant management system requirements, enhancing safety and integrity.</li> </ul>
<b>Structured Assurance</b>	<ul style="list-style-type: none"> <li>Geared up our operations readiness for self-regulation certification by conducting Document Review Audits and Adequacy Audits to validate readiness of occupiers for Self-Regulation Certification.</li> </ul>
<b>Culture</b>	<ul style="list-style-type: none"> <li>Fostered Generative Culture in safety and regulation compliance across PETRONAS by Integrating Self-Regulation Culture Leading Indicators with Generative Culture Effectiveness Metrics for Groupwide implementation.</li> </ul>
<b>Capability and Competency</b>	<ul style="list-style-type: none"> <li>Collaborated with the Department of Occupational Safety and Health and Institut Teknologi Petroleum PETRONAS (INSTEP) to develop Plant Management System Qualified Person (PMSQP) certification programmes, as well as partnered with Project Delivery and Technology division for Risk-based Inspection (RBI) competency development and certification of key personnel.</li> <li>Conducted engagements and workshops on Plant Management System (PMS) and Special Scheme of Inspection Regulations with all Self-Regulation Occupiers and relevant stakeholders.</li> </ul>
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Digitalised self-regulation work processes through PETRONAS Self-Regulation System and integrated it with relevant systems for seamless data and information accessibility by occupiers and relevant stakeholders.</li> <li>Developed a digitalisation roadmap for PETRONAS Self-Regulation System enhancement to support self-regulation programme sustainability.</li> </ul>

- ➔ **100 per cent** completion of structured assurance (Document Review Audit and Adequacy Audit) planned in 2023, with a significant increase of **eight** completed in 2023 compared to four in 2022.
- ➔ **75 per cent** readiness for Self-Regulated Certification achieved for **two Pengerang Integrated Complex** occupiers and **four pilot** PETRONAS operating units.
- ➔ Certified a cumulative total of **38** Plant Management System Qualified Person (PMSQP) for asset integrity, occupational safety and health and process safety.
- ➔ Completion of Industry Code of Practice for Plant Management System (ICOP PMS) in collaboration with the Department of Occupational Safety and Health as supplemental document for SSI Scheme B.

## Positive Social Impact

### Crisis and Incident Management

In 2023, PETRONAS focused on enhancing its crisis and incident management capabilities, employing digital solutions and collaborative efforts to ensure robust and efficient response mechanisms.

#### Key Initiatives for 2023

Focus Area	Initiatives and Achievements
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Enhanced end-to-end process in managing HSE incidents via HSSE Incident Management System (HSSE IMS) for mobile accessibility, centralised repository and prescriptive governance.</li> <li>Enhanced Crisis Management Information System (CMIS) for managing emergencies and crises, with a target of groupwide mandatory utilisation by 2024.</li> </ul>
<b>Fire and HAZMAT Response Management</b>	<ul style="list-style-type: none"> <li>Collaborated with Fire Rescue Department Malaysia (FRDM) for confined space rescue training and proactive engagements.</li> <li>Strengthened PETRONAS Fire Response Services and On-Scene Commanders leadership skills on Emergency Response (ER) preparedness.</li> <li>Initiate a phased withdrawal of Poly and Per-Fluoro Alkyl Sunstances (PFAS) Firefighting foams through site-specific risk management and cost-effective approach.</li> <li>Oversight of technical integrity of firefighting and emergency response equipment through asset life study of aged fire trucks, attestation of Inspection, Testing and Preventive Maintenance performance standards and emergency response capability review.</li> </ul>
<b>Emergency and Crisis Management</b>	<ul style="list-style-type: none"> <li>Strengthened emergency and crisis preparedness through workshops with local authorities and government agencies.</li> <li>Held Disaster Management Collaborative Workshops and Natural Disaster Management Committee Collaborative Workshops.</li> <li>Adopted digital solutions to enhance the experience and support crisis management.</li> </ul>
<b>Oil Spill Management</b>	<ul style="list-style-type: none"> <li>Strengthened Oil Spill Response preparedness for PETRONAS' international operations. Enhanced awareness and adoption of Oiled Wildlife Response for Malaysia operations.</li> </ul>
<b>Incident Learning</b>	<ul style="list-style-type: none"> <li>Developed a multi-pronged approach for HSE incident learning and intensified governance via periodic site verification and attestation programmes.</li> </ul>

## HSE Talent Capability

We intensified our HSE capability building, going beyond dedicated professionals and operation frontliners to our partners and targeted contractor personnel to deliver sustainable HSE performance. In 2023, we significantly advanced our HSE capability efforts through collaboration, digitalisation and comprehensive management strategies.

### Key Initiatives for 2023

Focus Area	Value Created
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>Enhanced collaboration with Universiti Teknologi PETRONAS (UTP), enriching innovation and knowledge exchange.</li> <li>Engaged subject matter experts in academic activities, including module development and delivery at the Centre for Advanced and Professional Education (CAPE).</li> </ul>
<b>Industry Partnerships</b>	<ul style="list-style-type: none"> <li>Partnered with the National Institute of Occupational Safety and Health (NIOSH) to integrate HSE culture elements into the Oil and Gas Safety Passport learning module, contributing to industry-wide HSE capability development.</li> </ul>
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Developed an action-based HSE Mixed Reality learning for the Working at Height module at the minimum viable product stage, focusing on the actions of scaffolding work.</li> <li>Offered over 40 e-learning modules curated by subject matter experts, for comprehensive HSE learning.</li> </ul>
<b>Contractors Management</b>	<ul style="list-style-type: none"> <li>Aimed to elevate HSE competency among contractors by enabling access to key e-learning modules under the Contractors HSE Frontliners Programme. We rolled out four HSE related e-learning modules to the selected contractors.</li> </ul>
<b>HSE Capabilities and Competencies</b>	<ul style="list-style-type: none"> <li>Developed a five-year HSE capability roadmap, offering capability building programmes for HSE professionals.</li> <li>Managed HSE competent person training programmes, training matrix and enterprise compliance e-learning, extending six enterprise compliance modules to all staff for enhanced HSE awareness.</li> </ul>

## myHSSE Systems



The myHSSE digital platform is our one-stop knowledge centre for all PETRONAS health, safety, security and environment (HSSE) matters.

We adopted a single information platform that houses all 15 systems of our HSSE digital solutions. Each system addresses different business pain points, and facilitates users' easier access and fit-for-purpose usage.

We are also enabling users to harness the power of HSSE data to derive insights on HSSE performance, trends, emerging risks and other essential elements needed to make proactive interventions. Group HSE aims to continue bolstering these efforts in moving towards our goal of realising predictive and prescriptive HSSE analytics.



Positive Social Impact

Security

Why It Is Important

Enterprise security is synonymous with lasting growth and stability, making it a fundamental aspect of sustainability. Robust security controls and practices safeguard against physical and cyber threats for continued resilience. It propels uninterrupted business competitiveness and activities within an increasingly volatile and unpredictable operating landscape.

Complex geopolitical tensions, conflicts, economic uncertainties, insider threats, misinformation and disinformation, and societal fragmentation alongside rapid technological developments underpin existential future realities. Security is ever so critical now as industries navigate and withstand consequences as well as challenges ensuing from shrinking boundaries between physical and digital business dimensions.

A holistic security framework enables progress amid coexistence with exposures ranging from protests to scams and cyber crimes, among others. It ultimately fosters stakeholder trust to secure license to operate. Our dynamic security stand reinforces our commitment towards our people, operations, property and information across our widespread operations, globally, to deliver lasting value creation.

Our Approach

PETRONAS adopts a layered depth security philosophy, focusing on prevention as a main mechanism by integrating operational and strategic security acumens for a secured workplace to optimise business efficiencies. The underlying aim is to pursue proactive strategies, measures and mitigations for future-fit security relevant to demands of an energy sector enroute to a decarbonisation pathway.

This includes deploying a suite of physical and technical security solutions catered for the needs of our onshore and offshore operational facilities across various countries, with a priority to prevent untoward occurrences and where necessary, backed by swift response capability. Core to this is continuous investment into our people, streamlined governance practices, tightened physical security controls, technological infrastructure, industry-wide collaborations and fortified in-house security culture.

Value Created in 2023

Proactive Risk Management

The effectiveness of our security measures and practices is crucial to our business operations. Our proactive initiatives to strengthen our risk management systems include the following:

Initiatives	Our Impact
Ongoing security framework enhancements	<ul style="list-style-type: none"><li>Streamlined security frameworks, standards and practices for all operational facilities, while deploying advanced monitoring systems for securing high-risk and unmanned assets and pursuing risk-based resource allocation alongside tailored training programmes.</li></ul>
Established role of inspectors in the domestic regions Malaysia	<ul style="list-style-type: none"><li>Fortified management of security frontliners and response capabilities across the seven domestic regions.</li></ul>
Established drone jammer guidelines for operations in Malaysia	<ul style="list-style-type: none"><li>Readiness against emerging risks facing national strategic sector.</li></ul>
Implemented security exercises and drills	<ul style="list-style-type: none"><li>Integrated security exercises and drills across domestic and international operations by identifying vulnerabilities, improving response capabilities, fostering collaboration and ensuring proactive readiness for various security threats.</li></ul>

## Capable Security Personnel

Our focus on nurturing a skilled workforce is crucial for the sustained success of our business activities and operations. This commitment ensures adept management of security initiatives and strategically positions us to respond effectively amid a fluid and evolving security environment.

### What We Did

- Trained identified security representatives from across the Group at the Security Academy in Malaysia.
- Expanded skills of frontliners in three areas namely Assistant Investigation Officer, Crime Scene Investigator and Certified Drug Screening Tester.
- Attained Technology Specialist certification for identified Group Security Personnel under the Malaysia Board of Technologists, with 90 personnel registered as Ts or Tc.
- Established a dedicated Security Lab at Universiti Teknologi PETRONAS (UTP) in Malaysia.
- Enhanced the capabilities of personnel through external certification programmes such as with Malaysia's National Anti Drugs Agency and Civil Defence Emergency Response Team, respectively.

## Strategic Growth Partnership

We solidified our security response capabilities and preparedness through continuous efforts to build and solidify close ties with various domestic and international stakeholders such as enforcement and security agencies, peers and associations. In doing so, we leveraged mutually beneficial partnerships and business working relationships to elevate security good practices across various domains, capitalising on joint strength and capabilities to advance the security function of the global energy sector.

These partnerships are pivotal in ensuring the sustainable security of our operations.

- Collaborated with the Royal Malaysian Police to combat marine diesel fuel pilferage.
- Provided security insights and decision-making support in contributing towards evacuation of Malaysians from Sudan in April 2023.
- Enhanced strategic partnerships through a Memorandum of Understanding with Malaysian Maritime Enforcement Agency in strengthening collaboration in maritime security, and *Agensi Antidadah Kebangsaan* (National Anti-Drugs Agency) in addressing and mitigating substance misuse matters.
- Led the Security Forum for international and domestic stakeholders featuring a suite of industry experts on subjects cutting across physical and digital security.
- Co-organised the Responsible Security Taskforce Meeting in Kuala Lumpur, Malaysia alongside Ipieca and PETRONAS Group Health, Safety and Environment.
- Organised an awareness session on Voluntary Principal Security Human Rights for Business representatives.

## Positive Social Impact

### Future Driven by Technology

Security is at the forefront wherever we operate. We work around the clock to safeguard our business interests across the globe. We integrate technology with human capabilities to balance our abilities in providing better physical security support and services to our internal stakeholders.

Initiatives	Our Impact
<b>Piloted robot surveillance at the PETRONAS Twin Towers</b>	<ul style="list-style-type: none"> <li>Enhanced monitoring with artificial intelligence and improved surveillance efficiency ensuring 24-hour monitoring.</li> </ul>
<b>Utilised drone technology for security surveillance at PETRONAS East Coast Operations and Pengerang Integrated Complex</b>	<ul style="list-style-type: none"> <li>Replaced diesel vehicles with drones for 30 per cent of patrolling efforts as a sustainable alternative.</li> </ul>
<b>Introduced the Integrated Security Control Center</b>	<ul style="list-style-type: none"> <li>Centralised control and monitoring of security operations, resulting in RM2 million savings through resource consolidation.</li> </ul>
<b>Developed the Mobile Command Centre Vehicle</b>	<ul style="list-style-type: none"> <li>Promoted operational flexibility and fostered sustainability in crisis management by improving security operations through mobile operations.</li> </ul>

### Resilient Security Culture

We proactively pursued initiatives to accelerate better understanding of security across the Group and targeted external stakeholders such as third-party service providers. This included undertaking conventional and unconventional endeavours to inculcate proactive security awareness to actively accelerate and improve security mindfulness across all levels.

What We Did	What Did We Achieve
<b>Jointly implemented the Go To Safety Point Programme at selected PETRONAS Service Stations in Malaysia</b>	<ul style="list-style-type: none"> <li>Equipped personnel with the ability to provide early emergency assistance at more than 1,000 PETRONAS service stations nationwide.</li> </ul>
<b>Launched security-focused campaigns for staff</b>	<ul style="list-style-type: none"> <li>Disseminated awareness posters via the Just One Thing series Groupwide on timely security issues of interest such as scams and tailgating.</li> <li>Organised seven webinars on topics such as Unlocking the Power of Real Time Security Monitoring and The Green Zone.</li> </ul>
<b>Participated in various activities to create security awareness during events that involved dealers and third-party service providers</b>	<ul style="list-style-type: none"> <li>Engaged and raised awareness among contractors on basic security acumen.</li> </ul>
<b>Organised an inaugural two-day Security Exhibition</b>	<ul style="list-style-type: none"> <li>Over 12 exhibitors, and turnout of 385 persons, with 89 per cent quoting a positive learning experience.</li> <li>Showcased security practices and solutions to internal and external stakeholders, enhancing their understanding of security.</li> <li>Launched basic set of security rules to streamline good behaviours, namely, Be Security Smart.</li> </ul>
<b>Championed SecureKidz and SecureRide</b>	<ul style="list-style-type: none"> <li>Inaugural event which rallied security among children through fun and interactive activities.</li> <li>First endeavour deploying sports to raise security as top of mind following a solidarity bicycle ride, coinciding with the National Sports Day.</li> </ul>

## ► Cyber Security

### Why It Is Important

The energy sector has changed significantly, driven by sustainability concerns, geopolitical tensions and technological advancements. There has been a rapid increase in digitalisation, automation and reliance on interconnected information and operational technology systems. This convergence of technologies has made cyber security a significant concern due to the expanding possibility of cyber attacks and made digitalised power systems attractive targets for various threat actors.

Internally, the pressure to innovate rapidly can lead to a tendency to overlook security while implementing new technologies. The interconnected technology supply chain increases the risk of breaches across the oil and gas value chain. This scenario has prompted a surge in interest, innovation and investment in addressing cyber threats facing critical energy infrastructures.

Increased collaborations in the energy industry and globally across organisations such as the World Economic Forum and the United Nations underscores the urgency for a holistic approach to cyber security. The approach must emphasise education, organisational review and collaboration across the industry to ensure readiness and resilience against cyber threats.

### Our Approach

PETRONAS has prioritised building solid capabilities to identify, detect and protect against cyber threats as the foundation of its response and recovery from cyber attacks.

The cyber security strategic programme establishes visibility and context across assets and networks. The programme also implements governance and incident response protocols Groupwide. This approach enforces a risk-based perspective, where risks are identified, assessed and prioritised based on their significance and potential impact. Regular exercises are conducted to simulate potential attack scenarios and filter individual responsibilities during cyber attacks.

The emphasis on education at all levels is paramount, with dedicated efforts to instil secure behaviours and training for technology practitioners in information and operational technology. This comprehensive approach spans multiple functions and layers within the organisation.

### Cyber Security Strategic Direction

Given PETRONAS' evolving business, the industry's volatility and threat landscape, establishing cyber resilience is critical. These challenging scenarios drive PETRONAS' cyber security initiatives to enable cyber resilience to support the business and technology landscape through the following components:

- **Complete Core** – A comprehensive reflection of the current state of business and technology to drive cyber resilience. Fundamental to this work is the consistency of application of this core across the Group.
- **Secure by Design** – Enabling secure practices across procurement, evaluation, design, development, deployment and maintenance of technology across the Group. It identifies and applies the appropriate security controls early and consistently throughout the life cycle of a PETRONAS asset.
- **Zero Trust** – A way of operating where all traffic is assumed to be untrusted, thus needing to be continuously verified and monitored to prevent data breaches and limit internal threats and incidents.

### Value Created in 2023

#### Enabling a Risk-Based Approach in Practice

PETRONAS uses a risk-based approach in cyber security that allows identification of our critical systems more effectively and protect hotspots while ensuring safeguards are in place. In 2023, no major security breaches were observed. We continue to strengthen core cyber security capability to support the evolving business and technology as listed below:

- Achieved ISO/IEC 27001 certification, an international Information Security Management System standard, for PETRONAS Digital Sdn Bhd. Conformity with ISO 27001 means PETRONAS has put in place a system to manage risks related to information security that meets this standard.
- Conducted tabletop exercises for major cyber threat scenarios with the PETRONAS leadership team to establish senior-level awareness and enhance the organisation's readiness to respond to threats.
- Successfully deployed the Identity and Governance Administration system, onboarded 100 applications and centralised access control, streamlining identity life cycle management, enhancing efficiency and significantly reducing security risks.



## Positive Social Impact

### Enabling Capable Personnel

Nurturing a skilled workforce is paramount for our business success. It ensures the effective management of security initiatives and allows us to respond adeptly to a dynamic security landscape.

- Our staff consistently engages in cyber security topics through various channels, including virtual events and boot camps.
- In 2023, structured learning opportunities were enhanced by the introduction of video-based learning to accompany written articles and quizzes. Monthly phishing tests were also conducted to ensure employees remained vigilant.
- We enhanced the capabilities of our cyber security personnel through access to trainings and certifications.

### Supporting the Cyber Security Talent Pipeline

Collaboration with partners is vital. We partner with universities, other businesses within the oil and gas community and government agencies and engaging the wider community to combat cyber threats.

- Throughout October, we organised the Global Cyber Security Month event to enhance cyber security awareness and practices for internal and external audiences. This initiative extended to PETRONAS Lubricants International Italy and PETRONAS Carigali Indonesia, emphasising a global approach to cyber security education.
- We participated in PETRONAS Digital Day events held in Kuala Lumpur and other regions in Malaysia, highlighting the critical role of cyber security.
- To promote cyber security as a viable career choice, we collaborated with universities such as Universiti Teknologi MARA, Kuala Pilah and Universiti Malaya to raise cyber awareness and introduce students to careers in cyber security.
- We continue to work with partners in the cyber security community, such as the National Cyber Security Agency, the World Economic Forum and our technology partners, to explore frameworks and initiatives that can enhance the cyber security pipeline locally and globally.

### Driving Strategic Growth Partnership

We enhanced our security response capabilities and readiness by establishing and strengthening close relationships with various stakeholders in Malaysia and beyond, including enforcement and security agencies, associations and business partners.

- We actively participated in cyber security forums, such as the Cyber Security for Energy And Utilities Forum in Dammam, Saudi Arabia and the Asian Downstream Summit in Singapore, to share insights and collaborate on safeguarding critical infrastructure.
- As a Critical National Information Infrastructures Sector Lead, we collaborated with the National Cyber Security Agency, Malaysia to address cyber threats. We are also members of the National Cyber Security Crisis workgroup, which coordinates activities during crises.
- Engaged Digital Malaysia Petroleum Management (MPM) Line Department to enforce cyber security requirements on their Petroleum Arrangement Contractors. Relevant trainings have been conducted and subsequent risk assessment activities are ongoing.
- Continuous engagement with PETRONAS Groupwide businesses and procurement (Group Procurement and Local Procurement) to enforce cyber security requirements at the early stages of contracting with external parties.
- Completed the enhancement of the third-party cyber security requirements for Petroleum Arrangement Contractors and third-parties. The enhancement includes adding new requirements based on the latest threats and developing customised requirements based on the criticality of system assets. We have completed various third-party risk assessments to ensure appropriate gaps are remediated accordingly throughout PETRONAS Group's supply chain.

# Human Rights

## Why It Is Important

Embedding human rights into all PETRONAS operations is a fundamental responsible practice. We manage human rights risks and impacts across our systems as any human rights breaches can adversely affect the well-being of workers and society, compromise health, safety and environment (HSE), and affect our social license to operate.

## Our Approach

Embedding human rights across our business activities means effectively implementing the United Nations Guiding Principles on Business and Human Rights and upholding our values and standards. Respect for human rights begins with our organisational culture and commitment to ensuring our employees enjoy a safe and healthy workplace. Everyone feels valued and respected, and understands their responsibility to promote human rights through their work. Furthermore we extend our commitment to respecting human rights beyond employees to those we interact with through our operations. Our salient human rights issues are labour and working conditions, community well-being, supply chain and communities.

Labour and Working Conditions	Community Well-being	Supply Chain	Responsible Security
<ul style="list-style-type: none"> <li>Forced and trafficked labour</li> <li>Child labour</li> <li>Condition of employment and work</li> <li>Discrimination in hiring and contractual terms</li> <li>Freedom of association and collective bargaining</li> <li>Workers' health and safety</li> <li>Workers' camp conditions</li> </ul>	<ul style="list-style-type: none"> <li>Community health and safety</li> <li>Access to natural resources for health, cultural needs and livelihood</li> <li>Land acquisition and involuntary resettlement with or without economic displacement</li> <li>Indigenous Peoples</li> <li>In-migration</li> </ul>	<ul style="list-style-type: none"> <li>Contractor or supplier performance related to labour and working conditions, community well-being and security</li> </ul>	<ul style="list-style-type: none"> <li>Use of force and conduct of third-party security</li> <li>Provision of human rights training for staff and third-party security</li> </ul>

Our leaders' approach to human rights starts with clear governance processes for implementation and accountability, led by the PETRONAS Board and Executive Leadership Team.

## Our Policies, Certifications and Frameworks

PETRONAS recognises human rights as a material business risk and is committed to aligning fully with international standards in all areas affecting human lives.

Recently, we strengthened our human rights practices through an updated Human Rights Policy, approved in 2023 and effective in implementation as of 1 April 2024. It is grounded in five key principles:

- 1 Respect and acknowledgement of internationally recognised human rights.
- 2 Adoption of a risk-based approach to human rights due diligence.
- 3 Access to effective grievance mechanisms and remedies.
- 4 Appropriate governance for human rights policy and its processes groupwide.
- 5 Commitment to maintaining disclosure and reporting groupwide.

This policy enhancement allows us to systematically elevate our activities according to international standards.

Amid the energy transition, we have amplified our focus on human rights. Our social performance framework guides environmental, health, safety, socio-economic and cultural impact management. Aligned with the PETRONAS Human Rights Policy, we integrate controls across key systems and processes. For more information on our standards, policies and guidelines on human rights, please visit the PETRONAS website.

## Positive Social Impact

### Due Diligence

We have established standards and due diligence guidelines for Indigenous Peoples, cultural heritage, land acquisitions and settlements. Led by our Social Performance practitioners, we systematically identify, mitigate and monitor human rights issues, extending this diligence to mergers and acquisitions. Transitioning to a lower carbon future, we consistently update processes and tools to assess the impact of new energy infrastructure on human rights. We also collaborate with supply chain partners and share best practices to ensure effective implementation of human rights due diligence.

### Enhancing Implementation of Labour Practices

In our commitment to fostering a fair and supportive workplace environment, we prioritise the well-being and rights of our workforce across all aspects of employment within the organisation. Our policies and practices are crafted to ensure that every individual is treated with dignity and respect, regardless of their background.

With a steadfast dedication to upholding human rights, PETRONAS remains resolute in providing equitable opportunities for employment. We prioritise equality by strictly prohibiting discrimination during our hiring processes, reflecting our dedication to providing equal opportunities for all. As part of this commitment, the organisation has established hiring standards that guarantee fair and inclusive recruitment practices.

Furthermore, PETRONAS firmly upholds the fundamental rights of freedom of association and collective bargaining, recognising the crucial role of empowering workers to voice their concerns and advocate for their interests. PETRONAS acknowledges the requirements for collective bargaining provided by the respective laws of the land in countries where we operate. In 2023, Malaysian-based employees represent 81 per cent of our total workforce, which includes 19 per cent of non-executive employees covered by collective bargaining agreements. Non-unionised non-executive employees have their working conditions and employment terms standardised in line with collective bargaining terms, ensuring consistency across our workforce operations.

Central to our operations is an unwavering focus on workers' health and safety, with comprehensive measures in place to mitigate risks and promote well-being.

### Implementation of Minimum Notice Periods

Employees are given reasonable notice through formal communication when operational changes are implemented. This involves either a one or three-month notice for an employee's exit, depending on their category. If it is not possible to give ample notice, salary payment will be given in lieu of the termination notice period. A voluntary separation offer following a restructuring or transformation exercise would give the affected employees seven to 14 days to accept the offer. This would include a waiver of the contractual termination notice.

For organisations with collective bargaining agreements, PETRONAS has a term of three years, where either party may serve the other three months written notice prior to expiry to negotiate a new agreement. During the term of the collective bargaining agreement, both parties may seek to vary, alter, modify, annul or add to any of the provisions by jointly depositing an agreement to the Industrial Court.

### Upskilling Employee and Transition Assistance Programmes

We provide our current employees the opportunity to upgrade their skills with a variety of development programmes. For employees who are either affected by a termination or are approaching retirement, we offer advisory sessions and training that will assist them in their next phase after their employment at PETRONAS.

PETRONAS has taken proactive measures to manage employment transitions for affected employees. By utilising the services of a third-party provider, PETRONAS ensures the seamless execution of severance procedures that are in alignment with ethical and legal standards.

The engagement encompasses a comprehensive range of services, addressing pre-separation planning and post-Voluntary Separation Programme phases. During the pre-separation phase, the third-party provider offers advisory support and training to stakeholders, facilitating informed decision-making and preparing employees for transition.

In the post-voluntary separation programme phase, the provider offers personalised assistance to separated employees, aiding them in navigating their career transitions and securing re-employment opportunities outside the organisation. These efforts underscore the Company's commitment to responsible human resource management, fostering positive outcomes for both departing employees and the wider community.

### Effectiveness of Implementation and the Outcomes of Policies and Procedures

PETRONAS assesses actual and potential social risks arising from business activities through Social Risk Assessment. The scope of Social Risk Assessment covers four human rights elements, including labour and working conditions, responsible security, community well-being and supply chain management. In 2023, we completed 15 out of 16 planned Social Risk Assessments across PETRONAS with the remaining rescheduled to 2024.

### Access to Remedy

Our grievance mechanisms facilitate open dialogue, prompt solutions and fair resolutions for workers and rights holders. PETRONAS requires contractors to establish similar mechanisms.

For PETRONAS employees, we provide a grievance management platform and whistleblowing channel for any employee with dissatisfaction or complaint concerning their work to freely raise employment grievances or complaints without any fear, prejudice or adverse impact arising from the employment grievance.

Grievance management and whistleblowing processes are designed to be conducted in a fair and transparent manner whereby the employee will be treated with dignity and be free of fear of reprisal.

In 2023, we handled and resolved 25 labour and working conditions grievance reports. During the same period, we also received and successfully resolved 32 community well-being grievance reports.

## Community Engagement

### Local Community Impacts and Engagement

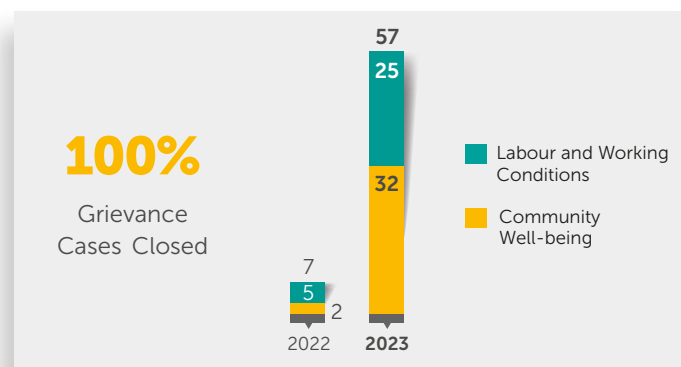
When conducting a Social Risk Assessment, we organise site visits and engagements with rights holders where relevant to gather insights on the project or operations' human rights performance. Among topics discussed during the engagements include land management, cultural heritage, Indigenous Peoples and community health and safety.

### Indigenous Peoples

We conduct PETRONAS Indigenous Peoples Assessments for new capital projects and ongoing operations to baselines; modification or expansion of existing facilities which may impose an impact on Indigenous Peoples; decommissioning or abandonment of current facilities; and new acquisitions of businesses, facilities or equity in assets.

Free, Prior and Informed Consent practices are required, referring to the rights of Indigenous Peoples to participate in decision-making on issues affecting them. These issues may range from economic development and natural resource management to social development.

To further enhance our knowledge and competency to manage heightened risks related to Indigenous Peoples in



some of our operations, like Malaysia and Canada, we will organise Free, Prior and Informed Consent training in February 2024.

### Land Acquisition and Involuntary Resettlement

Land acquisition can have a positive or adverse impact on PETRONAS. Acquiring land for projects and operations might lead to either voluntary or involuntary resettlement of communities or economic losses.

PETRONAS manages the human rights aspect of land acquisition and involuntary resettlement through a dedicated team that is responsible for overseeing the process which includes consultation with affected parties prior to the land purchase. We compensate inhabitants in cases of voluntary resettlement as required by the law, covering both physical and economic aspects. We respect the local or Indigenous Peoples' land, passage and usage rights on company-controlled land and conduct comprehensive engagement with local communities and Indigenous Peoples to understand their traditional practices and cultural heritage.

## Value Created in 2023

### Strategic Competence and Skill Development

In 2023, we focused on enhancing our capabilities, specifically in the context of human rights regulations. As a result, we deployed several strategic competence and skill development programmes.

Programme	Achievement	Outcome
<b>Training modules in the HSE Skill Group</b>	<ul style="list-style-type: none"> <li>Established two new human rights training modules on Social Risk Assessment and Grievance Mechanism with <i>Institut Teknologi Petroleum</i> PETRONAS (INSTEP).</li> </ul>	<ul style="list-style-type: none"> <li>Standardised Social Performance training as part of INSTEP's programmes.</li> </ul>
<b>Upskilling sessions for Petroleum Agreement Contractors</b>	<ul style="list-style-type: none"> <li>Upskilled 21 Petroleum Agreement Contractors members on Social Risk Assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Social Risk Assessments conducted by Petroleum Agreement Contractors either internally or via appointed consultants.</li> </ul>

## Positive Social Impact

Programme	Achievement	Outcome
<b>Training modules in Human Resource</b>	<ul style="list-style-type: none"> <li>Developed a training module on Human Rights Management for human resource practitioners.</li> </ul>	<ul style="list-style-type: none"> <li>44 per cent increase in the number of human resource practitioners, skilled with knowledge of human rights management.</li> </ul>
<b>Gap closure of process controls at Corporate Divisions</b>	<ul style="list-style-type: none"> <li>Established line-of-sight responsibilities for human rights management and reporting with Group Health, Safety and Environment overseeing community well-being, Group Human Resource Management overseeing labour, Group Security overseeing responsible security and Group Procurement overseeing supply chain.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent closure of process controls gaps.</li> </ul>
<b>Ipieca's Social Responsibility and Responsible Security Meeting</b>	<ul style="list-style-type: none"> <li>Hosted a three-day Ipieca Social Responsibility and Responsible Security Meeting from 11-13 October 2023. The meeting provided a platform to discuss current and emerging issues and challenges and share lessons learned on policies, implementation and capability development, human rights legislation, and approaches in the Asia Pacific region. Additionally, the meeting included dialogue on just transition.</li> </ul>	<ul style="list-style-type: none"> <li>The meeting gathered ten energy industry players who are Ipieca members to discuss imminent social issues from the lens of human rights and security.</li> </ul>

### Contractors Code of Conduct on Human Rights

We prioritise contractors who align with our values of integrity, anti-bribery and anti-corruption practices. The Contractors Code of Conduct on Human Rights (CoCHR), encompassing principles such as freedom of association and collective bargaining, is compulsory for all PETRONAS contractors. This year, we achieved zero incidents of non-compliance with human rights regulations through the following engagements:

Programme	Achievements	Outcome
<b>Coaching of Group Procurement personnel</b>	<ul style="list-style-type: none"> <li>Provided guidance and training on the CoCHR.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent of Group Procurement Sustainable Supply Chain team personnel upskilled on CoCHR.</li> </ul>
<b>Assessment of Human Rights Due Diligence tools</b>	<ul style="list-style-type: none"> <li>Received external verification on CoCHR Compliance.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent verification completed.</li> </ul>
<b>Assessment of Forced or Child Labour</b>	<ul style="list-style-type: none"> <li>Issued Corrective Action Plans (CAPs) on indicatives of Forced Labour practices such as passport retention, which were closed by December 2023.</li> </ul>	<ul style="list-style-type: none"> <li>No presence of child labour found but minor indications of forced labour practices.</li> </ul>
<b>CoCHR Compliance</b>	<ul style="list-style-type: none"> <li>Completed contractor assessment on CoCHR for cycle 2023.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent CoCHR assessment completed.</li> </ul>

### Indigenous Rights Due Diligence

In 2023, there were no reported violations involving Indigenous Peoples' rights, and activities related to land acquisition or involuntary resettlement.

### Zero Workplace Discrimination

Adhering to our non-discrimination policy, we conducted regular reviews, strengthened policies and upheld employees' rights to equality without receiving any complaints of discrimination in 2023. We have provisions on unlawful discrimination and workplace bullying and harassment which are provided in the PETRONAS Code of Conduct and Business Ethics and its relevant trainings, conducted for all our employees.



## Supply Chain Management



### Why It Is Important

PETRONAS' supply chain is crucial to its business operations, which extends beyond procurement and logistics. It involves working alongside a vast global network of suppliers offering a diverse range of products and services. We consider ethical and sustainable supply chains, which include respecting human rights, as critical to our operations, and are committed to collaborating with our vendors and suppliers to implement sustainable practices across the value chain.

In 2023, the Malaysian Government launched the National Energy Transition Roadmap (NETR) to accelerate the country's transition from a traditional fossil fuels-based economy to a high-value green economy.

As the custodian of Malaysia's hydrocarbon resources, we are committed to delivering a responsible and sustainable energy transition. We are actively engaging and supporting our suppliers, particularly in the Malaysian Oil and Gas Services and Equipment (OGSE) sector, to ensure sustainable practices and capability building that aligns with our Net Zero Carbon Emissions by 2050 Pathway. Pursuing an inclusive energy transition will create opportunities to build a resilient and sustainable ecosystem that stimulates economic growth and capability development for the future.

### Our Approach

Our approach to supply chain management is to enhance supply chain resilience, a key part of which involves supporting and empowering suppliers, including small and medium enterprises (SMEs). This support not only stimulates the economy but also fosters the development and growth of these suppliers.

Concurrently, our commitment to ethical practices is unwavering, especially in upholding human rights principles across our value chain. By implementing our Contractor Code of Conduct on Human Rights (CoCHR), we ensure that fundamental labour and working condition principles are strictly adhered to. These principles encompass the freedom of labour, the prevention of child labour, fair wages and benefits, reasonable working hours, effective grievance mechanisms, non-discrimination, freedom of association, and the humane treatment of foreign and migrant workers.

Our approach underscores PETRONAS' dedication to maintaining high standards within our operations and also ensuring that our partners and suppliers align with our commitment to sustainability, safety and ethical practices.

## Positive Social Impact

### Value Created in 2023

#### Elevating Sustainability in the Supply Chain

In 2023, we made significant strides in enhancing sustainability awareness within our supply chain, particularly among small and medium enterprises (SMEs).

Initiative	Details and Impact
<b>SME Sustainability Series</b>	<ul style="list-style-type: none"> <li>Collaborated with SME Corp to organise two events in 2023 resulted in the coordination of two events in 2023: "Charting the Pathway for SMEs" in Kuala Lumpur, attended by 281 participants, and a forum "Empower SMEs for Sustainable Growth" during the OGSE Partners Day 2023 in Sarawak, which attracted over 300 participants. These events were aimed at promoting sustainability adoption among SMEs.</li> </ul>
<b>Green Financing</b>	<ul style="list-style-type: none"> <li>Facilitated engagements with Bank Negara Malaysia for a sharing on Green Transition Financing and with Maybank, Bank Muamalat and UOB for a session on the Green Financing Scheme. These efforts alongside vendor involvement, accelerated the understanding of sustainable financing requirements. With insights and resources shared, vendors became empowered to promote environmental sustainability in their operations, boosting their participation in green initiatives.</li> </ul>
<b>Vendor Success Story</b>	<ul style="list-style-type: none"> <li>The SME Sustainability Series and OGSE Partners Day provided a platform for vendors to share their success stories of adopting sustainability practices, encouraging industry players to explore green technology. Among the stories shared included an initiative by a vendor to reduce fuel consumption and promote a healthier working environment by installing solar panels on their Fast Crew Boat. Another vendor emphasised the importance of incorporating sustainability elements into business strategies and provided examples for others to apply.</li> </ul>
<b>Knowledge Sharing</b>	<ul style="list-style-type: none"> <li>A session was conducted during OGSE Partners Day in Kuala Lumpur to discuss the products and services of the Malaysian Green Technology and Climate Change Corporation (MGTC), emphasising MGTC's contribution to supporting the National Climate Change Agenda and Low Carbon Operating System (LCOS) as a tool to expedite progress.</li> <li>Additionally, the session highlighted the significance of SIRIM IQNet SR10 accreditation, which provides companies with a competitive advantage and inspires greater confidence.</li> </ul>

#### Enhancing Supplier Growth and Development

We continue to support our suppliers' growth through various programmes and initiatives, ensuring their development and contribution to the economy.

Programme	Impact and Value Created
<b>Vendor Financing Programme</b>	<ul style="list-style-type: none"> <li>In collaboration with nine financial institutions, this programme facilitates access to financing for vendors and enhances supply chain resilience. The programme has recorded RM1.8 billion in approved applications since 2018.</li> </ul>
<b>Special OGSE (SOS) Financing Programme</b>	<ul style="list-style-type: none"> <li>This alternative financing is available for vendors with less than five years of experience. Over RM41.4 million has been approved since 2022.</li> </ul>
<b>Road to Bursa (R2B)</b>	<ul style="list-style-type: none"> <li>This programme was established to facilitate local vendors' adoption of corporate governance standards that qualify for listing on the Malaysian stock exchange – Bursa Malaysia. Two vendors have successfully listed on Bursa, while another 34 vendors have been coached since 2020.</li> </ul>
<b>Vendor Development Programme (VDP)</b>	<ul style="list-style-type: none"> <li>The programme focuses on nurturing Bumiputera vendors' technical skills, commercial attractiveness, and homegrown technologies development, fostering growth and global expansion, with the ultimate aim of potential listing on the Bursa Malaysia. Since its inception in 1993, it has benefitted 170 vendors, with over 10 vendors entering international markets and some listed on Bursa Malaysia, bolstering resilient Bumiputera SMEs in the Malaysian OGSE.</li> </ul>

## Strengthening Industry Relationships

Our collaboration with industry players and government bodies in 2023 has been pivotal in enhancing our supply chain network and contributing to local economies.

Platforms	Value created
<b>National OGSE Blueprint (NOB) Roadshow by Malaysia Petroleum Resources Corporation (MPRC)</b>	<ul style="list-style-type: none"> <li>Supporting the national agenda to create value for the industry via information sharing platform i.e., National OGSE Blueprint (NOB) Roadshow by MPRC at Johor, Kuantan and Kuala Lumpur.</li> </ul>
<b>OGSE Partners Day 2023 (Kuala Lumpur)</b>	<ul style="list-style-type: none"> <li>Successfully gathered over 1,000 industry players to foster a sustainable and healthy ecosystem through impactful collaboration and engagement with vendors.</li> <li>Held a focus group in collaboration with petroleum arrangement contractors, MPRC and contractor associations to review and discuss the current challenges faced by the industry.</li> </ul>
<b>Commemoration of Sabah Vendors WeCare Sabah</b>	<ul style="list-style-type: none"> <li>Commemorated 25 Sabahan vendors that were awarded major contracts.</li> <li>Engaged with over 300 vendors, providing insights on Sabah outlook and capacity-building opportunities to spur business growth.</li> </ul>
<b>Commemoration of Sarawak Vendors</b>	<ul style="list-style-type: none"> <li>Commemorated 49 Sarawakian vendors that were awarded major contracts.</li> </ul>
<b>OGSE Partners Day 2023 (Sarawak)</b>	<ul style="list-style-type: none"> <li>Engaged with over 500 participants, providing updates on the OGSE programmes and networking sessions to encourage collaborations and partnerships that could enhance their business growth.</li> </ul>

## Fostering Technology and Innovation Through TITAN

Our Technology and Innovation Adoption (TITAN) programmes serve as catalysts to accelerate the adoption of technologies and innovation. These programmes connect vendors with funding facilities, technology accelerators and technology marketplace to commercialise their technology.

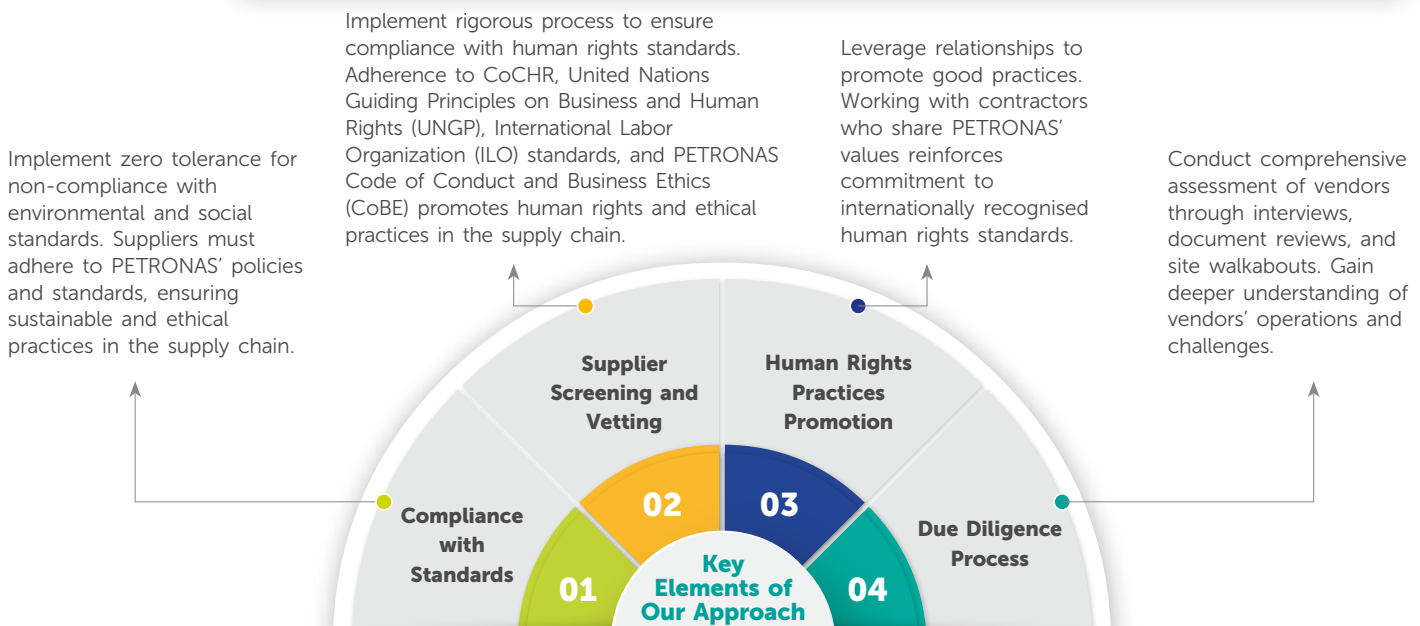
Innovative Initiative	Value Created
<b>Sandbox Offerings</b>	<ul style="list-style-type: none"> <li>Enabled vendors to test and commercialise their technologies by establishing connections and raising awareness of available facilities and scope through collaboration with sandbox providers, such as SIRIM and National Technology Innovation Sandbox (NTIS).</li> </ul>
<b>Collaboration with MPRC for Development Grant Promotion</b>	<ul style="list-style-type: none"> <li>Enhanced support for OGSE vendors in technology, development and export by partnering with MPRC on the MPRC OGSE Development Grant.</li> </ul>
<b>Technology Marketplace Promotion</b>	<ul style="list-style-type: none"> <li>Promoted Innovation Gateway at PETRONAS (IG@P), a technology platform for collaborating with external parties. This initiative enables vendors to offer fast-paced, innovative solutions.</li> <li>Funnelled communication to vendors on PETRONAS' technology agenda and technologies that are currently in demand, such as hydrogen, carbon capture and storage (CCS), advance materials and digital robotics.</li> </ul>

## Positive Social Impact

### Upholding Human Rights and Ethical Practices

In 2023, PETRONAS significantly strengthened its commitment to human rights and ethical practices, which included enhancements to its Contractor Code of Conduct on Human Rights (CoCHR). Recognising the critical importance of these values in our operations, we implemented a comprehensive programme of due diligence and mitigation for contractors.

	Actions Taken in 2023	Value Created
<b>Contractor Response and Risk Identification</b>	Surveyed 1,008 contractors for human rights exposure, identifying high-risk cases for targeted intervention.	Identified 63 high-risk contractors, enabling targeted interventions and improvements in human rights practices.
<b>Participation Rate and Vendor Inclusion</b>	Expanded the CoCHR assessment to include 98 per cent more vendors, with a total of 1,008 participants, compared to 510 in 2022. This represents a 21 per cent increase in participation rate.	Broadened engagement in human rights compliance, reflecting deeper organisational commitment and wider contractor involvement.
<b>Increase in CoCHR Compliance Assessments</b>	Increased CoCHR Compliance Assessments significantly by 173 per cent, totalling 60 assessments compared to 22 in 2022.	Demonstrated a heightened commitment to human rights, with broader compliance and adherence to ethical standards.
<b>Enhanced Due Diligence and Mitigation</b>	Introduced a programme to address high-risk human rights breaches, including corrective action plans for companies with proven violations, focusing on areas such as foreign and migrant workers, document retention, salary deduction, and accommodation standards.	Effective management and resolution of human rights issues in critical areas, ensuring ethical practices.
<b>Awareness of Governance Documents</b>	Sustained and improved awareness for PETRONAS governance documents related to human rights among contractors.	Achieved over 85 per cent awareness among contractors for three consecutive years and narrowed the Code of Conduct and Business Ethics (CoBE) awareness gap to less than 5 per cent from 2021 to 2023.





## Product Stewardship

### Why It Is Important

Ensuring that our products meet regulatory compliance, customer needs, sustainability considerations and stakeholders' expectations is paramount to the PETRONAS brand. We adhere to responsible business practices to ensure that our existing products and upcoming innovative solutions under development align with the highest standards. This includes continuously identifying, assessing and communicating health, safety and environment (HSE) risks throughout a product's entire life cycle. The integrity of product data disclosed would also be further enhanced through product safety and regulatory compliance.

We strive to ensure our products meet stakeholders' expectations by continuously improving regulatory compliance through routine monitoring and reporting practices.

### Our Approach

Our commitment spans a spectrum of disciplines, including product safety and regulatory compliance, toxicology, ecotoxicology and environmental health.

We aim to ensure that PETRONAS products are compliant with all applicable chemical regulations in regions or countries where they are manufactured or traded ranging from product safety, transportation and application sector-specific regulations. This is key in ensuring our products are handled and used in a safe and responsible manner as well as meeting stakeholder expectations while ensuring PETRONAS' license to operate in this important area.

To establish consistency in how Product Safety and Regulatory risks are managed Groupwide, structured processes and expert working groups have been formed within PETRONAS to manage emerging issues such as new reporting requirements under European Sustainability Reporting Standards (ESRS), new hazard classes under the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), emerging the European Union Registration, Evaluation, Authorisation and Restriction of Chemicals (EU REACH) like regulations and many more.

We continue to partner and collaborate with key stakeholders within the industry and along our product supply chain to ensure that our risk mitigation measures continue to be relevant and fit-for-purpose. This is illustrated by our continued commitment to extend programmes such as Raw Material Information Request (RAWMIR) to our international operations. This extension enables us to better profile the oil field chemicals used based on their environmental performance. This aligns with our efforts that go beyond compliance to shape and address material topics such as the environmental impact of producing our products, even from their early stages.

In terms of product sustainability, we have expanded our life cycle assessment efforts to various sectors across PETRONAS' value chain since 2019. This enabled us to assess environmental impacts of our businesses including Upstream, Gas and Downstream, in more than ten categories, including carbon footprint, global warming potential, eutrophication potential and resource depletion to enhance decision-making.

We have actively supported life cycle assessments upskilling across PETRONAS through various platforms, including collaboration with UTP via Centre for Advanced and Professional Education (CAPE). Our approach to life cycle thinking integrates these elements into our operations, encompassing Research and Development (R&D), raw material sourcing, manufacturing, distribution, product application, consumer use and disposal.

The toxicology discipline stands as the cornerstone of our commitment to safeguarding human health and the environment. Recently, we strengthened our product sustainability commitment by establishing an in-house toxicity testing facility to facilitate integrated product safety assessment at the early stages of R&D. The testing strategy is based on Safe and Sustainable by Design (SSbD) approach to identify and minimise the possible health and environmental risks of products, to prevent late-stage drop-out and to manufacture safer and more sustainable products. The currently established test methods, as well as those in the pipeline, are all non-animal approaches and are based on the Organisation for Economic Co-operation and Development (OECD) Guidelines for the Testing of Chemicals.

We continuously assess the ecological risk of our operations towards life below water. The produced water risk-based assessment (PWRBA) was conducted at our selected onshore terminals to address the ecological risk of discharged produced water on sensitive receptors in coastal and marine ecosystems.

Additionally, our teams are guided by international principles, frameworks and standards, including:

- ➔ United Nation's Globally Harmonised System of Classification and Labelling of Chemicals
- ➔ Organisation for Economic Co-operation and Development (OECD) Guideline for the Testing of Chemicals
- ➔ ISO 14040/44 Environmental Management – Life Cycle Assessment
- ➔ ISO 14067 – Greenhouse gases – Carbon footprint of products



## Positive Social Impact

### Value Created in 2023

#### Progressive Life Cycle Assessments

In 2023, we have completed life cycle assessments for 48 products. These efforts have supported PETRONAS Chemicals Group Berhad in completing life cycle assessments for all its domestic products under its Life Cycle Assessment Roadmap. These assessments have created value by:

- 1 Addressing customer requests and supporting low carbon economy
- 2 Augmenting marketable opportunities
- 3 Aligning with PETRONAS Energy Transition Strategy

The team actively contributes in life cycle assessments-related certification, such as International Sustainability and Carbon Certification (ISCC), which emphasises sustainability with an impending rise in carbon footprint evaluations.

The internal methodology in conducting product carbon footprint is specified under the PETRONAS Technical Standard on Life Cycle Assessment for Products. Our methodology is verified by BUREAU VERITAS in accordance with international standards on life cycle assessment and carbon footprint of products in accordance to ISO 14040/44 and ISO 14067. The methodology details mandatory criteria such as data collection and calculation requirements as well as the impact assessments methods. We have also completed life cycle assessments verification for low-density polyethylene and its derivatives and urea.

As part of the continued efforts in integrating life cycle thinking across PETRONAS, the team organised the very first internal Life Cycle Assessment Forum which was attended by more than 100 delegates. The event brought together HSE Leaders, life cycle assessments practitioners and stakeholders across various PETRONAS businesses to share key learnings and achievements throughout the journey in applying life cycle assessments in PETRONAS.

#### Standard and Capability Development of Environmental Health

We are committed to safeguard the health of communities in areas where we operate by proactively conducting Human Health Risk Assessment (HHRA) to evaluate community exposures to chemicals in the ambient environment. We have established a technical standard with the goal to govern the risk management of potential chemical exposures from PETRONAS' operations to the community. By adopting international standards and guidelines on public health, the technical standards aim to strengthen environmental health risk management throughout the facility life cycle such as, from project, operations, merger and acquisition, divestment to decommissioning. With the establishment of the technical standard, a series of communication sessions and workshops across businesses were conducted in 2023 to create awareness and assess readiness to operationalise.

In 2023, we networked with strategic partners in academia, government agencies, and with Environmental Health (EH) experts to collaborate in areas of capability development. As a result, we have identified competence areas that are needed to operationalise EH, and established a groupwide environmental health training matrix and training modules with the goal to upskill resources in meeting PETRONAS' capability needs in environmental health.

In addition, the networking resulted in PETRONAS' participation in the 9<sup>th</sup> National Environmental Health Action Plan (NEHAP) Malaysia Conference as a plenary speaker and technical sharing from the Ministry of Health, Environmental Health Research Centre and the Centre of Toxicology & Health Risk Studies of the Universiti Kebangsaan Malaysia at PETRONAS' event to celebrate World Environmental Health Day.

## Raw Material Compliance Impact

The Raw Material Information Request (RAWMIR) played a pivotal role in securing key product stewardship information on raw materials in 2023. Piloted in 2019, RAWMIR data enabled the identification of Substance of Very High Concern (SVHC) and conflict minerals. The data collected served as a baseline for strategising SVHC management.

What We Did	Our Impact	Our Results
<b>Completed RAWMIR for key Upstream international assets (Indonesia, Iraq, Turkmenistan, and Canada).</b>	<ul style="list-style-type: none"> <li>Established hazard profile and conflict minerals due diligence of Oil Field Chemicals (OFCs).</li> <li>Served as a baseline for our business to strategise for the reduction in SVHCs used, in support of our biodiversity position and commitment to Kunming-Montreal Global Biodiversity Framework targets to reduce the risk of highly hazardous chemicals by half by 2030.</li> </ul>	No conflict minerals were used in OFCs to date.
<b>Enhanced Produced Water Risk-Based Assessment (PWRBA) approach to take into account possible presence of SVHC based on RAWMIR data on Oil Field Chemicals.</b>	<ul style="list-style-type: none"> <li>Incorporated selective extension of PWRBA going beyond geogenic substances to also include production chemicals for a more holistic approach in understanding overall risk from produced water from our upstream operations.</li> </ul>	Preliminary analysis on pilot studies indicated minimal risk of SVHC from produced water to the environment.
<b>Established the digitalisation of the RAWMIR process for chemical procurement in eCHEMS.</b>	<ul style="list-style-type: none"> <li>Streamlined the overall RAWMIR process during chemical procurement across PETRONAS entities.</li> </ul>	Operationalised RAWMIR as business as usual throughout the entire organisation.

## International Best Practice in Product Toxicity Testing

The establishment of PETRONAS Toxicology Laboratory (PeTL) in 2022 reflects the enterprise's commitment and passion for driving the sustainability agenda. PeTL continued its success in 2023, during which the OECD QSAR Toolbox, an in silico method of predictive toxicology, and several non-animal toxicity testing methods have been established for R&D product safety assessment.

Developments in 2023	What We Did
<b>Implementation of non-animal testing methods at PeTL</b>	<ul style="list-style-type: none"> <li>Successfully established the OECD QSAR Toolbox in silico screening service and non-animal methods for assessing mutagenicity (OECD TG 471 – Bacterial Reverse Mutation Assay), skin sensitisation (OECD TG 442C – Direct Peptide Reactivity Assay), and algae growth inhibition (OECD TG 201 – Freshwater Alga and Cyanobacteria, Growth Inhibition Test) of R&amp;D products.</li> </ul>
<b>Staff upskilling</b>	<ul style="list-style-type: none"> <li>Conducted targeted training programmes to enhance staff proficiency in the established testing methods.</li> </ul>

## Positive Social Impact

### Sharing Knowledge and Fostering collaboration through Product Stewardship and Toxicology Community of Practice

Through the establishment of a Community of Practice (CoP), the Product Stewardship programmes and best practices were successfully disseminated within PETRONAS' business and operation. It has created a significant value impact through strong collaboration with businesses and relevant stakeholders. During the annual forum, knowledge sharing, networking and replication of best practices were achieved via workshops, forums, interactive booths, technical talk webinars, technical publications and capability building modules which significantly contributed to the company's business growth and sustainability goals. For that success and value impact, Product Stewardship and Toxicology CoP had been recognised as the top performing CoP within PETRONAS.



# Talent Development

## Why It Is Important

In an era of rapid energy transition and technological advancement, we recognise the immense value of a skilled and diverse workforce. Our employees are the driving force behind our strategic vision, particularly in delivering the PETRONAS Energy Transition Strategy and our commitment to achieving net zero carbon emissions by 2050. As the energy sector evolves, new job roles emerge and traditional ones transform, underscoring the importance of continuous talent development.

Investing in talent development is crucial for adapting to these changes. This involves equipping our current and future talents with essential skills and knowledge, aligning them with the demands of a shifting global energy landscape to remain agile, innovative and competitive. By fostering a workforce equipped with advanced skills and diverse experiences, we not only enhance their career growth but also drive our business forward. Our dedication to developing future-ready talent is key to our sustainable growth, positioning us as a top employer and a contributor to economic progress in a low-carbon future.

This was strengthened when PETRONAS was recognised at the HR Excellence Awards 2023 where we were awarded bronze for Excellence in In-House Talent Pipeline Strategy category.

## Our Approach

Our approach to the development of our current talents is twofold: attracting and retaining skilled individuals, and providing opportunities for growth. With a commitment of RM330 million to employee training and development in 2023, we aim to uphold a high-performance culture, ensuring our employees are equipped with the necessary skills, mindset and conduct for business sustainability. Our efforts towards enabling a just transition for our workforce include identifying gaps, understanding workforce needs, providing access to upskilling and reskilling opportunities and collaborating with stakeholders on initiatives that address the needs of the workforce as we progress through the energy transition.

To develop future talents, we offer sponsorship opportunities for undergraduates, postgraduates studies and vocational training through PETRONAS Powering Knowledge, aligning with our energy transition needs and strategic objectives.

Our talent development strategies are anchored on our five key priorities for capability development.



Through our various initiatives, we have achieved results that are at par with, if not higher than, the industry benchmarks. We believe that these outcomes are a testament to our team's hard work and dedication, and we look forward to continuing to improve and exceed expectations in the future.

## Positive Social Impact

### Value Created in 2023

#### Strengthening Our Capability Development Priorities

In 2023, PETRONAS focused on five key Capability Priorities, supported by our in-house and external learning institutions and strong leadership, driving career progression and talent growth.

##### Priority 1: Sustainability

PETRONAS proactively focuses on a combination of awareness programmes and technical in-depth initiatives, empowering our employees to become champions of sustainability, fostering a comprehensive understanding of sustainability principles and equipping them with the necessary skills to develop and implement innovative solutions.

#### Specially Curated Internal Sustainability Programmes

Programmes	Details
<b>PETRONAS Board Excellence on Sustainability</b>	<ul style="list-style-type: none"> <li>To bolster understanding of sustainability among PETRONAS Group of Directors, equip them to tackle sustainability challenges in a dynamic business environment, and enhance their efficacy at board level.</li> <li>Attended by 25 members of PETRONAS' Board of Directors groupwide.</li> </ul>
<b>Sustainability Excellence</b>	<ul style="list-style-type: none"> <li>This programme is specifically curated for PETRONAS' top leaders to inculcate Sustainability Leadership, where our leaders champion and collaborate across the value chain towards achieving PETRONAS' Sustainability Agenda.</li> <li>141 top leaders who attended were engaged to explore how to integrate sustainability into their business strategies, turn risks into opportunities and adopt a stakeholder-oriented mindset.</li> </ul>
<b>Sustainability Explained</b>	<ul style="list-style-type: none"> <li>To provide clarity on PETRONAS' Net Zero Carbon Emissions by 2050 Pathway and relatability to their roles.</li> <li>79 non-executive technical employees participated.</li> </ul>
<b>Sustainability Masterclass</b>	<ul style="list-style-type: none"> <li>To explain PETRONAS' Net Zero Carbon Emissions by 2050 Pathway, including its positions on nature and biodiversity, and human rights. It also identifies practical decarbonisation actions and key biodiversity areas to drive the organisation towards our net zero carbon emissions goals.</li> <li>Conducted 21 masterclasses attended by 851 employees of all levels.</li> </ul>
<b>Sustainability Network Change Agents</b>	<ul style="list-style-type: none"> <li>The learning programme topics ranged from understanding the United Nations COP 27 and COP 15, climate science and how business need to take action on nature and inequality.</li> <li>150 Sustainability Change Agents were appointed with six learning programmes conducted.</li> </ul>

#### External Programmes

Programmes	Details
<b>Executive Education</b>	<ul style="list-style-type: none"> <li>199 employees completed executive education on sustainability offered by seven credible institutions and programmes: Yale School of Management; International Institute for Management Development; London School of Economics and Political Science, Massachusetts Institute of Technology School of Management, Accounting4Sustainability Academy, The Cambridge Institute for Sustainability Leadership, and The Prince of Wales's Business and Sustainability Programme.</li> </ul>
<b>World Business Council for Sustainable Development (WBCSD) Leadership</b>	<ul style="list-style-type: none"> <li>Two Top Talents attended WBCSD leadership programme to develop the skills needed to be a sustainable development leader and learn about different leadership styles, communication, decision-making and strategies.</li> <li>Two Top Talents attended WBCSD LEAP programme, focusing on women and sustainability, in partnership with Yale University and ESADE Business School. The programme is designed to help women reach senior positions in their companies and ensure that sustainability is both embedded in their leadership and included in their company strategy.</li> </ul>



## Awareness Programmes

Programmes	Details
<b>Enterprise Compliance Awareness of Sustainability e-Learning</b>	<ul style="list-style-type: none"> <li>35,414 employees completed the module.</li> </ul>
<b>PETRONAS Net Zero Carbon Emissions by 2050 Pathway</b>	<ul style="list-style-type: none"> <li>6,142 employees' awareness on the subject was improved through sustainability masterclasses and cascaded via leaders' engagement activities across PETRONAS with the support of PETRONAS Sustainability Network Change Agents.</li> </ul>

## Priority 2: Continuous Improvement, Agile and Innovation

As we aim to progress our growth as a company, we continue to equip our people with updated knowledge, methodologies, skills and the right mindset. We empower our employees with structured continuous improvement methodologies to drive innovation, maximise operational cash flow, and enhance efficiency as part of our commitment to fostering Agile Innovation and Continuous Improvement (CI). This is achieved through three areas:

### Continuous Improvement

As we rally our employees to develop curiosity and passion in improving our ways of working to realise our business results, we embrace innovation to move towards process excellence with pace via these two engines:

### Business Process Management

Process integration is key to ensuring sustainable business agility and good governance practices. Fundamentally, Business Process Management (BPM) focuses on process digitalisation efforts, which increased 33 per cent in 2023.

Value Created in 2023	What We Did	Details
<b>Certified employees as Process Managers by American Productivity and Quality Centre (APQC) International</b>	<ul style="list-style-type: none"> <li>Certified 20 process modellers and three BPM Specialists.</li> </ul>	<ul style="list-style-type: none"> <li>These PETRONAS employees were the first batch in PETRONAS and Malaysia to be certified with the prestigious Process Manager certification programme.</li> </ul>
<b>Introduced a new digital capability used for PETRONAS BPM</b>	<ul style="list-style-type: none"> <li>Implemented Process Mining, a tool from Architecture of Integrated Systems (ARIS).</li> </ul>	<ul style="list-style-type: none"> <li>Process Mining provides process performance measurements in terms of efficiency and conformance rates, process transparency and the ability to identify potential improvement or happy path in real-time.</li> </ul>
<b>Established an ecosystem that aligned the operating model to provide clarity and enable seamless integration of human resource processes</b>	<ul style="list-style-type: none"> <li>Developed a Group Human Resource Management Supersystem Map.</li> </ul>	<ul style="list-style-type: none"> <li>The supersystem map is a comprehensive understanding of Group Human Resource Management's process ecosystem and integration towards enabling effective process improvement efforts, strategic alignment and informed decision-making.</li> </ul>

## Positive Social Impact

### PETRONAS Lean Six Sigma

PETRONAS Lean Six Sigma (PLSS) was introduced in 2016 with the intention to shape and upskill PETRONAS employees with continuous improvement capability using proven process improvement methodologies and tools to create simpler, better and meaningful ways of working. PLSS is an internationally accredited programme by the International Association for Six Sigma Certification (IASSC) and The Council for Six Sigma Certification (CSSC).

Value Created in 2023	Details
<b>Enabled PLSS awareness for new hires and career transition</b>	<ul style="list-style-type: none"> <li>Collaborated with PETRONAS Leadership Center (PLC) to enable awareness of CI through Hello Hires Onboarding for new hires and NextSTEP, a career transition programme.</li> </ul>
<b>Established CI programmes for external vendors and partners</b>	<ul style="list-style-type: none"> <li>Offered CI programmes for external vendors and partners through a Master Training Agreement with Centre for Advanced and Professional Education, Universiti Teknologi PETRONAS (CAPE UTP).</li> </ul>
<b>Certified and trained employees with PLSS</b>	<ul style="list-style-type: none"> <li>Upskilled 209 employees in Yellow Belt, 498 employees in Green Belt, and 39 employees in Black Belt.</li> </ul>
<b>Extended training modules to students and graduates</b>	<ul style="list-style-type: none"> <li>131 students and graduates under our industrial training programmes and Graduate Employability Enhancement Scheme (GEES) completed the CI Awareness self-learning module and Yellow Belt training.</li> </ul>

CI Initiatives		Progress and Value Created since 2016
<b>PLSS Improvement Projects</b> Executed <b>1,217</b> projects	<b>Man-hours Saved</b> Saved <b>1.6 million</b> man-hours	<b>CI Awareness Upskilling</b> Over <b>12,000 employees</b> trained
<b>PLSS Certification</b> Certified <b>642</b> Green Belts and <b>77</b> Black Belts	<b>PLSS Training</b> Trained <b>1,401</b> Yellow Belts, <b>1,802</b> Green Belts, <b>179</b> Black Belts and <b>7</b> Master Black Belts.	<b>Process Cycle Efficiency (PCE)</b> Achieved <b>55.82</b> per cent efficiency (above the benchmark of 50 per cent)

Other platforms such as Community of Practitioners on Process Excellence and Recognition (COPPER) and the Making Impossible Possible Awards and Convention (MIPAC) are important as they offer avenues to unleash talents, ignite passion and sustain momentum across PETRONAS. This progressive effort demonstrated undivided collaboration at all levels in PETRONAS in driving CI in line with our Statement of Purpose.

Value Created in 2023	Details
<b>Community of Practitioners on Process Excellence and Recognition (COPPER)</b>	<ul style="list-style-type: none"> <li>COPPER is held annually as a community of practice that focuses on internal and external leaders' points of views on Process Excellence matters as well as celebrate successful PLSS and BPM practitioners on their achievements.</li> </ul>
<b>Making Impossible Possible Awards and Convention (MIPAC)</b>	<ul style="list-style-type: none"> <li>A platform to steer continuous improvement, innovation and value-focused mindset among employees to push the boundaries towards Operational Excellence.</li> <li>From 292 teams (with 2,043 staff), PETRONAS exhibited CI in action through Operational Excellence League, then from there, 52 finalists competed in the annual MIPAC, a platform that encourages and sustains the momentum of CI and Innovation.</li> </ul>

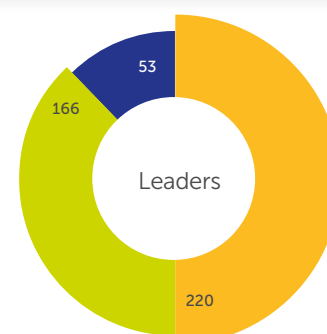
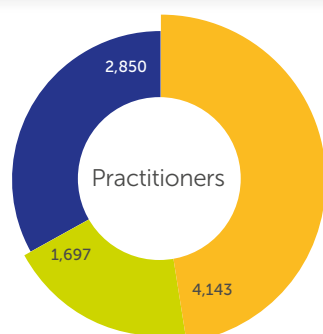
## Agile

Embracing agility is a key component of our talent development strategy. Our ongoing efforts focus on promoting and embedding business agility across the organisation through the adoption of Agile practices, which are categorised into two key areas:

### Agile Capability

Our focus on Agile Capability involves equipping leaders, coaches/experts, and practitioners with the skills and knowledge to effectively implement Agile practices. Together with PETRONAS Leadership Centre (PLC), Agile Enterprise has continuously assessed and designed learning experiences to spur business agility based on good practices across businesses as well as outside-in perspectives.

Key Progress and Achievements	Details
<b>Agile Capability Framework</b>	<ul style="list-style-type: none"> <li>Established to support new ways of working, focusing on developing capabilities in key organisational roles.</li> </ul>
<b>Continuous Upskilling of Employees</b>	<ul style="list-style-type: none"> <li>Upskilled over 10,000 employees through our Agile Capabilities programmes since its launch in 2018.</li> </ul>
<b>Agile Coaching Enablement (ACE)</b>	<ul style="list-style-type: none"> <li>Collaborated with PLC to develop 41 Agile coaches, up from 32 in 2022, fostering a widespread coaching culture. Total of 80 Agile Coaches since 2021.</li> </ul>



**Note:** Data from 2021 to 2023.

- Introduction to Agile
- Beginner's Guide to Agile
- Others

- Professional Scrum Master (PSM I and II)
- Professional Scrum Product Owner (PSPO I and II)
- Professional Scrum User Experience
- Agile Coaching Enablement (ACE)

- Certified Agile Leadership (CAL)
- 8 Trends of Progressive Organisations
- Masterclass "Understanding and Designing Progressive Organisational Structures"

### Agile Awareness

Our initiatives in Agile Awareness are designed to broaden the understanding of Agile principles across the organisation, ensuring that employees at all levels are aligned with the Agile way of working. The focus on Agile Awareness aims to foster a culture that values adaptability and continuous improvement.

Key Progress and Achievements	Details
<b>Continuous communication efforts</b>	<ul style="list-style-type: none"> <li>Reached a total of 36,000 viewers through our 'Be Agile' channel, significantly increasing awareness of Agile ways of working.</li> </ul>
<b>'Rally for Agility' video series</b>	<ul style="list-style-type: none"> <li>Featured key top leaders in this series to rally the workforce towards driving agility, mindset shift, and highlighting initiatives conducted by each business unit.</li> </ul>
<b>Agile Adventures Comic and New Ways of Working (NWOW) Handbook Series</b>	<ul style="list-style-type: none"> <li>Produced seven comic series and three handbook series, offering external perspectives from progressive organisations in driving agility.</li> </ul>

## Positive Social Impact

### Innovation

PETRONAS equips its workforce with structured methodologies such as Lean Six Sigma and Operational Performance Improvement (OPI), fostering a culture of continuous improvement to enhance operational efficiency and maximise cash flow.

The PETRONAS Working Backwards (PWB) Methodology and innovation framework have since expanded to business divisions with the Innovation Masterclass (IM) established as a permanent offering at PLC. In 2023, 17 personnel in Innovation Academy have become in-action coaches ready to lead PWB through IM.

PETRONAS also embarked on implementing key shifts in the innovation ecosystem covering Strategy, Portfolio Management, Execution Discipline and Capability and Culture towards driving more purposeful and effective innovation across the organisation.

Additionally, our training initiatives emphasise innovation and agility, empowering employees to ideate, incubate and scale new ideas swiftly to deliver customer-centric solutions.

Innovation Initiatives	Impact
<b>Innovation masterclasses</b>	<ul style="list-style-type: none"> <li>Over 1,300 employees upskilled in new business and innovation initiatives.</li> <li>This includes two masterclasses in Brazil and Italy customised for PETRONAS Lubricants International (PLI) and two customised IM hackathons involving KLCC (Holdings) Sdn Bhd (KLCCCH), PETRONAS Digital Sdn Bhd (PDSB), and Upstream International Asset.</li> </ul>
<b>Practitioners in action</b>	<ul style="list-style-type: none"> <li>More than 200 practitioners via four additional cohorts comprising “sharks”, coaches, programme managers and incubators.</li> </ul>
<b>Awareness training</b>	<ul style="list-style-type: none"> <li>5,184 self-learning modules on PWB, our in-house innovation methodology, were completed via myLearningX.</li> </ul>
<b>Idea registration</b>	<ul style="list-style-type: none"> <li>Over 200 ideas were registered from Enterprise Innovation, of which 138 ideas were registered from IM, with 30 receiving “Compelling” feedback during Shark Tank and 15 high potential ideas progressing to incubation stage. Overall, more than 70 high potential opportunities have progressed into Incubation and Venture Build stages since the inception of PWB in 2021.</li> </ul>
<b>Commercialisation success</b>	<ul style="list-style-type: none"> <li>Two projects progressed to scale, including EV-Charge-Go, for which Gentari secured partnership with BMW for first-in-Malaysia deployment.</li> </ul>

### PING23 Sdn Bhd

PING23 Sdn Bhd, or PING, is a subsidiary of PETRONAS Leadership Centre (PLC) which was incorporated in July 2023 to explore the space of entrepreneurship. It began upon recognising that there are natural entrepreneurs among PETRONAS employees who are passionate about creating something on their own and making an impact beyond their day job.

PING is PETRONAS’ commitment to support its internal entrepreneurs by providing a safe space to identify, incubate, and launch innovation opportunities into deployable solutions and investible ventures, to create value for PETRONAS and beyond.

It offers an entrepreneurship path within conventional employment, by providing them with funding, upskilling, mentoring, and access to testing facilities, coupled with entrepreneur-friendly policies that allow them to devote themselves to their ventures. With PING, PETRONAS hopes to unlock a new stream of innovations, capitalising on the strength and entrepreneurial drive of our own people.

The PING programme runs for four months at the Accelerate stage, where the venture teams that pitched their ideas successfully at PING Open Mic may continue to validate, incubate and accelerate the progress of their project while developing themselves as entrepreneurs. At the end of the four months, the teams pitch their solutions at PING Demo Day where the winning venture teams will further build their ventures for 12 months in the Launch phase before running independently as a start-up.

To date, PING programme has attracted a total of 120 video submissions from across the organisation and has built entrepreneurial capabilities of 46 PETRONAS talents.

We successfully onboarded Cohort 1 to the Launch phase where nine members from the four venture teams signed on with PING23 Sdn Bhd, making them the first PING employees until they spin off their companies. The four ventures were: Tigasfera, an integrated, containerised waste-to-energy solution that supports circular economy; V-Cred, an AI-powered document reviewer and analyser for enterprise; FarmDirect, an agritech venture focusing on a B2B digital integrated marketplace; Jazro, an edutech company providing robotherapy educational programmes for autistic children.



We also successfully onboarded ten venture teams for Cohort 2 to the Accelerate phase in November 2023 with various solutions ranging from personalised AI-assistance for engineers, remote operation of offshore platforms, and a solution to overcome valve passing to reduce flaring and improve safety of facilities.

### Priority 3: Digital

With digitalisation reshaping the global landscape, PETRONAS has embraced this change by focusing on equipping our employees with advanced digital skills. From AI-enhanced productivity to data analytics for competitive edge, our commitment to digital upskilling is evident in our continued digital literacy programmes through modules available in myLearningX, to accelerate widespread adoption of digital solutions.

PETRONAS was recognised at the HR Excellence Awards 2023 where we were awarded gold for Excellence in Digital Transformation category.

### Leveraging Digital Tools for Growth through Robust Talent Ecosystem

PETRONAS and our talents have effectively utilised the organisation's talent ecosystem for growth and advancement in PETRONAS.

Innovation Initiatives	Impact
<b>myLearningX</b>	<ul style="list-style-type: none"> <li>241 learning communities on myLearningX.</li> <li>32,476 employees who are members.</li> <li>34,575 learning objects available for training via curriculum, events, online courses, videos, and external content.</li> </ul>
<b>Effective succession planning for a sustainable pool of leaders via myTalentX</b>	<ul style="list-style-type: none"> <li>Focused rich talent discussions and data-driven decision-making facilitated by enhanced AI models (Personality and competency archetype via Superior Managed Assessment (SMA) and external assessment data), providing accurate and non-biased snapshots of talents with ranking of the most suitable candidates for critical positions, whilst unearthing hidden talents for Succession Planning (SP) deliberations.</li> <li>Enabled PETRONAS Talent Council to conduct focused and effective SP based on criticality and business priority.</li> <li>Achieved the highest ratio of successors to positions for the Succession Planning of Top Management positions, by completing the most Succession Plans in the past five years.</li> <li>Enriched conversation on SP, talent review and development supported by enhanced myTalentX AI models, detailed experience, and Career Pathing Model.</li> <li>Achieved 272 myTalentX users consisting of PETRONAS leaders, Global HR Partners, Centres of Excellence and leadership focals as of Q4 of 2023.</li> </ul>



## Positive Social Impact

### Priority 4: Technical and Functional

As PETRONAS ventures into renewable energy, carbon capture and storage (CCS) and remote autonomous operation (RAO), we continue to deliver our Core Business by strengthening the technical and functional competencies required of our talent to succeed in their role and evolve at pace with the business. Through our Skill Group Development Programme (SGDP), we are committed to progressively improve the technical and functional competencies requirement of our talents at all levels to achieve 75 per cent competence by 2025 and ensure relevancy and future-proof our business. The SGDP efforts include establishing new and refining current competency ruler, designing and deploying development programmes for niche and new capabilities, increasing qualified technical and business professional pool, and partnering with industry experts, universities, and providers for knowledge and skill transfer.

Moreover, our diverse upskilling programmes include formal learning and On-the-Job Learning (OJL), enhancing our workforce's skills to align with future energy transition needs and strategic objectives.

### Fulfilling Future Capability Needs for PETRONAS and Industry

Through **PETRONAS Powering Knowledge**, we offer equitable access to quality education, especially for underprivileged students through sponsorships for undergraduates and postgraduates. Our diverse upskilling programmes, including formal learning, graduate and industrial trainings enhance our workforce's skills and empower them towards progress, ultimately leaving a positive impact on the world.

In 2019, we set a target to achieve 24,100 beneficiaries from PETRONAS' Educational Programmes by 2024. In 2023, we exceeded the target with 76,356 beneficiaries.

### Education Sponsorship for Undergraduates

Since 1975, the PETRONAS education sponsorship has enriched the lives of more than 38,000 students from diverse ethnic and economic backgrounds. During their undergraduate years, PETRONAS scholars undergo PETRONAS Readiness for Employment Programme (PREP), a structured development programme to ensure they are continuously nurtured until graduation. Scholars are also given the opportunity to interact with PETRONAS leaders, aiming to inspire and motivate them to reach their full potential.

#### IMPACT CREATED IN 2023

More than  
**RM340 million**  
invested.

**602** sponsorships  
awarded to those  
who completed  
the *Sijil Pelajaran  
Malaysia* (Malaysian  
Certificate of  
Education) 2022.

**13** sponsorships  
awarded to students  
who were already  
pursuing their  
undergraduate  
studies at prestigious  
universities in the  
US and UK.

**90 per cent** of  
scholars who  
graduated in 2023  
were recruited by  
PETRONAS.

**Six** engagement  
sessions with  
PETRONAS leaders  
conducted locally  
and internationally  
to inspire students.

Other education sponsorship initiatives by PETRONAS that started in 2023 included the option to pursue studies in marketing in South Korea.

### Education Sponsorship for Postgraduates

This programme, which has been an extension of PETRONAS' education sponsorship for postgraduates since 2018, aims to strengthen students' knowledge and capability in specific key areas through advanced research. This empowers scholars and fosters groundbreaking innovations that align with PETRONAS' growth strategies. To date, 131 scholars have benefitted from the sponsorship enhancing their expertise in areas such as Drilling, Fluid Technology Solutions, Autonomous System (Robotics), Renewable Energy and Carbon Capture. In 2023, we invested over RM11.55 million, benefitting 35 recipients.

### Vocational Institution Sponsorship and Training Assistance

Since 1992, our Vocational Institution Sponsorship and Training Assistance (VISTA) programme has benefitted 35 institutions nationwide where more than RM90 million invested to produce up to 12,000 graduates.

Through this programme, assistance channelled to the selected institutions in terms of infrastructure, training materials, trainers and curriculum readiness is aimed at ensuring that the identified technical training courses can be conducted according to industry standards and produce a competent workforce.



### IMPACT CREATED IN 2023

**RM2.8 million** invested.

Over **600** competent technical graduates.

**21** Technical and Vocational Education and Training (TVET) institutions selected for VISTA implementation in 2023-2026.

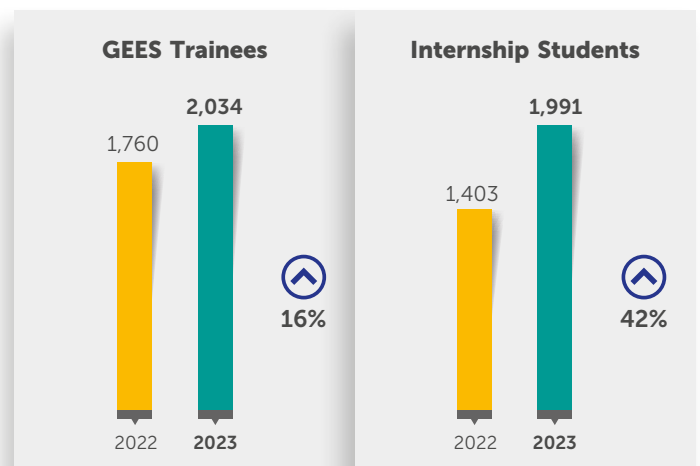
**Provided provision to ensure industry-driven delivery of TVET courses** for trades related to oil and gas including 6G Welding, Chargeman, Scaffolder, Pipe Fitter and oil and gas related diploma courses, such as Petrochemical and Process or Instrumentation.

### Graduate Employability Enhancement Scheme

In support of the Malaysian government's Protégé Ready-to-Work initiative, this 12-month on-the-job training provides new graduates with work experience in enhancing their employability towards securing long-term employment. Since 2011, this programme has since benefitted 6,717 new graduates. In 2023, PETRONAS invested over RM58.48 million to train 2,034 new graduates under the Graduate Employability Enhancement Scheme (GEES) programme.

### Internship Opportunity

Internship opportunities are offered to provide industry experience and learning for undergraduates to gain knowledge outside of their academic setting. In 2023, 1,991 students from local and international universities participated in our internship programme.



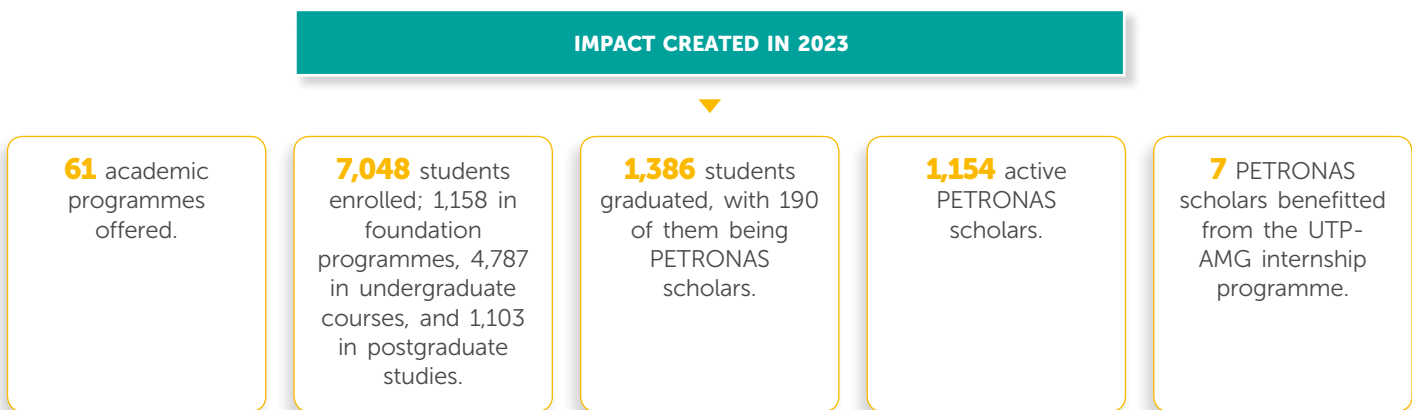
## Positive Social Impact

### Building Capabilities through Learning Institutions

As part of PETRONAS' commitment to accelerating holistic people development to foster a future-relevant workforce, we leverage our learning institutions and platforms to provide opportunities for our talents to be upskilled in various areas across the energy industry.

#### Universiti Teknologi PETRONAS

Established in 1997, Universiti Teknologi PETRONAS (UTP) offers courses and programmes at undergraduate, postgraduate and professional levels designed to cater to the needs of the oil, gas and energy industry. In 2023, UTP was ranked 63<sup>rd</sup> in the Times Higher Education Asia University Rankings and 79<sup>th</sup> in the Times Higher Education Young University Rankings. To date, it has produced 25,390 graduates from over 71 countries.



The UTP-AMG Internship Programme is a strategic collaboration with Mercedes AMG to provide sponsored students the technical knowledge and valuable experiences at the Mercedes AMG Operations Centre in Brackley, United Kingdom.



Scan this QR to access the Universiti Teknologi (UTP) PETRONAS website.

#### Centre for Advanced and Professional Education, Universiti Teknologi PETRONAS

Centre for Advanced and Professional Education, Universiti Teknologi PETRONAS (CAPE UTP) is dedicated to fostering a dynamic learning environment aimed at empowering individuals and teams to reach their full potential. The Centre's mission is to cultivate a culture of continuous learning, leveraging cutting-edge technology to accelerate the development of technical capabilities and drive tangible business outcomes. In 2023, more than 3,000 PETRONAS employees were upskilled through our diverse portfolio of open customised courses tailored to the unique needs of the energy industry.

#### Institut Teknologi Petroleum PETRONAS

Institut Teknologi Petroleum PETRONAS (INSTEP) has trained over 156,000 skilled workers for more than 30 refineries, petrochemical plants, and 100 platforms globally, with clients in more than 50 countries. INSTEP has also initiated a collaboration with Malaysia Petroleum Management on the Petroleum Arrangement Contractors (PACs) Talent Incubators Programme to understand the industry's talent requirement and cater to the increasing workforce demand in Malaysia energy industry.

#### INSTEP Achievements in 2023

- 443 students were sponsored at INSTEP as part of the effort to create a sustainable talent pipeline.
- Over RM46 million was invested in the Technical Enrichment Programme, a learning framework focusing on competency and experiential learning.
- Almost 90 per cent of graduates from the 2023 intake have been recruited by PETRONAS.

INSTEP also offers structured development programmes such as Executive Technical Solutions (ETS) and Non-Executive Technical Solutions (NETS) Programmes for engineers and technicians, and Technical Certification Solutions (TCS), competency-based training programmes for employees at all levels. In 2023, more than 19,000 PETRONAS employees and 5,000 industry technical talents were upskilled via 1,234 courses.

INSTEP, PETRONAS' technical training arm, embodies its tagline of 'Experiencing is Enriching' by providing a comprehensive educational experience for our learners and practical exposure to sustainability projects implemented on campus grounds.

Sustainability Efforts at INSTEP	Details
<b>Food Composter House</b>	<ul style="list-style-type: none"> <li>The annual composting of approximately 15,000 kilograms of food waste contributes to the reduction of greenhouse gases that are equivalent to what 6,000 trees can absorb annually.</li> </ul>
<b>SEE CAPEXLESS Project</b>	<ul style="list-style-type: none"> <li>The installation of light emitting diode (LED) lighting and high mast lighting in Non-Process Areas contributes to energy consumption savings of approximately 407,880 kWh per year of energy consumption.</li> </ul>
<b>Rainwater Harvesting</b>	<ul style="list-style-type: none"> <li>The rainwater collected through the drainage system is utilised for maintenance and services and enables INSTEP to conserve both water and energy consumption.</li> </ul>
<b>Solar Photovoltaic (PV)</b>	<ul style="list-style-type: none"> <li>The installation of solar panels on rooftops and training facilities generates 1,927,240 Megawatt Hour (MWh) of clean energy per annum, which amounts close to 30 per cent of INSTEP's overall energy requirement, effectively reducing 1,285 tonnes of carbon dioxide (CO<sub>2</sub>) annually.</li> </ul>

### Akademi Laut Malaysia

PETRONAS continues to shape maritime leaders and professionals in its maritime training academy, *Akademi Laut Malaysia* (ALAM), located in Melaka, Malaysia.

Since ALAM's inception, 6,225 students have enrolled in its cadetship diploma programme, maritime studies programme, able seafarers programme, advanced post sea courses and short courses.

Programmes	Details
<b>Sponsored students at ALAM by MISC</b>	<ul style="list-style-type: none"> <li>829 cadets with a total investment of RM29.6 million, including 157 new cadets in 2023.</li> <li>ALAM provided graduates with employment opportunities by assisting 71 eligible able seafarers to work at multiple shipping companies.</li> </ul>
<b>Introduction of new programmes</b>	<ul style="list-style-type: none"> <li>Introduced 40 new programmes, including four diploma programmes approved by the Ministry of Higher Education to strengthen the academic curriculum.</li> </ul>
<b>Collaborations with learning institutions and industry partners</b>	<ul style="list-style-type: none"> <li>Formed partnerships with five local and five international universities and signed a Letter of Intent with nine industry partners.</li> <li>Expanded local and global academic network and enhanced maritime training, research and services.</li> </ul>

Positive Social Impact

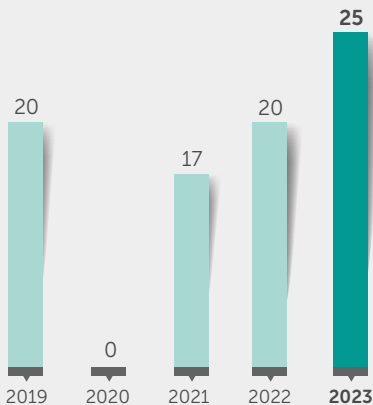
Kimanis Petroleum Training Centre

Kimanis Petroleum Training Centre (KTC) is a learning institution established by PETRONAS in 2011 under the collaboration between PETRONAS and Sabah State Government to develop and equip the youths from underprivileged families in Sabah with the necessary skills for them to enrol in the oil and gas industry.

Kimanis Petroleum Training Centre

- ➔ Since the establishment of KTC in 2011, PETRONAS has invested more than RM38 million benefitting 256 talents and producing an average of 20 students annually.
- ➔ In 2023, PETRONAS invested around RM4.05 million for the yearly operational expenditure of the institution.
- ➔ KTC is the first Technical and Vocational Education and Training (TVET) institution in Sabah to provide a three-year full-time training in Industrial Instrumentation and Control (Malaysian Skills Diploma) and the first to be recognised as an Accredited Centre by the Department of Skills Development under the Ministry of Human Resources.

Total Number of KTC Trainees



Priority 5: Leadership

PETRONAS focuses on enhancing leadership capabilities through structured assessment and development programmes. These initiatives are designed to cultivate distinctive strengths in relevant leadership competencies ensuring that talents can deliver the desired results expected from their roles to drive organisational success.

PETRONAS was recognised at the HR Excellence Awards 2023 where PETRONAS Senior Vice President of Group Human Resource Management, Farehana Hanapiah was awarded silver for HR Leader of the Year category. Additionally, PETRONAS was also awarded bronze for Excellence in Leadership Development.

Leadership: Energise, Decide, Grow and Execute

We use Superior Managed Assessment (SMA) and external assessments to evaluate talents at their current roles and their readiness for advancement, as well as to identify top talents for key positions. The leadership assessment is done using Leadership: Energise, Decide, Grow and Execute (Leadership EDGE) as a leadership competencies element. Our aim is to achieve a leadership bench strength of 75 per cent by 2025 through the completion of SMA for all talents.

Leadership EDGE Programmes

Value Created in 2023

Transformational Leadership Programme	➔	83 General Managers attended
High Impact Leadership Programme	➔	278 Senior Managers enrolled
Dynamic Leadership Programme	➔	598 Managers participated
Foundational Leadership Programme	➔	499 Executives joined

In 2023, a total of 1,458 employees comprising executives, managers, senior managers and general managers attended leadership programmes designed to strengthen and elevate their EDGE competencies.



## Unleashing Potential through Coaching

PETRONAS aims to foster a pervasive coaching culture to nurture employees, grow their capabilities and careers, and drive high performance for organisational success.

In 2023, a total of 1,909 coaches elevated their leadership skills through coaching solutions and services, to lead with clarity, instil psychological safety and excel in decision-making competencies.

**5** coaching solutions

**66** certified leadership coaches

**48** aspiring leadership coaches

Coaching Summit 2023 was held at PLC and served as the premier event for leaders and coaches to enhance their coaching skills, learn best practices, and connect with the coaching community. Themed 'Building a Sustainable Coaching Culture', the summit was organised by PLC's Coaching Academy and registered 1,035 participants comprising PETRONAS leaders, coaches and middle managers. It also featured external speakers Dr Marshall Goldsmith and Dr Peter Chee.

## PETRONAS Leadership Centre

PETRONAS Leadership Centre (PLC) upholds PETRONAS' commitment to leadership development, garnering significant recognition including four accolades from the esteemed 2023 Brandon Hall Group HCM Excellence Award for Leadership Development namely the Gold Award for Best Development Programme for Frontline Leaders, the Bronze Award for Best Hybrid Learning Programme, and Best Use of Games or Simulations for Learning.

Beyond leadership development, PLC continues to power innovation supported by PETRONAS Innovation Garage (PING), Social Enterprise Education Lab (SEEd.Lab), and FutureTech Accelerator, while also driving sustainability through its campus, programmes and engagements to shape progressive leaders that are poised to become catalysts for change and innovation.

The PLC campus is built to promote environmental consciousness through its green operations. Emphasising on ethical decision-making, collaboration and innovation, PLC aims to cultivate leaders committed to long-term sustainability advocacy and practices. This aligns with our goal to develop leaders who are capable of advancing the sustainability agenda and meeting the evolving needs of our business.

Programmes and Events in 2023	Details
<b>Future Energy Leaders at Energy Asia 2023</b>	<ul style="list-style-type: none"> <li>Launched in 2023 as a subset and prequel of Energy Asia 2023.</li> <li>The two-and-a-half-day programme is aimed at inspiring interest among the next generation of leaders in the energy transition and Asia's Sustainability Agenda through the exchange of knowledge, insights, and innovations by industry leaders and sustainability experts.</li> <li>The programme successfully gathered 120 university students and young professionals along with 13 thought leaders as panelists to share their insights and passion towards sustainability and sustainable development.</li> </ul>

## Positive Social Impact

### Employee Well-being

#### Why It Is Important

In 2023, we strengthened our focus on ensuring the well-being of our employees by cultivating a psychologically safe environment, and building an inclusive culture for all employees to thrive.

These allow our talents to truly excel and bring their best selves to work, unlocking the full potential of our workforce, fuelling motivation, engagement, and ultimately, driving our business towards greater heights.

We believe that our talents need a nurturing and inclusive environment. This includes encouraging flexible work arrangements, providing access to wellness programmes and a range of other initiatives.

#### Our Approach

The foundations of our strong HR ecosystem ensures that employee well-being is taken care of. This includes channelling the necessary resources to truly understand the unique needs of our diverse workforce.

Anchored on the PETRONAS Shared Values and guided by the PETRONAS Cultural Beliefs, we actively foster a psychologically safe environment and build an intentionally inclusive culture through leadership, governance, communication, education, and cultural initiatives. Our remuneration policy is based on merit. We ensure fair and competitive remuneration for our employees, regardless of gender, age, nationality, ethnicity and religion. On average, wages for employee based in Malaysia is 27 per cent above the national minimum wage.

Our commitment to diversity and inclusion is steered by the PETRONAS Diversity and Inclusion (D&I) programmes, supported by our Wellness Steering Committee.

#### Value Created in 2023

##### Building A Psychologically Safe and Inclusive Culture

PETRONAS made significant strides in enhancing psychological safety and fostering an inclusive culture within the organisation. Our talent composition included 29 per cent women, representing an upward trend in gender diversity in our workforce.

Following this, our permanent employee base comprised 30 per cent women, while our contract employee segment showcased a notable 32 per cent women representation. These figures not only reflect our commitment to gender inclusivity but also serve as a testament to our ongoing efforts in creating a workplace where diversity is celebrated and valued. By prioritising the empowerment and advancement of women in our workforce, we reinforce our dedication to fostering an environment where everyone has equal opportunities for growth and success.

Additionally, our team is now more culturally diverse than ever, comprising over 100 nationalities with 42 per cent of our workforce being under 35 years of age. This diversity enriches our workplace with a multitude of perspectives, driving innovation and better outcomes. Throughout the year, we focused on the following areas to build D&I:

**Focus 1:  
Leadership and  
Governance**

**Focus 2:  
Communication**

**Focus 3:  
Education**

**Focus 4:  
Culture**

## Focus 1: Leadership and Governance

While leadership sets the tone for organisational culture, effective governance ensures that diversity and inclusion are not just concepts but practiced values. Across our global operations, the majority of our senior management positions are held by members of their respective local communities. At our primary operational hub in Malaysia, 94 per cent of senior management roles, encompassing General Manager and above, are held by Malaysians.

### Leadership

Overall results were encouraging in 2023, we continue to strive and drive immersion of D&I in PETRONAS which is reflected in the following:

Focus Area		Target (%)	2023 Dec 2023 (%)
<b>Gender</b>	Women in Senior Leadership	28	31
<b>Multinational</b>	Multinationals in Senior Leadership	11	9
<b>Age</b>	Young employees (35 years and below) involved in project leadership roles	25	43
<b>Culture</b>	Different perspectives respected and valued*	3 <sup>rd</sup> Quartile	3 <sup>rd</sup> Quartile

\*Measured using employee survey, PETRONAS Organisational Culture Survey (POCS) 2023.

### Appointment of Senior Management in National and International Governing Bodies

Governing Body	Appointment	Impact Created
<b>Ministry of Women, Family, and Community Development of Malaysia</b>	PETRONAS Senior Vice President of Group Human Resource Management, Farehana Hanapiah as a permanent member of the National Council for Women and Family for 2023-2025 Term.	<ul style="list-style-type: none"> <li>Worked with esteemed leaders from various industries on women empowerment and gender equality initiatives and efforts from May 2023.</li> <li>Inaugural council meeting took place on 29 August where members discussed the increased participation of women in the workforce.</li> </ul>

Positive Social Impact

Diversity and Inclusion

What We Did	Value We Created
<b>Reviewed the membership of the Diversity and Inclusion (D&amp;I) committee</b>	<ul style="list-style-type: none"><li>Strengthened the line up of the D&amp;I committee with the aim to have diverse members to promote inclusive decision-making.</li><li>Appointed Azrul Osman Rani, Vice President and Chief Executive Officer, PETRONAS Dagangan Berhad as the new PETRONAS D&amp;I Champion.</li><li>Additionally, appointed other senior leaders into the committee, such as the Senior Vice President of Group Human Resource Management, the Vice President and Chief Sustainability Officer and representatives from PETRONAS' Group Legal Division.</li></ul>
<b>Authorise key documents with the intent to provide strategic directive in immersing inclusion and fostering a psychologically safe working environment.</b>	<ul style="list-style-type: none"><li>Endorsed the D&amp;I roadmap 2024 and 2025 outlining key PETRONAS activities in driving immersion and heightening awareness of D&amp;I.</li></ul>

PETRONAS' involvement in the D&I workstream within CEO Action Network (CAN) solidified us as a reputable organisation that not only promotes D&I within the organisation, but in our external collaborations as well.

Top Leaders Dialogue

Top Leaders Dialogue (TLD) plays a crucial role in shaping the behaviour and mindset of PETRONAS' leadership (Senior General Managers and above), influencing the organisational culture within PETRONAS by setting the tone from the top and establishing a role model culture.

In collaboration with PETRONAS Leadership Centre (PLC), and to continue fostering a positive and psychologically safe workplace, three TLD sessions were conducted in 2023 with well-known industry thought leaders. One of the sessions also included participants who were General Managers.



## Governance

### → PETRONAS Chemicals Group Berhad

- Listed as the Top 10 per cent Companies for Three Consecutive Years in the Dow Jones Sustainability Indices (DJSI) for World and Emerging Markets (Chemicals Industry).

### → PETRONAS Dagangan Berhad and PETRONAS Gas Berhad

- Recognised as constituents of the FTSE4Good Bursa Malaysia Index, which is designed to allow investors and stakeholders to measure the company's performance in ESG practices.

## Focus 2: Communication

Continuous communication and engagements across businesses reinforce an inclusive culture, ensuring diverse voices are heard and integrated.

### Internal Communication

Key Activities	Details
<b>Upstream D&amp;I Showcase 2023</b>	<ul style="list-style-type: none"> <li>• Received 150 in-person attendees and 137 virtual attendees.</li> </ul>
<b>Sharing Our Similarities, Celebrating Our Differences Sharing Session</b>	<ul style="list-style-type: none"> <li>• A collaboration between Holding Company Units (HCU) and PETRONITA, the panel session focused on the meaning of inclusion particularly gender, age and culture.</li> </ul>
<b>D&amp;I conversations and focused group discussions</b>	<ul style="list-style-type: none"> <li>• A collaboration between businesses across PETRONAS: Downstream, PD&amp;T, Gas and PETRONAS Leading Women Network (PLWN) via HR &amp; You.</li> <li>• Topics covered included female empowerment, neurodivergence and PETRONAS' efforts on D&amp;I as a whole.</li> <li>• A total of 2,200 PETRONAS employees attended the sessions.</li> </ul>
<b>Regional sharing sessions on D&amp;I</b>	<ul style="list-style-type: none"> <li>• Organised by Downstream business for employees at PETRONAS Refinery and Petrochemical Corporation Sdn Bhd in Pengerang, PETRONAS Chemicals Fertiliser Kedah Sdn Bhd in Gurun, PETRONAS Chemicals Group Berhad plants in the East Coast area, and Malaysian Refining Company Sdn Bhd, Melaka.</li> <li>• The series also reached PETRONAS international employees in South Africa, Thailand, Indonesia, China, Vietnam, and the Philippines via various virtual sharings and forums.</li> </ul>



## Positive Social Impact

### External Communication

PETRONAS continued to play a progressive and nurturing role internally by advancing the D&I agenda and externally through our participations in key programmes, leveraging Employee Resource Groups, particularly PETRONAS Leading Women Network (PLWN). These events provided a global space for PETRONAS to feature its journey, efforts and findings on D&I, alongside senior leaders from other companies.

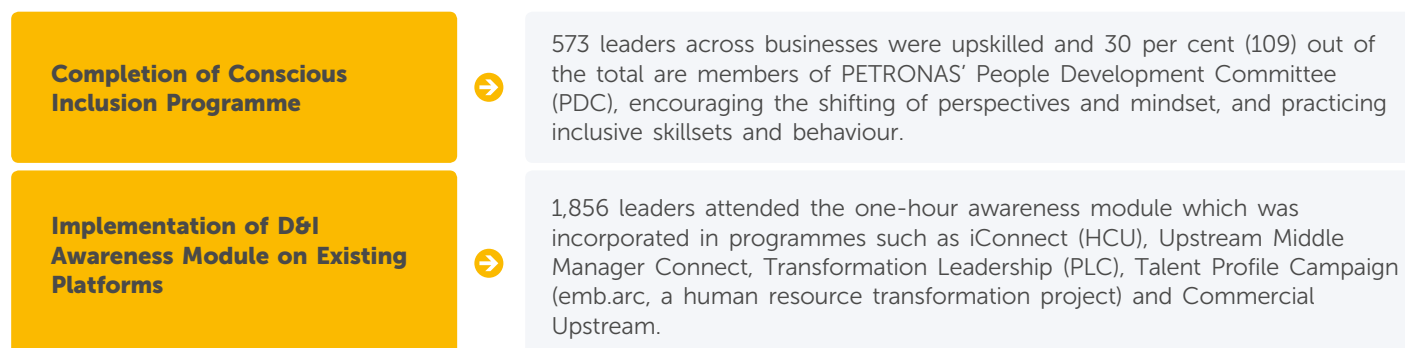
Key Programmes	Details
<b>CERAWeek 2023 (Spotlight Dinner   Diversity in the Workforce: Creating Value)</b>	<ul style="list-style-type: none"> <li>The talk, for which PETRONAS Senior Vice President of Group Human Resource Management was a panellist, spoke on unlocking potential leveraging Diversity, Equity and Inclusion (DEI).</li> <li>It called upon organisations to look deeper at its processes and practices, and to have the fortitude to challenge the status quo to enable change, anchoring on data analytics.</li> </ul>
<b>PETRONAS Lunch Escape in collaboration with Malaysian Press Institute</b>	<ul style="list-style-type: none"> <li>The annual networking lunch with the Public Relations and Communications industry spotlighted a panel discussion themed "Elevating D&amp;I: Fuelling Innovation and Collective Success" towards creating more diverse, equitable and inclusive environments.</li> </ul>
<b>Women in Energy Conference, co-hosted by the United States Embassy and Malaysia Women in Energy (MyWie)</b>	<ul style="list-style-type: none"> <li>The panel session of "A Just Energy Transition: The Critical Role of Women" featured PETRONAS Senior Vice President of Group Human Resource Management.</li> <li>This is a platform where PETRONAS Leading Women Network co-organised with Shell Women's Action Network or SWAN (Shell), Sarawak Energy Leading Women Network or SELWN (Sarawak Energy), and Malaysian Gas Association (MGA) together with the United States Embassy.</li> </ul>
<b>Women Global Leadership Conference (WGLC) 2023 in Houston, Texas, United States</b>	<ul style="list-style-type: none"> <li>Two members of the Senior Management from PETRONAS (Global Human Resource Partners Downstream and Project Director BIGST) were invited as keynote speakers concerning women empowerment in the energy space.</li> </ul>
<b>Business Commission to Tackle Inequality (BCTI) Asia Roundtable 2023</b>	<ul style="list-style-type: none"> <li>Hosted a one-day BCTI Roundtable Asia in June 2023 with a total of 16 roundtable delegates.</li> <li>The roundtable aimed to initiate discussions in infusing an Asian perspective to the topic of inequality in formulating the right action plans for Asia. The discussions were conducted based on the insights presented in the BCTI Flagship Report which provides a clear framework by outlining six categories of action.</li> </ul>
<b>World Business Council for Sustainable Development (WBCSD)</b>	<ul style="list-style-type: none"> <li>Selected employees across Group Human Resource Management were invited to attend the masterclass to empower teams with the right knowledge and tools needed to enhance our understanding for DEI.</li> </ul>
<b>Energy Asia 2023</b>	<ul style="list-style-type: none"> <li>PETRONAS Senior Vice President of Group Human Resource Management joined a panel of international speakers for a session on Creating Asia's Energy Workforce of the Future to discuss the challenges and enablers in creating Asia's future energy workforce, from collaboration, diversity and inclusion, transformational leadership, and change management.</li> </ul>

### Focus 3: Education

Continuous learning is key for employees to adapt to evolving workplace dynamics and fostering an inclusive environment. With that intent, we conducted six hybrid engagement sessions for all employees called the Brown Bag Series centred around PETRONAS' 2023 focus area on cultivating psychological safety in the organisation featuring various leaders and topics. The Brown Bag Series was launched in 2016 as a lunchtime engagement platform.

#### Infusing Diversity and Inclusion

In 2022, PETRONAS introduced the Conscious Inclusion (CI) programme to upskill leaders on Diversity and Inclusion (D&I). In 2023, we intensified the roll-out of CI to embed D&I practices in key talent-related conversations.



#### Programmes for Middle Managers

PETRONAS provides multiple programmes aimed at training and moulding middle managers into leaders who can role model positive behaviours. In doing so, we can cultivate a psychologically safe work environment and internalise the right culture to achieve business results. The programmes include i-Connect, where General Managers and above facilitated for middle managers, emphasising accountability and highlighting the role of leaders as culture shapers.

Initiatives/Programmes	Impact
<b>i-Connect</b> <b>Industrial Relations for Leaders</b> <b>Targeted Learnings for All Talents</b>	<ul style="list-style-type: none"> <li>Upskilled 2,721 middle managers</li> <li>56 per cent (3,900 employees) of the targeted group attended in 2023</li> <li>Generative HSSE Culture leadership programme</li> <li>Legal compliance awareness through e-learning</li> </ul>

## Positive Social Impact

### Focus 4: Culture

PETRONAS will continue working systematically towards an inclusive culture through various initiatives and learning programmes as well as create a culture where every team member feels valued, heard and empowered to contribute their best.

We recognise that a psychologically safe workplace not only nurtures individual well-being but also fuels innovation, collaboration, and overall organisational success.

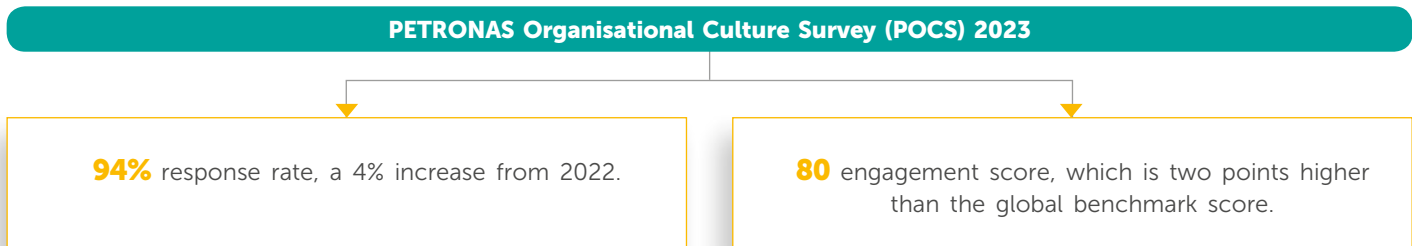
### Regular Conversations

Our dedication to holistic development of employees is fundamental to who we are as an organisation and is exemplified by 100 per cent of eligible men and women employees undergoing regular performance and career development reviews, comprising Performance Review (Goal Setting and Check-In) and Career Development Review (Competency Assessment and Career Conversation).

### PETRONAS Organisational Culture Survey

The PETRONAS Organisational Culture Survey (POCS) provides management with valuable insights from employees, aligning with our commitment to fostering talent and supporting career growth within a safe environment.

POCS measures six critical areas that have impact on employee engagement. They are Purpose, Clarity, Growth, Connection, Empowerment and Well-being. This employee survey is conducted annually to understand and monitor levels of employee sentiment and identify areas of improvement. Additionally, we conducted the inaugural POCS Pulse, allowing us to measure the effectiveness of our efforts at mid-point from POCS2022.



### Flexible Working Arrangement

In 2023, PETRONAS continued to make revisions to Flexible Working Arrangement (FlexiWork), keeping the office as the default location and turning it into a dynamic hub of collaboration, inclusivity, innovation and growth, where ideas are allowed to flow seamlessly.

PETRONAS was recognised at the HR Excellence Awards 2023 where we were awarded silver for Excellence in Hybrid Working category.

## Neurodiversity

In 2023, PETRONAS began a partnership with Ernst and Young Consulting Sdn Bhd (EY) to grow PETRONAS' talent pool to include neurodivergent talents, leveraging their diverse perspectives and innovative thinking that are critical in developing a workforce of the future whilst promoting its awareness across the organisation.

Initiative	Details
<b>Neurodivergent Hires at Project Delivery and Technology (PD&amp;T)</b>	<ul style="list-style-type: none"> <li>PETRONAS enhanced our digital talent pool by hiring neurodivergent individuals in 2023 through a four-step neuroinclusive candidate assessment process.</li> <li>This strategic inclusion has not only amplified productivity but also sparked innovation within our teams. For example, harnessing the pattern recognition skills inherent in one of our neurodivergent talents led to the automation of 4,800 incident tickets, saving 720 hours of work. Moreover, tapping into the neurodivergent strength of challenging the norms, two departments were able to improve their new joiners onboarding programmes. The testing team accelerated their learning speed by one month while the Monitoring and Security Operations Centre team had significantly enhanced the clarity of their instructional manuals, reducing the upskilling period for new hires by three months.</li> <li>In creating a neuroinclusive work environment, a support ecosystem was established comprising the Neurodiverse Centre of Excellence (NCoE) Manager, Line Managers and Buddies (peer appointed to assist the neurodivergent talents) and external Job Coach. Extensive upskilling and coaching sessions were conducted to ensure they are equipped with the right skills to cultivate a sense of belonging and oversee the integration of neurodivergent talents into the workforce.</li> </ul>

## Persons with Disabilities

PETRONAS strongly believes that individuals who are differently-abled should be given the opportunity to be part of mainstream economic activity.

Initiative	Details	Value Created
<b>Employment of Persons with Disabilities (PWD) in a pilot programme</b>	<ul style="list-style-type: none"> <li>Initiated by PETRONAS Dagangan Berhad (PDB) in collaboration with ENOKU, a social enterprise under SEEd.Lab, to provide employment opportunities for PWDs leveraging its network of retail station dealers.</li> </ul>	<ul style="list-style-type: none"> <li>PWD individuals were employed at petrol station outlets.</li> </ul>
<b>Establishment of inclusive ecosystem, mindset and culture</b>	<ul style="list-style-type: none"> <li>PDB ensures the development and empowerment of the right ecosystem, mindset and culture for D&amp;I implementation including its hiring strategy.</li> </ul>	<ul style="list-style-type: none"> <li>PWD talents were hired through PDB Management Trainee programme.</li> </ul>

Positive Social Impact

Integrity

At PETRONAS, we are deeply committed to upholding the highest level of integrity to create a safe space for everyone by safeguarding and protecting our employees from involvement in activities that could jeopardise duty of good faith, fidelity, diligence and integrity. Our adherence to PETRONAS’ Shared Values and the Code of Conduct and Business Ethics (CoBE) maintains the organisation’s integrity and reputation, and becomes part of the employee’s lived experience.

We continue to implement existing mitigations to manage corruption risk through targeted learnings, leaders engagement and campaigns on integrity, systematic review and monitoring through the Anti Bribery Management System (ABMS) ISO recertification, employee declarations and management oversight platforms such as the PETRONAS Integrity Awareness Committee.

What We Did	Value Created
Revised Code of Conduct and Business Ethics (CoBE)	<ul style="list-style-type: none"><li>Enhanced ethical guidelines and Employee Declarations, aligning with the CoBE updates made effective in August 2022 and the Country Supplement (Malaysia) in January 2023.</li></ul>
Employee Declaration of Activities	<ul style="list-style-type: none"><li>Introduced the annual Nothing to Declare attestation to employees of PETRONAS Common T&amp;C* Group Malaysia alongside existing declarations of involvement in activities. This has strengthened our integrity commitment, nurturing honesty and accountability, and fostering trust within the organisation.</li></ul>
Employee Declaration of Assets	<ul style="list-style-type: none"><li>Implemented Declaration of Asset via myAsset platform with nearly 100 per cent compliance by PETRONAS Common T&amp;C* Group Malaysia employees, as part of our endeavour to enhance the organisation’s capacity to evaluate, mitigate, and monitor risks stemming from integrity issues.</li></ul>

*\*The PETRONAS Common T&C refers to the companies that share similar terms and conditions in Malaysia operations.*

Trade Unions

Collaborative relationships with trade unions are crucial for co-creating solutions that support business strategies such as the PETRONAS Sustainability Agenda and Trade Union Act 1959 amendments, and employee well-being such as Social Security Organisation (SOCSO), Employees Provident Fund (EPF), and Amanah Raya Berhad. In 2023, a total of 29 engagement sessions were conducted.

In 2023, **8,266** Malaysia-based employees (78 per cent of the overall non-executive pool) were categorised as Unionised Employees.

Union Management



PETRONAS’ approach in Union Management includes effectively balancing formal and informal communication to ensure inclusivity and transparency.

Trade Union involvement in PETRONAS’ strategic initiatives aims to provide support, fostering a collaborative work environment that shapes the success of our shared goals.

Our engagement is extensive and representative, bringing together a variety of viewpoints and ideas necessary for our continued progress and innovation.



## Employee Assistance Programme

myFriends is an Employee Assistance Programme (EAP) that is part of PETRONAS' effort to care for the welfare of our employees by creating a psychologically safe space for all, where they are encouraged to speak up. It provides psychological support services designed to enhance individual resilience, alleviate emotional strain, and eradicate the societal stigma associated with mental health challenges.

### ► In 2023

**338**  
employees  
received  
counselling with a  
total of 1035.73  
hours

- ➔ An increase of 21.15 per cent from 2022 in number of employees utilising the service, demonstrating employees' willingness to address personal or professional challenges and issues. This also promotes a culture that prioritises well-being and personal growth.
- ➔ An increase by 81.98 hours (8.59 per cent) to 1,035.73 hours from 2022.
- ➔ 2,427 individual sessions were conducted, an increase by 864 (55.27 per cent) from 2022.
- ➔ 1,581 calls to the EAP Careline were made, an increase of 884 calls (126.83 per cent) from 2022.

## Clubs and Associations

### PETRONAS Sports and Recreation Club

PETRONAS Sports and Recreation Club (KSRP) promotes team camaraderie among employees through sports and recreational activities that encourage a healthy lifestyle and well-being. In 2023, KSRP also created a TikTok account to be more inclusive across all ages and engage with its younger demographic through its initiatives via the platform.

**18,699** members in 2023

**13,487** members participated in **250** various activities organised by KSRP across six regions in Malaysia

### Association for Wives and Women Staff of PETRONAS

Association for Wives and Women Staff of PETRONAS (PETRONITA) was established to foster unity amongst PETRONAS employees' spouses and female employees through recreational, charitable, and experience-sharing activities. As at 2023, the association had 5,584 members.

### PETRONAS Leading Women Network

PETRONAS Leading Women Network (PLWN) is a strategic initiative launched in 2015, dedicated to advancing gender inclusion within PETRONAS as part of the D&I Statement. It aims to empower the women workforce, fostering a work environment that is both enabling and fulfilling in line with the company's D&I goals. The network also seeks to promote gender inclusion across the organisation by encouraging all employees to actively support this cause and thereby drive meaningful organisational change.

PLWN is led by a committee of 20 leaders from across PETRONAS who reflect the initiative's commitment to diversity and inclusion.

### Young Professionals Club

Young Professionals Club (YPC) is a progressive community that serves as a platform to unite and empower PETRONAS' young talents. The club collaborates with various internal and external stakeholders for their activities and initiatives.

**19,909** members as at 2023

**3,908** new members in 2023

## Positive Social Impact

### Community Engagement and Enrichment

#### Why It Is Important

We recognise that our journey towards net zero carbon emissions by 2050 is not just about environmental goals but also about the people in the communities we serve. Investing in local communities is more than a responsibility; it's a cornerstone of our business philosophy. By actively engaging with these communities, we gain insights into their needs, mitigate conflicts, and foster harmonious relationships through mutual understanding. This approach builds trust and goodwill and creates shared value, contributing to the mutual success and sustainability of both PETRONAS and the communities we serve.

#### Our Approach

Our commitment to community development focuses on enhancing living standards, improving livelihoods, promoting equitable growth, and fostering environmental awareness. We believe in creating long-term sustainable programmes and have developed a structured approach to maximise our social impact. Our internal framework and guidelines steer our planning, implementation, measurement and reporting in ensuring the effectiveness of our activations.

Prior to the development of any community programmes, we will conduct a formal assessment and identify expected outcomes of the activation. This is to ensure that the activations will be impactful to stakeholders and community needs, meet the targeted United Nations Sustainable Development Goals (UNSDGs) and PETRONAS material topics, enhance business values, and address business risks. We also conduct upskilling and engagement sessions internally to ensure streamlined understanding and purpose among employees towards enhancing our role in preparing communities to be more adaptive and resilient for a just transition.

We recognise the importance of collaboration with key stakeholders at the Federal and State Governments, as well as strategic partners by leveraging on each other's expertise and experience. For our key programmes, we have established joint committees with our key stakeholders and partners to oversee the project progress in an open and transparent manner. We also engage with the communities to understand their issues, challenges and opportunities. We take them into consideration when we participate in initiatives by creating a platform that enables them to share any issues or complaints. We provide opportunities for others to participate in our programmes through Yayasan PETRONAS, including invitations to apply for grants and submission of activation proposals for our One Million Trees Programme. Post completion of any programme, we evaluate the effectiveness of the activation and gather feedback from relevant stakeholders and communities to help us in improving future activations.



## Our Focus

In PETRONAS, our social impact programmes are centred on education, community well-being and development, and environmental stewardship. In 2023, our pursuit was to drive consistent and streamlined activities aligned with PETRONAS' Sustainability Agenda. We introduced a social impact brand that helps to communicate our activities – **PETRONAS Powering Knowledge** for Education, **PETRONAS Uplifting Lives** for Community Well-being and Development and **PETRONAS Planting Tomorrow** for Environment.

	Education	Community Well-being and Development	Environment
Brand Name	<b>PETRONAS</b> <b>Powering Knowledge</b> 	<b>PETRONAS</b> <b>Uplifting Lives</b> 	<b>PETRONAS</b> <b>Planting Tomorrow</b> 
Descriptor	<b>PETRONAS Powering Knowledge</b> is our commitment to champion the pursuit of knowledge among students and educators. We support their quest for quality education and expertise and are devoted to empowering them to strive for progress and positively impact a rapidly changing world.	<b>PETRONAS Uplifting Lives</b> is our commitment to provide access to essential resources for underserved communities to enhance their living standards. We are devoted to our best efforts in empowering the communities to reach their full potential and create positive social impact and change.	<b>PETRONAS Planting Tomorrow</b> is our commitment to champion awareness and promote the importance of biodiversity conservation. We support this through our education programmes on sustainable living, reforestation and rehabilitation activities, including mangrove tree planting and replenishing marine and freshwater ecosystems. We empower communities to contribute towards a healthier planet.

Through **PETRONAS Powering Knowledge**, we provide comprehensive upskilling and training opportunities, breaking down barriers of income, gender, ethnicity and abilities to foster inclusivity and empower lives. Meanwhile, with **PETRONAS Uplifting Lives**, we prioritise the enhancement of physical and mental well-being, driving socio-economic development by offering sustainable livelihoods and economic opportunities, especially for the underserved. Our commitment extends to environmental stewardship through **PETRONAS Planting Tomorrow**, where we engage communities to promote sustainability and inspire collective responsibility for a healthier planet.

In 2023, our social impact contributions surpassed RM850 million, benefitting nearly 3 million individuals globally. Yayasan PETRONAS played a significant role, contributing RM44.17 million to over 125,000 beneficiaries nationwide. These efforts underscore our dedication to inclusive education, socio-economic advancement, and environmental sustainability, promoting a sustainable future for all.



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### Value Created in 2023

#### PETRONAS Powering Knowledge

PETRONAS is passionate about developing and equipping students, teachers and communities with essential skills and knowledge that empower them to lead fulfilling lives through quality education. A significant portion of our social impact activities is dedicated to empowering students, teachers and communities with knowledge for the future and skills needed to participate in the workforce. Investing in education and training will help them pursue better opportunities to improve their socio-economic status, chart personal growth and meaningful careers, and contribute to the nation's economic growth through productivity and innovation.

To this end, we have a diverse range of programmes that cater to students, teachers and the general public by providing access to better education, financial assistance, with a focus on science, technology, engineering and mathematics (STEM) education, technical and vocational education and training (TVET) and other skills beyond the traditional curriculum. At national level, we work closely with the Ministry of Education and Ministry of Higher Education in ensuring that our programmes are aligned with the national education agenda.

#### Access to Better Education

We collaborated with the Sarawak State Government through Yayasan Sarawak and Sabah State Government together with *Majlis Amanah Rakyat* (MARA) to develop MARA Junior Science College known as *Maktab Rendah Sains Mara* (MARA) Bintulu and MRSM Ranau, with PETRONAS as the main sponsor for the overall construction of projects including the provision of furnishings and equipment. Construction began in 2019 with a total cost invested for both institutions amounting to RM224.23 million. Both MRSMs have been handed over to MARA in November 2023 with the first intake of students in March 2024.

Internationally, PETRONAS has played a pivotal role in advancing access to quality education through a variety of initiatives. We have undertaken the renovation and repair of school infrastructure, including supplying new furniture to enhance learning environments, in Kiyarly village, Turkmenistan, benefitting 500 students.

Additionally, we conducted free vision checks and provided prescription glasses to over 200 students from the local community surrounding the Garraf Contract Area in Iraq. Furthermore, we refurbished primary schools in Franceville, East Gabon, and Al-Saddan School, Al-Bu Hussein Village in Iraq, each benefitting more than 500 students.

In Suriname, we contributed information and communication technologies equipment and upgraded chemical laboratories in schools, benefitting over 500 students and teachers. Moreover, our support extends to Argentina, where we enhanced school facilities by providing furniture and school supplies, including stationery and bags, enriching the learning experiences of over 220 students.

#### Financial Assistance

Under Yayasan Universiti Teknologi PETRONAS (YUTP), we provided financial assistance to 2,697 beneficiaries through its scholarships and bursaries since it was established in 2007. In 2023, 592 students benefitted from YUTP's sponsorships and bursaries, allowing them to pursue knowledge, especially in science and technology.

Apart from this, education opportunities are also provided to all through *zakat* (alms) collection from UTP and PETRONAS employees. In 2023, under Tabung Amanah Zakat UTP (TAZU), a total of 1,035 UTP students received financial assistance through tertiary education sponsorship, 200 *asnaf* (beneficiaries of *zakat* from Muslims) students were selected for a Full Foundation Sponsorship Programme, and the Laptop Assistance Programme was expanded to support students from low-income families.



## Science, Technology, Engineering and Mathematics Education Programmes

Initiative	Aim	What We Did	Outcome
<b>Empowering Educators in STEM</b>	<ul style="list-style-type: none"> <li>To strengthen the capabilities of 4,500 STEM teachers serving schools with a majority of students from low income communities (B40) by 2030 through <i>Program Duta Guru</i> (Teacher Ambassador Programme).</li> </ul>	<ul style="list-style-type: none"> <li>Conducted a two-year programme per cohort to upskill STEM educators in schools, partnering with the Ministry of Education and Teach for Malaysia. Post graduation, we provided funding of up to RM20,000 per project to 14 selected teachers for STEM activities in schools.</li> <li>Organised National Symposium in October 2023 which garnered 800 attendees. The event aimed to provide the <i>Program Duta Guru</i> community a platform to exchange knowledge, encourage intellectual discussion as well as a learning and networking platform.</li> </ul>	<ul style="list-style-type: none"> <li>In 2023, 243 teachers from cohort 3 have completed the two-year programme.</li> <li>To date, 496 teachers from cohorts 1, 2 and 3 have completed the two-year programme and took on their roles as <i>Duta Guru</i> (teacher ambassador) to increase STEM interest and competency amongst students in secondary schools.</li> </ul>
<b>Interactive and Experiential Learning in STEM</b>	<ul style="list-style-type: none"> <li>To stimulate interest among students in the STEM field via academic excellence, interactive and experiential learning activities. It is also aimed to improve students' academic results in major examinations through intensive learning particularly in science subjects.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted six educational programmes attended by secondary school students in 2023, covering intensive, interactive and experiential learning modules through Pengerang Integrated Complex STEM education initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>Increased students' enrollment to pursue Form 4 science stream classes.</li> <li>Improved academic achievements in <i>Sijil Pelajaran Malaysia</i> (Malaysian Certificate of Education) examination especially in science-related subjects.</li> <li>Benefitted about 480 students in 2023 with a target of 1,900 students in total by 2026.</li> </ul>
<b>Upskilling Teachers and Students in Technical and Digital-Related Areas</b>	<ul style="list-style-type: none"> <li>To increase STEM interest among students in Sabah, Malaysia, cultivating 21<sup>st</sup> century technical skills in a fun and engaging manner to prepare participants for the workforce of the future.</li> <li>To expose teachers to innovative ways they can explore to ease the teaching process and guide students in enhancing their digital comprehension level, adding value to everyday solution design and curation of the solution.</li> </ul>	<ul style="list-style-type: none"> <li>Upskilled and enhanced the capacity of teachers in technical- and digital-related skills, as well as democratised digital creation activities for students from low-income families to deepen their interests in STEM.</li> </ul>	<ul style="list-style-type: none"> <li>80 teachers and 80 students from 41 secondary schools in Tawau and Sandakan benefitted from the two sessions conducted for each district.</li> </ul>



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Petrosains was established 25 years ago as an extension of PETRONAS' commitment to nation-building by nurturing interest in STEM and driving the creation of a new generation of science and technology-minded and innovation-inspired individuals.

Initiative	Aim	What We Did	Outcome
<b>Petrosains</b>	<ul style="list-style-type: none"> <li>Petrosains was set up as one of PETRONAS' flagship social investment initiatives. Petrosains, The Discovery Centre is a not-for profit establishment that embodies PETRONAS' commitment to providing the nation, especially the younger generation, with the tools and experiences to cultivate a passion for scientific knowledge through immersive and imaginative experiences.</li> <li>The Discovery Centre continues to instil a sense of awe in visitors of all ages through its immersive exhibits, innovative challenges and enriching community as well as partnership programmes.</li> <li>To be the learning catalyst that provides immersive learning in science, technology, and sustainability aligned with PETRONAS' Education Agenda.</li> <li>To enable the creation of innovative solutions for shared progress, leaving no one behind.</li> <li>To educate on the evolving digital era through advanced technologies: robotics, artificial intelligence (AI), and the internet of things (IoT).</li> </ul>	<ul style="list-style-type: none"> <li>Collaborated with various entities in conducting impactful STEM programmes such as BSN Smart Junior @ Schools, Offshore Petroleum Industry Training Organisation (OPITO), the <i>Generasi Marikh</i> Academy for Junior Astropreneur Exchange (JAX), ASTRO for <i>Paper Lama Science Show</i>, PlayQuest Activation for AirAsia Academy, Young Energy Explorer at SEDA Roadshow for Sustainable Energy Development Authority (SEDA).</li> <li>Internationally, we have collaborated with PETRONAS Carigali Overseas Indonesia (PCOSB) at the 47<sup>th</sup> Indonesian Petroleum Association (IPA) Convention and Exhibition 2023 and Belt and Road International Science Popularization Week 2023 at Wuhan, China. Petrosains is also in the international Science Centre networking through the Asia-Pacific Network of Science and Technology Centres (ASPAC), European Collaborative for Science Industry and Technology Exhibitions (ECSITE), Association of Science-Technology Centers (ASTC).</li> <li>Petrosains was honoured with the prestigious Bronze Award for the Entertainment Category at the Putra Brand Awards, a testament to the dedication and passion that has fueled our journey over the past 25 years.</li> <li>Petrosains was also awarded with the Malaysian Industrial Safety and Health Association (MiSHA) Golden Awards on Occupational Safety and Health Principle of Prevention (OSHPoP) by MiSHA National Excellence Award 2023, signifying safety as one of our top priorities.</li> </ul>	<ul style="list-style-type: none"> <li>Recorded 874,725 visitors who interacted with Petrosains exhibits and exhibitions as well as outreach programmes in 2023, the highest number since its establishment in 1999.</li> <li>Petrosains, The Discovery Centre houses about 300 interactive exhibits and recorded 1,573 school visits to the centre in 2023.</li> <li>Achieved virtual reach of 78,162 by diversifying our learning approach across DeLiMa, PIXEL and SkyWalk 360 as well as through virtual activations of RBTX, Meet The Expert and thematics programmes.</li> <li>14,215 beneficiaries of Petrosains' learning programmes such as below: <ul style="list-style-type: none"> <li><b>Petrosains Playsmart™ and Maker Studio</b> <ul style="list-style-type: none"> <li>More than 620,389 visitors physically via its centres in Johor, Pahang, Sabah and Sarawak.</li> <li>Reached 1,050 beneficiaries through its beneficiaries-driven programmes, and 3,020 beneficiaries in the local communities through the Inspire Together Programme, providing access to STEM learning to underprivileged groups.</li> </ul> </li> <li><b>Petrosains RBTX Challenge</b> <ul style="list-style-type: none"> <li>6,049 beneficiaries, nearly a 100 per cent increase from 3,028 in 2022.</li> <li>Recorded participation of 1,795 teams from across Malaysia, Indonesia, Singapore, Mexico, India, Azerbaijan, American Samoa and Romania.</li> <li>RBTX 2023 was awarded the "Largest Participation in a Robotic Interactive Learning Event" by the Malaysia Book of Records for two consecutive years.</li> </ul> </li> <li><b>Petrosains Science Drama Competition</b> <ul style="list-style-type: none"> <li>117 teams from across Malaysia participated.</li> <li>The winner of PSDC in Malaysia performed at the ISDC in Thailand, and brought home two awards: First Prize Winner for Junior Category and Outstanding Performer for Male Category.</li> <li>The Malaysia Book of Records awarded PSDC 2023 with the "Most Participants in a Science Themed Drama Competition".</li> </ul> </li> </ul> </li> </ul>

## Mentoring and Other Training

Initiative	Aim	What We Did	Outcome
<b>Digital Literacy</b>	<ul style="list-style-type: none"> <li>To enhance digital literacy of young graduates in preparation for the constantly evolving job market of the future.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted a series of two-week intensive programme called the BeDigital Bootcamp which exposed participants to design thinking, data storytelling, transitioning into the working world and digital entrepreneurship.</li> </ul>	<ul style="list-style-type: none"> <li>296 participants benefitted from the bootcamp, whereby 37 participants received conditional job offers from PETRONAS and one participant received an internship offer from PETRONAS.</li> </ul>
<b>Supporting Personal Growth of Students</b>	<ul style="list-style-type: none"> <li>Project VENUS aims to build life skills through exposure to different career pathways and preparatory activities to support students' personal growth beyond academic syllabus.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted five modules focusing on harnessing and strengthening the students' confidence in public speaking, as well as providing them with a broad understanding on choosing their desired career path and industry.</li> </ul>	<ul style="list-style-type: none"> <li>Benefitted 1,900 students from Terengganu, Kuala Lumpur and Melaka, involving 480 PETRONAS volunteers for all five modules and the final presentation competition.</li> </ul>
<b>Education and Awareness on Chemicals Safety Handling</b>	<ul style="list-style-type: none"> <li>The SHOC4Schools programme increased students' awareness on basic first aid and lab safety procedures.</li> </ul>	<ul style="list-style-type: none"> <li>Provided school students with exposure to best practices in safe chemical handling.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed safety kits for safe chemical management to local school students in Labuan, Gebeng, Kertih, Bintulu and Sipitang, where PETRONAS operates.</li> </ul>
<b>Bridging Industry-Academia Knowledge in Technical Areas</b>	<ul style="list-style-type: none"> <li>To create more platforms for Technical Professionals (TPs) and Subject Matter Experts (SMEs), and bridge industry-academia knowledge sharing in technical areas through Collaboration with Higher Education Strategic Initiatives (CHESS).</li> </ul>	<ul style="list-style-type: none"> <li>Facilitated opportunities for SMEs to perform Technical Professional Excellence responsibilities and build rapport with the Higher Education sector and young Malaysian top talents in creating awareness and interest in the energy industry.</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 500 academia, students and PETRONAS SMEs attended the CHESS Symposium event held in June 2023.</li> <li>20 innovative ideas from 95 submissions were selected for final innovation pitching during the CHESS Symposium to relevant SMEs for scale-up opportunities in four categories: <ul style="list-style-type: none"> <li>Artificial Intelligence (AI) and Robotics;</li> <li>New Energy and Sustainability;</li> <li>Additive Manufacturing and Circular Economy,</li> <li>Data Analytics and Internet of Things (IoT).</li> </ul> </li> <li>Two new university partnerships established under CHESS: Universiti Tenaga Nasional (UNITEN) and Universiti Selangor (UNISEL), bringing it to a total of 22 participating universities since 2021.</li> <li>Over 60 knowledge-sharing sessions enabled on top of joint research, innovation activities, coaching programmes, Final Year Project (FYP) panels, and syllabus reviews.</li> </ul>

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Initiative	Aim	What We Did	Outcome
<b>Discover PETRONAS @ Schools (DPS)</b>	<ul style="list-style-type: none"> <li>To engage and encourage secondary school students to pursue STEM and TVET education by highlighting the diverse career paths across the oil, gas and energy sectors and providing information on PETRONAS education sponsorship.</li> </ul>	<ul style="list-style-type: none"> <li>Organised career forums and booths for interactive engagements and experiential learning conducted by PETRONAS volunteers.</li> </ul>	<ul style="list-style-type: none"> <li>Over 3,227 students benefitted from the programmes conducted at eight centralised locations: Sandakan, Tawau and Pitas (Sabah), Miri, Bintulu, Lawas and Limbang (Sarawak) and Pengerang (Johor).</li> <li>Participation from 109 schools, involving 145 PETRONAS volunteers.</li> </ul>



## PETRONAS Uplifting Lives

We are dedicated to improving the well-being of our community to pursue greater opportunities and achieve improved standards of living. Our focus areas in achieving this include assisting community fundamental needs such as access to utilities, as well as providing upskilling opportunities to ensure long term self-sustainability. In ensuring smooth implementation and that the programme reaches the right targeted groups, we worked closely with relevant authorities and agencies at Federal and State levels such as the Malaysian Welfare Department (JKM), National Disaster Management Agency (NADMA), Malaysia Civil Defence Force (APM), Northern Corridor Economic Region (NCER), East Coast Economic Region Development Council (ECERDC), Department of Orang Asli Development (JAKOA) and Department of Fisheries (DoF).

### Providing Basic Necessities

Initiative	Aim	What We Did	Outcome
<b>Energy and Water for Indigenous People</b>	<ul style="list-style-type: none"> <li>To provide solar energy and clean water supply to <i>Orang Asli</i> (Indigenous People) villages nationwide. Our goal is to illuminate and uplift the lives of the underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>Provided <i>Orang Asli</i> villages with solar systems at identified households, as well as clean water sanitation facilities.</li> </ul>	<p><b>Solar and Lighting</b></p> <ul style="list-style-type: none"> <li>Provided 1,158 households across 38 villages in Perak, Pahang and Kelantan with Home 500x PICO, a compact solar-powered home and lighting system.</li> <li>Cumulatively, the community experienced an additional 1.6 million productivity hours, capturing an estimated RM3.2 million total electricity savings since 2022.</li> <li>Expanded the initiative to three villages in Sabah for 140 houses and three shared spaces.</li> </ul> <p><b>Clean Water</b></p> <ul style="list-style-type: none"> <li>Provided four villages with access to clean water and sanitation facilities by installing 18 units of Waterlily solar powered water purification systems and 16 communal toilets.</li> <li>Cumulatively, provided 111,120 litres of clean water to 620 <i>Orang Asli</i>, valued at RM166,680.</li> </ul>
<b>Access to Clean Water in International Operations</b>	<ul style="list-style-type: none"> <li>To ensure access to clean water in Garraf, Iraq and Gabon.</li> </ul>	<ul style="list-style-type: none"> <li><b>Iraq</b> Provided 90 water filters and coolers to schools.</li> <li><b>Gabon</b> Construction of water well for 3<sup>rd</sup> Libreville district.</li> </ul>	<p><b>Iraq</b></p> <ul style="list-style-type: none"> <li>Improved access to safe drinking water, thereby fostering improved health outcomes and facilitating a conducive learning environment was achieved through the provision of water filtration and cooling systems at schools. This initiative directly benefitted 15,000 school students and educators within the Garraf Contract Area.</li> </ul> <p><b>Gabon</b></p> <ul style="list-style-type: none"> <li>A reliable and sustainable source of clean water for the local community, improving health and reducing the burden of water collection to more than 6,000 individuals from the Libreville community.</li> </ul>

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Initiative	Aim	What We Did	Outcome
<b>Flood Relief Assistance</b>	<ul style="list-style-type: none"> <li>To improve community resilience in disaster-prone areas to mitigate, manage, circumvent risks and recover from the effects of a disaster in a timely and efficient manner.</li> </ul>	<ul style="list-style-type: none"> <li>Supplied mineral water and 500 gas cylinders to flood victims in Johor, Malaysia.</li> <li>Several PETRONAS Station dealers volunteered to store and deliver mineral water to temporary relief centres during the monsoonal flood period.</li> <li>Distributed 1,800 Care Packages through Yayasan PETRONAS from January to March 2023 to affected districts.</li> <li>Distributed 10,000 Care Packages by Yayasan PETRONAS before the occurrence of floods from November to December 2023 to the Malaysia Welfare Department Depots nationwide.</li> <li>Provided 25 units of Four-Wheel Drive vehicles (on loan basis) to local agencies conducting rescue efforts in Johor.</li> <li>Provided PETRONAS gift cards (for purchase of petrol or diesel) to local flood relief agencies.</li> </ul>	<ul style="list-style-type: none"> <li>Provided immediate disaster relief assistance to affected communities and relevant agencies.</li> <li>Benefitted 13,806 beneficiaries nationwide.</li> </ul>
<b>Festive Celebrations</b>	<ul style="list-style-type: none"> <li>To contribute to the less fortunate during festive seasons to incite joy, love and care.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed essential items to low income communities (B40) through Yayasan PETRONAS.</li> <li>Supplied LPG cylinders and merchandise to <i>Masjid Jamek Kampung Baru</i> and <i>Bazaar Ramadan Plaza Angsana</i>.</li> <li>Distributed 1,025 <i>bubur lambuk</i> (rice porridge) to local communities around Kuala Lumpur.</li> <li>Provided essential food items during Ramadan (the Muslim fasting month) to underprivileged families in Iraq.</li> </ul>	<ul style="list-style-type: none"> <li>11,800 beneficiaries nationwide received food aid for the festive season.</li> <li>102,550 local communities around Kuala Lumpur benefitted throughout Ramadan.</li> <li>700 underprivileged families in Iraq benefitted from the programme.</li> </ul>



## Skills and Entrepreneurship Development

Initiative	Aim	What We Did	Outcome
<b>Income Generation for Low-Income (B40) Communities</b>	<ul style="list-style-type: none"> <li>To contribute to uplifting the livelihoods of the B40 community in Kelantan, Kedah, Terengganu, Johor, Pahang, Perak and Sabah through the <i>Memampankan Ekonomi Asas Rakyat</i> (MEKAR) Programme.</li> </ul>	<ul style="list-style-type: none"> <li>Provided training in skills, leadership and innovation to improve the living standards and increase opportunities for sources of income for the low-income community.</li> </ul>	<ul style="list-style-type: none"> <li>1,286 participants graduated from the programme.</li> <li>1,349 participants completed hard and soft skills training, and are currently in monitoring and guidance mode.</li> <li>933 participants have registered businesses and became entrepreneurs.</li> </ul>
<b>Building Sustainable Welfare Homes</b>	<ul style="list-style-type: none"> <li>To enable welfare homes to be self-sustaining while ensuring necessities of the occupants are met.</li> </ul>	<ul style="list-style-type: none"> <li>Kickstarted green chili planting at an orphanage, <i>Rumah Anak Yatim Nur Taqwa</i>, Kota Belud, Sabah.</li> <li>Kickstarted chili <i>boh</i> (paste) production training in the Malaysian Aids Foundation (<i>Pertubuhan Komuniti CAKNA</i>, Terengganu).</li> </ul>	<ul style="list-style-type: none"> <li>Three harvest cycles amounting to 30 kilograms of chillies were sold to local markets in Kota Belud.</li> </ul>
<b>Sustainable Economic Development for Fishing Communities</b>	<ul style="list-style-type: none"> <li>To enhance the economic well-being of fishing communities by providing an alternative fishing ground allowing better catchment and reducing encroachment at prohibited areas.</li> </ul>	<ul style="list-style-type: none"> <li>Signed a Memorandum of Understanding between PETRONAS and the State Government of Sabah, represented by the Department of Fisheries, Sabah, to contribute 40 Fish Aggregating Devices<sup>1</sup> for a span of two years from 2023 to 2024.</li> <li>Contribution of food rations and fishing equipment such as 100 cooler boxes enables fishermen to preserve their catch, reducing spoilage and increasing their ability to access markets with fresh seafood, thereby improving their livelihoods.</li> <li>Conducted a series of community engagement and awareness sessions on safety and security of fishing activities in collaboration with the Malaysian Maritime Enforcement Agency (MMEA).</li> </ul>	<ul style="list-style-type: none"> <li>Deployed 20 Fish Aggregating Devices benefitting more than 500 fishermen across Sabah.</li> <li>Deployed 160 mini-Fish Aggregating Devices, for Kota Belud, Kimanis and Besut which benefitted 1,100 fishermen.</li> <li>More than 1,500 fishermen's economic livelihoods have been improved through increased catchment via the expansion of the fishing areas.</li> <li>Estimated catch per Fish Aggregating Device is ten tonnes of fish per visit and the mini-Fish Aggregating Device yields 500 kilograms of fish per visit, with a reduction of encroachment reported to be 66.45 per cent less compared to 2019<sup>2</sup>.</li> <li>Recognised in The Malaysia Book of Records on the deployment of the first artificial reefs using concrete structures and a decommissioned vessel, preserving marine ecosystems while enhancing local community economies.</li> </ul>

### Note:

<sup>1</sup> A fish aggregating device (FAD) is a floating object strategically deployed in the ocean to create alternative fish breeding and gathering grounds and providing a more efficient fishing experience to the fishermen by concentrating fish populations for easier catch.

<sup>2</sup> 2019 is taken as our baseline year as data could not be collected during the COVID-19 lockdown in 2020-2021 and restrictions in 2022.

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Initiative	Aim	What We Did	Outcome
<b>Community Fire Safety and Preparedness</b>	<ul style="list-style-type: none"> <li>Empowering local communities in Bintulu and Miri with skills and support to ensure readiness, resilience and unity in the face of fire emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted <i>Program Bomba Komuniti</i> (Fire Community Programme) and Fire Point in collaboration with the Fire and Rescue Department (BOMBA), at the Long Busang community in Sarawak.</li> <li>Contributed disaster relief aid to fire victims of <i>Kampung Wireless</i>, Miri.</li> </ul>	<ul style="list-style-type: none"> <li>More than 1,250 individuals benefitted from the programme through increased awareness of early response in fire prevention to the local communities, basic skills in firefighting, live demonstrations and knowledge of firefighting equipment and the proper technique in using Portable Fire Extinguishers.</li> <li>Provided immediate disaster relief assistance to the affected communities, involving 12 families comprising 80 residents from <i>Kampung Wireless</i> Miri.</li> </ul>
<b>Continuous Development of Local Cooperatives</b>	<ul style="list-style-type: none"> <li>To create sustainable income and improve the socio-economic condition of local communities through establishment of various local cooperatives around Pengerang Integrated Complex.</li> </ul>	<ul style="list-style-type: none"> <li>Recultivated 121 acres of an abandoned palm oil plantation in Pengerang Integrated Complex into business opportunities for <i>Kampung Lepau</i> local cooperatives (KOLEPAU).</li> <li>Provided upskilling programmes for Cooperative Board Members through training related to financial management, business acumen and marketing.</li> </ul>	<ul style="list-style-type: none"> <li>First phase (pruning) of 5,000 trees was successfully completed.</li> <li>Created 15 job opportunities for the <i>Kampung Lepau</i> community.</li> </ul>

## Community Funding

Initiative	Aim	What We Did	Outcome
<b>Pediatric Cancer Research</b>	<ul style="list-style-type: none"> <li>Improving the survival rate for pediatric cancer</li> </ul>	<ul style="list-style-type: none"> <li>Supported Hospital Canselor Tuanku Muhriz UKM (HCTM) in conducting research on precision medicine that utilises genetic sequencing and raised public awareness on pediatric cancer.</li> </ul>	<ul style="list-style-type: none"> <li>Development of the analysis of Whole Genome and Targeted Sequencing with improved turnaround time between 8-13 weeks, aims to improve survival with precision therapies.</li> <li>Development of Minimal Residual Disease (MRD) using 8 colours for better sensitivity and precision, with improved turnaround time of 21 days, and sensitivity ability of 1 in 1,000,000 cells.</li> <li>Four awareness programmes were carried out and one book on pediatric cancer awareness for children was published.</li> </ul>
<b>Patient Navigation Programme</b>	<ul style="list-style-type: none"> <li>To close the care gap in cancer treatment and enable access to quality care for underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>Our grant went towards the maintenance of four PNP centres. This extended our ongoing support to Cancer Research Malaysia (CRM), which also includes support of cancer research activities and the funding to set up four additional PNP centres in future.</li> </ul>	<ul style="list-style-type: none"> <li>Helped medical professionals serve a total of 370 patients and achieved a marked reduction in treatment delays and patient defaults.</li> </ul>
<b>Pre and Post Natal Care Training Programme (A MEKAR-Related Grant)</b>	<ul style="list-style-type: none"> <li>Supporting Universiti Teknologi MARA's (UiTM) maternity department in helping them provide professional training in pre and post-maternity care to underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>Each participant received training in the theoretical and practical aspects of safe maternal and infant care, gaining certification from the Ministry of Health (MOH).</li> </ul>	<ul style="list-style-type: none"> <li>Trained 34 people from underserved communities in Papar, Beaufort and Kota Kinabalu, Sabah. The training enabled them to improve the quality of care and bring sustainable benefit to their communities.</li> </ul>
<b>Youth Employability and Entrepreneur training</b>	<ul style="list-style-type: none"> <li>To accelerate the journey of young entrepreneurs in Sabah by supporting the unique needs of early-stage business owners.</li> </ul>	<ul style="list-style-type: none"> <li>Provided funding, customised content and created an incubator to support and guide early-stage youth entrepreneurs.</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 500 youth trained.</li> </ul>
<b>Financial Literacy Upskilling BeSemart</b>	<ul style="list-style-type: none"> <li>This programme aims to empower food vendors with financial literacy so that they can make informed business decisions.</li> </ul>	<ul style="list-style-type: none"> <li>Provided food vendors with Point of Sales (POS) systems and devices for data collection, order management and educated food vendors on financial literacy for their businesses.</li> </ul>	<ul style="list-style-type: none"> <li>Benefitted 50 entrepreneurs who had undergone six months of training in Kedah.</li> </ul>

## Positive Social Impact

Initiative	Aim	What We Did	Outcome
<b>International Medical and Welfare Funding</b>	<ul style="list-style-type: none"> <li>To support and enhance the quality of life in the North Peace region, Canada through charitable contributions and community development initiatives via the North Peace Community Foundation.</li> <li>To provide critical care and rapid emergency medical transport services for those in need across Western Canada through STARS air ambulance.</li> <li>To improve healthcare services and facilities for the Fort St. John community through fundraising and support for the local hospital through the Fort St. John Hospital Foundation.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed funding to three prominent organisations in providing social assistance to local communities and First Nation communities across Fort St. John and British Columbia.</li> </ul>	<ul style="list-style-type: none"> <li>Strengthened the community across Fort St. John with a five-year commitment to the North Peace Community Foundation made since 2022.</li> <li>STARS air ambulance:               <ul style="list-style-type: none"> <li>PETRONAS supported STARS Fleet renewals and a total of 1,667 missions carried out from across Alberta and British Columbia in 2023.</li> <li>STARS air ambulance service has assisted with medical emergencies to the public and in the field ensuring rapid and specialised medical care and transportation to critically ill and injured patients in remote and underserved areas.</li> </ul> </li> <li>The contribution to the Fort St. John Hospital Foundation has benefitted 69,000 community members including First Nations through improved healthcare services and facilities, leading to better patient outcomes and enhanced medical care for the residents of Fort St. John and surrounding areas.</li> </ul>

### PETRONAS Planting Tomorrow

In our journey towards better environmental stewardship, we believe in the power of collective action. Working alongside local communities and stakeholders, we engage in various initiatives to support environmental conservation through reforestation, rehabilitation activities, biodiversity conservation and preservation, as well as communication, educational and public awareness programmes. We work with partners from government agencies to Non-Governmental Organisations (NGOs) alike in delivering impact-driven environment programmes with multilevel co-benefits such as rehabilitation, biodiversity and community resilience.

#### Tree Planting

We have several programmes to promote awareness on the importance of biodiversity conservation and environmental sustainability through tree planting and rehabilitation activities across states. Our reforestation effort will serve as a habitat for various species of life and contribute to the overall health of the surrounding ecosystem. Through *Yayasan PETRONAS*, we started the Walk4Trees programme in 2020 with the aim to plant 50,000 trees and have exceeded the target with 74,652 trees. Following this successful implementation, *Yayasan PETRONAS* is extending the tree planting initiatives to achieve 1,000,000 native trees over a five-year period.

Initiative	Aim	What We Did	Outcome
<b>Tree Planting Activities</b>	<ul style="list-style-type: none"> <li>To protect, restore and promote terrestrial ecosystems while providing economic opportunities for surrounding communities.</li> </ul>	<ul style="list-style-type: none"> <li>Provided the low-income (B40) community with sustainable livelihood opportunities through seedling buy-back system and allowances for nursery maintenance and tree planting.</li> <li>Empowered local communities in sustainable ecosystem rehabilitation through effective resource management, focusing on forests, and mangrove and peat swamps.</li> <li>Enhanced the knowledge and skills of B40 local communities including <i>Orang Asli</i> (Indigenous People) in proper tree planting, environmental protection and soil erosion, while promoting mangrove management through learning visits and peer-to-peer training.</li> </ul>	<ul style="list-style-type: none"> <li>Completed the Walk4Trees programme nationwide with a total of 74,652 trees planted over 14 planting sites throughout Malaysia since 2020. To date, the programme has achieved 74 per cent tree survival rate and benefitted 255 local communities in terms of income generation and skills developed. The programme has won its first regional award and was recognised as an ASEAN Green Initiative by the ASEAN Centre for Biodiversity in 2023.</li> <li>In 2023, Yayasan PETRONAS launched the One Million Tree (OMT) project and kick started with UTP by planting 550 trees and with <i>Majlis Bandaraya Kuala Terengganu</i> by planting 3,000 trees.</li> <li>We also planted 10,000 mangrove trees at Regency East Java Indonesia, 5,500 mangroves at Tanjung Surat Johor, 3,000 mangroves in Sarawak with the Department of Environment (DOE) and Natural Resources and Environment Board (NREB), 750 mangroves at Kuala Selangor Nature Park and 200 mangroves at EcoCare Kertih.</li> </ul>

## Sustainability Education

Initiative	Aim	What We Did	Outcome
<b>Speech Competition</b>	<ul style="list-style-type: none"> <li>To educate youth about environmental protection, build stronger ties with the community and be socially responsible.</li> </ul>	<ul style="list-style-type: none"> <li>PETRONAS China held the 'Student Voices' competition to enable future generations to share their thoughts and solutions to some of the planet's most pressing issues.</li> </ul>	<ul style="list-style-type: none"> <li>34 schools in China participated in the competition with nearly 700 submissions.</li> <li>Student Voices cumulatively reached about 650,000 people (participants and spectators) throughout 17 competitions with 69 WeChat posts.</li> </ul>



## Positive Social Impact

### Cleanup and Waste Management

Initiative	Aim	What We Did	Outcome
<b>Cleanup and Waste Management</b>	<ul style="list-style-type: none"> <li>To cultivate proper waste management practices.</li> </ul>	<p><b>Nationwide</b></p> <ul style="list-style-type: none"> <li>Organised PCG's Be Green initiatives and waste management competition in collaboration with the Ministry of Education, local authorities and waste collectors in areas where we operate, including Klang Valley, Labuan, Gebeng, Gurun, Kertih, Bintulu and Sipitang. Additionally, an MoU was established between PCG and Cenviro for waste management and recycling initiatives in central regions such as Putrajaya, Kuala Lumpur and Selangor.</li> <li>Beach cleaning activities were conducted in collaboration with local NGO <i>Geng Plastik Ija</i> in Terengganu, with volunteers cleaning beaches in Pantai Rantau Abang, Dungun, Terengganu.</li> </ul> <p><b>International</b></p> <p><b>Jakarta, Indonesia</b></p> <ul style="list-style-type: none"> <li>Hosted a plogging activity where participants jogged while picking up litter, in conjunction with Jakarta's Car Free Day in collaboration with a local NGO, KamiBox.</li> <li>Hosted an engaging and educational session with students from University of Indonesia, covering various topics including the Plastic, Sustainability and You Education module. We also provided 20 recycling bins around the campus to enable a culture of sustainability and 3R practices.</li> </ul> <p><b>Bangkok, Thailand</b></p> <ul style="list-style-type: none"> <li>Worked with over 80 students from Klong Song Kratiam School, Wat Lad Prao School and Satri Witthaya School to further clean up a section of the Lat Phrao Canal. This initiative was organised by PETRONAS subsidiary, PCM (Thailand) Co. Ltd and its partner, TerraCycle Thai Foundation. We also taught the students on the importance of recycling and instilled in them the values of sustainability.</li> </ul>	<ul style="list-style-type: none"> <li>Over 120 tonnes of recyclable waste collected from PCG's Be Green programme.</li> <li>Benefitted 3,025 members of the local community in Manyarejo District Gresik Regency East Java.</li> <li>Over 100 attended the plogging activity, including members of the Malaysian Embassy, local partners, surrounding communities and students.</li> <li>The activation in Thailand resulted in the removal of about 4,000 kilograms of ocean bound plastics from the canal.</li> </ul>

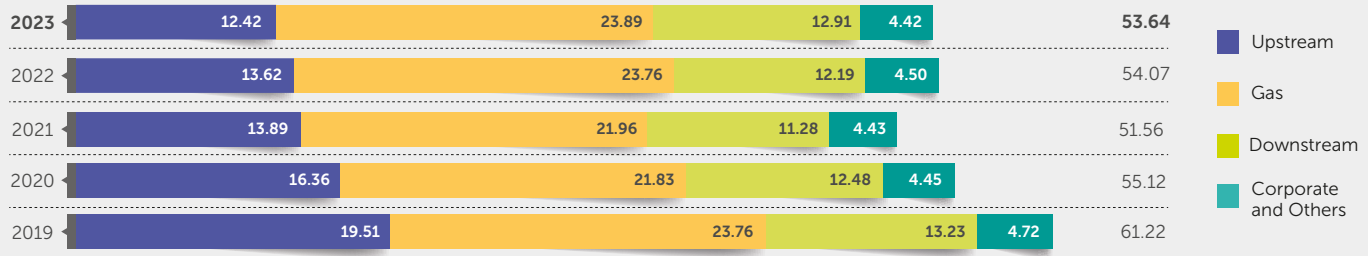
## Biodiversity Conservation and Preservation

Initiative	Aim	What We Did	Outcome
<b>Sea Turtle Conservation</b>	<ul style="list-style-type: none"> <li>To support the sea turtle conservation efforts led by <i>Jabatan Perikanan</i> Malaysia (Fishery Department).</li> </ul>	<ul style="list-style-type: none"> <li>Installed solar panel systems at the Turtle Nursery Centre and improved facilities at the turtle hatchery centre at Pulau Rusukan Besar.</li> <li>Cleaned turtle ponds at the conservation centre and painted walls and roadside kerb.</li> <li>Refurbished the turtle hatchery center with the construction of a new roofing structure.</li> </ul>	<ul style="list-style-type: none"> <li>Released 250 baby turtles into the sea.</li> <li>An average of 94 per cent hatchability rate on a yearly basis, providing better conditions for the incubation of turtle eggs, leading to higher hatchling success rates and a surge in turtle landings at Pulau Rusukan Besar.</li> </ul>
<b>Alveole Bee Programme</b>	<ul style="list-style-type: none"> <li>To enhance community knowledge on biodiversity conservation efforts through nature-based beekeeping solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted four workshops on Hive-to-Honey and Wonders of Beeswax to approximately 60 participants.</li> <li>Two wild pollinator BeeHomes were installed, and one of it was set up at the PECL Calgary office.</li> <li>Collaborated with local Indigenous artist, Star Crop Eared Wolf to paint the BeeHomes using bee friendly paint showcasing the land and history of the Blackfoot territory.</li> </ul>	<ul style="list-style-type: none"> <li>The honeybee hives obtained from the BeeHomes were used for honey environmental DNA sampling and testing contributing to global pollinator research.</li> <li>It is estimated that a single hive can produce as much as 100 140-gram jars of honey.</li> <li>Supports biodiversity improvement through notable sighting of various floral and fauna species including 726 different caterpillar species and 20 pollen specialist bees that have unique adaptation to only certain keystone native plant species.</li> </ul>
<b>Coral Conservation</b>	<ul style="list-style-type: none"> <li>To address the decline of coral reef populations and restore the health of marine ecosystems, aligned with Labuan Federal Territory and Labuan Corporation aspiration to boost the eco-tourism industries in Pulau Rusukan Besar.</li> </ul>	<ul style="list-style-type: none"> <li>Installed ten coral frames, in addition to the nine previously installed frames to expand the coral planting areas.</li> </ul>	<ul style="list-style-type: none"> <li>19 coral frames have been installed since 2019 resulting in a steady survivability and thriving rate at an average of 75 per cent for coral on each frame.</li> <li>The corals act as shelter and protection for the turtle population and other marine life as well as providing food for turtles in their new habitat.</li> </ul>
<b>Shoreline Preservation</b>	<ul style="list-style-type: none"> <li>Preservation and prevention of shoreline from further abrasion, safeguarding coastal areas from degradation.</li> </ul>	<ul style="list-style-type: none"> <li>Installed a retaining wall and planted 6,000 abrasion-resistant trees to prevent abrasion of shoreline in Indonesia.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed to the resilience of over 1,000 communities in Randuboto Village, Sidoarjo District, Gresik Regency, East Java Province, Indonesia against coastal hazards, protecting homes, infrastructure, and livelihoods.</li> <li>Created a natural buffer, preserving habitats for wildlife and promoting biodiversity along the shoreline.</li> </ul>

# Sustainability Key Performance Data

## Greenhouse Gas (GHG) Emissions – Operational Control

### Total GHG Emissions Breakdown by Business, Operational Control (million tonnes CO<sub>2</sub>e)



#### Notes:

1. GHG data for 2019-2022 at Upstream, Gas and Downstream have been restated following external GHG verification conducted by LRQA Inspection Malaysia Sdn Bhd.
2. PETRONAS acquired BRB and Perstorp. Their respective GHG accounting systems are currently being established aligned with PETRONAS GHG accounting and reporting requirements. 2023 GHG emissions for BRB and Perstorp amounts to 893 tonnes CO<sub>2</sub>e and 0.36 million tonnes CO<sub>2</sub>e respectively. The GHG emissions from both subsidiaries will be included in subsequent disclosures.
3. Corporate and Others include MISC and KLCC Group of Companies (KLCCGoC).

PETRONAS has set 2019 as the base year for tracking the progress towards achieving the targets of its Net Zero Carbon Emissions by 2050 Pathway. As a part of PETRONAS' efforts to increase confidence in our disclosed GHG emissions data, PETRONAS has embarked on a three-year external GHG verification exercise based on ISO 14064-1: 2018. A limited level of assurance for PETRONAS Upstream, Gas and Downstream businesses covering Scope 1 and 2 GHG emissions under the operational control boundary has been completed in March 2024. Therefore, GHG data for 2019-2022 have been restated. PETRONAS will continue the external verification in phased approach for both operational control and equity share – Scope 1, 2 and 3 to increase the credibility of the disclosure.

Overall PETRONAS Global operations emitted 53.64 million tonnes CO<sub>2</sub>e in 2023, covering Scope 1 and Scope 2 emissions. The emissions are lower compared to 2022 as a result of good implementation of emissions reduction projects. Furthermore, GHG emissions accounting for Corporate and Others require further refinements due to different organisational boundary used previously. Hence, subsequent analysis depicted below excludes Corporate and Others.

### GHG Emissions Breakdown by Region (million tonnes CO<sub>2</sub>e) (excludes Corporate and Others)



## PETRONAS Global GHG Emissions *(excludes Corporate and Others)*

In 2023, GHG emissions from our operations recorded 49.22 million tonnes CO<sub>2</sub>e, which is 0.71 per cent lower compared to 2022. GHG emissions from Malaysia operations recorded 45.16 million tonnes CO<sub>2</sub>e, which is below the short-term target of capping GHG emissions from Malaysia operations to 49.5 million tonnes CO<sub>2</sub>e by 2024. Energy efficiency, flare and vent reduction as well as vent-to-flare conversion attributed to the emission performance improvement in 2023.

Scope 1 contributes to 48.50 million tonnes CO<sub>2</sub>e (98.54 per cent) and Scope 2 contributes to 0.72 million tonnes CO<sub>2</sub>e (1.46 per cent).

Out of the total Scope 1 GHG emissions, about 70 per cent of the footprint relates to stationary combustion (34.07 million tonnes CO<sub>2</sub>e), flaring (8.61 million tonnes CO<sub>2</sub>e), venting (2.54 million tonnes CO<sub>2</sub>e) and other Scope 1 emissions (3.28 million tonnes CO<sub>2</sub>e), such as refrigerant, equipment leaks, acid gas removal and mobile combustion.

	2019	2020	2021	2022	2023
<b>Total GHG Emissions (Scope 1 and 2)</b>					
PETRONAS (million tonnes CO <sub>2</sub> e)	56.49	50.67	47.13	49.57	<b>49.22</b>
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	52.98	48.16	44.62	46.10	<b>45.16</b>
International (million tonnes CO <sub>2</sub> e)	3.51	2.51	2.51	3.47	<b>4.06</b>
<b>Breakdown by Scope</b>					
Scope 1 – Direct GHG Emissions (million tonnes CO <sub>2</sub> e)	55.48	49.76	46.42	48.88	<b>48.50</b>
Scope 2 – Indirect GHG emissions (million tonnes CO <sub>2</sub> e)	1.01	0.91	0.71	0.69	<b>0.72</b>
<b>Scope 1 – Direct GHG Emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	52.42	47.64	44.16	45.60	<b>44.65</b>
International (million tonnes CO <sub>2</sub> e)	3.06	2.11	2.26	3.28	<b>3.85</b>
<b>Breakdown by GHG type</b>					
Carbon Dioxide (million tonnes CO <sub>2</sub> e)	44.56	40.34	40.29	43.33	<b>43.63</b>
Methane (thousand tonnes CH <sub>4</sub> )	428.69	369.36	238.42	214.86	<b>186.55</b>
Nitrous Oxide (thousand tonnes N <sub>2</sub> O)	0.74	0.64	0.62	0.69	<b>0.70</b>
<b>Breakdown by Sources</b>					
Combustion (million tonnes CO <sub>2</sub> e)	34.89	32.10	32.05	33.97	<b>34.07</b>
Flaring (million tonnes CO <sub>2</sub> e)	8.51	6.65	7.11	7.87	<b>8.61</b>
Venting (million tonnes CO <sub>2</sub> e)	9.08	8.19	4.98	3.86	<b>2.54</b>
Others (million tonnes CO <sub>2</sub> e)	3.00	2.82	2.28	3.18	<b>3.28</b>
<b>Scope 2 – Indirect GHG emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	0.56	0.51	0.47	0.49	<b>0.51</b>
International (million tonnes CO <sub>2</sub> e)	0.45	0.40	0.24	0.20	<b>0.21</b>
<b>Scope 3 - Indirect GHG emissions</b>					
Category 11 – Fuel (million tonnes CO <sub>2</sub> e)	315.93	283.83	292.92	286.29	<b>307.51</b>

**Note:**

Detailed breakdown may not add up to the total due to rounding.

## Sustainability Key Performance Data

### GHG Emissions Intensity

	2019	2020	2021	2022	2023
<b>GHG Intensity by Business Segments</b>					
<b>Upstream</b>					
Total (tonnes CO <sub>2</sub> e/kboe)	57.29	51.51	44.71	36.11	<b>32.73</b>
Malaysia Assets (tonnes CO <sub>2</sub> e/kboe)	66.11	61.04	50.14	42.77	<b>36.95</b>
International Assets (tonnes CO <sub>2</sub> e/kboe)	28.29	20.06	28.23	24.11	<b>26.05</b>
<b>Downstream</b>					
Refineries (tonnes CO <sub>2</sub> e/bbl)	0.016	0.018	0.018	0.021	<b>0.019</b>
Petrochemicals (tonnes CO <sub>2</sub> e/tonnes)	0.62	0.62	0.60	0.57	<b>0.60</b>

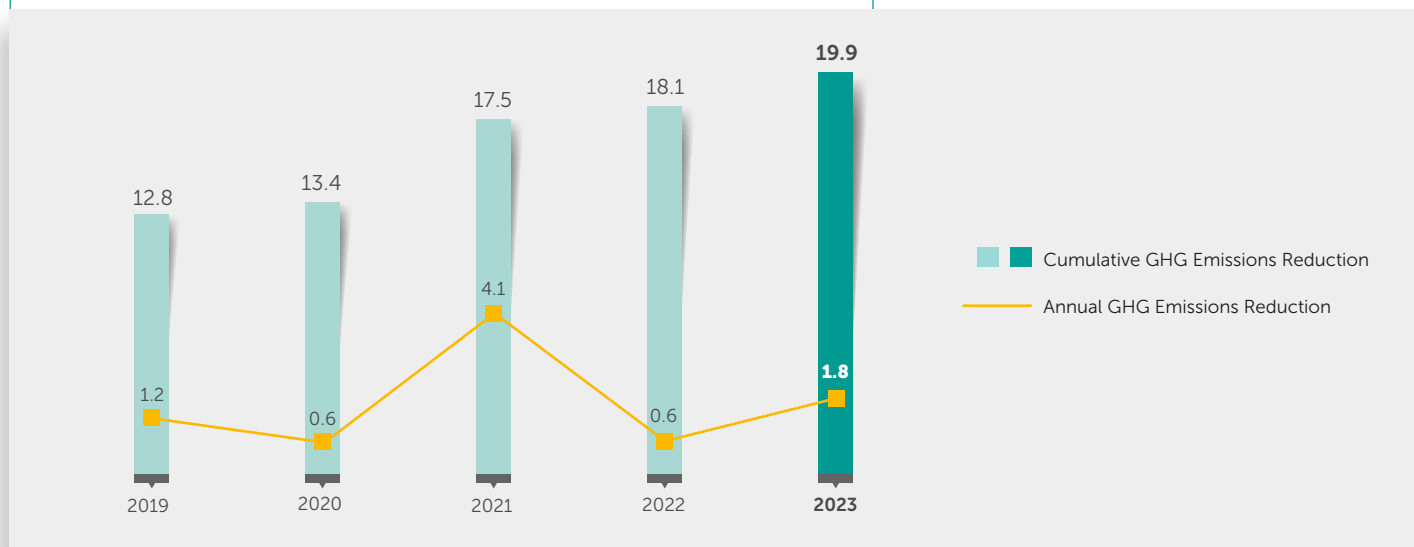
#### Notes:

1. Numerator for GHG intensity is a summation of Scope 1 and Scope 2 GHG emissions under operational control boundary.
2. Boundary for Downstream is Malaysia operations only.

No significant change for PCG and Refineries as operations are maintaining plant performance and efficiency at optimum level.

Upstream intensity shows a reduction of 9.36 per cent compared to 2022, as a result of ongoing efforts in reducing hydrocarbon venting and flaring.

### GHG Emissions Reduction from Projects (million tonnes CO<sub>2</sub>e/year)



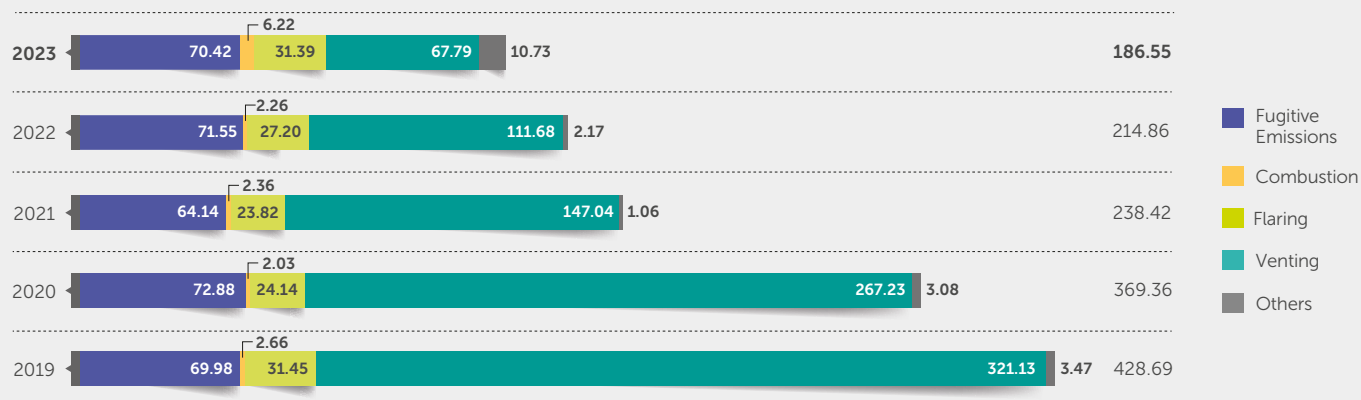
#### Notes:

1. GHG emissions reductions are calculated as per ISO 14064-2:2019 and does not reflect the year-on-year GHG emissions differences.



PETRONAS is continuously seeking opportunities to reduce its GHG emissions in contribution toward its Net Zero Carbon Emissions by 2050 Pathway. The completed GHG emissions reduction projects in 2023 may reduce the GHG emissions from PETRONAS' operations in Malaysia by 1.8 million tonnes CO<sub>2</sub>e per year compared to business-as-usual. Cumulatively since 2013, we have reduced 19.9 million tonnes CO<sub>2</sub>e of GHG emissions per year from our operations.

### Methane Emissions (PETRONAS Global Methane Emissions (thousand tonnes CH<sub>4</sub>) (excluding Corporate and Others))

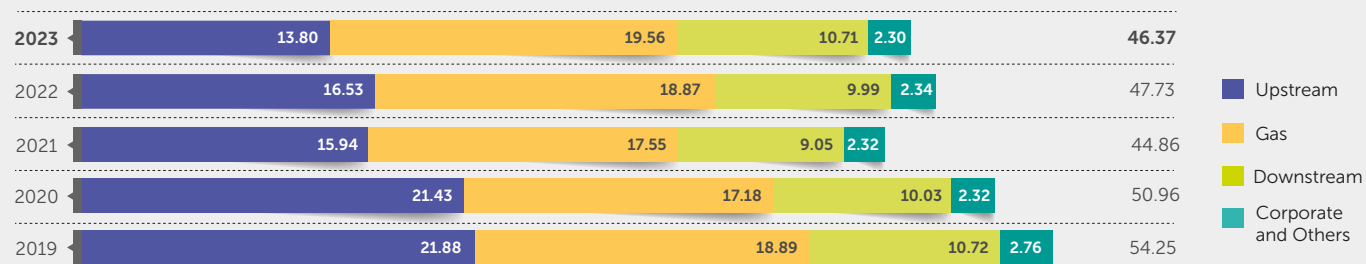


**Note:**

1. GHG emissions reductions are calculated as per ISO 14064-2:2019 and does not reflect the year-on-year GHG emissions differences.
2. As part of Oil and Gas Methane Partnership 2.0 continuous improvement in methane measurement, the methane emissions data will be reinstated post external verification in 2024.
3. Others are methane from acid gas removal, glycol dehydrator, mobile and transportation.

### GHG Emissions – Equity Share

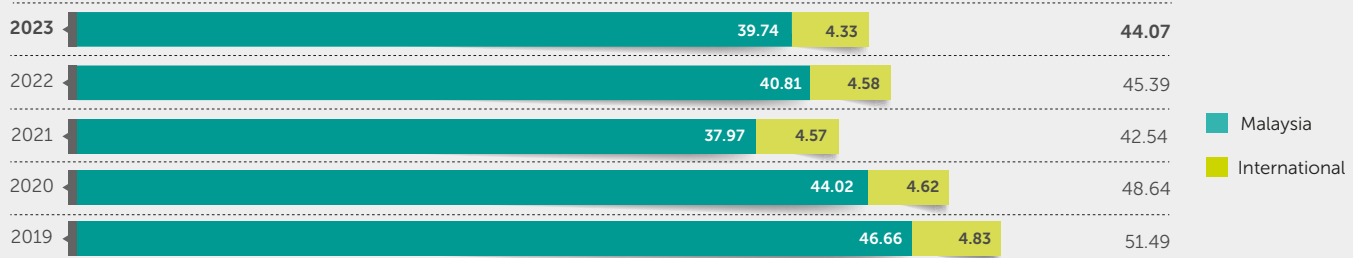
#### Total GHG Emissions Breakdown by Business (million tonnes CO<sub>2</sub>e)



From an equity share perspective, GHG emissions from PETRONAS global operations was lower by 2.85 per cent compared to 2022. Equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation. Hence, PETRONAS has set mid-term and long-term targets by referring to 2019 as the base year on an equity share approach. Analysis indicates the Scope 1 and Scope 2 PETRONAS GHG emissions from equity share have reduced 14.53 per cent from 54.25 million tonnes CO<sub>2</sub>e in 2019 to 46.37 million tonnes CO<sub>2</sub>e in 2023. The improvement was a result of ongoing investment in GHG emission reduction efforts since 2019.

## Sustainability Key Performance Data

### GHG Emissions Breakdown by Region (million tonnes CO<sub>2</sub>e) (excludes Corporate and Others)



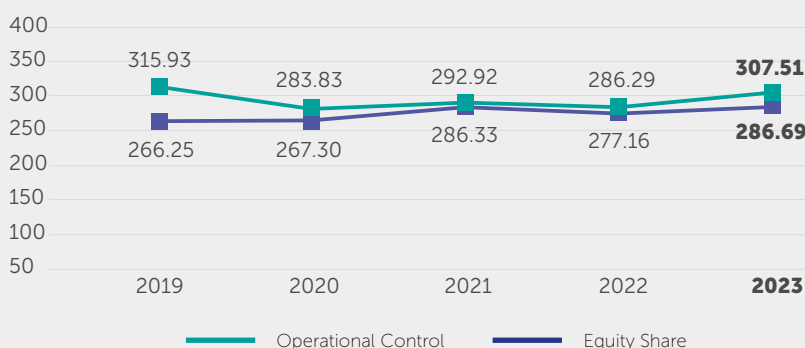
In 2023, PETRONAS global GHG emissions by equity share approach, recorded GHG emissions of 44.07 million tonnes CO<sub>2</sub>e, accounting for a 2.62 per cent increase in Malaysia operations and about 5.46 per cent reduction from international operations compared to 2022. Scope 1 constituted to 43.24 million tonnes CO<sub>2</sub>e (98.12 per cent) and Scope 2 to 0.83 million tonnes CO<sub>2</sub>e (1.88 per cent).

### Detailed Breakdown for PETRONAS GHG Emissions Based on Equity Share

Key Performance Indicators (excludes Corporate and Others)	2019	2020	2021	2022	2023
<b>Total GHG Emissions (Scope 1 and 2)</b>					
<b>Breakdown by Scope</b>					
Scope 1 – Direct GHG emissions (million tonnes CO <sub>2</sub> e)	50.45	47.67	41.77	44.59	<b>43.24</b>
Scope 2 – Indirect GHG emissions (million tonnes CO <sub>2</sub> e)	1.04	0.97	0.77	0.80	<b>0.83</b>
<b>Scope 1 – Direct GHG Emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	46.09	43.51	37.54	40.32	<b>39.21</b>
International (million tonnes CO <sub>2</sub> e)	4.36	4.16	4.23	4.27	<b>4.03</b>
<b>Scope 2 – Indirect GHG Emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	0.57	0.51	0.43	0.49	<b>0.53</b>
International (million tonnes CO <sub>2</sub> e)	0.47	0.46	0.34	0.31	<b>0.30</b>
<b>Scope 3 – Indirect GHG emissions</b>					
Category 11 – Fuel (million tonnes CO <sub>2</sub> e)	266.25	267.30	286.33	277.16	<b>286.69</b>

### Scope 3 Emissions

#### Scope 3 Category 11 (million tonnes CO<sub>2</sub>e) by Operational Control and Equity Share Approaches



PETRONAS continues to strengthen its quantification and reporting of Scope 3 (Category 11: Use of Sold Products) emissions, where in 2023, PETRONAS recorded 307.51 million tonnes CO<sub>2</sub>e under operational control approach, which is higher by 7.41 per cent compared to 2022. Meanwhile, Scope 3 of PETRONAS GHG emissions for equity share have increased by 3.44 per cent from 277.16 million tonnes CO<sub>2</sub>e in 2022 to 286.69 million tonnes CO<sub>2</sub>e in 2023.

In the following table, in addition to Category 11 emissions, we progressively report the screening study's results for 2022 and 2023 Category 1 to 6 emissions for operational control approach.

### PETRONAS Group Scope 3, GHG Emissions for Category 11 and Category 1 to 6, the Progressive Results from Scope 3 Emissions Screening Study<sup>1</sup>, for Operational Control Approach

Scope 3 Categories	2022 GHG emissions (million tonnes CO <sub>2</sub> e)	2023 GHG emissions (million tonnes CO <sub>2</sub> e)
Category 1 (Purchased goods and services) <sup>2,8</sup>	25.90	<b>23.45</b>
Category 2 (Capital goods) <sup>8</sup>	2.42	<b>3.19</b>
Category 3 (Fuel- and energy-related activities) <sup>3,9</sup>	2.61	<b>3.10</b>
Category 4 (Upstream transportation and distribution) <sup>4,8</sup>	2.75	<b>2.69</b>
Category 5 (Waste generated in operations) <sup>5,9</sup>	0.01	<b>0.02</b>
Category 6 (Business travel) <sup>6,9</sup>	0.03	<b>0.05</b>
Category 11 (Use of sold products) <sup>7</sup>	286.29	<b>307.51</b>

<sup>1</sup> PETRONAS Scope 3 screening study is guided by GHG Protocol, Ipieca and benchmarking with peers.

<sup>2</sup> This category includes estimated upstream emissions (cradle to gate emissions) from goods and services purchased by PETRONAS from third-party supplier. Emissions from purchased capital goods are reported separately under Category 2. Emissions from upstream transportation and distribution services and emissions from transportation and distribution of purchased goods are reported separately under Category 4.

<sup>3</sup> This category includes emissions related to the production of fuels and energy purchased and consumed by PETRONAS in the reporting year that are not included in Scope 1 or Scope 2.

<sup>4</sup> The term "upstream" here refers to indirect GHG emissions related to purchased or acquired goods and services. This category includes emissions from transportation of purchased goods and capital assets, as well as purchased third-party transportation services from transportation services supplier.

<sup>5</sup> This category includes emissions from third-party disposal and treatment of waste that is generated in PETRONAS' owned or controlled operations.

<sup>6</sup> This category includes emissions from the transportation of employees for business related activities in vehicles owned or operated by third parties.

<sup>7</sup> Since 2022, PETRONAS has started reporting Scope 3, Category 11. In 2023, we continue to mature our data in calculating Category 11. The data above is based on Operational Control approach. PETRONAS Scope 3 Category 11 based on Equity Share approach is 277.16 million tonnes CO<sub>2</sub>e in 2022, and 286.69 million tonnes CO<sub>2</sub>e in 2023. Historical Scope 3 Category 11 can be found in PETRONAS Integrated Report 2023. Category 11 only includes emissions associated with fuel products sold to third party. All fuel products sold are assumed to be fully combusted.

<sup>8</sup> Spend based method is used to calculate Category 1,2 and 4. Spend-based method estimates emissions by collecting data on amount spent (such as, bills, invoices, etc.) and multiplying it by emission factors from United States Environmental Protection Agency (USEPA).

<sup>9</sup> Average data method is used to calculate Category 3,5 and 6. Average-data method estimates emissions by collecting data on the mass (such as, kilograms or pounds, etc.), or other relevant units and multiplying by the emission factors from Department for Environment, Food and Rural Affairs (DEFRA) Conversion Factors.

Going forward, we plan to report PETRONAS' material Scope 3 categories, which will be based on the outcome of the materiality assessment, that will be informed by the screening results of the remaining Scope 3 categories. To ensure credibility of its Scope 3 data, PETRONAS plans to verify its Scope 3 emissions in subsequent years.

### Cumulative Renewable Energy Installed Capacity

Key Performance Indicators	2019	2020	2021	2022	2023
Total Cumulative Renewable Energy Installed Capacity (megawatt)	10	644	851	1,086	<b>1,621*</b>
Malaysia	10	19	29	81	<b>78</b>
International	n/a	625	822	1,005	<b>1,543</b>

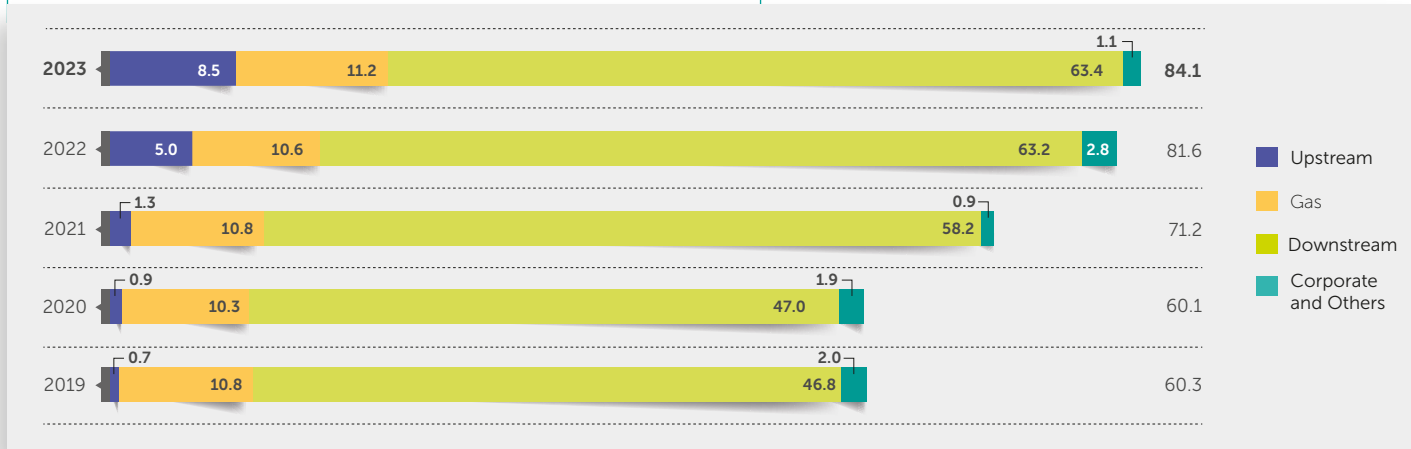
**Note:**

\* Cumulative renewable energy capacity is 2.9GW, including installed and under construction.

## Sustainability Key Performance Data

### Environment

#### Total Freshwater Withdrawal (million cubic metres per year)



Disclosures	2019	2020	2021	2022	2023
<b>Water</b>					
Total Freshwater Withdrawal (million cubic metres per year)	60.3	60.1	71.2	81.6	<b>84.1</b>
Freshwater Withdrawal by Business Segments					
Upstream (million cubic metres per year)	0.7	0.9	1.3	5.0	<b>8.5</b>
Gas (million cubic metres per year)	10.8	10.3	10.8	10.6	<b>11.2</b>
Downstream (million cubic metres per year)	46.8	47.0	58.2	63.2	<b>63.4</b>
Corporate and Others (million cubic metres per year)	2.0	1.9	0.9	2.8	<b>1.1</b>
Freshwater Withdrawal by Regions					
Malaysia (million cubic metres per year)	57.0	56.8	70.2	76.8	<b>75.7</b>
International (million cubic metres per year)	3.3	3.3	1.0	4.8	<b>8.4</b>
<b>Effluents</b>					
Discharges to Water (tonnes of hydrocarbon)	648	532	452	487	<b>327</b>
<b>Spillage</b>					
Number of Hydrocarbons Spills into the Environment over One Barrel (number of cases)	7	5	2	2	<b>5<sup>1</sup></b>
<b>Air Emissions</b>					
Total Sulphur Oxides Emissions (tonnes)	110,214	84,225	47,954	60,116	<b>60,212</b>
Total Nitrogen Oxides Emissions (tonnes)	148,446	138,035	133,962	62,790	<b>101,695<sup>2</sup></b>
<b>Waste</b>					
Total Hazardous Waste Generated (tonnes)	112,224	92,019	124,884	144,620	<b>152,037</b>
Hazardous Waste Generated by Region					
Malaysia (tonnes)	97,739	67,078	59,882	82,051	<b>66,444</b>
International (tonnes)	14,485	24,941	65,002	62,569	<b>85,593</b>
Total Hazardous Waste Sent for Reused, Recycled and Recovered (3R)	64,655	65,170	49,561	73,643	<b>57,424</b>
Hazardous Waste Sent for 3R by Region					
Malaysia (tonnes)	64,655	49,022	41,364	63,133	<b>52,147</b>
International (tonnes)	–	16,148	8,197	10,510	<b>5,277</b>
Total Hazardous Waste Disposed (tonnes)	42,121	33,349	59,228	76,485	<b>96,310</b>
Hazardous Waste Disposed by Region					
Malaysia (tonnes)	27,725	14,914	21,542	24,449	<b>20,023</b>
International (tonnes)	14,396	18,435	37,686	52,036	<b>76,287</b>

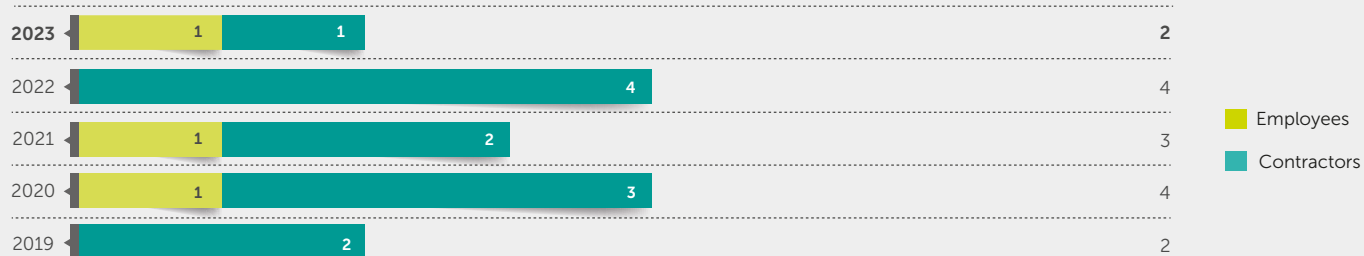
#### Note:

<sup>1</sup> In 2023, the increase in number of cases of hydrocarbon spills over one barrel, whereby four out of five cases were due to pipe leaks.

<sup>2</sup> Total nitrogen oxide emissions increased in 2023 to 101,695 tonnes from 62,790 tonnes. This increase was due to the high nitrogen oxide value from Malaysia LNG's combustion process and updated 2023 reporting scope by a subsidiary.

## Safety

### Number of Fatalities (number of cases)



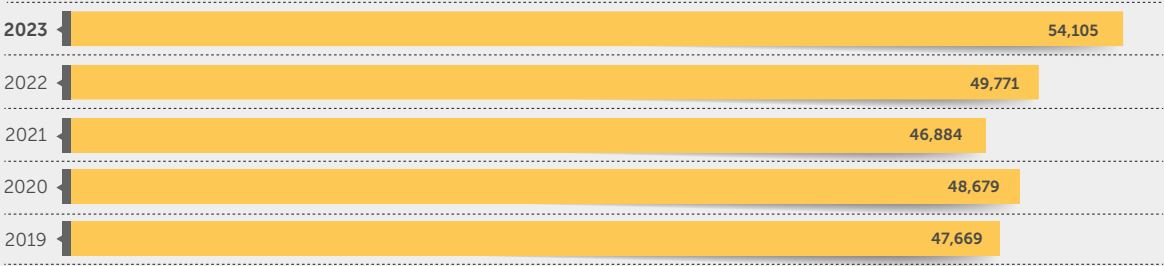
Key Performance Indicators	2019	2020	2021	2022	2023
Total man-hours worked (million hours)	355	273	268	295	<b>292</b>
Employees	133	120	120	127	<b>131</b>
Contractors	222	153	148	168	<b>161</b>
Fatal Accident Rate (FAR) (number per 100 million man-hours)	0.56	1.47	1.12	1.36	<b>0.69</b>
Employees	0.00	0.84	0.84	0.00	<b>0.76</b>
Contractors	0.90	1.96	1.35	2.38	<b>0.62</b>
Lost Time Injury Frequency (LTIF) (number of cases per one million man-hours)	0.11	0.10	0.14	0.13	<b>0.11</b>
Employees	0.08	0.09	0.10	0.11	<b>0.08</b>
Contractors	0.12	0.11	0.17	0.14	<b>0.12</b>
Total Recordable Case Frequency (TRCF) (number of cases per one million man-hours)	0.34	0.29	0.41	0.34	<b>0.31</b>
Employees	0.28	0.27	0.28	0.26	<b>0.19</b>
Contractors	0.37	0.31	0.52	0.40	<b>0.40</b>
Total Recordable Occupational Illness Frequency (TROIF) (number of cases per one million man-hours – employees)	0.23	0.39	0.24	0.32	<b>0.66</b>
Number of Tier 1 Process Safety Events (number of cases)	9	9	10	7	<b>9</b>



Sustainability Key Performance Data

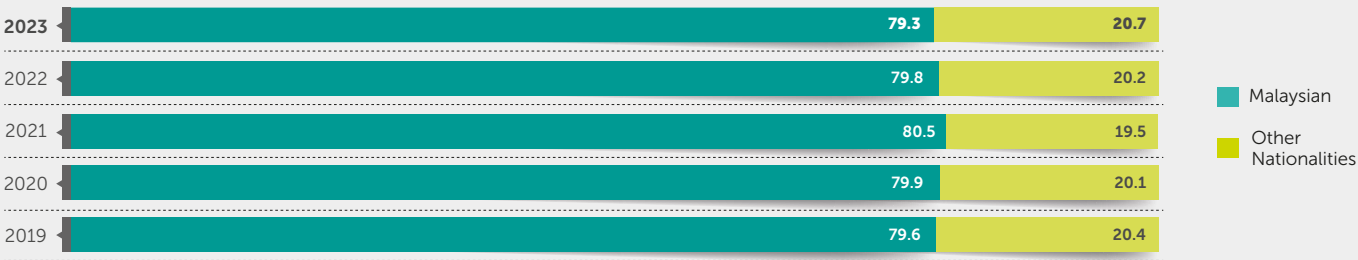
Employees

Total Number of Employees

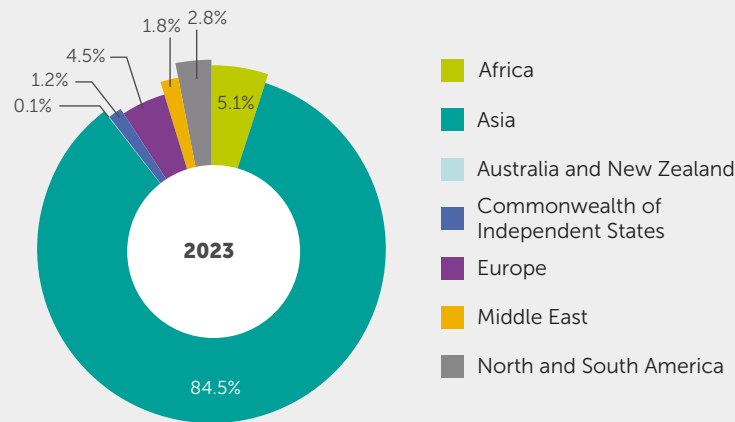


2023 workforce grew by 8.7 per cent fueled by business growth in alignment with PETRONAS Energy Transition Strategy whilst strengthening operational excellence.

Breakdown of Employees by Nationality (%)



Breakdown of Employees by Region in 2023 (%)



By monitoring our employee count across all regions where we operate, we have maintained a stable workforce in each region year-on-year. This ensures that our business operations can continue to perform.

## Employees

Key Performance Indicators	2019	2020	2021	2022	2023
Employment Type (%)					
Permanent	88	86	87	88	<b>87</b>
Contract	12	14	13	12	<b>13</b>
Age Group (%)					
Above 35	52	53	59	60	<b>58</b>
Below 35	48	47	41	40	<b>42</b>
Total Number of Union Members	8,420	8,476	8,353	8,360	<b>8,266</b>

### Note:

1. Exclusively employing permanent and contract employees, we forgo non-guaranteed hours or part-time positions. This highlights our commitment to offering stable and fulfilling careers.
2. Re-baseline Union Members disclosure for 2022 aligned with redefined boundaries for union members. The observed decrease in union membership is attributed to natural attrition.

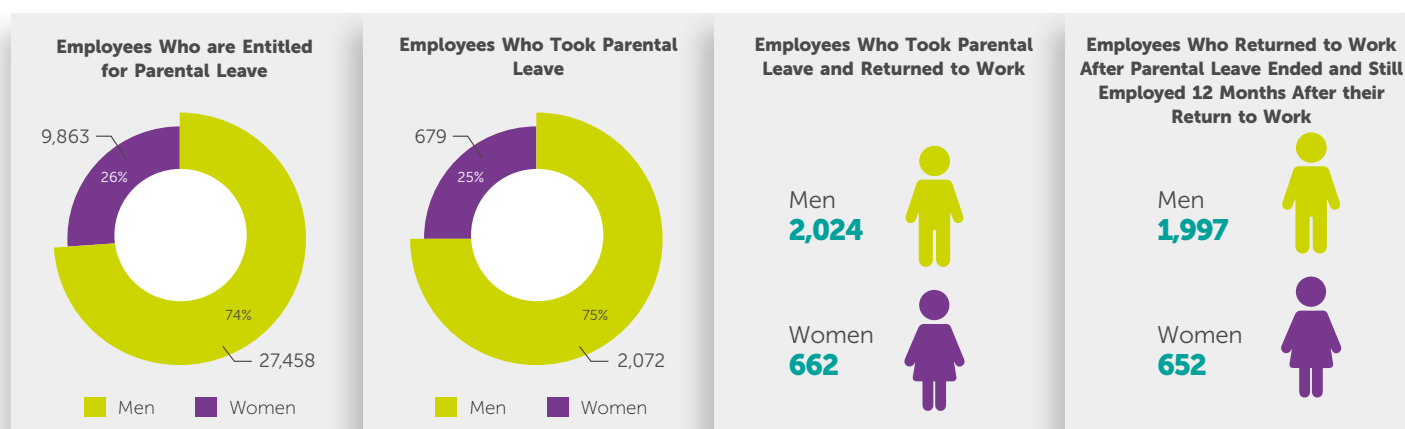
## Gender Diversity

Key Performance Indicators	2019	2020	2021	2022	2023
Breakdown of Employees by Gender (%)					
Men	73	72	72	71	<b>71</b>
Women	27	28	28	29	<b>29</b>
Breakdown of Senior Management Employees by Gender (%)					
Men	85	81	74	78	<b>79</b>
Women	15	19	26	22	<b>21</b>
Breakdown of Management Committee Employees by Gender (%)					
Men	89	78	78	78	<b>78</b>
Women	11	22	22	22	<b>22</b>
Breakdown of Board of Directors Employees by Gender (%)					
Men	86	75	70	82	<b>75</b>
Women	14	25	30	18	<b>25</b>
Women in Technical Position (%)	14	14	14	14	<b>15</b>

**Note:** Senior Management refers to Vice President and above. Management Committee refers to Executive Leadership Team.

## Benefits

Full-time employees in Malaysia have a comprehensive range of benefits including leave, allowances, medical coverage, financing options and talent development opportunities. Acknowledging the temporary nature of contract employment, contract employees may have different benefits depending on the duration and type of their contract. Certain benefits, such as dental or optical, preventive health screening, assistance for employees with a special needs child, Hajj or Umrah leave, pilgrimage leave, home financing, vehicle financing, substance misuse rehab assistance and staff development programmes, are only available to permanent employees.



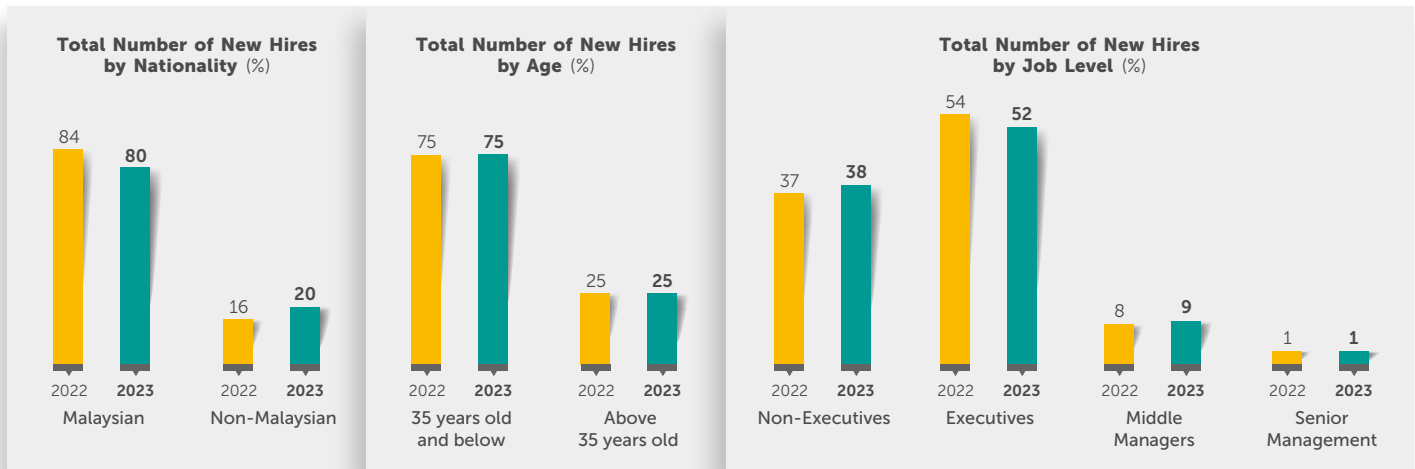
Parental Leave: **96%** retained within the Company

**Note:** Parental leave refers to Maternity and Paternity only.

## Sustainability Key Performance Data

### New Hires

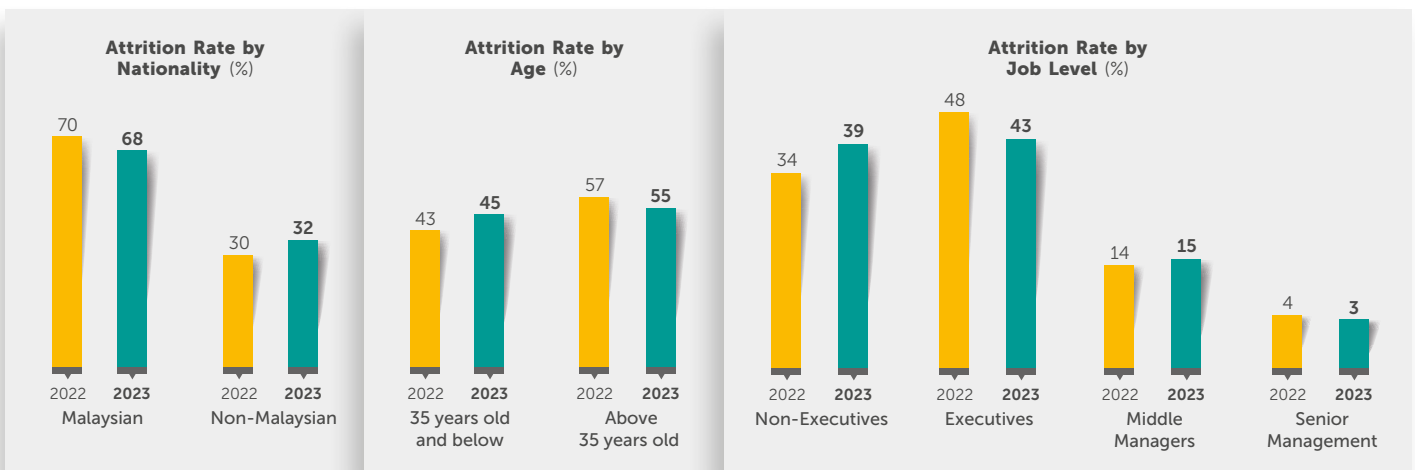
Key Performance Indicators	2019	2020	2021	2022	2023
Total Number of New Hires	3,498	2,160	2,172	5,210	7,386



**Note:**  
Our primary approach is to focus on internal talent development with vacancies primarily filled through transfers and promotions. External recruitment is pursued after internal options are fully explored. This underscores our commitment to upskilling talent to meet organisational growth objectives.

### Employee Attrition

Key Performance Indicators	2019	2020	2021	2022	2023
Employee Attrition Rate (%)	5.5	4.9	8.4	6.6	6.4
Men	3.7	3.6	5.7	4.7	4.6
Women	1.8	1.3	2.8	1.9	1.8



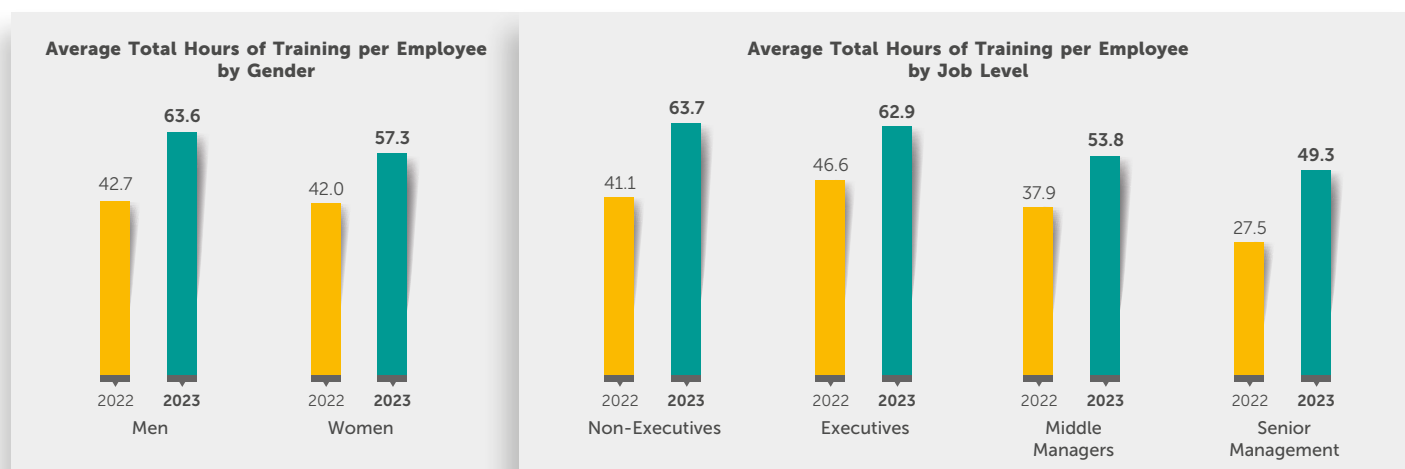
## Talent and Future Pipeline

### Training and Development

Key Performance Indicators	2019	2020	2021	2022	2023
Training days per employee	7.0	5.0	4.0	4.9	<b>7.3</b>
Training investment per employee (RM)	6,543	3,588	2,386	5,433	<b>6,771</b>
Average total hours of training per employee (person hours)	53.6	36.0	30.0	39.1	<b>58.2</b>

**Note:**

Significant increase in the learning hours resulted from efforts towards inculcating 'self-driven learning culture', and ensuring learning solutions support PETRONAS Capability Development Priorities such as Leadership, Technical, Agile and Innovation, Digital and Sustainability are being fulfilled.



### Groupwide Technical Expertise

Key Performance Indicators	2019	2020	2021	2022	2023
Technical Authorities (TA)	340	501	601	618	<b>786</b>
Technical Professionals (TP)	1,028	1,173	1,281	1,384	<b>1,380</b>
Technical Trade Specialists (TTS)	240	259	262	266	<b>255</b>

### Sponsorship

Key Performance Indicators	2019	2020	2021	2022	2023
Number of PETRONAS Scholars Recruited	206	219	220	281	<b>256</b>
Recruited by PETRONAS (%)	67	61	66	90	<b>90</b>
Recruited by Others (%)	33	39	34	10	<b>9</b>
Number of Scholarships Awarded to Malaysians	399	370	302	587	<b>615</b>
International Universities (%)	46	25	34	34	<b>35</b>
Malaysian Universities (%)	54	75	66	66	<b>65</b>
Number of Scholarships Awarded to Non-Malaysians at Universiti Teknologi PETRONAS	78	42	41	41	<b>32</b>

**Note:**

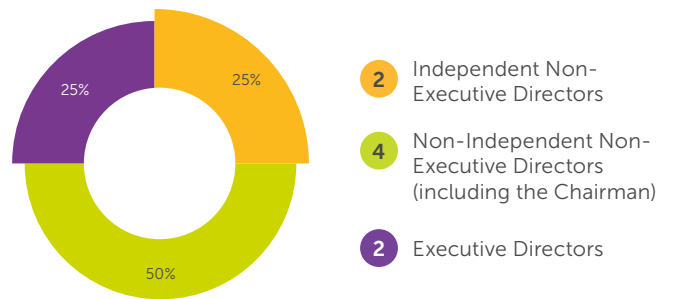
Re-baseline PETRONAS Scholars Recruited for 2022 data to reflect actual status of scholars pending placement. 1 per cent of 2023 PETRONAS's scholars are currently pending placement.

### Human Rights

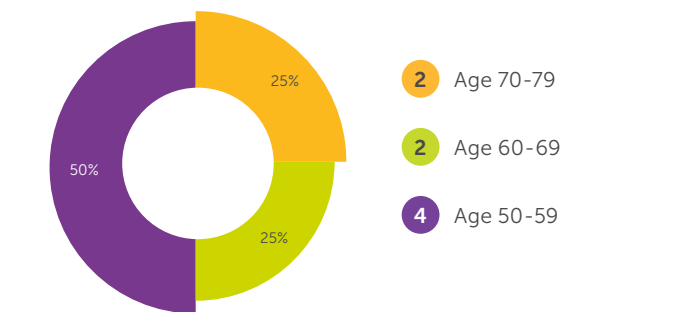
Key Performance Indicators	2019	2020	2021	2022	2023
Number of security personnel trained in human rights policies or procedures	161	913	1,415	617	<b>115</b>

# Board Composition

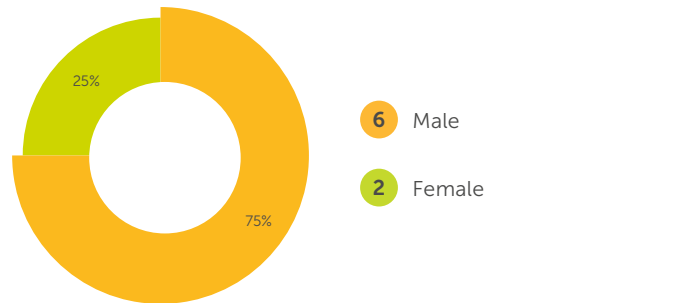
## Composition



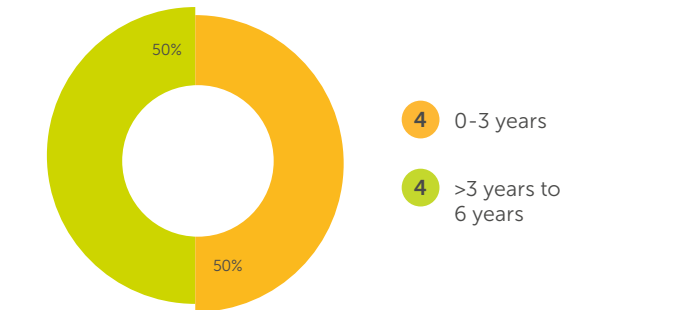
## Age Group



## Gender



## Tenure



Board Skills and Expertise								
Oil and Gas								1
Public Sector								3
Property								3
Consultancy								2
Finance/Audit								5
Economics								3
Commercial/Marketing								4
Legal								2
Strategy								5

**Note:**  
A Director may have more than one experience and skill.  
All information is as at 28 February 2024.



# Profile of Board of Directors

As at 28 February 2024



**Age and Gender**  
69 Years/Male

**Nationality**  
Malaysian

**Date of Appointment**  
18 June 2019

**Tan Sri Dato' Seri Mohd Bakke Salleh**

Non-Independent Non-Executive Director/Chairman

## Academic/Professional Qualifications:

- Fellow of the Institute of Chartered Accountants in England and Wales (ICAEW)
- Member of the Malaysian Institute of Accountants (MIA)
- Bachelor of Science (Economics), London School of Economics, United Kingdom

## Past Appointments/Experiences:

Held key positions in a number of Government-linked companies and local corporations:

- Chairman, Telekom Malaysia Berhad
- Chairman, Federal Land Development Authority (FELDA)
- Group President and Chief Executive Officer, FELDA Global Ventures Holdings Berhad
- Group Managing Director, FELDA Holdings Berhad
- Chairman, Yayasan FELDA
- Executive Deputy Chairman and Managing Director, Sime Darby Plantation Berhad
- President and Group Chief Executive, Sime Darby Berhad
- Council Member of Yayasan Sime Darby
- Chairman, Malaysian Palm Oil Board (MPOB)
- Chairman, Bank Islam Malaysia Berhad
- Non-Executive Director, Eastern and Oriental Berhad
- Group Managing Director and Chief Executive Officer, Lembaga Tabung Haji
- Director, Property Division of Pengurusan Danaharta Nasional Berhad
- Managing Director, Syarikat Perumahan Pegawai Kerajaan Sdn Berhad (SPPK)
- Group General Manager, Island and Peninsular Berhad
- Pro Chancellor of Universiti Putra Malaysia

## Other Current Appointments:

- Chairman, Yayasan PETRONAS
- Honorary Council Member, Malaysian Palm Oil Association (MPOA)



**Age and Gender**  
50 Years/Male

**Nationality**  
Malaysian

**Date of Appointment**  
15 October 2018

**Tan Sri Tengku Muhammad Taufik**

Executive Director, President and Group Chief Executive Officer

## Academic/Professional Qualifications:

- Fellow of the Institute of Chartered Accountants in England and Wales (ICAEW)
- Member of the Malaysian Institute of Accountants (MIA)
- Bachelor of Arts (Honours) (Finance and Accounting), University of Strathclyde, Glasgow, Scotland

## Past Appointments/Experiences:

- Joined PETRONAS in 2000
- Has more than 23 years of experience in the oil and gas industry
- Areas of expertise include developing and steering key business strategies, organisational transformation, and finance and risk management
- Experienced in strategic planning, finance, and business strategy development with a focus on the oil and gas and energy industry
- Advocate of a just and responsible energy transition by promoting regional partnership in shaping policy, innovation and technology
- Other key positions previously held within the Group:
  - Executive Vice President and Group Chief Financial Officer, PETRONAS
  - Partner at PricewaterhouseCoopers (PwC) Malaysia
  - Chief Financial Officer for two public listed companies

## Other Current Appointments:

- Chairman, Audit Committee for East Coast Economic Region Development Council (ECERDC) and Northern Corridor Implementation Authority (NCIA)
- Chairman, Gentari Sdn Bhd
- Chairman, Malaysia-United Arab Emirates Business Council (MUBC)
- Chairman, National Trust Fund
- Exco Member, the World Business Council for Sustainability Development (WBCSD)
- Member, World Economic Forum (WEF) Industry Action Group and WEF Oil and Gas Governors Forum
- Co-Chairperson, the WEF ASEAN Leaders for Just Energy Transition Community
- Council Member, ECERDC and NCIA
- Member, Board of Trustees of the Merdeka Award Trust
- Director, PETRONAS Carigali Sdn Bhd
- Pro-Chancellor of Universiti Teknologi PETRONAS (UTP)

## Profile of Board of Directors

As at 28 February 2024



**Age and Gender**  
50 Years/Male

**Nationality**  
Malaysian

**Date of Appointment**  
1 April 2023

**AC** **RC**

**Datuk Johan Mahmood @ Johan Mahmood Merican**  
Non-Independent Non-Executive Director

### Academic/Professional Qualifications:

- Associate of the Institute of Chartered Accountants in England and Wales (ICAEW)
- Bachelor of Economics, University of Cambridge

### Past Appointments/Experiences:

- His extensive public sector experience over 20 years in areas that include policy development, economics, and human capital. Held various key positions including:
  - Deputy Secretary General (Policy) of the Ministry of Finance (MOF)
  - Director of the National Budget Office, MOF
  - Deputy Director General (Human Capital), Economic Planning Unit
  - Chief Executive Officer, TalentCorp
  - Chairman of MySALAM
- Private sector experience included accountancy and corporate finance roles in PwC, Sime Darby and MRCB

### Other Current Appointments:

- Member of Audit Committee, PETRONAS
- Member of Risk Committee, PETRONAS
- Secretary General of Treasury, MOF



**Age and Gender**  
65 Years/Male

**Nationality**  
Malaysian

**Date of Appointment**  
17 August 2020

**RC**

**Dato Haji Ibrahim Haji Baki**  
Non-Independent Non-Executive Director

### Academic/Professional Qualifications:

- A Barrister-at-Law and a member of Lincoln's Inn
- Honours Degree in Law



### Past Appointments/Experiences:

- Served as City Councillor and active in social welfare and charitable organisations
- Former Executive Chairman/Shareholders of Hubline Berhad
- Director/Shareholder of Gagasan Abadi Properties Sdn Bhd
- Chairman/Shareholder of Warisan Kenyalang Sdn Bhd
- Chairman/Shareholder of IBZ Corporation Sdn Bhd
- Chairman of Layang-Layang Aerospace Sdn Bhd
- Managing Director of Gagasan Sdn Bhd
- Commission members of Registrar of Companies Malaysia (SSM)
- Chairman, Daya Builders Sdn Bhd Government Linked Company

### Other Current Appointments:

- Chairman of Risk Committee, PETRONAS
- Chairman/Shareholder, Supreme Consolidated Resources Berhad
- Chairman, Redpyne Sdn Bhd
- Chairman/Shareholder, IBA Holdings Sdn Bhd
- Chairman, Lestari Asiabina Sdn Bhd
- Chairman/Shareholder of two newspapers, the New Sarawak Tribune and Suara Sarawak

### Board Committee:

-  Chairman of Committee
-  Member of Committee

**AC**

Audit Committee

**RC**

Risk Committee

**NRC**

Nomination and Remuneration Committee



**Age and Gender**  
73 Years/Male

**Nationality**  
Malaysian

**Date of Appointment**  
19 January 2022

**AC** **NRC**

**Datuk KY Mustafa**  
Non-Independent Non-Executive Director

#### Academic/Professional Qualifications:

- Bachelor of Arts in Anthropology and Sociology, University Malaya

#### Past Appointments/Experiences:

- Served the Sabah State Government for 33 years from 1974 to the year 2007
- Permanent Secretary to the Ministry of Infrastructure in 1996
- State Secretary to the State Government of Sabah in 2000 and held the position until his retirement in 2007
- Head of the State Public Service and Secretary to the State Cabinet
- Member of the Royal Commission of Inquiry on Immigrants in Sabah from 2012 to May 2014

#### Other Current Appointments:

- Member of Audit Committee, PETRONAS
- Member of Nomination and Remuneration Committee, PETRONAS
- Director, Berjaya Land Berhad
- Director, Suria Capital Holdings Berhad
- Director, Sabah Ports Sdn Bhd



**Age and Gender**  
71 Years/Female

**Nationality**  
Malaysian

**Date of Appointment**  
17 August 2020

**NRC** **AC**

**Tan Sri Zaharah Ibrahim**  
Independent Non-Executive Director

#### Academic/Professional Qualifications:

- Bachelor of Laws (Honours) (LL.B), University Malaya

#### Past Appointments/Experiences:

- Held key positions in the Judicial and Legal Services and the Judiciary in Malaysia:
  - Chief Judge of Malaya
  - Federal Court Judge, Federal Court, Putrajaya
  - Court of Appeal Judge, Court of Appeal, Putrajaya
  - High Court Judge, High Court of Malaya (Shah Alam and Kuala Lumpur)
  - Judicial Commissioner, High Court of Malaya (Kuala Lumpur and Shah Alam)
  - Parliamentary Draftsman, Attorney General's Chambers of Malaysia
  - State Legal Advisor, Selangor
  - Director, Intellectual Property Division, Ministry of Domestic Trade and Consumer Affairs
  - Magistrate, Melaka
- Chairman, Prasarana Malaysia Berhad

#### Other Current Appointments:

- Chairman of Nomination and Remuneration Committee, PETRONAS
- Member of Audit Committee, PETRONAS
- Pro-Chancellor of Universiti Teknologi PETRONAS (UTP)
- Chairman, National Islamic Legislation Committee

#### Board Committee:

- Chairman of Committee**
- Member of Committee**

**AC** Audit Committee

**RC** Risk Committee

**NRC** Nomination and Remuneration Committee

## Profile of Board of Directors

As at 28 February 2024



**Azizan Zakaria**  
Independent Non-Executive Director

- Age and Gender**  
53 Years/Male
- Nationality**  
Malaysian
- Date of Appointment**  
15 November 2023
- AC** **RC** **NRC**

### Academic/Professional Qualifications:

- Fellow of the Chartered Association of Certified Accountants (FCCA)
- Member of the Malaysian Institute of Accountants (MIA)
- Bachelor of Science (BSc Hons) in Accounting, University of Wales, Cardiff, United Kingdom

### Past Appointments/Experiences:

- Served as a Senior Partner of PricewaterhouseCoopers (PwC) Malaysia with over 26 years of experience in providing audit and business advisory services in Malaysia and United Kingdom
- His expertise spans across various areas, such as leading financial due diligences, forensic audits, internal audits, advisory, consulting services, reporting accountants and review engagements
- A Member of PwC Malaysia's Country Management Team as People Leader
- Led PwC Malaysia's Southern Region practice
- Chairman of the Audit and Risk Committee of SilTerra Sdn Bhd
- Member of ACCA Malaysia Advisory Committee
- Member of the Malaysian Accounting Standards Board (MASB)'s working Group on improvement projects

### Other Current Appointments:

- Chairman of Audit Committee, PETRONAS
- Member of Risk Committee, PETRONAS
- Member of Nomination and Remuneration Committee, PETRONAS
- Director, TNB Power Generation Sdn Bhd
- Director, IUM Holdings Sdn Bhd
- Chairman, IUM Schools Sdn Bhd



**Liza Mustapha**  
Executive Director, Executive Vice President and Group Chief Financial Officer

- Age and Gender**  
53 Years/Female
- Nationality**  
Malaysian
- Date of Appointment**  
1 June 2021

### Academic/Professional Qualifications:

- Fellow of the Association of Chartered Certified Accountants (FCCA)
- Advance Management Program at Harvard Business School, USA
- Member of the Malaysian Institute of Accountants
- Bachelor of Science Degree in Economics, majoring in Accounting and Finance from The London School of Economics and Political Science, University of London

### Past Appointments/Experiences:

- Vice President, Group Procurement, Project Delivery and Technology, PETRONAS
- Group Financial Controller, PETRONAS
- Chief Financial Officer, Upstream Business, PETRONAS
- Senior General Manager, Group Treasury, PETRONAS
- Chief Financial Officer, PETRONAS Gas Berhad
- Chairman, ENERGAS Insurance (L) Ltd

### Other Current Appointments:

- Director, MISC Berhad
- Director, KLCC Property Holdings Berhad
- Director, KLCC REIT Management Sdn Bhd
- Director, KLCC (Holdings) Sdn Bhd
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS International Corporation Ltd
- Director, Gentari Sdn Bhd
- Director, PETRONAS (E&P) Overseas Ventures Sdn Bhd
- Treasurer, Malaysian Petroleum Club

### Board Committee:

- Chairman of Committee**
- Member of Committee**

**AC** Audit Committee

**RC** Risk Committee

**NRC** Nomination and Remuneration Committee

# Profile of Company Secretaries

As of 28 February 2024



**Azizi Md Ali**

Company Secretary, PETRONAS



**Age:** 55 **Gender:** Male



**Nationality:** Malaysian



**Date of Appointment:** 17 January 2024

## Academic/Professional Qualifications

- Master of Laws, National University of Malaysia
- Bachelor of Laws (Honours), University of Malaya
- Licensed Company Secretary

## Past Appointments/Experiences

- Joined PETRONAS in 1995 and has about 29 years of extensive experience in legal, corporate governance and company secretarial matters
- Previously served as the Company Secretary of Trans-Thai Malaysia, PICL (Egypt), PETRONAS Penapisan Terengganu, Aromatics (Malaysia), MITCO International Trading, E&P Operations and Maintenance, E&P Malaysia Venture and Vestigo
- General Counsel, Legal Upstream Malaysia
- General Counsel, LNG Business
- Senior General Counsel, Legal Upstream
- Chief Compliance Officer, Legal Compliance and Finance, PETRONAS

## Other Current Appointments

- Head, Group Secretarial and Board Governance, PETRONAS
- Director, Malaysian Jet Services Sdn Bhd

## Academic/Professional Qualifications

- Master of Laws in Legal Aspects of Marine Affairs, University of Wales, Cardiff, United Kingdom
- Bachelor of Laws (Honours), University of Wales, Cardiff, United Kingdom
- Licensed Company Secretary

## Past Appointments/Experiences

- Joined PETRONAS in 1996
- Has more than 25 years of experience in the fields of legal, company secretarial and corporate governance
- Previously served as Head of Legal and Company Secretary of PETRONAS Dagangan Berhad
- Other portfolios held include Head of Legal for the MLNG Group of Companies, Legal Counsel for PETRONAS Gas Berhad and Head of Gas Management in Legal Upstream, Group Legal

## Other Current Appointments

- Head, Secretarial and Governance, Group Secretarial and Board Governance
- Secretary, PETRONAS Executive Leadership Team



**Nur Ashikin Khalid**

Company Secretary, PETRONAS



**Age:** 51 **Gender:** Female



**Nationality:** Malaysian



**Date of Appointment:** 28 October 2021



# Profile of Executive Leadership Team

As of 28 February 2024



**Tan Sri Tengku Muhammad Taufik**

President and Group Chief Executive Officer



**Age:** 50 **Gender:** Male



**Nationality:** Malaysian



**Date of appointment:** 15 October 2018

## Academic/Professional Qualifications:

- Fellow of the Institute of Chartered Accountants in England and Wales (ICAEW)
- Member of the Malaysian Institute of Accountants (MIA)
- Bachelor of Arts (Honours) (Finance and Accounting), University of Strathclyde, Glasgow, Scotland

## Past Appointments/Experiences:

- Joined PETRONAS in 2000
- Has more than 23 years of experience in the oil and gas industry
- Areas of expertise include developing and steering key business strategies, organizational transformation, and finance and risk management
- Experienced in strategic planning, finance, and business strategy development with a focus on the oil and gas and energy industry
- Advocate of a just and responsible energy transition by promoting regional partnership in shaping policy, innovation and technology
- Other key positions previously held within the Group:
  - Executive Vice President and Group Chief Financial Officer, PETRONAS
  - Partner at PricewaterhouseCoopers (PwC) Malaysia
  - Chief Financial Officer for two public listed companies

## Other Current Appointments:

- Chairman, Audit Committee for East Coast Economic Region Development Council (ECERDC) and Northern Corridor Implementation Authority (NCIA)
- Chairman, Gentari Sdn Bhd
- Chairman, Malaysia-United Arab Emirates Business Council (MUBC)
- Chairman, National Trust Fund
- Exco Member, the World Business Council for Sustainability Development (WBCSD)
- Member, World Economic Forum (WEF) Industry Action Group and WEF Oil and Gas Governors Forum
- Co-Chairperson, the WEF ASEAN Leaders for Just Energy Transition Community
- Council Member, ECERDC and NCIA
- Member, Board of Trustees of the Merdeka Award Trust
- Director, PETRONAS Carigali Sdn Bhd
- Pro-Chancellor of Universiti Teknologi PETRONAS (UTP)

## Academic/Professional Qualifications:

- Bachelor of Science in Chemical Engineering, University of Leeds, United Kingdom

## Past Appointments/Experiences:

- Joined PETRONAS in 1984
- Has more than 39 years of experience in the oil and gas industry
- Other key positions previously held within the Group:
  - Executive Vice President and Chief Executive Officer, Gas and New Energy Business
  - Senior Vice President, Project Delivery and Technology
  - Vice President, LNG Assets
  - Vice President, Global LNG Projects

## Other Current Appointments:

- Chairman, PETRONAS Gas Berhad
- Chairman, Malaysia LNG Sdn Bhd
- Chairman, Malaysia LNG Dua Sdn Bhd
- Chairman, Malaysia LNG Tiga Sdn Bhd
- Chairman, Malaysia LNG 9 Sdn Bhd
- Chairman, PETRONAS LNG Sdn Bhd
- Chairman, PETRONAS Canada LNG Limited
- Chairman, PETRONAS Refinery and Petrochemical Sdn Bhd
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS (E&P) Overseas Ventures Sdn Bhd



**Adnan Zainol Abidin**

Chief Operating Officer and Executive Vice President and Chief Executive Officer, Gas



**Age:** 62 **Gender:** Male



**Nationality:** Malaysian



**Date of appointment as Chief Operating Officer:** 1 February 2022

**Date of appointment as EVP & CEO, Gas:** 1 April 2019



### Liza Mustapha

Executive Vice President and  
Group Chief Financial Officer



**Age:** 53 **Gender:** Female



**Nationality:** Malaysian



**Date of Appointment:** 1 June 2021

### Academic/Professional Qualifications:

- Fellow of the Association of Chartered Certified Accountants (FCCA)
- Advance Management Program at Harvard Business School, USA
- Member of the Malaysian Institute of Accountants
- Bachelor of Science Degree in Economics, majoring in Accounting and Finance from The London School of Economics and Political Science, University of London

### Past Appointments/Experiences:

- Vice President, Group Procurement, Project Delivery and Technology, PETRONAS
- Group Financial Controller, PETRONAS
- Chief Financial Officer, Upstream Business, PETRONAS
- Senior General Manager, Group Treasury, PETRONAS
- Chief Financial Officer, PETRONAS Gas Berhad
- Chairman, ENERGAS Insurance (L) Ltd

### Other Current Appointments:

- Director, MISC Berhad
- Director, KLCC Property Holdings Berhad
- Director, KLCC REIT Management Sdn Bhd
- Director, KLCC (Holdings) Sdn Bhd
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS International Corporation Ltd
- Director, Gentari Sdn Bhd
- Director, PETRONAS (E&P) Overseas Ventures Sdn Bhd
- Treasurer, Malaysian Petroleum Club

### Academic/Professional Qualifications:

- Bachelor of Science (Honours) in Petroleum Engineering, Colorado School of Mines
- Master of Business Administration, Kellogg School of Management, Northwestern University

### Past Appointments/Experiences:

- Joined PETRONAS in 1993
- Has almost 32 years of experience in the oil and gas industry in the fields of petroleum engineering, operations, strategic planning, corporate transformation, petroleum economics, mergers and acquisitions and business development.
- Other key positions previously held within the Group:
  - Chairman, PETRONAS Gas Berhad
  - Chairman, PETRONAS Research Fund
  - Executive Vice President, Gas and New Energy
  - Senior Vice President, Development and Production Upstream Business
  - Senior Vice President, Corporate Strategy
  - Vice President, Malaysia Petroleum Management
  - Head, Strategy and New Ventures Division in Exploration and Production Business

### Other Current Appointments:

- Chairman, PETRONAS Energy Canada Ltd
- Chairman, PETRONAS CCS Ventures Sdn Bhd
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS (E&P) Overseas Ventures Sdn Bhd (PEPOV)
- Trustee of the Abandonment Cess Fund
- Chairman of the Society of Petroleum Engineers, Asia Pacific Advisory Council
- Member, International Petroleum Technology Conference Board of Directors
- Chairman of the Advisory Committee of the Offshore Technology Conference Asia (Kuala Lumpur) 2024



### Datuk Adif Zulkifli

Executive Vice President and Chief Executive  
Officer, Upstream



**Age:** 53 **Gender:** Male



**Nationality:** Malaysian



**Date of Appointment:** 1 April 2019

## Profile of Executive Leadership Team

As of 28 February 2024



### Datuk Sazali Hamzah

Executive Vice President and Chief Executive Officer, Downstream



**Age:** 57 **Gender:** Male



**Nationality:** Malaysian



**Date of appointment:** 1 January 2022

### Academic/Professional Qualifications:

- Chartered Fellow of the Institution of Chemical Engineers (IChemE)
- Bachelor of Chemicals Engineering, Lamar University, United States of America
- Advanced Management Programme, The Wharton School, University of Pennsylvania, United States of America
- Senior Management Programme, London Business School, London, United Kingdom

### Past Appointments/Experiences:

- Joined PETRONAS in 1990
- Has 34 years of experience in the oil and gas industry in the fields of petroleum refining, petrochemicals, technical and engineering services and project delivery.
- Other key positions previously held within the Group:
  - Senior Vice President and Managing Director/Chief Executive Officer of PETRONAS Chemicals Group Berhad
  - Managing Director/Chief Executive Officer of Malaysia Refining Company Sdn Bhd
  - Managing Director/Chief Executive Officer of PETRONAS Technical Sdn Bhd
  - Head of Group Project Management and Delivery, PETRONAS
  - Head of PETRONAS Group Technical Services
  - Various senior management positions in the refinery and petrochemical business within PETRONAS

### Other Current Appointments:

- Chairman, Pengerang Refining Company Sdn Bhd
- Chairman, Pengerang Petrochemical Company Sdn Bhd
- Chairman, PETRONAS Marketing International Sdn Bhd
- Director, PETRONAS Dagangan Berhad
- Director, PETRONAS Chemicals Group Berhad
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS International Corporation Ltd
- Member of the International Advisory Panel for C-THRU Research Project

### Academic/Professional Qualifications:

- Bachelor of Chemical Engineering from Cockrell School of Engineering, University of Texas, Austin, USA
- Senior Management Development Program, INSEAD, Singapore
- Advanced Management Program, AMP 65, The Wharton School, University of Pennsylvania

### Past Appointments/Experiences:

- Joined PETRONAS in 1992
- Has more than 33 years of experience in the oil and gas industry
- Other key positions previously held within the Group:
  - VP Malaysia Assets, Upstream
  - VP International Assets, Upstream
  - SGM, Petroleum Operations Management, Malaysia Petroleum Management, Upstream
  - Head, Special Projects, Corporate Strategic Planning
  - President, Sudd Petroleum Operating Company (SPOC)
  - President, White Nile Petroleum Operating Company (WNPOC)
  - General Manager, Exploration and Production, Greater Nile Petroleum Operating Company (GNPOC)
  - General Manager, PETRONAS Carigali Sdn Bhd – Sarawak Operations

### Other Current Appointments:

- Chairman, PETRONAS Research Sdn Bhd.
- Chairman, Institute of Technology PETRONAS Sdn Bhd
- Director, PETRONAS LNG 9 Sdn Bhd
- Director, UTP FutureTech Sdn Bhd
- Board of Trustees, Dana Asy-Syakirin
- Board of Trustees, Petroleum Research Fund



### Datuk Ir. Bacho Pilong @ Pelu

Senior Vice President, Malaysia Petroleum Management



**Age:** 59 **Gender:** Male



**Nationality:** Malaysian



**Date of appointment:** 1 February 2024



**Marina Bt Md Taib**

Senior Vice President, Corporate Strategy



**Age:** 51 **Gender:** Female



**Nationality:** Malaysian



**Date of Appointment:** 1 January 2024

#### Academic/Professional Qualifications:

- Bachelor's Degree in Accountancy, University of Exeter, United Kingdom
- Master's Degree in Petroleum Business Management, University of Adelaide, Australia
- Fellow of the Institute of Chartered Accountants in England and Wales (ICAEW)
- Advanced Management Program, Harvard Business School, United States of America

#### Past Appointments/Experiences:

- Joined PETRONAS in 1999
- Has almost 25 years of experience in the PETRONAS in the fields of Finance, Upstream and Corporate Planning
- Other key positions previously held within the Group:
  - Head, Strategic Planning, Petroleum Management Unit
  - Country Manager, Brunei
  - Senior General Manager, Corporate Strategic Planning
  - Vice President, Treasury

#### Other Current Appointments:

- Director, PETRONAS Gas Berhad
- Director, PETRONAS Refinery and Petrochemical Corporation Sdn Bhd (PRPC)
- Director, Primesourcing International Sdn Bhd
- Board of Trustees, Petroleum Research Fund
- PETRONAS International Corporation Ltd (PICL)
- PETRONAS Carigali Sdn Bhd
- PETRONAS (E&P) Overseas Ventures Sdn Bhd ("PEPOV")

#### Academic/Professional Qualifications:

- Bachelor of Science in Chemical Engineering, Oklahoma State University, USA.
- Advanced Management Programme, The Wharton School, University of Pennsylvania, USA.
- Registered Professional Engineer (PE), Board of Engineers Malaysia.
- Fellow of Institution of Chemical Engineers (IChemE).

#### Past Appointments/Experiences:

- Joined PETRONAS in 1989.
- Has 34 years of experience in the oil and gas industry in the fields of refining, chemicals, marketing and sales.
- Other key positions previously held within the Group:
  - Senior Vice President and Managing Director/Chief Executive Officer of PETRONAS Chemicals Group Berhad, (PCG).
  - Vice President (Refining and Trading) of PETRONAS.
  - Head of Manufacturing, PCG.
  - CEO of PETRONAS Chemicals Olefins, Glycols, and Derivatives (PC OGD).

#### Other Current Appointments:

- Board of Trustees, Dana Asy-Syakirin.
- Board of Trustees, Petroleum Research Fund.
- Director, Pengerang Refining Company Sdn Bhd.
- Director, Pengerang Petrochemical Company Sdn Bhd.
- Director, UTP FutureTech Sdn Bhd.
- Director, PETRONAS Research Sdn Bhd (PRSB).
- Director, ENGEN Limited.
- Director, PETRONAS Technical Services Sdn Bhd



**Ir. Mohd Yusri Bin Mohamed Yusof**

Senior Vice President, Project Delivery and Technology



**Age:** 58 **Gender:** Male



**Nationality:** Malaysian



**Date of Appointment:** 1 January 2024



## Profile of Executive Leadership Team

As of 28 February 2024



### Razman Hashim

Senior Vice President, Group Legal and Group General Counsel



**Age:** 50 **Gender:** Male



**Nationality:** Malaysian



**Date of Appointment:** 1 July 2021

### Academic/Professional Qualifications:

- Bachelor of Laws and Shariah, International Islamic University Malaysia
- Licensed Company Secretary

### Past Appointments/Experiences:

- Joined PETRONAS in 1998
- Has more than 25 years of experience in the legal and secretarial fields.
- Other key positions previously held within the Group:
  - Senior General Counsel, Legal Upstream
  - General Counsel, Legal Upstream International, Legal Upstream
  - Company Secretary to PETRONAS Carigali Sdn Bhd and PETRONAS International Corporation Ltd
  - Directors of various entities within Upstream business
  - Member of Joint Management Committee of Garraf Operations, Iraq

### Other Current Appointments:

- CEO@ Kulliyyah, Ahmad Ibrahim Kulliyyah of Laws, International Islamic University Malaysia
- Director, KLCC (Holdings) Sdn Bhd

### Academic/Professional Qualifications:

- Bachelor of Commerce and Administration (Accountancy), Victoria University of Wellington, New Zealand
- Advanced Management Programme, Harvard Business School

### Past Appointments/Experiences:

- Joined PETRONAS in 1990
- Has more than 33 years of experience in various leadership roles in areas such as internal audit, corporate strategy, planning and risk, commercial and joint venture management, and human resource management.
- Other key positions previously held within the Group:
  - General Manager, Strategic Planning
  - Head, Commercial Development and JV Formation of Refinery and Petrochemical Integrated Development (RAPID)
  - Head, Human Capital Expertise, Group HRM
  - Head, Human Capital Strategy, Group HRM
  - Chief Executive Officer, PETRONAS Management Training Sdn Bhd

### Other Current Appointments:

- Chairman, PETRONAS Management Training Sdn Bhd
- Chairman, PETRONAS Technical Training Sdn Bhd
- Chairman, Dana Asy-Syakirin
- Chairman, PETRONAS Sponsorship Loan Fund
- Director, Institute of Technology PETRONAS Sdn Bhd
- Director, PETRONAS Digital Sdn Bhd
- Director, PETRONAS Lubricants International Sdn Bhd (Chairman of Nomination and Remuneration Committee)
- Director, PETRONAS Chemicals Group Berhad
- Global HR Council of The Conference Board
- Member of Majlis Wanita dan Keluarga Negara (MWKN)



### Farehana Hanapia

Senior Vice President, Group Human Resource Management



**Age:** 56 **Gender:** Female



**Nationality:** Malaysian



**Date of Appointment:** 1 January 2020



# Corporate Governance at PETRONAS

## Board Governance and Structure

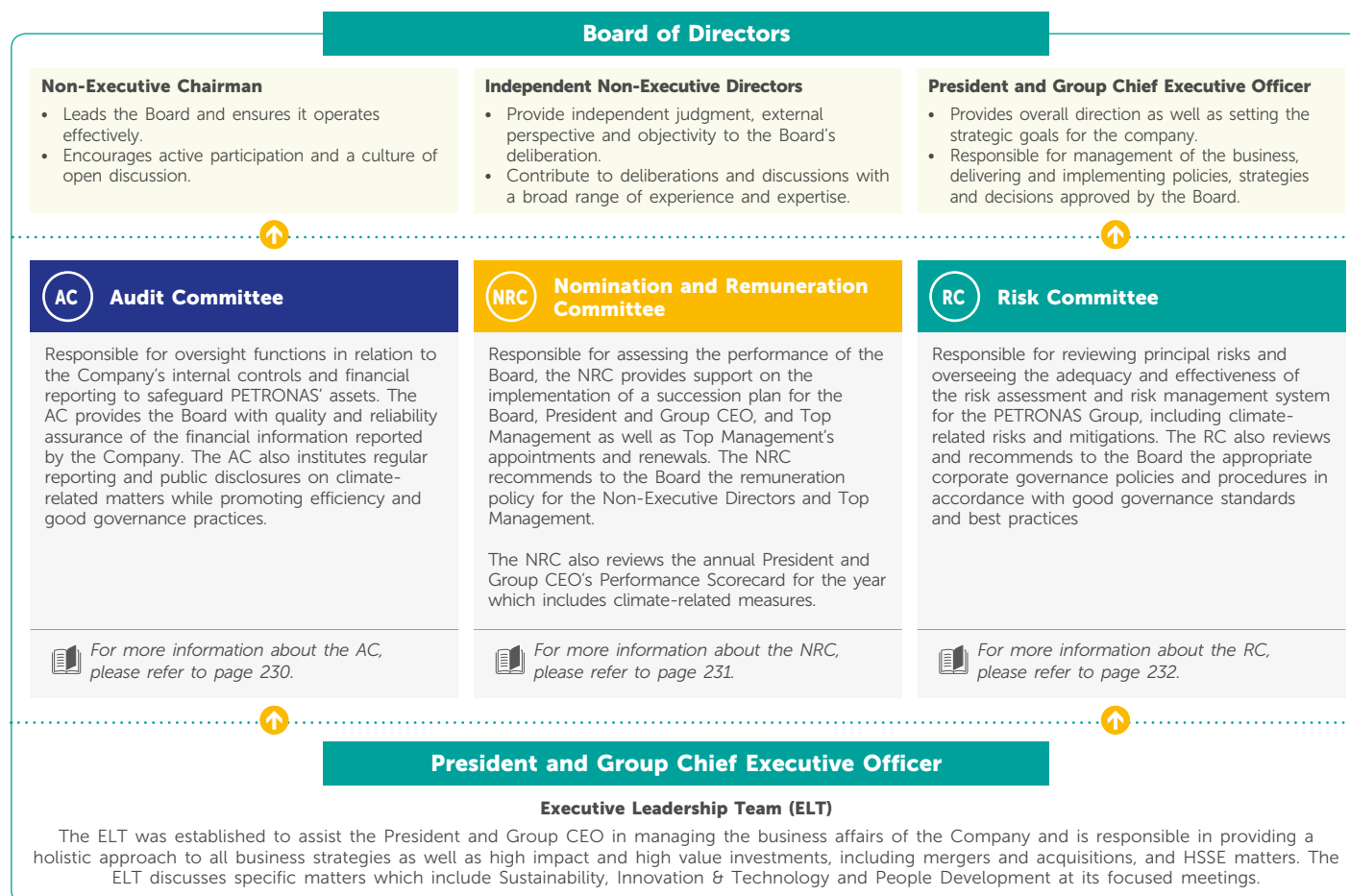
"At **PETRONAS**, we remained resilient in our commitment to applying the best corporate governance principles across the Group. Our aim is to play a key role in the energy transition, focusing on energy security and delivering energy solutions responsibly. The PETRONAS Energy Transition Strategy centres on creating value for our stakeholders.

Corporate governance plays a crucial role in promoting sustainability and value creation by providing the necessary framework for accountability, transparency and structure within the Group. In building a sustainable business, our Board is fully aware of their responsibility towards our shareholders and stakeholders. The Board firmly upholds effective leadership and unwavering ethical standards by providing the framework which serves as a basis for sustainable decision-making for value creation."

PETRONAS is led by a Board whose Directors are collectively responsible for creating and delivering long-term sustainable value for the business. A key responsibility of the Board is to balance the interests of the Group and our stakeholders including employees and the wider communities we serve. Our governance structure ensures role clarity by clearly delineating roles and areas of accountability and recognising the independent roles and duties required to govern our Company effectively. Our governance structure aims to promote strategic alignment across the Group whilst facilitating efficient decision-making at all levels.

### Governance Structure

Our governance structure illustrates the oversight role of the Board and the various components of governance which facilitate the interaction and flow between the Board and Management. The table below describes the Group's governance structure, and an overview of the key committees of the Board and Management.



## Corporate Governance at PETRONAS

### Board Leadership

The Board provides effective stewardship and is responsible for the Group's strategic direction and control of the Company. The Board exercises this control by way of a governance framework, effective delegation, risk management and a system of assurances regarding financial reporting and internal controls. The Board is accountable to its shareholders and towards a wider range of stakeholders such as employees, suppliers, community and the authorities.

Each Director has the duty to act in good faith and in the best interest of the Company with reasonable care, skills, and diligence. In discharging its roles and duties effectively, the Board is guided by the Board Charter, a document which sets out the authority, responsibilities and operations of the Board.

The differing roles of the Chairman and the President and Group CEO are acknowledged and provided for in the Board Charter. The Chairman of the Board is not a member of any of the Board Committees.

The Board exercises collective oversight at all times. In delegating its authority to the Board Committees, the Board does not abdicate its responsibilities. The Board further ensures that such delegation does not hinder or reduce the Board's ability to discharge its functions. In this regard, the Board clearly sets out the division of responsibilities in the respective Terms of Reference ("TOR") of the Board Committees.

Together with Management, the Board upholds good corporate governance culture within the Company by ensuring ethical leadership, prudent and professional behaviour in the conduct of its business and in all aspects of its operations.

### How the Board Functions

The Board meets regularly, and additional meetings are arranged as and when circumstances dictate. Each meeting is conducted in accordance with a formal and structured agenda and Board papers are circulated in time to ensure that Directors are well-informed and that debates and decisions are constructive and robust.

Access to Board papers by the Board members is provided online through a collaborative software, with the aim of enhancing the efficiency of the Board process. Going digital allows the Directors to access, read, and review the Board papers, as well as enabling the Board members to confer with each other and the Company Secretaries, electronically. Board Papers and presentations by the Management to the Board are prepared and delivered in a manner that ensures clarity and provides sufficient understanding of the subject matter.

During 2023, our Board met on 17 occasions of which almost all meetings were conducted physically. Although the quorum for the Board meeting is two, the majority of the Board meetings were attended by all Directors. Whilst a decision of the Board only requires a majority of votes of the Directors, all decisions are made on a consensus basis.

Each Director has full access to the services of the Company Secretaries, who play an advisory role to the Board by guiding corporate governance, ethical business practices, compliance to the Company's Constitution, policies and procedures and the relevant regulatory requirements, guidelines and legislation.

The Board may from time to time and if deemed appropriate, consider and approve urgent matters via Directors' circular resolution. All circular resolutions passed by the Board are tabled at the next Board meeting for notation.

The Board practises active and open discussions at its meetings to ensure that opportunities are given to all Directors to participate and contribute to the decision-making process. Robust discussions and vigorous deliberations at the Board meetings ensure that the process of effective and beneficial conversation is achieved.

The Chairmen of the Audit Committee, Nomination and Remuneration Committee, and Risk Committee provide regular updates to the Board after the proceedings of their respective Committee meetings.

All proceedings of Board meetings are duly minuted, confirmed and signed. Minutes of each Board meeting accurately reflect the deliberations and decisions of the Board, including any dissenting views and if any Director had abstained from voting or deliberating on a particular matter. Minutes of the Board meetings are properly kept by the Company Secretary.

### Matters Reserved for the Board

The Board has an approved and documented schedule of matters reserved for its decision as follows:

1. **Strategy and Management** – Strategy, policies, annual budgets and major investment decisions which include capital projects, mergers and acquisitions, and funding requirements.
2. **Financial, Governance and Risk** – Financial reporting and control, and risk management.
3. **Corporate Matters** – Reputation and stakeholder management, Health, Safety, Security and Environment (HSSE), Board and Board Committees' memberships, and Directors' remuneration and succession planning.

## The Board's 2023 Key Focus Areas and Priorities

### Strategy

Key Focus Areas	Description
<b>The Group's Strategic Initiatives and Plans</b>	The Board deliberated on long-term strategic options and provided the relevant feedback and steer.
<b>The Group's Business Plan and Budget</b>	The Board deliberated and approved the Company's business plan. The Company's strategic targets, operational plan and financial forecasts were presented to the Board for their deliberation. The Board deliberated the risks as well as potential challenges, both external and internal, towards achieving the business plan. The Board considered and approved the budget necessary to carry out the business plan.

### Financial

Key Focus Areas	Description
<b>The Group's Performance on Quarterly Basis</b>	The Board was updated on the performance against the business performance targets on quarterly basis. Performance is measured and tracked against approved KPIs.
<b>Dividends</b>	The Board considered and approved the proposal on the declaration of dividends.

### Risk and Internal Controls

Key Focus Areas	Description
<b>Enterprise Risks</b>	<p>The Board deliberated and approved, on a quarterly basis, PETRONAS and its Group's critical risks that may significantly impact the business goals and targets. The Board constantly monitors the agreed mitigations to manage or reduce the likelihood and impact of these critical risks. Key risk indicators which provide early warnings of risk manifestation were also reported to the Board.</p> <p>To ensure risks undertaken in pursuit of business objectives are within the acceptable level, the Board approved the Company's risk appetite which sets its key operational boundaries. Any breach of risk appetite may jeopardise the Company's business sustainability, hence, will be escalated to the Board for deliberation.</p> <p>In achieving comprehensive risk-based decision making, the Board also deliberated on the risks related to high impact business matters such as projects' Final Investment Decisions in order to assess the feasibility and commerciality of these projects and investments.</p>

### Corporate Governance and Compliance

Key Focus Areas	Description
<b>Implementation and Monitoring of Succession Planning</b>	As part of its role, the Board ensures that there is an appropriate succession plan for members of the Board. The Fit and Proper Policy was established to enhance the Board Selection Criteria for the appointment and re-appointment of directors which includes character, integrity, experience, competence and commitment to contribute.

### Sustainability

Key Focus Areas	Description
<b>Net Zero Carbon Emissions by 2050 (NZCE 2050) Pathway Delivery</b>	<p>Consideration of PETRONAS NZCE 2050 Pathway is embedded in the deliberation of company strategic direction, plans &amp; budget, and risks management.</p> <p>Oversight on the achievement of the NZCE 2050 pathway short-, medium- and long-term targets.</p>
<b>Translating Commitment and Strategy into Governance</b>	The Board approved and institutionalised PETRONAS Commitment to NZCE 2050, PETRONAS Position on Nature and Biodiversity and PETRONAS Human Rights Policy as PETRONAS governance documents to clarify the direction, accountability, and responsibility to help ensure consistent Group-wide adoption.

## Corporate Governance at PETRONAS

### Board Roles

#### ➔ Chairman

- Responsible for the effective running of the Board and ensures that the Board plays a full and constructive role in the development and determination of the Company and the Group's strategy and overall commercial objectives.
- Leads the Board in setting the values and ethical standards of the Company.
- Promotes the highest standards of integrity and corporate governance at the Board level.

#### ➔ President and Group CEO

- Responsible for all executive management matters affecting the Company and/or the Group and leads the Executive Leadership Team.
- Responsible for developing and recommending the long-term strategy and vision for the Company and/or the Group.
- Fosters a corporate culture that promotes ethical practices, encourages individual integrity and the fulfilment of the Company's corporate social responsibilities.
- Champions the Company's values and behaviours across the Group.

#### ➔ Executive Directors

- Provide in-depth knowledge and insights from PETRONAS' perspective.

#### ➔ Non-Executive Directors

- Provide alternative insights and constructively challenge proposals to ensure the Board objectively considers all relevant matters.
- Oversight on the performance of the Management and monitors the delivery of Group strategy within the risk and control environment set by the Board.
- Bring independent judgment and scrutiny to the decisions taken by the Board.

#### ➔ Company Secretaries

- Facilitate the effective operation of the Board and ensure that the Directors receive accurate, timely and clear information to enable them to discharge their responsibilities.
- Provide support and advice to the Board regarding governance matters and ethical business practices.

### Attendance at Meetings

The Directors' commitment to carry out their duties and responsibilities is affirmed by their attendance at the Board meetings. A total of 17 Board meetings were held during the year under review where the Board's attendance was recorded in accordance with the relevant requirements.

## Board Balance and Effectiveness

### Board Balance and Composition

As of the date of this report, the Board comprises eight members; the Non-Executive Chairman, two Executive Directors and five Non-Executive Directors (NEDs), out of which two are Independent Non-Executive Directors (INEDs). The profiles of the Directors are available on pages 211 to 220.

The size and composition of the Board is fundamental to its success in providing strong and effective leadership. The presence of Non-Executive Directors ensures that no individual or small group of Directors can dominate the decision-making process and that the interests of shareholders and stakeholders are protected.

During the year under review, the Board saw some changes and new appointments to its composition.

The Board wishes to record its appreciation and gratitude to Datuk Seri Asri Hamidin @ Hamidon (resigned on 5 January 2023), Encik Ainul Azhar Ainul Jamal and Encik Thayaparan S Sangarapillai (retired on 19 April 2023) and Dato' Razali Mohd Yusof (resigned on 1 August 2023), for their contribution and commitment during their tenure on the Board.

The Board also welcomed Datuk Johan Mahmood Merican as a NINED and Encik Azizan Zakaria as an INED to the PETRONAS Board, effective 19 April 2023 and 15 November 2023 respectively.

The Board's current composition has a blend of skills, experience and knowledge which enables them to provide effective oversight, strategic guidance and constructive challenge, review and deliberation on the Management's proposals. The NRC is responsible for reviewing the composition of the Board and assessing whether the balance of skills, experience, knowledge and independence is appropriate to enable the Board to perform effectively as a high-performing Board.

### Fit and Proper Policy

The Fit and Proper Policy was established to enhance the existing PETRONAS Board Selection Criteria. The Policy aims to ensure that any person appointed or elected/re-elected as a Director of the PETRONAS Group shall possess the character, integrity, experience, competence and commitment to contribute in discharging their responsibilities required of the appointment in the most effective manner.

In assessing a person's fitness and propriety, the Board through its NRC, conducts Fit and Proper assessment on persons identified to be appointed as a director or to continue holding the position as a director within PETRONAS prior to the appointment or reappointment.

### Diversity

The Board recognises the importance of diversity and the value it brings to the PETRONAS Group. Diversity promotes the inclusion of different perspectives, raising the standards of good practice in Board leadership and enhancing valuable insights in business judgment. Diversity is also important to ensure the Company remains relevant, resilient and sustainable in the rapidly transforming and evolving business environment.

Whilst it is important to promote diversity, the normal selection criteria of a Director is based on an effective blend of competencies, skills, experience and knowledge in areas identified by the Board which remains a priority so as not to compromise the effectiveness in carrying out the Board's functions and duties. The Board is committed to ensuring that its composition reflects diversity and has the right mix of skills and balance to contribute to achieving the Company's goals and objectives.



## Corporate Governance at PETRONAS

### Board Independence

The Board assesses the independence of its NEDs annually. The independence assessment takes into account whether the NEDs have demonstrated an independent state of mind and objective judgment in their deliberations and decision-making process. The assessment on the independence of the NEDs may be undertaken in the following circumstances:

1

#### Prior to the Appointment of Non-Executive Directors

Prior to the appointment of NEDs, the independence of each individual candidate will be reviewed and determined by the Board based on the recommendations from the NRC upon reviewing his/her criteria per the PETRONAS Independent Directors Guidelines.

2

#### Annual Review

The Board determines the independence of each NED annually, based on the recommendations from the NRC per the PETRONAS Independent Directors Guidelines.

3

#### Notice of Change of Circumstances

Each NED has an affirmative obligation to notify the NRC of any change in circumstances that may affect his/her independence status. Once notified, the NRC shall re-evaluate the independence status and make the necessary recommendations to the Board.

The INEDs have been appointed for their specific experience and expertise and are independent of management and free from any business or other relationship that could materially interfere with the exercise of their independent judgment. NEDs may serve on the boards of other companies provided this does not involve a conflict of interest and that the appointment does not restrict their ability to discharge their duties to PETRONAS in any way.

In line with the exemplary practices of corporate governance, the Board has adopted a tenure policy whereby an INED's total tenure on the Board is capped at nine years. As of the date of this Statement, none of the INEDs has served the Board for more than nine years.

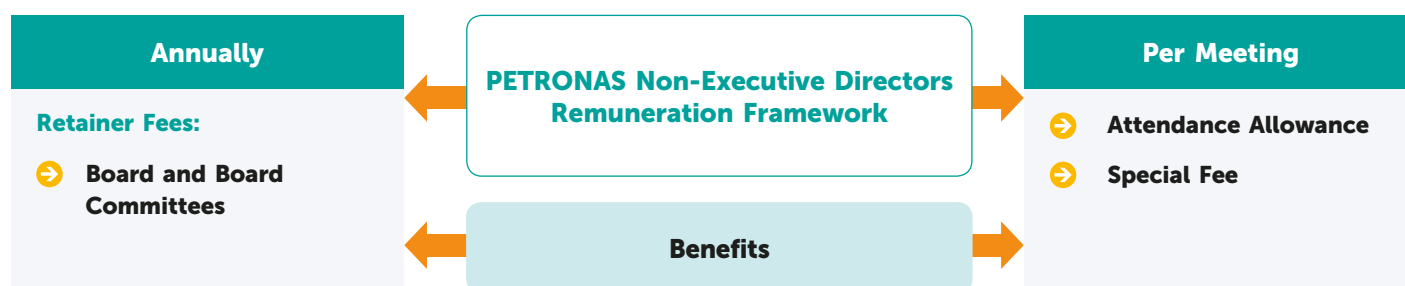
### Conflict of Interest

In ensuring transparency and integrity of the decision-making process and preventing any conflict of interest, a declaration of interest by Directors is a fixed agenda item at the start of every Board meeting. A Director who has direct or indirect interest in a transaction shall recuse himself/herself when required and abstain from deliberations and voting to allow unbiased and free discussions and decision-making. Disclosure of the nature and extent of the Directors' interest and abstention from decision making proceedings are recorded in the minutes of the Board meetings. The Principles of Directorship for the PETRONAS Group was established to govern the way Directors conduct themselves in a conflict-of-interest situation, which corresponds with the Companies Act 2016 and the PETRONAS Code of Conduct and Business Ethics (CoBE).

The Directors are also required to declare their interests annually, in line with the requirements on the disclosure of Director's interests in the Company's Audited Financial Statements.

## Board Remuneration Policy

Given the highly competitive market, PETRONAS designed a robust fee structure to attract, retain and appropriately compensate the diverse and internationally experienced NEDs. The fee framework is illustrated below:



## Board Onboarding and Professional Development Programme

The Board recognises the importance of ensuring that new Directors have a complete introduction to the business so they can make a full and meaningful contribution to the Board. To that end, the Board has adopted a comprehensive and extensive onboarding programme for new Directors, including meetings with key senior leadership teams, bespoke training on relevant regulatory and legal obligations and onboard procedures and processes.

Directors will have full access to roundtable discussions, seminars and other events, covering topics relevant to the Group and their roles. The Company provides Directors with the necessary resources to update their knowledge and capabilities throughout the year.

Suite	PETRONAS Board Excellence (PBE)								
Solution	Onboarding	Foundational*		Advanced			Continuous Education	Conference	
Programme	Onboarding Programme for New Directors	Essentials for Directorship	Rising Above 2	Best Practices for Board Excellence (Advanced 1)	Effective Strategy for Stakeholder Management (Advanced 2)	Round Table	Updates on trends	Directors Conference	Audit Committee Forum
Continuous Programme	E-Learning (5 Critical Legal Areas, Code of Conduct, Anti Corruption, Data Privacy)								
	Board Assessment (Observation, Interview and Digital)								

\* The Foundational programmes only apply to the directors who are employees of the PETRONAS Group, thus, the PETRONAS Directors, upon their onboarding, will attend the Advanced programmes of the PBE.

A suite of development programmes, known as the PETRONAS Board Excellence, tailor-made to the requirements of Directors across the Group, has been in place since 2016 to chart the Directors' development plans in a structured manner. The PETRONAS PBE programme is developed to enhance Directors' awareness and knowledge involving their roles and responsibilities. During the year under review, we introduced two topics for the Continuous Education series namely Sustainability 101 and Conflict of Interest. The Sustainability 101 programme was conducted on 25 May 2023, intended to create awareness among the directors on the importance of sustainability and the accountabilities of Directors as part of the Environmental, Social and Governance requirements. The Conflict of Interest programme was conducted on 27 October 2023 in line with the latest regulatory requirements on disclosure of the nature and extent of any potential conflicts of interest, including interest in competing business involving directors.

## Corporate Governance at PETRONAS

### Board Conversations

As part of our initiative to achieve a high-performing Board, a series of Board Conversations were held, which included topics on strategies, sustainability and energy transition. These sessions were conducted in-house or by external subject matter experts to provide updates and discussions on sustainability and market outlook, as well as deliberations on the Group's strategic and growth plans to enrich the Directors' knowledge and keep abreast with the latest trends and developments.

### Qualified and Competent Company Secretaries

The Company Secretaries of PETRONAS are qualified to act as company secretary by virtue of Section 235 of the CA 2016. Both of the Company Secretaries are legally qualified. They serve as advisors to the Board, particularly with regard to the PETRONAS' Constitution, policies and procedures and its compliance with regulatory requirements, codes, guidelines and legislations.

The Company Secretaries act as an important link between the Board and the business. Through effective communication, they provide the Management with an understanding of the expectations and value brought by the Board.

The Company Secretaries ensure that discussions and deliberations at the Board and Board Committee meetings are well documented, and subsequently communicated to the Management for appropriate actions. The Company Secretaries update the Board on the follow-up of its decisions and recommendations. The Board is satisfied with the performance and support rendered by the Company Secretaries to the Board in discharging their functions in the financial year under review.

The Company Secretaries also constantly keep themselves abreast of the evolving regulatory changes and developments in corporate governance through continuous training.

### Board Evaluation

The Board, through the NRC, endeavours to conduct an annual performance evaluation of the Board and its Committees, facilitated by the Company Secretary. Evaluation results are reported to the NRC. Individual Director's evaluation results are made available to the NRC Chairman and reported directly to the Chairman of the Board. The Chairman of the Board will then conduct feedback sessions through peer-to-peer meetings.

In line with the best practice recommended by the Malaysian Code on Corporate Governance (MCCG) for the Board to engage an independent expert at least every three years to facilitate objective and candid Board evaluation, the NRC had engaged an independent third-party consultant to conduct the Board Effectiveness Evaluation (BEE) in 2022. The process of the BEE involved a set of questionnaires consisting of evaluations by the Board, Board Committee and Self-Assessment which were developed to maximise the effectiveness and performance of the Board in the best interests of PETRONAS. The indicators for the performance of the Board include, among others, the Board composition, planning process, conduct, communication with the Management and stakeholders, as well as strategy and planning for the Company. Subsequently, the consultant independently assessed the findings and areas of improvement and presented them to NRC for consideration.

The NRC reviewed the outcome of the BEE findings that the Board is committed to the highest standards of good governance and affirmed the effectiveness of the Board.

## Directors' Indemnity

PETRONAS continues to provide and maintain indemnification for our Directors throughout the financial year as allowed under the CA 2016 to the extent it is insurable under the Directors' and Officers' Liability Insurance (D&O) procured by the Company. Directors and Officers are indemnified against any liability incurred by them in discharging their duties while holding office as Directors and Officers of the Company. All Directors may opt to obtain D&O insurance to provide insurance protection (to the extent it is insurable) against unindemnified liabilities by the Company or uninsured circumstances. The insurance company determines the premium to be paid by all Directors.

## Succession Planning

The Board had adopted the Board Succession Planning Framework to assist the Company in ensuring a structured and timely identification and selection of new Non-Executive Directors in the event of an opening on the Board, whether such opening exists because of an anticipated retirement, the expansion of the size of the Board, or otherwise. Such a structured succession plan addresses the composition and effectiveness of the Board. The Board, through the NRC, has the responsibility of ensuring appropriate succession planning of Directors and reviewing the Board's required mix of skills and experience, as well as reviewing the tenure of INEDs on the Board.

In addition to the succession planning for the Directors, the NRC also reviewed the succession plan for the key management positions of the Company. The NRC continued to focus on conducting all relevant reviews and assessments of the key management positions.

## Board Commitment to Sustainability

The Board acknowledges that the well-being of the employees, customers, suppliers, other stakeholders, the environment and society at large is central to sustaining our long-term performance and continued relevance. Careful consideration of the needs of a broader universe of stakeholders ultimately drives value for the shareholders.

The heightened materiality of sustainability to the business requires the Board to factor in these sustainability components, risks and opportunities into its deliberations at all times. The Board, being the highest authority in sustainability governance, has taken the initiative in establishing the Company's sustainability approach, strategy and targets. During the year under review, the Board broadened their engagement and oversight of sustainability-related matters.

The Board is taking more deliberate actions in elevating sustainability, to shape the long-term strategic direction of the company. Aside from the conversation series and the institutionalisation of sustainability governance documents, the other oversight activities by the Board on sustainability are as follows:

- Endorsement by the RC on the PETRONAS Corporate Risk Profile considering sustainability-related risk and its mitigation on quarterly basis for Board's approval.
- Apprised on business plan updates covering GHG emissions reduction, methane emissions reduction, and capital expenditure allocation.
- Approved the long-term incentive plan for senior leadership that includes a performance measure linked to the delivery of the NZCE 2050 Pathway. In 2023, 20 per cent of the long-term incentive plan constituted sustainability elements, including net carbon intensity (NCI) as well as diversity and inclusion (D&I).

## Corporate Governance at PETRONAS

### Board Committees

#### Audit Committee (AC)

➔ Azizan Zakaria – Chairman	▶ Appointed w.e.f. 1 December 2023
➔ Tan Sri Zaharah Ibrahim	
➔ Datuk Johan Mahmood Merican	▶ Appointed w.e.f. 19 April 2023
➔ Datuk KY Mustafa	▶ Appointed w.e.f. 20 May 2023
➔ Ainul Azhar Ainul Jamal – Chairman	▶ Resigned w.e.f. 19 April 2023
➔ Thayaparan S. Sangarapillai	▶ Resigned w.e.f. 19 April 2023

The AC continued to play a key role in assisting the Board in fulfilling its oversight responsibilities to ensure the effectiveness of financial reporting, internal controls, and internal and external audit functions.

The AC discharges its responsibilities through its scheduled meetings during the year following its fixed agenda which covers the matters under the purview of the AC. The AC met eight times in 2023.

#### Key Matters in 2023

##### Financial

During the year under review, the AC reviewed the quarterly financial results and the financial performance of business segments and the PETRONAS Group and its report for the financial year ended 31 December 2023 to ensure that they were prepared in compliance with the relevant regulatory requirements and guidelines.

The AC also reviewed the effects of applying significant accounting areas of estimation uncertainty and critical judgments including impairment assessment and provision for decommissioning, dismantling, removal and restoration (DDRR).

As part of continuation from the benchmarking of PETRONAS Audited Financial Statements in FY2022, the AC also reviewed the benchmarking exercise on the PETRONAS Group Quarterly Report performed against industry players to achieve best-in-class financial reporting

disclosures. As a result, several opportunity areas for enhancement are identified and proposed for adoption which include additional reporting dimensions for Group and business segments performance, revision on Quarterly Report presentation flow and sustainability-related disclosure to demonstrate PETRONAS' commitment to Net Zero Carbon Emission (NZCE) by 2050.

#### Internal Control and Audit Activities

The AC reviewed and deliberated internal audit reports which included opinions on the adequacy and effectiveness of governance, risk management and internal controls, audit finding's root causes, implications and the agreed recommendations to be undertaken by the Management.

The internal audit exercises provide reasonable assurance on the state of PETRONAS Governance and Control as well as compliance to applicable policies, procedures, laws and regulations over the following key areas (but not limited to):

- a) Technical areas covering:
  - Project Management activities of selected Upstream ongoing projects involving project planning, project execution/delivery and project monitoring, as well as Project Governance at the enterprise level.
  - Asset Integrity Management which includes Maintenance Management, Operation Management and Safety Management on selected domestic assets.



- b) Non-Technical areas covering:
- Integrated Hydrocarbon Management focusing on gas value chain covering from Upstream to Midstream and Downstream businesses.
  - Procurement and Contract Management activities on Downstream selected entities and Upstream Malaysia Assets.
  - Security Management at selected domestic and international assets.
- c) Digital and Technology areas covering:
- Cybersecurity Management and Operations at selected domestic and international assets.
  - Research and internal technologies at the enterprise level.
- d) Shareholders audits covering operations, HSSE, commercial and procurement at selected joint venture (JVs) entities.

The AC also reviewed and endorsed the following matters:

- Comprehensiveness of the Annual Audit Plan developed based on the enterprise/business strategies, enterprise/business risks, audit/assurance history results and stakeholder feedback.
- Continuous risk sensing and insights to ensure the proposed audit activities are carried out as per emerging and relevant risks as well as the latest enterprise/business strategies.
- Quarterly status on agreed recommendations arising from internal audit assignments.
- Overall performance of Group Internal Audit, which includes budget, resources including talent composition, progress of audit operations and key initiatives.

The AC, together with the external auditors reviewed the results of the statutory audit and the audit report. The AC also reviewed the proposed fees for the statutory audits and limited review fees for PETRONAS and selected subsidiaries.

### Nomination and Remuneration Committee (NRC)

➔ <b>Tan Sri Zaharah Ibrahim</b> – Chairperson	➤ Appointed w.e.f. 15 November 2023
➔ <b>Datuk KY Mustafa</b>	➤ Appointed w.e.f. 20 May 2023
➔ <b>Azizan Zakaria</b>	➤ Appointed w.e.f. 15 November 2023
➔ <b>Dato' Razali Mohd Yusof</b> – Chairman	➤ Resigned w.e.f. 31 July 2023
➔ <b>Ainul Azhar Ainul Jamal</b>	➤ Resigned w.e.f. 19 April 2023

The NRC carries duties and responsibilities regarding nomination and remuneration matters with strict adherence to the principles of good corporate governance.

The NRC is responsible for assisting the Board in ensuring that the Board and Board Committees retain an appropriate structure, size, and balance of skills and experience, as well as the independence and diversity required to meet PETRONAS' strategic objectives. The NRC is also responsible for reviewing, PETRONAS' Top Management's appointments and succession planning before the Board's approval.

The NRC discharges its responsibilities through its scheduled meetings during the year following its fixed agenda, which covers the matters under the purview of the NRC. The NRC met four times in 2023.

## Corporate Governance at PETRONAS

### Key Matters in 2023

- The NRC reviewed and made recommendations to the Board on the status of independence of the NEDs of PETRONAS in line with the requirements of the PETRONAS Independent Directors Guidelines on the annual review of independence of the NEDs.
- The NRC reviewed PETRONAS' Top Management appointments, contract renewals and contract cessations, as well as succession planning and development opportunities.
- The NRC also reviewed and endorsed the establishment of the 2023 President and Group CEO's Performance Measurement to balance between Perform and Transform objectives with emphasis on enterprise outcomes and promoting desired behaviours.
- The NRC reviewed and endorsed the high-level organisation structure.
- The NRC reviewed and endorsed the Annual Board Assessment and Board Performance for PETRONAS.

### Risk Committee (RC)

➔ Dato Hj. Ibrahim Hj. Baki – Chairman	▶ Appointed w.e.f. 19 April 2023
➔ Datuk Johan Mahmood Merican	▶ Appointed w.e.f. 19 April 2023
➔ Azizan Zakaria	▶ Appointed w.e.f. 15 November 2023
➔ Dato' Razali Mohd Yusof	▶ Resigned w.e.f. 31 July 2023
➔ Thayaparan S. Sangarapillai – Chairman	▶ Resigned w.e.f. 19 April 2023

The RC supports the Board in reviewing principal risks and oversees the adequacy and effectiveness of risk assessment and risk management system for the PETRONAS Group. The Committee also deliberates on risk mitigation strategies and measures, reviews investment proposals that are significant from the risk perspective as well as monitors the activities on integrity-related initiatives for the PETRONAS Group.

The RC discharges its responsibilities through its scheduled meetings during the year following its fixed agenda, which covers the matters under the purview of the RC. The RC met eight times in 2023.

### Key Matters in 2023

- The RC assisted the Board in deliberating the PETRONAS Group's Corporate Risk Profile and Risk Appetite every quarter. Additionally, the Committee recommended revisions to the Corporate Risk Profile and Risk Appetite which the Board approved to align with the Group's business objectives and strategies as well as reflect the current exposures being managed.
- The RC played its oversight role in reviewing risks related to strategic and high-impact business matters, such as investment decisions for key projects during the year.
- The RC appraised the performances and activities of Group Integrity every quarter and was updated on the progress of the Group's integrity and governance programmes.
- The RC reviewed the report and activities on the Company's Portfolio Commodity Hedging programmes on a half-yearly basis.

## Compliance

### Cascading and Disseminating the Tone from the Top

The compliance culture at PETRONAS is championed with a tone from the top approach, driven by the continuous messaging from the PETRONAS Board of Directors (Board) and PETRONAS Executive Leadership Team (ELT), as they advocate the principles of PETRONAS Shared Values and PETRONAS Cultural Beliefs. The same consistent messaging is also disseminated by the senior management and directors of the PETRONAS Group of companies (PETRONAS Group) to ensure that our businesses are conducted in a responsible and ethical manner. It is crucial the PETRONAS Group is aware of and comply with all the applicable legal and regulatory requirements, with steering and guidance from the Corporate Division's committees such as the Legal Leadership Team (LLT), the Risk Management Committee (RMC), and the PETRONAS Integrity Awareness Committee (PIAC). These committees may recommend matters (such as on Integrity and Compliance programmes and activities) to be reported and escalated to ELT, PETRONAS Risk Committee (RC) and Board, if required, for their further guidance.

The LLT is responsible for deliberating and providing advice on the latest developments in laws and regulations affecting PETRONAS operations globally, while the RMC is tasked to oversee the adequacy and effectiveness of the risk management system and its implementation across the PETRONAS Group, including legal and regulatory risk. Correspondingly, the responsibility to steer and drive the implementation and embedment of Ethics and Integrity programmes and activities across the PETRONAS Group lies within PIAC.

The expectations from the top, which is subsequently cascaded down to the very bottom of the working chain, help shape the behaviour and attitude of PETRONAS employees at all levels of businesses and activities.

### Compliance Focus Areas

As the PETRONAS Group is involved with diversified businesses covering Upstream, Gas, Downstream, Renewable Energy, Project Delivery & Technology, Maritime and Logistics, the business operations are exposed to the risk of non-compliance to various laws. Therefore, PETRONAS has identified the relevant laws that our business operations need to comply with and categorised them by critical laws (also known as Critical Legal Areas) and operational laws (also known as Operational Legal Areas).

The Critical Legal Areas (CLAs) are laws with extra-territorial effect and may pose enterprise risks to PETRONAS holding company. Any breaches of critical laws could result in significant financial penalties, potential legal suits and severe reputational impact.

The Operational Legal Areas (OLAs) are laws that relate to business activities and operations. Any breaches of operational laws could pose threats to the continuous operations of the business, including the loss of the license to operate.

PETRONAS has established the Legal Compliance Framework (LCF) as an overarching framework to manage legal and regulatory risk. The LCF is supported by the Legal Compliance Standards (LCS) which provide the details and standard requirements for PETRONAS Group in managing compliance to CLAs and OLAs.

The following list encapsulates the areas of laws under CLAs and OLAs as categorised by PETRONAS:

Critical Legal Areas	Operational Legal Areas
<ol style="list-style-type: none"> <li>1. Ethics and Integrity</li> <li>2. Data Privacy</li> <li>3. Sanctions</li> <li>4. Export Control</li> <li>5. Competition</li> </ol>	<ol style="list-style-type: none"> <li>1. Health, Safety, Security and Environment</li> <li>2. Petroleum</li> <li>3. Energy and Utilities</li> <li>4. Finance and Tax</li> <li>5. Employment</li> <li>6. Land and Real Property</li> <li>7. Intellectual Property</li> <li>8. Building and Construction</li> <li>9. Education</li> <li>10. Company</li> <li>11. Multimedia and Communication</li> <li>12. State</li> </ol>

### Operationalising Compliance from the Ground

#### Compliance to the Critical Laws

To ensure a centralised and systematic approach to monitoring compliance to critical laws, Legal Compliance of Group Legal was established to manage compliance to CLA requirements and effectively operationalise LCF and LCS-CLA across the PETRONAS Group.

## Corporate Governance at PETRONAS

As PETRONAS operates in multiple jurisdictions worldwide, the Compliance Management Operations (CMO) team of Legal Compliance is structured to ensure compliance with domestic and global legal requirements by establishing a compliance team at PETRONAS headquarters in Kuala Lumpur (Malaysia) covering Malaysia and Asia Pacific region, as well as regional teams in London (United Kingdom), Dubai (United Arab Emirates) and Calgary (Canada). These compliance officers from both the headquarters and regional CMO team are pivotal in reinforcing PETRONAS' compliance position. They facilitate the implementation of adequate and effective controls in PETRONAS and PETRONAS Group, roll-out compliance programmes and activities to inculcate awareness to PETRONAS employees, as well as provide advisories on matters pertaining to critical laws. Moreover, to assist PETRONAS Group companies operating across multiple jurisdictions, the regional compliance officer further develops localised controls and policies that would suit local laws and requirements. They achieve this through a risk-based approach and constant engagement with the headquarters to ensure alignment with PETRONAS' compliance practices.

As the compliance advisories provided by PETRONAS compliance officers need to remain comprehensive and up-to-date, the Subject Matter Expert (SME) team of Legal Compliance would keep PETRONAS abreast with updated regulations, laws and enforcements guidance from around the globe, as well as develop compliance policies, processes and procedures for PETRONAS businesses and activities. Additionally, the SME team would manage compliance requirements for critical projects, provide specialist legal advice, steer the strategic direction of PETRONAS business, set up PETRONAS group positions and represent PETRONAS interest in events and programmes, including during trade negotiations.

Similarly, for effective and efficient management of compliance programmes and activities, the Compliance Strategy and Planning (CSP) team of Legal Compliance would develop and plan PETRONAS' corporate compliance strategy and programmes, as well as develop and maintain legal compliance systems and tools. The strategies and plans established by CSP are intended to facilitate the operations of PETRONAS compliance officers, which will subsequently ensure seamless execution and monitoring of corporate compliance status, programmes and activities across the PETRONAS Group.

### Compliance to the Operational Laws

To ensure the PETRONAS Group comply with requirements under the operational laws, the CSP team spearheads the operationalisation of OLA compliance programme, supported by the respective business lawyers and corporate SMEs. This is achieved through the establishment of a governing document (i.e. LCS-OLA) and processes pertaining to the OLA assurance programme, provision of upskilling sessions to OLA business focal and reporting to relevant senior management on the status of compliance and closure of gap, with the ultimate aim of protecting and safeguarding the PETRONAS Group against any breaches of operational laws.

To ensure PETRONAS Group's compliance with all applicable operational laws, various functional checklists have been developed for PETRONAS entities to perform a self-assessment and gauge their level of compliance as part of the OLA assurance programme. The functional checklists will be revised as and when required as PETRONAS commits to continuous adherence to applicable laws and regulations that keep evolving.

PETRONAS entities are expected to establish the Operational Register (i.e. a list of laws that apply to their business) and answer the relevant functional checklist based on a risk-based approach, with support from the business lawyers and corporate SMEs.

### Digitalising Compliance

For an organisation with close to 50,000 employees, a digital system and solution are vital for efficient and effective monitoring of legal and regulatory compliance, as well as managing legal and regulatory risk.

Hence, myCompliance system, an integrated compliance solution, was developed in 2022, featuring automation, data-driven tracking and compliance reporting via a real-time compliance dashboard, and was deployed across the PETRONAS Group.

With myCompliance system in place, the Legal Compliance of Group Legal is better equipped to protect PETRONAS from risk exposure to potential threats, such as incurring financial and non-financial penalties, loss of business opportunities, and severe reputational impact on the enterprise.

## myCompliance modules

myCompliance consists of six (6) modules as follows:

- Compliance Tracker – enables the monitoring and analysis of compliance assurance programme which includes First Line and Second Line Assurances activities for CLA.
- Third Party Risk Management (TPRM) – enables the digitalisation of due diligence work process flow; centralised database and data analytics to manage PETRONAS' exposure to third parties.
- Training Tracker – enables the tracking and monitoring of CLA e-learning training completion by PETRONAS employees groupwide.
- Policy Management – digitalises the work process flow of drafting, reviewing, approving and repository of Level 1 PETRONAS policies.
- Regulation Tracker – enables centralised repository, maintenance, and update of laws (CLAs and OLAs) that are applicable to PETRONAS.
- Legal and Regulatory Universe (LRU) – provides a comprehensive list of PETRONAS entities and corporate divisions, categorised based on the nature of businesses and operations. All legal compliance activities are monitored for PETRONAS entities as per the LRU.

## Continuous Enhancement of myCompliance

For effective and efficient handling of any system enhancements and issues, myCompliance Taskforce was formed in 2023, comprised of representatives from Group Legal and Group Digital of PETRONAS.

Among the key system enhancements that were undertaken in 2023 are as follows:

- Inclusion of the LRU module to ease the extraction, maintenance and updating of PETRONAS entities and corporate divisions' key information and to enable the categorisation of risk for compliance assurance activities.
- Enhancement to the Regulation Tracker module to enable the segregation of the acts and regulations and to allow the integration of this information with myGOVERNANCE, a system developed by Group Risk for PETRONAS entities to create and update its Operational Register (i.e. a list of applicable laws); and

- Improvement of the Compliance Tracker to facilitate the monitoring and analysis of compliance assurance results.

## Key Compliance Areas

One of the components of LCF is the Legal Compliance Controls (LCC), which is a dynamic set of internal controls that PETRONAS entities and corporate divisions must implement to ensure the PETRONAS Group complies with various legal and regulatory requirements, as well as to mitigate the legal and regulatory risk embedded within PETRONAS Group's business activities and operations. These controls help to strengthen the compliance culture in PETRONAS, and are grouped into the 5 Key Compliance Areas (5 KCAs) for ease of classifications and monitoring.

The status of controls under each of the 5 KCAs are reported on a quarterly basis to the top management of Group Legal and Group Risk Management via the Corporate Risk Profile / Risk Appetite report and escalated (where necessary) to PETRONAS ELT, RC and the Board. This ensures the top management is made aware of the progress of LCC's implementation across PETRONAS Group, and to be able to react promptly and aptly to any breaches of the laws.

## 5 Key Compliance Areas





## Corporate Governance at PETRONAS

### Governance and Risk Assessment

1

PETRONAS establishes various governance documents, including policies, frameworks, standards, guidelines and manuals, to set the foundations implementing internal controls and understanding the principles behind the laws and regulations. In 2023, new governance documents were developed, and existing governance documents were enhanced to ensure the controls and activities undertaken remain in compliance to current requirements. These governance documents are required to be adopted and implemented by PETRONAS entities globally.

#### Overarching Legal Compliance

##### PETRONAS Legal Compliance Framework

##### Critical Legal Areas

- PETRONAS Legal Compliance Standard for Critical Legal Areas
- PETRONAS Breach Reporting Manual for Critical Legal Areas
- PETRONAS Third Party Risk Management Manual

##### Operational Legal Areas

- PETRONAS Legal Compliance Standard for Operational Legal Areas

#### Additional Governance Documents for Critical Legal Areas

##### Ethics and Integrity

- PETRONAS Code of Conduct and Business Ethics (CoBE)
- PETRONAS Anti-Bribery and Corruption Manual (ABC Manual)
- PETRONAS Whistleblowing (WB) Policy
- PETRONAS Raid Protocol
- PETRONAS International Raid Protocol

##### Critical Legal Areas

- PETRONAS Corporate Privacy Policy
- PETRONAS Master Guidelines to the PETRONAS Corporate Privacy Policy
- PETRONAS Data Protection Impact Assessment Guidelines

##### Critical Legal Areas

- PETRONAS Sanctions and Export Control Guidelines

##### Critical Legal Areas

- PETRONAS Competition Law Guidelines
- PETRONAS Competition Law Compliance Protocols:
  - Meetings and Information Sharing
  - Merger and Acquisition Transactions

Additionally, to facilitate PETRONAS employees in understanding the principles behind the regulatory and policy requirements, the Governance Documents have been developed in multiple languages (e.g. WB Policy in Arabic), have been localised to fit the local jurisdictional requirements (e.g. CoBE Country supplement for Azerbaijan) and have been customised for different business segments (e.g. Competition Law Compliance Handbook for Gas Business in Malaysia). As at 31 December 2023, PETRONAS has developed 40 CoBE Country supplements.

The PETRONAS Group is potentially exposed to hazards and risk factors inherent to the course of doing the businesses. PETRONAS has established several risk assessment processes which help to identify these potential threats as it may have substantial impact towards the PETRONAS Group's business operations and activities. The relevant controls are then established and implemented across the PETRONAS Group to mitigate the legal and regulatory risks identified and to prevent potential non-compliance to legal and regulatory requirements.

#### Risk Assessments for Legal and Regulatory Compliance

##### Ethics and Integrity

- Corruption Risk Assessment

##### Health, Safety and Environment

- Social Risk Assessment

##### Risk Management

- Risk Assessment in Decision Making

## Training and Awareness

2

PETRONAS continues to deliver enterprise-wide training and awareness programmes via digital platforms (i.e. eLearning Modules via myLearningX) and customised engagements through its compliance officers. These efforts are pivotal in instilling awareness and strengthening compliance to legal and regulatory requirements among PETRONAS employees and directors.

In FY2023, around 38,000 employees across PETRONAS Group have completed the mandatory compliance eLearning Modules on Anti-Bribery and Corruption, Competition, Sanctions and Third Party Risk Management. Additionally, more than 20,000 employees have completed the recently revised modules on Export Control and Personal Data Protection and Privacy. On top of the eLearning Modules, 349 additional focused training and engagement sessions were conducted for the PETRONAS Group, with more than 16,000 participants benefitting from these customised sessions.

Online courses, webinars and virtual training continued to be the preferred mode of engagement in 2023. In total, 54 per cent of the training and engagements were conducted virtually, 35 per cent were organised fully physically, while another 11 per cent were in hybrid mode.

The highlight of the 2023 awareness programme was the PETRONAS Compliance Conference 2023, held in September, which demonstrated PETRONAS' commitment to compliance and PETRONAS' zero tolerance to breaches of the critical laws. The event had attendees and speakers from different players across different industries, including but not limited to directors and C-suites from PETRONAS, Shell, CIMB, Sime Darby Property, Christopher & Lee Ong and Simmons & Simmons LLP, as well as representatives from regulatory bodies such as Malaysian Anti-Corruption Commission (MACC), Malaysia Competition Commission (MyCC) and Office of Foreign Assets Control (OFAC). In total, around 400 participants attended the event physically, while another 2,000 attended virtually.

PETRONAS Compliance Conference symbolises PETRONAS' support towards the notion of leadership by example, as seen through various open forums and discussions during the event, where the leaders shared the progress they undertake in ensuring their organisation complies with all sorts of legal and regulatory requirements. The networking platform provided during the event offered valuable industry insights as various practitioners and leaders shared the compliance practices undertaken by their organisations. To extend it further, Compliance Awards were given to the chosen PETRONAS Entities and employees as recognition of their unwavering efforts in ensuring their entities meet the expectations of PETRONAS.

On top of the engagements and commemorations with the stakeholders, continuous communications were deemed just as vital to ensure PETRONAS employees and directors keep abreast of developments and important updates on new laws and regulations. Throughout 2023, thirty-six (36) mass communications were produced via various social mediums including but not limited to email blast, PETRONAS Dot apps, digital screens, PETRONAS social media platforms, Legal Compliance channel and Legal Compliance web portal. The intended message is to strengthen awareness on mitigating legal and regulatory risk and complying with legal and regulatory requirements, as well as to ensure PETRONAS Entities align with PETRONAS' positions.

Corporate Governance at PETRONAS

Due Diligence and Contractual Obligations

3

PETRONAS Third Party Risk Management

As PETRONAS Group deals with various third parties, including partners, contractors, vendors, suppliers, distributors and agents, PETRONAS manages its third-party risks through its Third Party Risk Management (TPRM) programme. TPRM is a robust due diligence process to safeguard PETRONAS from any exposure due to the breaches of the CLAs (especially from any corporate liability), arising from the misconduct of its third parties.

The TPRM enables PETRONAS to detect possible threats before any formal engagement or during the business relationship with third parties. It would also allow mitigation or contractual safeguard against the risk of legal, financial and/or reputational damage towards PETRONAS. The TPRM applies to all businesses and needs to be embedded by PETRONAS Group.

TPRM documents and tools have been developed to guide the implementation of the TPRM process and for PETRONAS Group to embed and apply across all businesses and needs.

TPRM Documents		TPRM Tools	
<div><div>1. TPRM Manual</div><div>2. TPRM Frequently Asked Questions</div><div>3. KYC Business Guide</div><div>4. KYC Questionnaire Guide for Exclusion to Tender and Finance Exception List</div><div>5. KYC Guidebook</div></div>	<div><div>KYC Declaration Questionnaire ("KYCQ") (via myCompliance system)</div><div>In-house due diligence questionnaire for completion by our third-parties or counterparties covering Corporate and Business Information, Ethics and Integrity, Data Privacy, Sanctions, Export Control and Competition.</div></div>	<div><div>KYC6 – Online Screening System (via myCompliance system)</div><div>An externally managed screening system covering key screening themes in relation to the 5 CLAs with a capacity for enhanced due diligence.</div></div>	<div><div>Compliance Clauses</div><div>Embedment of compliance clauses relating to the 5 CLAs in all contracts. Base clauses provided could be negotiated and customised in accordance to business needs.</div></div>

To facilitate PETRONAS Group’s third parties in answering the TPRM KYCQ, different sets of questionnaires were developed, depending on the nature, size and complexity of the business. The KYCQ has also been developed in multiple languages and could be customised further, depending on the needs of the businesses, upon consultation with CSP and CMO team.

The Evolving Framework

As part of continuous improvement, the TPRM benchmarking was undertaken by CSP in 2023. The benchmarking includes comparative studies with various industry players, including from oil and gas, banking and telecommunication companies, engagement with internal stakeholders at the Corporate and Business Divisions’ level and a comprehensive literature review to assess the current TPRM programme and identify the areas of improvements. The TPRM findings and recommendations were presented to the ELT in 2023. The enhancement to the TPRM Framework and processes will be undertaken in 2024.

## Business Practice

4

PETRONAS reviews its business practices and activities regularly and ensures these practices are updated and aligned with the spirit of compliance to legal and regulatory requirements. It has also put in place pre-emptive measures that PETRONAS Entities must embed and implement to ensure that the PETRONAS Group adopts best practices and remains as an exemplary model to the oil and gas industry worldwide.

Some examples of the pre-emptive measures put in place are:

Items	Controls
Licensing	Sanctions Licensing and Export Control Licensing
Data Management	Retention of Personal Data, Accuracy of Personal Data and Retention of Consent
Declaration Forms	Conflict of Interest Declaration Form, Gift Declaration Form and Asset Declaration Form
Notices	Display of Privacy Notice at Physical Facilities, Online Facilities and When Dealing with Third Parties

In 2023, new controls have been introduced and enforced to PETRONAS Entities for continuous adherence to evolving laws:

- Employees Asset Declaration Forms;
- Data Privacy Officer requirement; and
- PETRONAS Social Impact Management Framework.

## Corporate Governance at PETRONAS

### Monitoring and Assurance

5

PETRONAS Board and ELT ensure their oversight over the PETRONAS Group's activities and its level of compliance towards critical laws and operational laws through rigorous monitoring. Relevant reporting on the PETRONAS Group's compliance activities and control implementations were escalated to various senior management and Board of Directors such as PETRONAS Board, RC, ELT, LLT, HSE Leadership Team, Business Leadership Teams, the Entities' Leadership Team and the Entities' Board of Directors. The escalation ensures top management and directors are aware of the PETRONAS Group's compliance activities and any gap in the control implementation. It allows them to provide continuous guidance for PETRONAS Entities to strive to close the gap in the most practical and feasible way possible. The established line of sight also solidifies the alignment of PETRONAS' position while meeting the business' expectations.

PETRONAS Group constantly verifies the adequacy and effectiveness of its internal controls via the PETRONAS Three Line of Defence model, which is in line with international standards such as Committee of Sponsoring Organizations of the Treadway Commission (COSO) Internal Control – Integrated Framework (ICIF) 2013 and International Organization for Standardization (ISO) 31000:2018 – Risk management.

In 2023, PETRONAS completed three assurance programmes to ensure compliance with the requirements stipulated under critical and operational laws.

1. First Line Assurance for Critical Legal Areas (FLA-CLA);
2. Second Line Assurance for Critical Legal Areas (SLA-CLA); and
3. First Line Assurance for Operational Legal Areas (FLA-OLA).

The oversight and monitoring of CLA and OLA compliance are performed through a structured self-assessment or First Line Assurance undertaken by the PETRONAS Group annually, supported by myCompliance, an integrated compliance system to ensure efficient and effective monitoring of Legal and Regulatory compliance across the PETRONAS Group.

Group Legal, as one of PETRONAS' Second Line Assurance Providers, along with Group Internal Audit and Internal Audit Fraternity, as PETRONAS' Third Line Auditors, effectively identify, evaluate, and recommend an intervention to address potential non-compliances and unsound practices using PETRONAS' Three Line of Defence model. The results of the review or audit may lead to the identification of new controls to be developed or existing controls to be enhanced to continuously improve the legal compliance posture of the PETRONAS Group.

The assurance activities are conducted periodically and assessed based on a risk-based approach. For instance, PETRONAS Entities may utilise the Frequency Determination Tool to assess potential repercussions should the Entities breach any operational laws. Similarly, the selection of entities for SLA-CLA are derived from intensive research on the potential exposures of the Entities if the controls are not implemented adequately and effectively by the Entities.



## PETRONAS Commitment to Integrity

We have zero tolerance for any form of bribery or corruption. The PETRONAS Code of Conduct and Business Ethics (CoBE), PETRONAS Anti-Bribery and Corruption Manual and PETRONAS Whistleblowing Policy are in place to guide our employees and third parties when dealing with potential or actual bribery and corruption situations or improper conduct in their daily business activities.

We demonstrate a top-level commitment to integrity through a dedicated PETRONAS Integrity Governance Unit (IGU), known as Group Integrity, and with the support of the Integrity Focal Person (IFP) at respective businesses. Group Integrity reports all PETRONAS Integrity-related matters directly to the Board Risk Committee and externally to the Malaysian Anti-Corruption Commission (MACC). The tone from the top is indisputable via integrity messaging and walkabouts by our leaders.

PETRONAS Groupwide Corruption Risk Assessment (CRA) is revised every three years following the adequate procedure requirement as one of the defences against corporate liability provisions.

We continue demonstrating our commitment to managing corruption-related activities while adhering to applicable laws and regulations. In 2023, our parent company, Petroliaam Nasional Berhad (PETRONAS), received a certification renewal for the ISO 37001:2016 Anti-Bribery Management System (ABMS) for three years until November 2026.

We formed the Integrity Alliance with our strategic partners to push for greater governance and integrity within Malaysia's oil and gas industry.

We aim to cultivate an environment that empowers our people to speak up and do the right thing in combating corruption and upholding integrity. Our whistleblowing channels are recognised as trusted platforms to speak up about any wrongdoing, as demonstrated by the increasing number of complaints received using these channels. We continue to enhance the whistleblowing management system to be robust and effective to ensure that reports of wrongdoing are dealt with in a timely manner and comply with applicable whistleblowing legislation.

Regarding training and communication, we continue to educate and provide awareness to internal and external stakeholders on integrity-related matters. In 2023, a total of 715 integrity programmes were conducted to strengthen integrity among internal and external PETRONAS stakeholders.

In collaboration with the Malaysian Anti-Corruption Academy (MACA), we continue to upskill our staff on integrity and governance through the Certified Integrity Officer (CeIO) programme.



For more information on PETRONAS Whistleblowing, please go to <https://www.petronas.com/whistleblowing>.

# Group Financial Results and Position

## Analysis of Financial Results

### Consolidated Statement of Profit or Loss

In RM million	Financial Year ended 31 December	
	2023	2022
<b>Continuing operations</b>		
Revenue	<b>305,755</b>	330,009 <sup>3</sup>
Cost of revenue	<b>(182,465)</b>	(175,509) <sup>3</sup>
<b>Gross profit</b>	<b>123,290</b>	154,500
Selling and distribution expenses	<b>(8,943)</b>	(7,324)
Administration expenses	<b>(15,245)</b>	(13,888)
Net impairment losses/write-off <sup>1</sup>	<b>(6,096)</b>	(1,749)
Other expenses	<b>(3,359)</b>	(3,312)
Other income	<b>8,479</b>	7,723
<b>Operating profit</b>	<b>98,126</b>	135,950
Financing costs	<b>(5,500)</b>	(4,929)
Share of profit after tax and non-controlling interests of equity accounted associates and joint ventures	<b>872</b>	957
<b>Profit before taxation from continuing operations</b>	<b>93,498</b>	131,978
Tax expense	<b>(14,559)</b>	(34,173)
<b>Profit for the year from continuing operations</b>	<b>78,939</b>	97,805
<b>Discontinuing operations<sup>2</sup></b>		
Profit for the year from discontinuing operations, net of tax	<b>1,775</b>	3,813
<b>PROFIT FOR THE YEAR</b>	<b>80,714</b>	101,618
<b>Profit attributable to:</b>		
Shareholders of the Company	<b>74,361</b>	92,313
Non-controlling interests	<b>6,353</b>	9,305
<b>PROFIT FOR THE YEAR</b>	<b>80,714</b>	101,618

#### Revenue (RM million)



Note 1: Excludes well costs and includes loss on remeasurement/derecognition of financial assets measured at amortised cost.

Note 2: Discontinuing operations relate to intended disposal of Engen Group.

Note 3: Prior year revenue and group costs have been restated to conform with current year presentation, with no impact on PAT.

## Consolidated Statement of Other Comprehensive Income

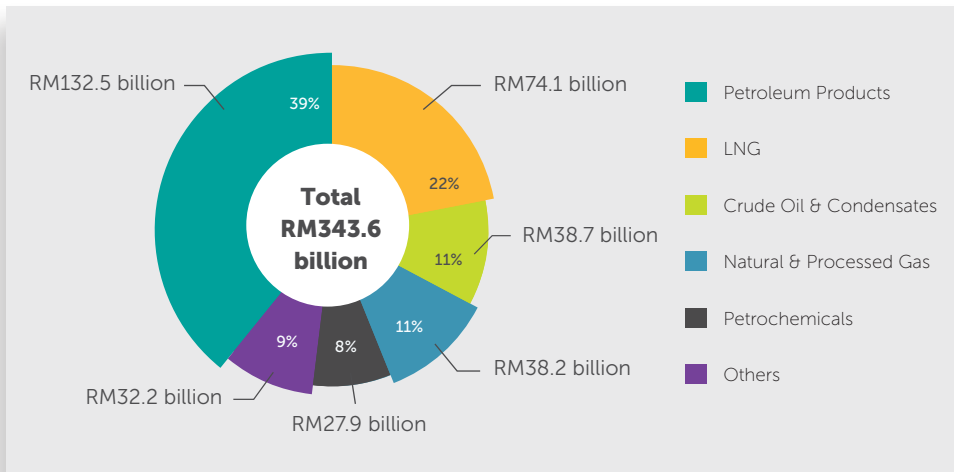
In RM million	Financial Year ended 31 December	
	2023	2022
<b>PROFIT FOR THE YEAR</b>	<b>80,714</b>	101,618
<b>Other comprehensive income/(loss)</b>		
<i>Items that will not be reclassified subsequently to profit or loss</i>		
Net changes in fair value of equity investments at fair value through other comprehensive income (OCI)	<b>(128)</b>	(429)
<i>Items that may be reclassified subsequently to profit or loss</i>		
Net movements from exchange differences	<b>10,071</b>	8,430
Cash flow hedge	<b>(873)</b>	2,999
Others	<b>20</b>	185
<b>Total other comprehensive income for the year, net of tax</b>	<b>9,090</b>	11,185
<b>TOTAL COMPREHENSIVE INCOME FOR THE YEAR</b>	<b>89,804</b>	112,803
<b>Total comprehensive income attributable to:</b>		
Shareholders of the Company	<b>81,437</b>	100,926
Non-controlling interests	<b>8,367</b>	11,877
<b>TOTAL COMPREHENSIVE INCOME FOR THE YEAR</b>	<b>89,804</b>	112,803

Note 1: All financial results comprise continuing and discontinuing operations. Discontinuing operations relate to intended disposal of Engen Group.

## Group Financial Results and Position

### Revenue by Products

The Group's total revenue was RM343.6 billion, primarily contributed by petroleum products and LNG which accounted for 39 per cent and 22 per cent of revenue, respectively.



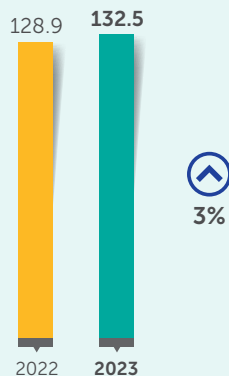
Note 1: All financial and operational results comprise continuing and discontinuing operations.

Discontinuing operations relate to intended disposal of Engen Group.

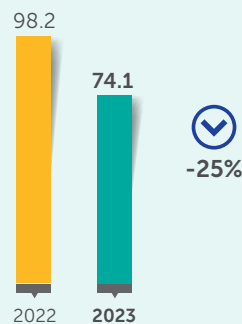
Note 2: Prior year revenue and group costs have been restated to conform with current year presentation, with no impact on PAT.

Note 3: Others comprise Property & Others; and Maritime & Logistics.

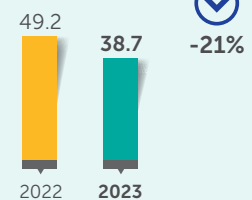
#### Petroleum Products (RM billion)



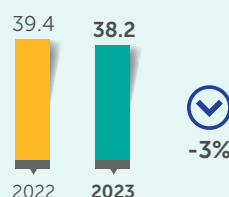
#### LNG (RM billion)



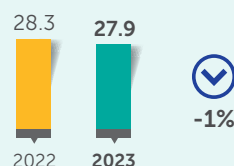
#### Crude Oil & Condensates (RM billion)



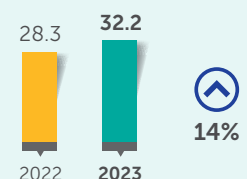
#### Natural & Processed Gas (RM billion)



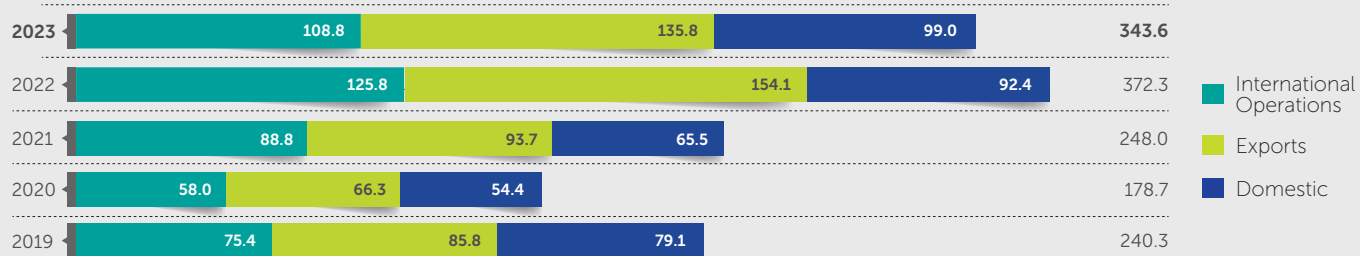
#### Petrochemicals (RM billion)



#### Others<sup>3</sup> (RM billion)



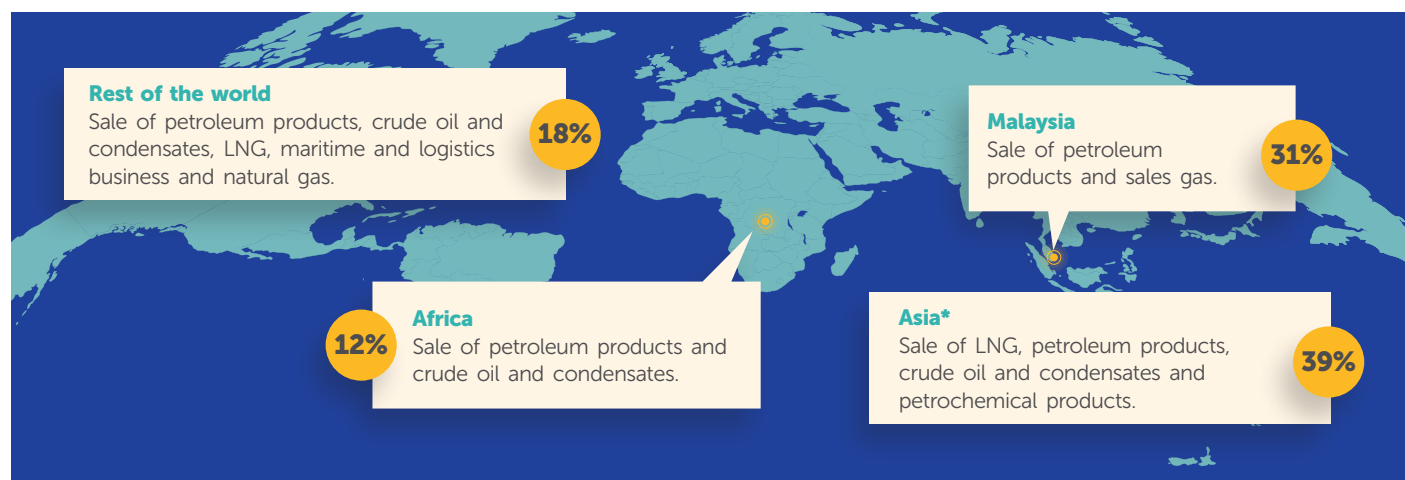
### Revenue by Geographical Trade (RM billion)



- Export sales continued to be the highest contributor to the PETRONAS Group revenue and accounted for 40 per cent of the Group's total revenue in FY2023.
- The lower export sales as compared to prior year were due to lower sales volumes and unfavourable key benchmark prices for major products mainly LNG.
- Similarly, international operations revenue which contributed 32 per cent of the Group's total revenue recorded a decrease as compared to the previous year mainly due to lesser trading opportunities for LNG coupled with downward trending of key benchmark prices for major products.
- The higher domestic sales were mainly contributed by petroleum products revenue following recovery of demand upon re-opening of international border since April 2022.

### Revenue by Geographical Segments<sup>3</sup>

Revenue from outside Malaysia, which included export and international sales, accounted for close to 70 per cent of the Group's revenue, demonstrating PETRONAS' strong global presence.



\* Excludes Malaysia

Note 1: All financial and operational results comprise continuing and discontinuing operations. Discontinuing operations relate to intended disposal of Engen Group.

Note 2: Prior year revenue and group costs have been restated to conform with current year presentation, with no impact on PAT.

Note 3: The revenue by Geographical segments are populated according to the customer's location.

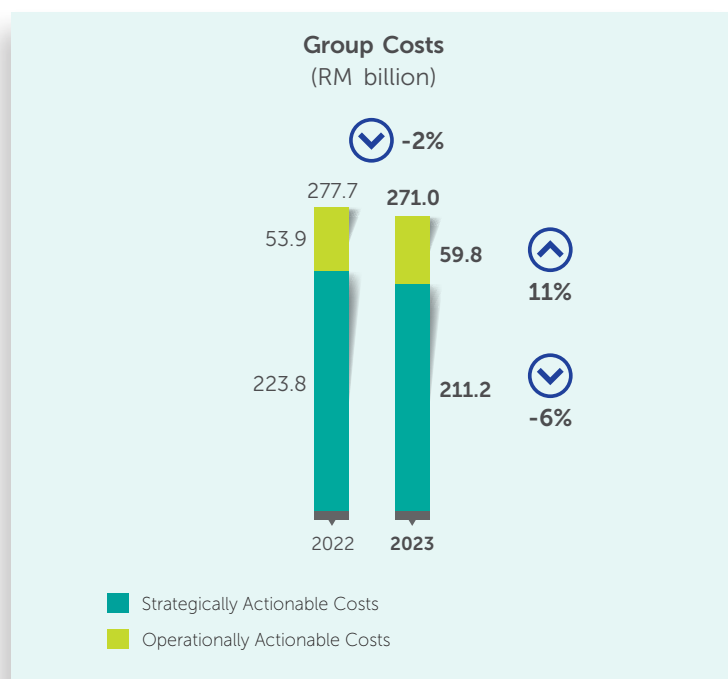


## Group Financial Results and Position

### Group Costs

- Group costs stood at RM271.0 billion, a decrease against last year by RM6.7 billion, mainly due to lower tax expenses in line with lower profit before tax.
- Despite the decrease in the Group's total costs, PETRONAS recorded a higher Group Costs to Revenue ratio of 79 per cent in FY2023 as compared to 75 per cent in the previous year, mainly due to increase in operationally actionable costs and higher net impairment on assets.

In RM billion	2023	2022	Variance
<b>Strategically Actionable Costs</b>	<b>211.2</b>	223.8	(12.6)
Product costs	<b>123.3</b>	120.0	3.3
Tax Expenses, Sales Tax & Duties and Cash Payments	<b>33.6</b>	56.2	(22.6)
Price-Sensitive Expense Items	<b>54.3</b>	47.6	6.7
Depreciation, Amortisation, Write-Off & Write-Down	<b>37.8</b>	33.9	3.9
Net Impairment on Assets	<b>6.8</b>	2.6	4.2
Others (Forex, Finance Costs, etc)	<b>9.7</b>	11.1	(1.4)
<b>Operationally Actionable Costs</b>	<b>59.8</b>	53.9	5.9
Production and transportation expense, purchase services, materials & supplies	<b>35.4</b>	33.4	2.0
Others (HR costs, rental, leases, utilities, G&A etc)	<b>24.4</b>	20.5	3.9
<b>TOTAL GROUP COSTS</b>	<b>271.0</b>	277.7	(6.7)
<b>Group Costs to Revenue Ratio (%)</b>	<b>79</b>	75	



Note 1: Group costs above relate to costs charged to Income Statement only.

Note 2: Prior year revenue and group costs have been restated to conform with current year presentation, with no impact on PAT.

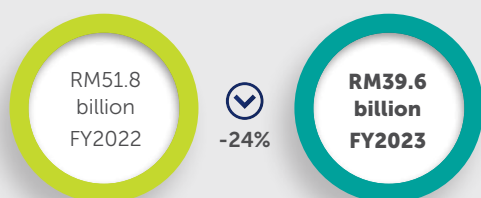
## Segment Earnings

Businesses across the value chain displayed operational resilience amid market volatility, resulting in resilient financial performance for the year ended 2023.

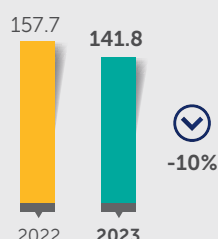
- The Group operated three core businesses in FY2023: Upstream, Gas and Downstream.
- Corporate and Others which complement our core businesses, comprises primarily the maritime and logistics segment; property segment and central treasury; project delivery and technology division as well as the renewables, hydrogen, and green mobility businesses.

### Upstream

#### PAT



#### Revenue (RM billion)

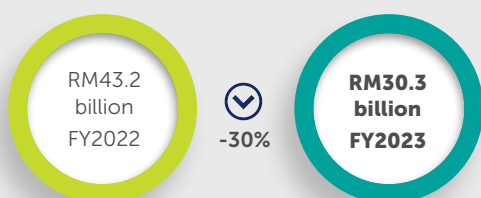


- Upstream business recorded a PAT of RM39.6 billion, lower as compared to RM51.8 billion in FY2022 in line with lower revenue, higher amortisation following additional capitalisation of assets and higher net impairment losses/write-off of assets<sup>2</sup>, partially offset by lower taxation.
- Lower Upstream revenue was mainly due to lower average realised prices and lower sales volume for crude oil and condensates, partially offset by impact from foreign exchange.
- Total daily production average in FY2023 was at 2,431 thousand barrels of oil equivalent (boe) per day, decreased marginally from 2,434 thousand boe per day in FY2022 mainly due to lower crude oil production from Malaysia.

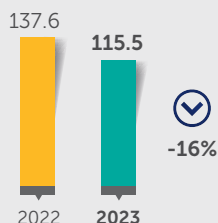
Further information on Upstream's operational performance can be referred on pages 72-79.

### Gas

#### PAT



#### Revenue (RM billion)



- Gas business recorded a lower PAT of RM30.3 billion against RM43.2 billion in FY2022 primarily driven by lower revenue partially offset by lower taxation and product costs.
- Revenue decreased as compared to prior year mainly due to lower average realised prices of LNG and processed gas coupled with lower LNG sales volume partially offset by impact from foreign exchange.
- Malaysia average sales gas volume during the year was 2,878 million standard cubic feet per day (MMscfd), decreased from 2,938 MMscfd in FY2022 mainly due to lower offtake from non-power sector in Sabah and Sarawak.

Further information on Gas' operational performance can be referred on pages 80-85.

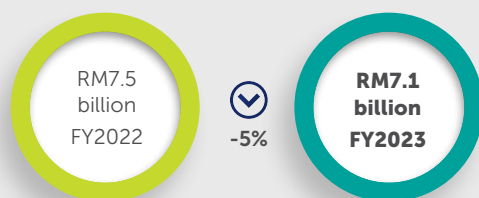
Note 1: Certain prior year information has been restated to conform with current year presentation.

Note 2: Includes net impairment losses/write-off of well costs and other exploration expenditure under intangible assets, loss on remeasurement/derecognition of financial assets measured at amortised cost and provision for onerous contracts, net of tax.

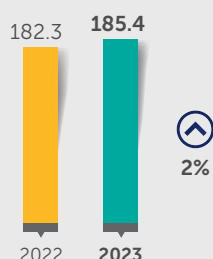
## Group Financial Results and Position

### Downstream

#### PAT



#### Revenue (RM billion)

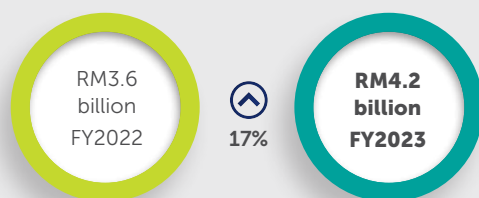


- Downstream business recorded a PAT of RM7.1 billion against RM7.5 billion in FY2022 following lower refining and petrochemical margins partially offset by lower taxation.
- Higher revenue was recorded underpinned by higher sales volume mainly from petroleum products and impact from foreign exchange partially offset by lower average realised prices.
- Petroleum products sales volume was 296.1 million barrels, higher by 37.9 million barrels primarily driven by increased trading activities and higher marketing volume. Crude oil sales volume was 106.9 million barrels, lower by 7.4 million barrels mainly due to lower marketing volume partially offset by higher trading opportunities. Petrochemical products sales volume was 9.4 million metric tonnes, higher by 1.1 million metric tonnes in line with higher production.
- During the year, Downstream business recorded 87.2 per cent in Overall Equipment Effectiveness (OEE), higher than 85.9 per cent recorded in FY2022.

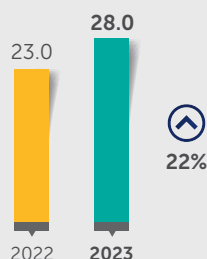
Further information on Downstreams operational performance can be referred on pages 86-91.

### Corporate and Others

#### PAT



#### Revenue (RM billion)



- Corporate and Other businesses recorded a PAT of RM4.2 billion as compared to RM3.6 billion last year primarily driven by higher revenue partially offset by higher operating expenses.
- MISC Berhad (MISC) and KLCCP Stapled Group were the two major contributors to this segment.
- MISC recorded a PAT of RM2.0 billion in FY2023, higher as compared to RM1.8 billion last year mainly due to lower impairment provisions partially offset by lower operating profits. Operating loss was recorded in the Marine and Heavy Engineering segment primarily attributed to additional cost provisions arising from revised schedule on ongoing projects during the year. Meanwhile, both Petroleum & Product Shipping and Gas Assets and Solutions segments recorded higher operating profit from higher revenue.
- KLCCP Stapled Group's PAT increased to RM1.1 billion as compared to RM0.9 billion in FY2022 mainly due to revenue growth of 11.0 per cent to RM1.6 billion underpinned by the resilience of its portfolio strength. The profit improvement is further bolstered by a significant fair value gain attributable to overall improvement in the market value of its investment properties.

Further information on MISC and KLCCP Stapled Group can be referred on pages 105-107.

Note 1: Certain prior year information has been restated to conform with current year presentation.

## Analysis of Financial Position

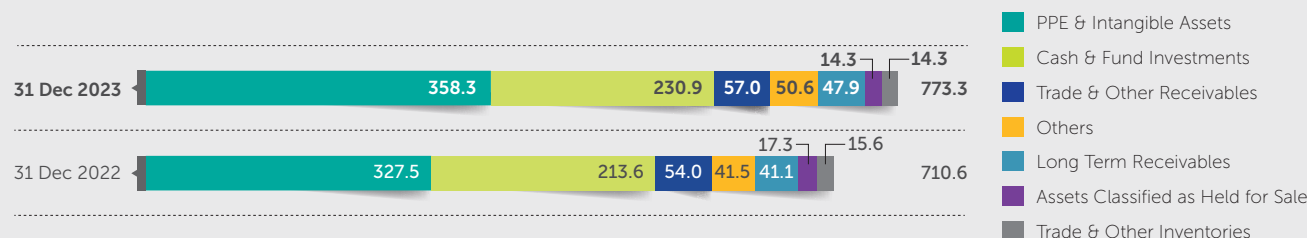
### Consolidated Statement of Financial Position

In RM million	As at 31 December	
	2023	2022
<b>ASSETS</b>		
Property, plant and equipment	<b>326,398</b>	301,218
Investment properties and land held for development	<b>12,275</b>	12,658
Investments in associates and joint ventures	<b>10,368</b>	8,114
Intangible assets	<b>31,902</b>	26,260
Long-term receivables	<b>47,939</b>	41,127
Fund and other investments	<b>10,778</b>	1,425
Deferred tax assets	<b>27,853</b>	20,675
<b>TOTAL NON-CURRENT ASSETS</b>	<b>467,513</b>	411,477
Trade and other inventories	<b>14,307</b>	15,612
Trade and other receivables	<b>57,028</b>	53,998
Fund and other investments	<b>11,620</b>	10,945
Cash and cash equivalents	<b>208,492</b>	201,220
Assets classified as held for sale	<b>291,447</b> <b>14,341</b>	281,775 17,318
<b>TOTAL CURRENT ASSETS</b>	<b>305,788</b>	299,093
<b>TOTAL ASSETS</b>	<b>773,301</b>	710,570
<b>EQUITY</b>		
Share capital	<b>100</b>	100
Reserves	<b>443,369</b>	401,509
Total equity attributable to shareholders of the Company	<b>443,469</b>	401,609
Non-controlling interests	<b>59,396</b>	58,822
<b>TOTAL EQUITY</b>	<b>502,865</b>	460,431
<b>LIABILITIES</b>		
Borrowings	<b>98,754</b>	96,345
Deferred tax liabilities	<b>13,297</b>	11,829
Other long-term liabilities and provisions	<b>64,434</b>	50,418
<b>TOTAL NON-CURRENT LIABILITIES</b>	<b>176,485</b>	158,592
Trade and other payables	<b>68,076</b>	63,677
Borrowings	<b>12,867</b>	7,812
Taxation	<b>3,931</b>	8,438
Liabilities classified as held for sale	<b>84,874</b> <b>9,077</b>	79,927 11,620
<b>TOTAL CURRENT LIABILITIES</b>	<b>93,951</b>	91,547
<b>TOTAL LIABILITIES</b>	<b>270,436</b>	250,139
<b>TOTAL EQUITY AND LIABILITIES</b>	<b>773,301</b>	710,570

## Group Financial Results and Position

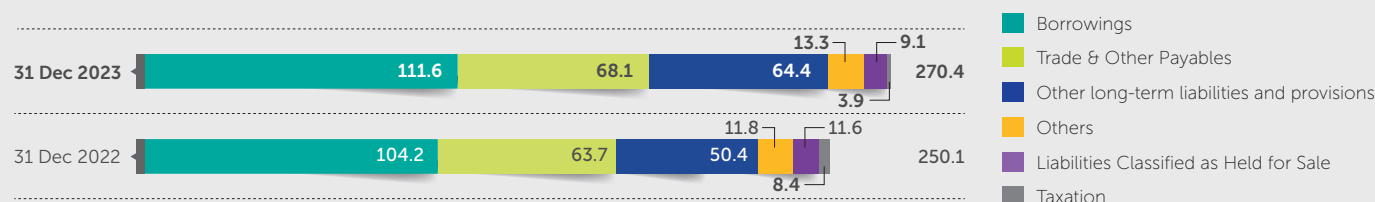
### Total Assets (RM billion)

Total assets strengthened to RM773.3 billion as at 31 December 2023 against RM710.6 billion as at 31 December 2022 mainly contributed by capital investments during the year as well as higher cash, fund and other investments balances.



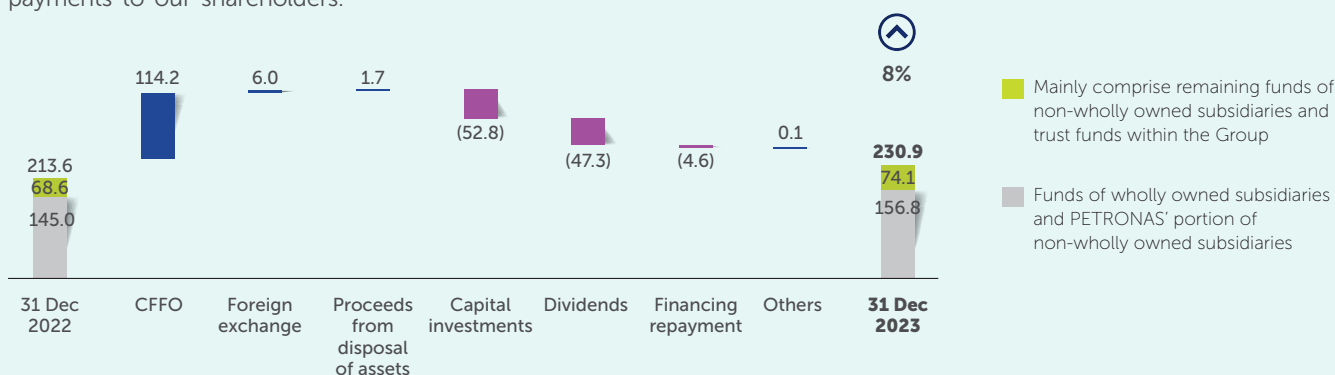
### Total Liabilities (RM billion)

Total liabilities increased to RM270.4 billion as at 31 December 2023 as compared to RM250.1 billion as at 31 December 2022 primarily due to higher other long-term liabilities and provisions as well as higher borrowings following impact from foreign exchange.



### Movement in Cash and Fund Investments (RM billion)

The Group's Cash and Fund Investments increased to RM230.9 billion as at 31 December 2023 against RM213.6 billion as at 31 December 2022 primarily contributed by Cash Flows from Operations (CFFO) of RM114.2 billion and impact from foreign exchange by RM6.0 billion. The robust CFFO generated sufficiently covers expenses to enable safe business operations, financial commitments, debt obligations and at the same time support growth investments and dividend payments to our shareholders.

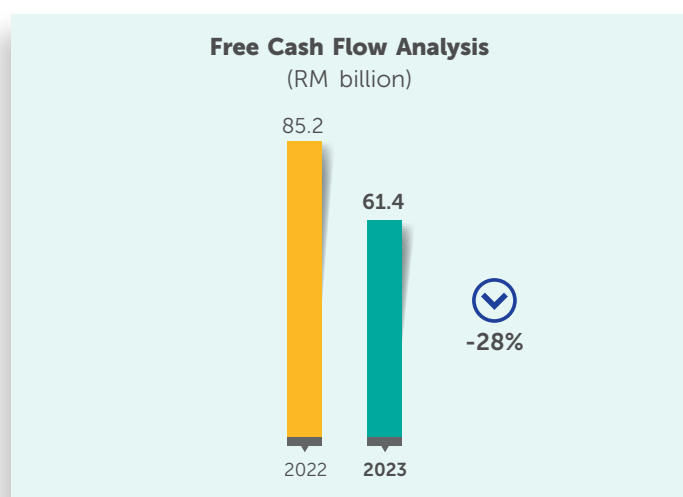




## Analysis of Cash Flow

### Consolidated Statement of Cash Flows

In RM million	Financial Year ended 31 December	
	2023	2022
<b>Cash flows from operating activities</b>		
Profit before taxation	<b>95,584</b>	135,956
Adjustments for non-cash items	<b>37,790</b>	42,142
Net changes in working capital	<b>1,321</b>	(13,994)
<b>Cash generated from operations</b>	<b>134,695</b>	164,104
Interest income received	<b>11,563</b>	5,677
Interest expenses paid	<b>(3,382)</b>	(3,024)
Taxation paid, net of refund	<b>(28,718)</b>	(31,471)
<b>Net cash generated from operating activities</b>	<b>114,158</b>	135,286
<b>Cash flows from investing activities</b>	<b>(59,296)</b>	(39,431)
<b>Cash flows from financing activities</b>	<b>(53,098)</b>	(69,884)
Net increase in cash and cash equivalents	<b>1,764</b>	25,971
(Increase)/Decrease in cash and cash equivalents restricted	<b>(474)</b>	341
Net foreign exchange differences	<b>5,957</b>	10,514
Cash and cash equivalents at beginning of the year	<b>200,384</b>	163,558
<b>Cash and cash equivalents at end of the year</b>	<b>207,631</b>	200,384
<b>Cash and cash equivalents</b>		
Cash and bank balances and deposits	<b>208,492</b>	201,220
Classified as held for sale	<b>652</b>	203
Less: Cash and cash equivalents restricted	<b>(1,513)</b>	(1,039)
	<b>207,631</b>	200,384



The Group generated free cash flow of RM61.4 billion during the year, decreased by RM23.8 billion or 28 per cent as compared to RM85.2 billion in FY2022 mainly due to reduced cash generated from operations in line with lower profit coupled with higher capital investments spent.

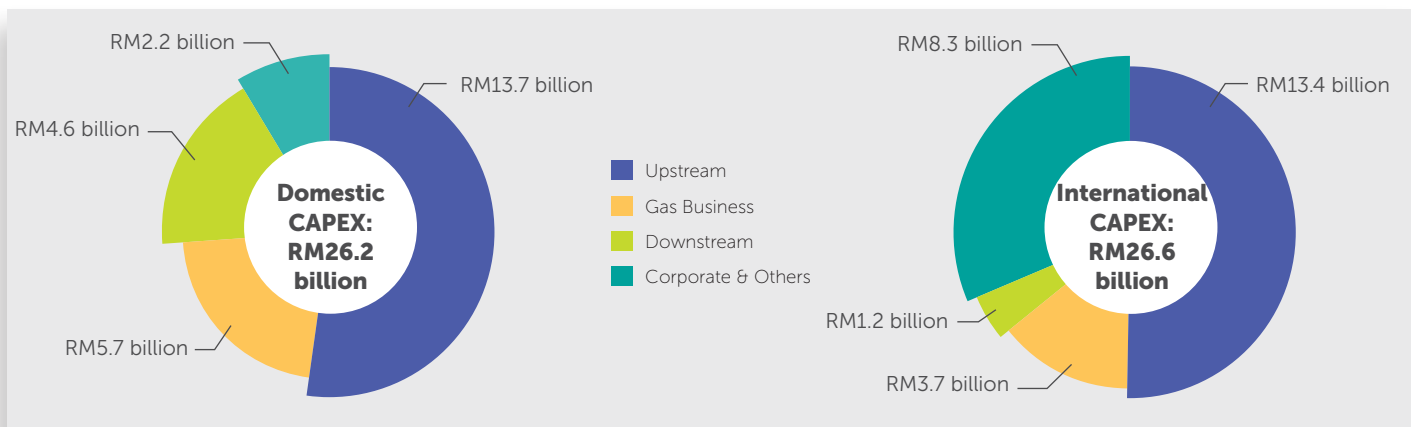
## Group Financial Results and Position

### Capital Investments (RM billion)

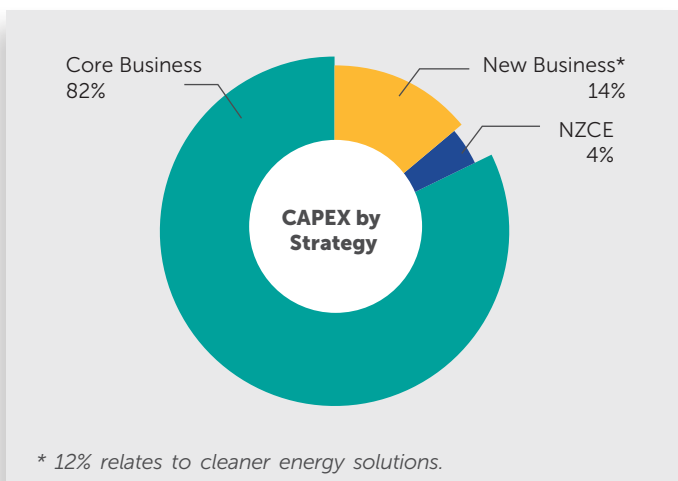
- Total Capital Expenditure (CAPEX) spent during the year of RM52.8 billion was higher by RM2.7 billion compared with RM50.1 billion in FY2022.
- The CAPEX spent was divided almost equally between Malaysia and international projects, with domestic CAPEX increased by 41 per cent as compared to FY2022, contributing to the growth of the Malaysian oil and gas industry.
- Included in the Corporate & Others business segment is CAPEX incurred for renewables, hydrogen and green mobility businesses.



### Capital Investments by Business and Geographical Segments in FY2023



### Capital Investments by Energy Transition Strategy in FY2023



- PETRONAS remains steadfast in the journey towards Energy Transition, in achieving our NZCE 2050 aspiration and step-out opportunities beyond the Group's current core business.
- During the year, 16 per cent of CAPEX was spent for cleaner energy solutions and decarbonisation projects.

*Note: Capital investments are based on cash, inclusive of costs of acquisition of subsidiaries and investments in associates and joint ventures.*

## Segment Capital Investments

- Aligned with our Energy Transition Strategy, PETRONAS continues to strengthen its Core Business, pursue growth in capturing opportunities for New Business, and at the same time responsibly manage carbon emissions, to realise the Group's NZCE 2050 Pathway.
- As we progress in this journey, PETRONAS continues to uphold strict discipline in allocating capital resources, to strike the right balance between investments in growth for Core Business and New Business, whilst reducing greenhouse gas emissions. However, this comes with increasing challenges given the restricted access to capital market for energy players.
- In FY2023, PETRONAS' overall CAPEX stood at RM52.8 billion, higher compared to RM50.1 billion last year. This includes significant investments in Malaysia to ensure energy security, affordability and sustainability, while continuing to make good progress in the development of the Nearshore Floating LNG Facility in Sabah, as well as the Kasawari Gas Field Development and CO<sub>2</sub> Sequestration (CCS) Facilities in Sarawak.
- Moving forward, higher allocation of CAPEX is projected in scaling up investments in core business, lowering emissions as well as investing in clean energy to future-proof the Group's portfolio.

### Upstream

- CAPEX for Upstream business accounted for 51 per cent of the Group's total CAPEX with a total spending of RM27.1 billion, an increase of RM3.4 billion as compared to FY2022. Upstream's CAPEX for FY2023 was predominantly spent on exploration, development and production activities aimed at sustaining and growing production in Malaysia and international operations.
- About RM13.7 billion or 51 per cent of Upstream total CAPEX was spent domestically to intensify efforts to enhance the recovery rate of existing fields as well as the development of new fields. Among the key projects in Malaysia are Kasawari Gas Field Development and CCS Facilities in Sarawak, being one of the largest offshore CCS projects in the world.

- Meanwhile, a total of RM13.4 billion was allocated towards international portfolio investments, which include key countries Canada, Angola, Argentina and Iraq. One of the key highlights during the year includes an acquisition of 40 per cent participating interest from TotalEnergies in Angola's deepwater block, featuring facilities that will be designed for zero flaring.

### Gas

- Gas business accounted for 18 per cent of Group's total CAPEX and recorded a total spending of RM9.4 billion in FY2023. This is an increase of RM3.8 billion as compared to the previous year mainly allocated on domestic investments.
- CAPEX for FY2023 were predominantly spent domestically amounting to RM5.7 billion or 61 per cent mainly on the Nearshore Floating LNG Facility in Sabah, aimed at monetising gas resources in an optimised and more environmentally conscious manner. Whereas internationally, a key investment is on the LNG project in Canada.

### Downstream

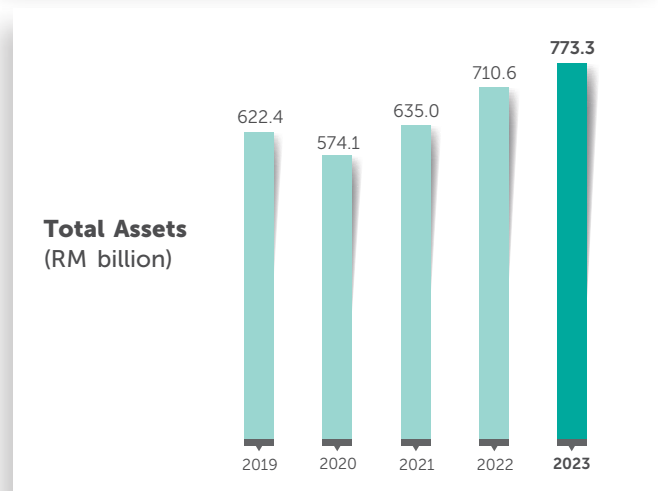
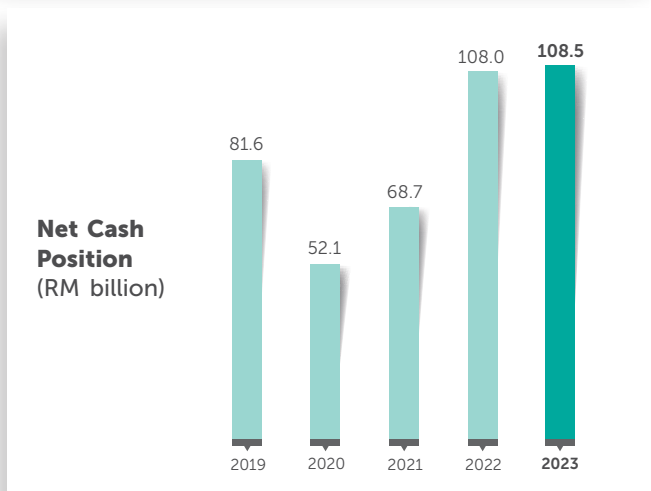
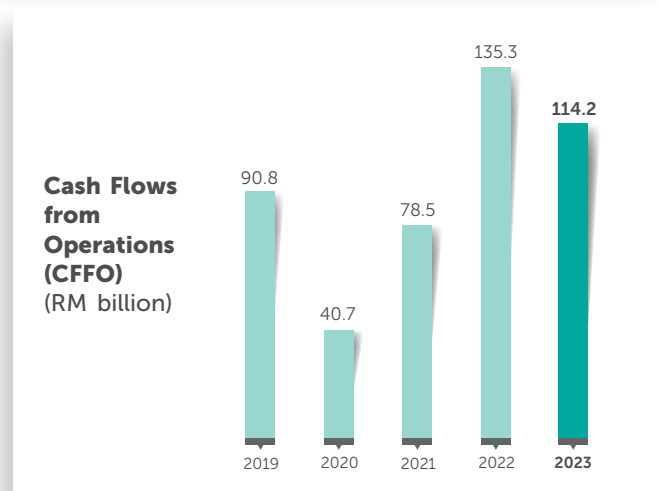
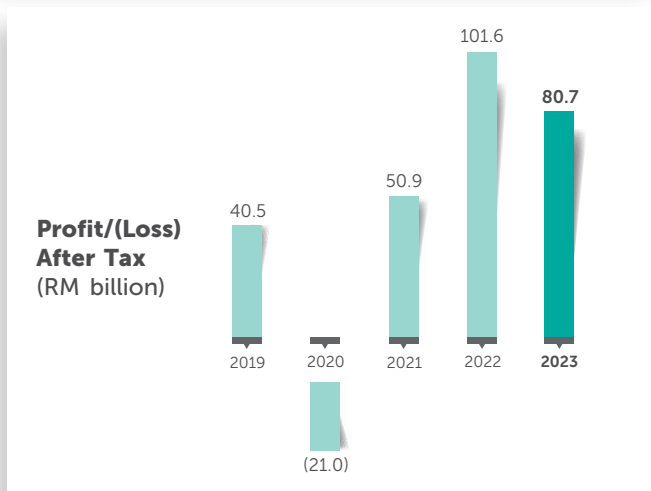
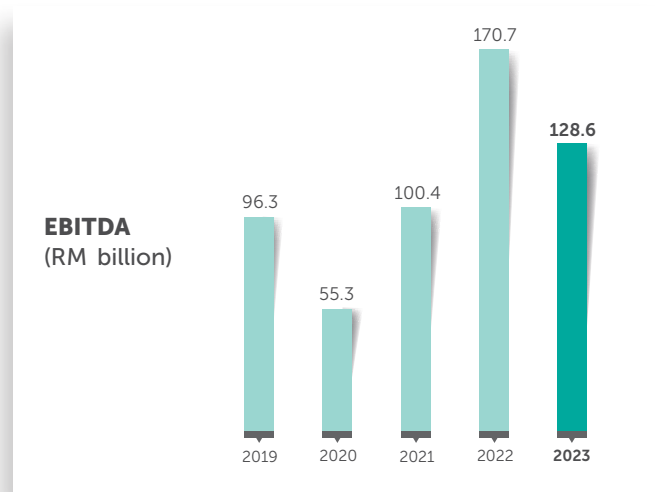
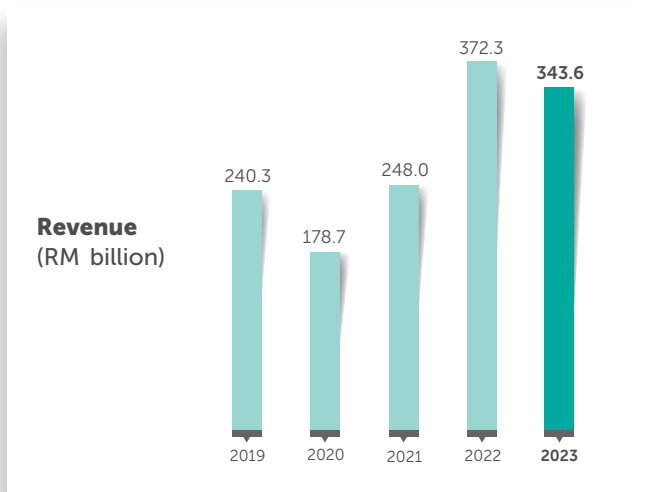
- Downstream business' CAPEX of RM5.8 billion during the year accounted for 11 per cent of the Group's overall CAPEX allocation, decreased by RM10.5 billion as compared to prior year mainly due to the acquisition of Perstorp in FY2022.
- The CAPEX spending made during the year was mainly allocated towards operational projects as well as turnaround activities, with majority spent domestically amounting to RM4.6 billion or 79 per cent.

### Corporate and Others

- CAPEX spent by businesses under Corporate and Others during the year amounted to RM10.5 billion with Gentari accounting for 58 per cent of the total spending.
- Gentari's significant investments on the forefront of renewables were mainly on the acquisition of 49 per cent ownership in Northland Power Inc.'s stake of the Hai Long project, poised to be one of Asia's largest offshore wind energy projects; and the acquisition of WIRSOL Energy, a leading renewable energy solutions provider.

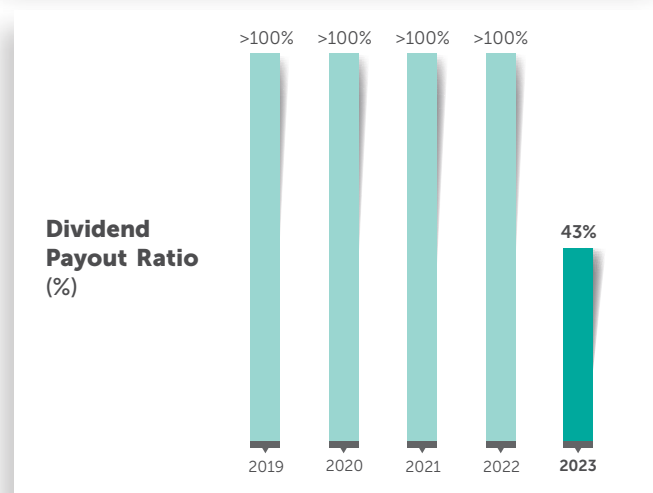
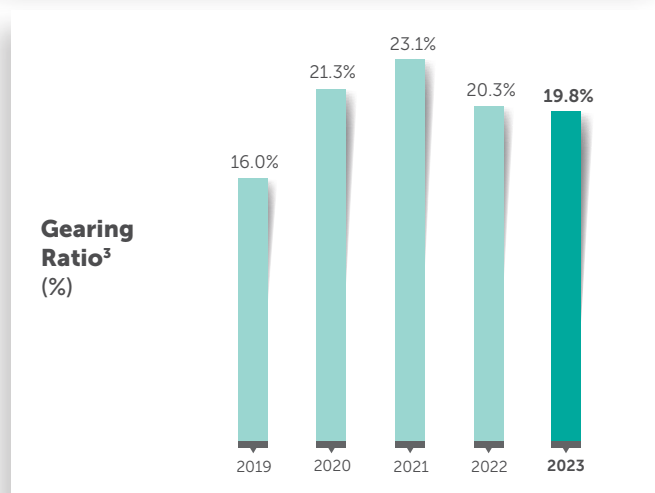
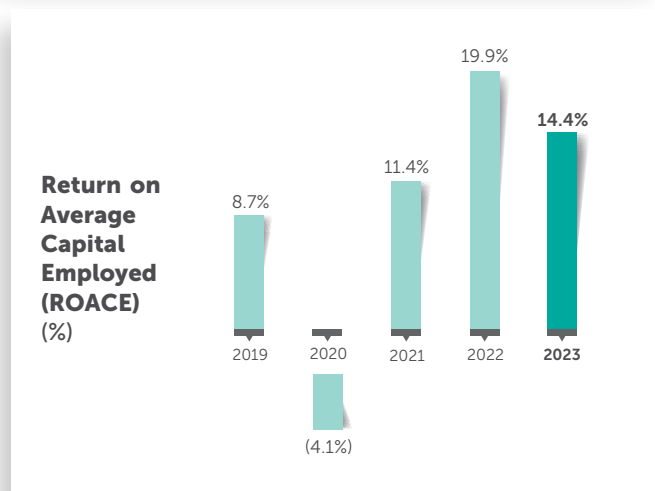
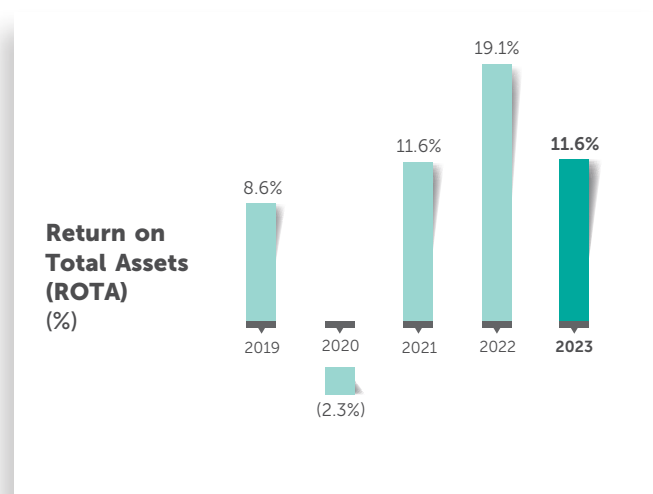
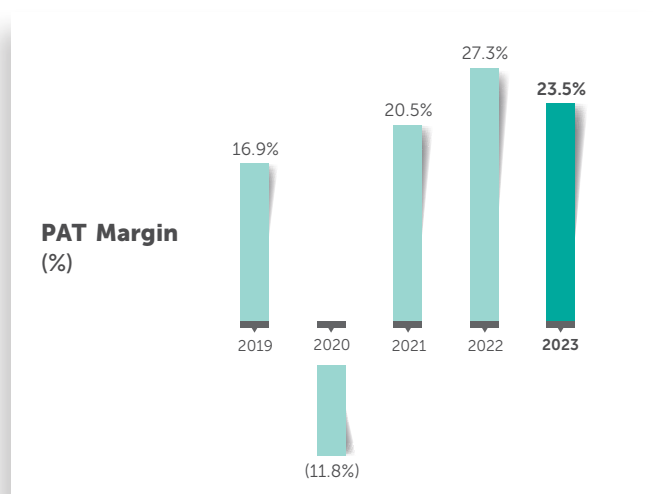
## Group Financial Results and Position

### Five-Year Key Financial Indicators



Note 1: All financial and operational results comprise continuing and discontinuing operations. Discontinuing operations relate to intended disposal of Engen Group.

Note 2: Prior year revenue and group costs has been restated to conform with current year presentation, with no impact to PAT.



Note 3: Gearing ratio is calculated as adjusted total debt (total debt including financial guarantees) divided by adjusted total equity (total equity plus deferred tax liabilities and minus capitalised interest) and adjusted total debt. Gearing ratio for corresponding period has been restated to conform with this formula.



# Appendix

## Ipieca Sustainability Reporting Guidance for the Oil and Gas Industry

Ipieca Disclosures		Reference Page
Governance and Business Ethics		
Governance and management systems	GOV-1: Governance approach	Corporate Governance at PETRONAS, pages 221-232
	GOV-2: Management systems	Corporate Governance at PETRONAS, pages 221-240
Business ethics and transparency	GOV-3: Preventing corruption	Risks Linked to Creating Value, page 59 Corporate Governance at PETRONAS, page 241
	GOV-4: Transparency of payments to host governments	Letter from the Executive Vice President and Group Chief Financial Officer, page 30
Climate Change and Energy		
Climate strategy and risk	CCE-1: Climate governance and strategy	Safeguard the Environment, pages 110-113
	CCE-2: Climate risk and opportunities	Safeguard the Environment, pages 110-114
Technology	CCE-3: Lower carbon technology	PETRONAS Energy Transition Strategy, pages 34-37 Project Delivery and Technology, pages 92-97 Gentari, pages 98-104
Emissions	CCE-4: Greenhouse gas (GHG) emissions	Safeguard the Environment, pages 115-121 Sustainability Key Performance Data, pages 198-203
	CCE-5: Methane emissions	Safeguard the Environment, pages 117-118 Sustainability Key Performance Data, page 201
Energy use	CCE-6: Energy use	Sustainability Key Performance Data, page 203
Flaring	CCE-7: Flared gas	Safeguard the Environment, pages 120-121 Sustainability Key Performance Data, page 199
Environment		
Water	ENV-1: Freshwater	Safeguard the Environment, page 125 Sustainability Key Performance Data, page 204
	ENV-2: Discharges to water	Sustainability Key Performance Data, page 204
Biodiversity	ENV-3: Biodiversity policy and strategy	Safeguard the Environment, pages 128-129 Positive Social Impact, pages 194-195
	ENV-4: Protected and priority areas for biodiversity conservation	Safeguard the Environment, page 128

Ipieca Disclosures		Reference Page
<b>Environment</b>		
Air emissions	ENV-5: Emissions to air	Safeguard the Environment, page 125 Sustainability Key Performance Data, page 204
Spills	ENV-6: Spills to the environment	Safeguard the Environment, page 126 Sustainability Key Performance Data, page 204
Materials management	ENV-7: Materials management	Safeguard the Environment, pages 122-123 Positive Social Impact, page 157 Sustainability Key Performance Data, page 204
	ENV-8: Decommissioning	Safeguard the Environment, page 127
Decommissioning	ENV-1: Freshwater	Safeguard the Environment, page 125 Sustainability Key Performance Data, page 204
<b>Safety, Health and Security</b>		
Workforce protection	SHS-1: Safety, health and security engagement	Positive Social Impact, pages 131-141
	SHS-2: Workforce health	Risks Linked to Creating Value, page 66 Positive Social Impact, pages 131-141
	SHS-3: Occupational injury and illness incidents	Gas, pages 80-82 Positive Social Impact, pages 131-141 Sustainability Key Performance Data, page 205
Product health, safety and environmental risk	SHS-5: Product stewardship	Positive Social Impact, pages 155-158
Process safety	SHS-6: Process safety	Positive Social Impact, pages 137-139 Sustainability Key Performance Data, page 205
Security	SHS-7: Security risk management	Positive Social Impact, pages 142-146
<b>Social</b>		
Human rights management	SOC-1: Human rights due diligence	Material Topics, page 56 Positive Social Impact, pages 147-150 Sustainability Key Performance Data, page 209
	SOC-2: Suppliers and human rights	Letter from the Vice President and Chief Sustainability Officer, pages 32-33 Positive Social Impact, pages 147-150
	SOC-3: Security and human rights	Positive Social Impact, pages 142-144 and 147-150

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Ipieca Disclosures		Reference Page
Social		
Labour practices	SOC-4: Site-based labour practices and worker accommodation	Positive Social Impact, pages 147 and 154
	SOC-5: Workforce diversity and inclusion	Positive Social Impact, pages 172-181 Sustainability Key Performance Data, pages 206-208
	SOC-6: Workforce engagement	Engaging with Stakeholders, page 47 Positive Social Impact, pages 159-171
	SOC-7: Workforce training and development	Positive Social Impact, pages 159-171 Sustainability Key Performance Data, page 209
	SOC-8: Workforce non-retaliation and grievance mechanisms	Positive Social Impact, pages 147-150
Community engagement	SOC-9: Local community impacts and engagement	Engaging with Stakeholders, page 51 Positive Social Impact, pages 182-197
	SOC-10: Indigenous peoples	Positive Social Impact, pages 147-150 and 182-197
	SOC-11: Land acquisition and involuntary resettlement	Positive Social Impact, pages 147-150
	SOC-12: Community grievance mechanisms	Positive Social Impact, page 149
	SOC-13: Social investment	Other Businesses, page 106 Positive Social Impact, page 169 Sustainability Key Performance Data, page 209
Local content	SOC-14: Local procurement and supplier development	Engaging with Stakeholders, page 47 Other Businesses, page 106 Positive Social Impact, pages 151-154
	SOC-15: Local hiring practices	Positive Social Impact, pages 147-148 and 179 Sustainability Key Performance Data, page 208

## Global Reporting Initiative Standards

PETRONAS has reported the information cited in this Global Reporting Initiative (GRI) content index for the period covering the full calendar year from 1 January to 31 December 2023 with reference to the GRI Standards.

GRI Disclosure	Reference Page
GRI 2: General Disclosures	2-1 Organisational details About This Report, pages 6-7 PETRONAS An Overview, pages 8-19
	2-2 Entities included in the organisation's sustainability reporting About This Report, pages 6-7
	2-3 Reporting period, frequency and contact point About This Report, pages 6-7
	2-4 Restatements of information Sustainability Key Performance Data, pages 198-209
	2-5 External assurance About This Report, pages 6-7
	2-6 Activities, value chain and other business relationships PETRONAS An Overview, pages 8-19
	2-7 Employees Sustainability Key Performance Data, pages 206-208
	2-8 Workers who are not employees Sustainability Key Performance Data, page 167
	2-9 Governance structure and composition Board Composition, page 210 Corporate Governance at PETRONAS, pages 221-224
	2-10 Nomination and selection of the highest governance body Corporate Governance at PETRONAS, page 221
	2-11 Chair of the highest governance body Profile of Board of Directors, page 211
	2-12 Role of the highest governance body in overseeing the management of impacts Corporate Governance at PETRONAS, pages 221-224
	2-13 Delegation of responsibility for managing impacts Corporate Governance at PETRONAS, page 229
	2-14 Role of the highest governance body in sustainability reporting About This Report, pages 6-7
	2-15 Conflicts of interest Corporate Governance at PETRONAS, pages 226-227
	2-16 Communication of critical concerns Corporate Governance at PETRONAS, page 223
	2-17 Collective knowledge of the highest governance body Corporate Governance at PETRONAS, page 227
	2-19 Remuneration policies Corporate Governance at PETRONAS, page 227
	2-20 Process to determine remuneration Corporate Governance at PETRONAS, pages 221 and 227
	2-22 Statement on sustainable development strategy Letter from the Chairman and Letter from the President and Group Chief Executive Officer, pages 24-27

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GRI Disclosure		Reference Page
GRI 2: General Disclosures	2-23 Policy commitments	Positive Social Impact, pages 147-150 Corporate Governance at PETRONAS, page 241
	2-24 Embedding policy commitments	Positive Social Impact, pages 147-150
	2-25 Processes to remediate negative impacts	Positive Social Impact, pages 148-149
	2-26 Mechanisms for seeking advice and raising concerns	Corporate Governance at PETRONAS, page 241
	2-28 Membership associations	Engaging with Stakeholders, page 52
	2-29 Approach to stakeholder engagement	Engaging with Stakeholders, pages 42-52
	2-30 Collective bargaining agreements	Positive Social Impact, pages 147-150
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Material Topics, page 53
	3-2 List of material topics	Material Topics, page 53
	3-3 Management of material topics	Material Topics, pages 53-58
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Letter from the Executive Vice President and Group Chief Financial Officer, pages 28-31 Positive Social Impact, pages 182-197 Group Financial Results and Position, pages 242-255 Audited Financial Statements, pages 6-18
	201-2 Financial implications and other risks and opportunities due to climate change	Safeguard the Environment, pages 111-114
	201-3 Defined benefit plan obligations and other retirement plans	Audited Financial Statements, page 124
	201-4 Financial assistance received from government	Audited Financial Statements, page 48
GRI 202: Market Presence 2016	202-1 Ratios of standard entry-level wage by gender compared to local minimum wage	Positive Social Impact, page 172
	202-2 Proportion of senior management hired from the local community	Positive Social Impact, page 173
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Positive Social Impact, pages 182-197
	203-2 Significant indirect economic impacts	Engaging with Stakeholders, pages 42-52 Positive Social Impact, pages 182-197



GRI Disclosure		Reference Page
GRI 205: Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	Corporate Governance at PETRONAS, pages 236-241
	205-3 Confirmed incidents of corruption and actions taken	Positive Social Impact, page 150 PETRONAS Commitment to Integrity, page 241
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Safeguard the Environment, pages 122-124 Positive Social Impact, page 157
	301-2 Recycled input materials used	Safeguard the Environment, pages 122-124
GRI 302: Energy 2016	302-1 Energy consumption within the organisation	Sustainability Performance Key Data, page 203
	302-2 Energy consumption outside of the organisation	Sustainability Performance Key Data, page 203
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Safeguard the Environment, page 125 Positive Social Impact, page 189
	303-2 Management of water discharge-related impacts	Safeguard the Environment, page 125
	303-3 Water withdrawal	Safeguard the Environment, page 125 Sustainability Performance Key Data, page 204
	303-4 Water discharge	Safeguard the Environment, page 125 Sustainability Performance Key Data, page 204
	303-5 Water consumption	Safeguard the Environment, page 125 Sustainability Performance Key Data, page 204
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Safeguard the Environment, page 128
	304-2 Significant impacts of activities, products and services on biodiversity	Safeguard the Environment, page 129
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Sustainability Performance Key Data, page 199 and 202
	305-2 Energy indirect (Scope 2) GHG emissions	Sustainability Performance Key Data, page 199 and 202
	305-3 Other indirect (Scope 3) GHG emissions	Sustainability Performance Key Data, page 199 and 202-203
	305-4 GHG emissions intensity	Sustainability Performance Key Data, page 200
	305-5 Reduction of GHG emissions	Sustainability Performance Key Data, page 200
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Safeguard the Environment, page 125 Sustainability Performance Key Data, page 204

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GRI Disclosure		Reference Page
GRI 306: Waste 2020	306-2 Management of significant waste-related impacts	Safeguard the Environment, page 124
	306-3 Waste generated	Safeguard the Environment, page 124 Sustainability Performance Key Data, page 204
	306-4 Waste diverted from disposal	Sustainability Performance Key Data, page 204
	306-5 Waste directed to disposal	Sustainability Performance Key Data, page 204
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Positive Social Impact, page 211
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Sustainability Performance Key Data, page 208
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Sustainability Performance Key Data, page 207
	401-3 Parental leave	Sustainability Performance Key Data, page 207
GRI 402: Labor/Management Relations 2016	402-1 Minimum notice periods regarding operational changes	Positive Social Impact, page 148
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Positive Social Impact, pages 131-141
	403-2 Hazard identification, risk assessment, and incident investigation	Positive Social Impact, pages 155-157
	403-3 Occupational health services	Positive Social Impact, pages 132-141
	403-4 Worker participation, consultation, and communication on occupational health and safety	Positive Social Impact, pages 175-176
	403-5 Worker training on occupational health and safety	Positive Social Impact, pages 137-141
	403-6 Promotion of worker health	Positive Social Impact, pages 131 and 134
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Risks Linked to Creating Value, page 66
	403-8 Workers covered by an occupational health and safety management system	Positive Social Impact, page 131
	403-9 Work-related injuries	Performance by Capitals, page 41 Positive Social Impact, pages 131 and 137-138 Sustainability Performance Key Data, page 205
	403-10 Work-related ill health	Performance by Capitals, page 41 Sustainability Performance Key Data, page 205

GRI Disclosure		Reference Page
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Sustainability Performance Key Data, page 209
	404-2 Programmes for upgrading employee skills and transition assistance programmes	Positive Social Impact, pages 159-171
	404-3 Percentage of employees receiving regular performance and career development reviews	Positive Social Impact, page 178
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Sustainability Performance Key Data, pages 207 and 210
	405-2 Ratio of basic salary and remuneration	Positive Social Impact, page 172
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	Positive Social Impact, page 150
GRI 408: Child Labour 2016	408-1 Operations and suppliers at significant risk for incidents of child Labour	Positive Social Impact, pages 147-150
GRI 409: Forced or Compulsory Labour 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory Labour	Positive Social Impact, pages 147-150
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	Positive Social Impact, pages 149-150 Sustainability Performance Key Data, page 209
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	Positive Social Impact, page 149
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programmes	Positive Social Impact, pages 149-150
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Positive Social Impact, page 154
	414-2 Negative social impacts in the supply chain and actions taken	Positive Social Impact, page 154
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Positive Social Impact, pages 155-158
	416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	Positive Social Impact, pages 155-158
GRI 417: Marketing and Labeling 2016	417-1 Requirements for product and service information and labeling	Positive Social Impact, page 155

## Appendix

### World Economic Forum's Stakeholder Capitalism Metrics

World Economic Forum Disclosures		Reference Page
<b>Principles of Governance: Core Metrics and Disclosures</b>		
Governing purpose	Setting purpose	About This Report, pages 6-7 Letter from the Chairman, pages 20-23
Quality of governing body	Governance body composition	Profile of Board of Directors, pages 211-214 Profile of Company Secretaries, page 215 Profile of Executive Leadership Team, pages 216-220 Corporate Governance at PETRONAS, pages 221-224
Stakeholder engagement	Material issues impacting stakeholders	Engaging with Stakeholders, pages 42-52 Material Topics, pages 53-58
Ethical behaviour	Anti-corruption	Corporate Governance at PETRONAS, page 241
	Protected ethics advice and reporting mechanisms	Corporate Governance at PETRONAS, page 241
Risk and opportunity oversight	Integrating risk and opportunity into business process	Risks Linked to Creating Value, pages 59-71
<b>Planet: Core Metrics and Disclosures</b>		
Climate change	Greenhouse gas (GHG) emissions	Safeguard the Environment, pages 109-121
	Task Force on Climate-related Financial Disclosures implementation	Safeguard the Environment, pages 109-121
Nature loss	Land use and ecological sensitivity	Safeguard the Environment, pages 128-129
Freshwater availability	Water consumption and withdrawal in water-stressed areas	Safeguard the Environment, page 125 Sustainability Key Performance Data, page 204
<b>People: Core Metrics and Disclosures</b>		
Dignity and equality	Diversity and inclusion (%)	Positive Social Impact, pages 172-181 Sustainability Key Performance Data, pages 206-208 and 264
	Risk for incidents of child, forced or compulsory labour	Positive Social Impact, pages 147-151
Health and wellbeing	Health and safety (%)	Positive Social Impact, pages 131-141
Skills for the future	Training provided (#, \$)	Performance by Capitals, page 41 Positive Social Impact, pages 151-171 Sustainability Key Performance Data, page 209

World Economic Forum Disclosures		Reference Page
Prosperity: Core Metrics and Disclosures		
Employment and wealth generation	Absolute number and rate of employment	Sustainability Key Performance Data, pages 206-208
	Economic contribution	<ol style="list-style-type: none"> <li>1. Revenue: Group Financial Results and Position, pages 242-255</li> <li>2. Operating cost: Group Financial Results and Position, page 246</li> <li>3. Employee wages and benefits: Audited Financial Statements, page 43</li> <li>4. Payment to providers of capital:               <ol style="list-style-type: none"> <li>I. Dividend: Letter from the Executive Vice President and Group Chief Financial Officer, page 30</li> <li>II. Financing costs: Audited Financial Statements, page 114</li> </ol> </li> <li>5. Payments to government: Letter from the Executive Vice President and Group Chief Financial Officer, page 30</li> <li>6. Community investment: Positive Social Impact, pages 182-197</li> <li>7. Audited Financial Statements, page 116</li> </ol>
	Financial investment contribution	<ol style="list-style-type: none"> <li>1. Total capital expenditures (CAPEX) minus depreciation, supported by narrative to describe the company's investment strategy: Group Financial Results and Position, pages 252-253</li> <li>2. Share buybacks plus dividend payments, supported by narrative to describe the company's strategy for returns of capital to shareholders: Letter from the Executive Vice President and Group Chief Financial Officer, page 30</li> <li>3. Dividend paid to non-controlling interest: Audited Financial Statements, page 10</li> </ol>
Innovation of better products and services	Total research and development expenses (\$)	Performance by Capitals, page 40 Project Delivery and Technology, page 140
Community and social vitality	Total tax paid	Audited Financial Statements, pages 13-14



## Appendix

### Task Force on Climate-related Financial Disclosures

Theme	Recommended Disclosure	Reference Page
<b>Governance</b>	Describe the board's oversight of climate-related risks and opportunities.	Safeguard the Environment, page 110 Corporate Governance at PETRONAS, pages 221-224
	Describe management's role in assessing and managing climate-related risks and opportunities.	Corporate Governance at PETRONAS, pages 221-224
<b>Strategy</b>	Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term.	Safeguard the Environment, pages 111-113
	Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning.	Safeguard the Environment, page 113
	Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	Safeguard the Environment, page 113
<b>Risk Management</b>	Describe the organisation's processes for identifying and assessing climate-related risks.	Safeguard the Environment, pages 113-114
	Describe the organisation's processes for managing climate-related risks.	Safeguard the Environment, pages 113-114
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organisation's overall risk management.	Safeguard the Environment, pages 113-114
<b>Metrics and Targets</b>	Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process.	Safeguard the Environment, pages 115-121
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Safeguard the Environment, pages 115-121 Sustainability Key Performance Data, pages 199-203
	Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.	Safeguard the Environment, page 115

# Glossary of Terms

Abbreviation	Full Term/Definition
2C	Contingent Resources
2P	Petroleum Reserves
3R	Reduce, reuse, recycle
AC	Audit Committee
ALAM	Akademi Laut Malaysia
ASEAN	Association of Southeast Asian Nations
B40	Bottom 40 per cent of income earners
bboe	Billion barrel of oil equivalent
BCM	Business Continuity Management
BES	Biodiversity and Ecosystem Services
Board	Board of Directors
boe	Barrel of oil equivalent
CAPEX	Capital Expenditure
CCS	Carbon capture and storage
CFFO	Cash Flows from Operations
CI	Continuous Improvement
CO <sub>2</sub>	Carbon dioxide
CoBE	Code of Conduct and Business Ethics
CoCHR	Contractors Code of Conduct on Human Rights
COVID-19	2019 novel coronavirus (or 2019-nCoV)
D&I	Diversity and Inclusion
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
ELT	Executive Leadership Team
ERM	Enterprise Risk Management
ESG	Environmental, social and governance
EV	Electric Vehicle
FY	Financial Year
GCEO	Group Chief Executive Officer
GEES	Graduate Employment Enhancement Scheme
GHG	Greenhouse gas

Abbreviation	Full Term/Definition
GLC	Government Linked Companies
GRI	Global Reporting Initiative
GW	Gigawatt
HRM	Human Resource Management
HSE	Health, Safety and Environment
HSSE	Health, Safety, Security and Environment
INED	Independent Non-Executive Director
INSTEP	Institut Teknologi Petroleum PETRONAS
IR	Integrated Reporting
ISO	International Organisation for Standardisation
kboe	Kilo barrels of oil equivalent
KTC	Kimanis Training Centre
KTPA	Kilotonnes per annum
LNG	Liquefied Natural Gas
LOPC	Loss of Primary Containment
MARA	Majlis Amanah Rakyat
MEKAR	Memampankan Ekonomi Asas Rakyat
MMscfd	Million standard cubic feet per day
MMT	Million metric tonnes
NED	Non-Executive Director
NGO	Non-Governmental Organisation
NINED	Non-Independent Non-Executive Director
NRC	Nomination and Remuneration Committee
NTF	National Trust Fund
OEE	Overall Equipment Effectiveness
OGSE	Oil and Gas Services and Equipment
OTOBOS	On Time, On Budget, On Scope
PAC	Petroleum Arrangement Contractor
PCG	PETRONAS Chemicals Group Berhad
PD&T	Project Delivery and Technology

## Glossary of Terms

Abbreviation	Full Term/Definition
PDB	PETRONAS Dagangan Berhad
PETRONAS Group	Petroleum Nasional Berhad (PETRONAS) and its subsidiaries
PIC	Pengerang Integrated Complex
PLC	PETRONAS Leadership Centre
PRPC	PETRONAS Refinery and Petrochemicals Corporation Sdn Bhd
RC	Risk Committee
RM	Ringgit Malaysia
RMC	Risk Management Committee
SAF	Sustainable aviation fuel
SDG	Sustainable Development Goal
SEED.Lab	Social Enterprise Education Lab
STEM	Science, Technology, Engineering and Mathematics
TCFD	Task Force on Climate-related Financial Disclosures
tCO <sub>2</sub> e	Tonnes of carbon dioxide (CO <sub>2</sub> ) equivalent
The Board	Petroleum Nasional Berhad (PETRONAS) Board of Directors
The Group	Petroleum Nasional Berhad (PETRONAS) and its subsidiaries
UN	United Nations
UNEP	United Nations Environment Programme
UTP	Universiti Teknologi PETRONAS
VDP	Vendor Development Programme
VISTA	Vocational Institution Sponsorship and Training Assistance
WBCSD	World Business Council for Sustainable Development
WEF	World Economic Forum

**Petroliam Nasional Berhad (PETRONAS)**

197401002911 (20076-K)

Tower 1, PETRONAS Twin Towers, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Malaysia

**[www.petronas.com](http://www.petronas.com)**