PETRONAS

Energising a **Sustainable Future**

Integrated
Report
2024

Statement of Purpose

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

Shared Values

Loyalty
Loyal to corporation

Integrity
Honest and upright

Professionalism
Strive for excellence

Cohesiveness
United, trust and respect for each other

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

2024 at a Glance

Presence in over **100** countries

RM55.1 billion
profit after tax
(2023: RM80.7 billion)

RM102.5 billion
cash flows from operations
(2023: RM114.2 billion)

2,451 thousand
barrels of oil equivalent per day (kboe/d)
(2023: 2,431 thousand)

35.7 million
metric tonnes (MMT) gross liquefied natural gas sales
(2023: 32.9 million)

91.2%
Overall Equipment Effectiveness for Downstream business
(2023: 87.2%)

247.8 million
barrels petroleum product sales
(2023: 296.1 million)

10.1 million
metric tonnes (MMT) chemical product sales
(2023: 9.4 million)

8 gigawatts
of secured cumulative global renewable energy capacity, including both installed and under construction
(2023: 2.9 gigawatts)

0.10
lost time injury frequency per million hours worked
(2023: 0.11)

46.55 million
tonnes of carbon dioxide equivalent (CO_2e) for PETRONAS Malaysia core business operations excluding Maritime, Corporate and Others (KLCC Group of Companies)
(2023: 45.38 million)

Please refer to Strategic Review on pages 60 to 81 and Sustainability Performance Review on pages 82 to 175.

Inside This Report

Energising a Sustainable Future

The theme reflects our commitment to delivering energy responsibly while navigating an increasingly complex and fast-changing global landscape. It conveys how we are evolving with purpose, adapting to new challenges and supporting the long-term energy needs of those we serve.

The cover visual, with its dynamic streams of light and movement, symbolises the momentum behind our transformation. These lines represent the various forces shaping the energy transition, including innovation, collaboration, knowledge and resilience. Their convergence at the centre signifies a shared direction, reinforcing our collective focus as we progress together as one organisation.

We remain committed to managing this transition in a way that delivers enduring value for Malaysia and the communities we serve globally.

Basis of This Report

We Are Passionate About Progress

8 PETRONAS Energy Solutions
10 2024 Key Highlights
12 Awards and Recognitions

Key Messages

14 Chairman's Letter
18 President and Group Chief Executive Officer's Letter
22 Executive Vice President and Group Chief Financial Officer's Letter
26 Vice President and Group Chief Sustainability Officer's Letter

How We Create Value

29 PETRONAS Energy Transition Strategy
30 Value Creation Model
32 Operating Landscape
34 Risks Linked to Creating Value
48 Our Approach to Sustainability
50 Material Topics
54 Engaging with Stakeholders

Strategic Review

60 Core Business: More Energy, Less Emissions
70 New Business: Capturing New Growth Opportunities
78 Net Zero Carbon Emissions: Pathway to Net Zero
80 Leveraging Innovative Solutions

Sustainability Performance Review

84 Creating Sustainable Value through Responsible Governance
85 Safety Management
90 Cyber Security and Data Protection

92 Delivering Net Zero
93 Climate Change
93 Greenhouse Gas Emissions

112 Thriving with Nature
113 Nature and Biodiversity
118 Environmental Management
124 Circular Economy

130 Fostering a Just Transition
132 Human Rights
145 Sustainable Supply Chain
147 Employee Attraction, Retention and Development
159 Health and Well-being

163 Sustainability Key Performance Data

Commitment to Governance

176 Board Composition
177 Profile of Board of Directors
180 Profile of Company Secretaries
181 Profile of Executive Leadership Team
186 Corporate Governance at PETRONAS

Financial Review and Other Information

206 Group Financial Results and Position
206 Analysis of Financial Results
212 Analysis of Financial Position
214 Analysis of Cash Flow
217 Five-Year Key Financial Indicators

219 Index
219 Ipieca Sustainability Reporting Guidance for the Oil and Gas Industry
222 Global Reporting Initiative (GRI) Standards
227 World Economic Forum's (WEF) Stakeholder Capitalism Metrics
229 International Financial Reporting Standards (IFRS) S2: Climate-related Disclosures

231 Glossary of Terms

Navigation Icons

PETRONAS Energy Transition Strategy

- Core Business
- New Business
- Net Zero Carbon Emissions

Sustainability Approach

- Creating Sustainable Value through Responsible Governance
- Delivering Net Zero
- Thriving with Nature
- Fostering a Just Transition

Six Capitals

- FC Financial Capital
- MC Manufactured Capital
- HC Human Capital
- IC Intellectual Capital
- NC Natural Capital
- SRC Social and Relationship Capital

Key Stakeholders

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

Key Risks

- MR Market Risk
- FLR Financial Liquidity Risk
- LR Legal and Regulatory Risk
- SR Sustainability Risk
- HSR Health, Safety, Security and Environmental Risk
- GR Geopolitical Risk
- HR Hydrocarbon Reserves and Resources Risk
- TR Technology Risk
- ER Execution Risk
- HCR Human Capital Risk

Material Topics

- CE Circular Economy
- CC Climate Change
- CG Corporate Governance
- CDP Cyber Security and Data Protection
- EC Economic Contribution
- EAR Employee Attraction, Retention and Development
- EM Environmental Management
- EI Ethics and Integrity
- GHG Greenhouse Gas Emissions
- HW Health and Well-being
- HR Human Rights
- IT Innovation and Technology
- LCT Lower-Carbon and Energy Transition Business
- NB Nature and Biodiversity
- SM Safety Management
- SC Sustainable Supply Chain

Cross References

+ Indicates where additional information can be found in this Report.

To access more information online: **www.petronas.com**

Scan the QR code to access additional information online.

Basis of This Report

The Petroliam Nasional Berhad (PETRONAS) Integrated Report 2024 is a comprehensive resource for understanding the energy market landscape, our operating environment, strategy, financial and operational performance, as well as our future direction. This Report reflects our purpose as a progressive energy company and is designed to offer a balanced and comprehensive perspective on our value creation journey.

Scope and Boundaries

The PETRONAS Integrated Report, published annually, covers the calendar year from 1 January to 31 December 2024, unless otherwise specified. It encompasses all operations and activities within PETRONAS and its subsidiaries (PETRONAS Group), joint operations and associate companies. This Report was published in June 2025.

Materiality Considerations

The material topics presented in this Report represent the most significant sustainability matters to PETRONAS and our stakeholders identified through our assessment conducted in 2024. These topics are categorised under the components of Delivering Net Zero, Thriving with Nature and Fostering a Just Transition. This structure is guided by our commitment to Creating Sustainable Value through Responsible Governance, reflecting PETRONAS' refreshed approach to sustainability.

Reporting Frameworks

We have referenced the following national and international guidance, frameworks and standards to help ensure the accuracy, reliability and comprehensiveness of this Report:

- International Integrated Reporting <IR> Framework
- International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards S1 and S2
- Malaysian Financial Reporting Standards
- Sustainability Reporting Guidance for the Oil and Gas Industry by Ipieca, the American Petroleum Institute, and the International Association of Oil and Gas Producers
- Global Reporting Initiative Standards
- World Economic Forum's Stakeholder Capitalism Metrics

Integrated Thinking and Reporting Process

This Integrated Report outlines how PETRONAS integrates and effectively balances financial, environmental and social considerations in delivering the PETRONAS Energy Transition Strategy. It details our performance across all aspects of sustainability focusing on the 16 material topics most relevant to our stakeholders and our business.

Aligning our business-critical focus areas with PETRONAS Sustainability Approach helps ensure that sustainability objectives remain central to our decision-making and directly contribute to the broader goals of the PETRONAS Energy Transition Strategy. By adopting an integrated approach, we aim to create long-term value for our stakeholders while contributing towards addressing complex challenges such as industry impacts on energy security and the environment.

To enhance accessibility and transparency, we have embedded QR codes to allow stakeholders easy access to additional content, such as updates, detailed insights and supporting data.

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 the 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 in this Report has been extracted from the consolidated Audited Financial Statements for the financial year ended 31 December 2024 and was audited by KPMG PLT. KPMG PLT has reviewed financial-related information in this Report and did not note any material inconsistencies with the said financial statements.

Scan the QR code to access the Audited Financial Statements 2024

The Group's greenhouse gas (GHG) emissions data covering Malaysia and the global operations has been assured by LRQA Inspection Malaysia Sdn Bhd, an independent and accredited third-party assurance provider. The data verification was performed in accordance with ISO 14064-3:2019.

- Limited assurance for PETRONAS' 2023 Scope 1 and 2 GHG emissions from Core Business Operations (Upstream, Gas, and Downstream) under the Operational Control approach.
- Reasonable assurance for PETRONAS' 2024 Scope 1 and 2 GHG emissions from Core Business Operations (Upstream, Gas and Downstream) under the Operational Control approach.
- Limited assurance for PETRONAS' 2019–2023 Scope 1 and 2 GHG emissions from Groupwide Operations under the Equity Share approach.
- Limited assurance for PETRONAS' 2019–2023 Scope 3 emissions (Category 11: Use of Sold Products - Fuel) from Core Business and Groupwide Operations, under both Operational Control and Equity Share approaches.

Scan the QR code to access the GHG Assurance Statements

Independent limited assurance on the following subject matter information was provided by SIRIM QAS International Sdn Bhd, in accordance with the International Standard on Assurance Engagements 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information:

- Corporate Governance
- Cyber Security and Data Protection
- Economic Contribution
- Employee Attraction, Retention and Development
- Ethics and Integrity
- Health and Well-being
- Safety Management

Scan the QR code to access the Assurance Statement

Approval by the Board

The PETRONAS Board of Directors acknowledges its responsibility in ensuring the integrity of this Integrated Report which in the Board's opinion, addresses the Group's ability to create value and fairly presents the Group's integrated performance.

To the best of the Board's 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

Feedback and Point of Contact

We are committed to continuous improvement and value the insights of our stakeholders. We encourage feedback on our Integrated Report.

Please send your feedback to:

Group Strategic Relations and Communications
Petroliam Nasional Berhad (PETRONAS),
Level 72, Tower 2, PETRONAS Twin Towers,
Kuala Lumpur City Centre,
50088 Kuala Lumpur, Malaysia.

digital.comm@petronas.com

We Are Passionate About Progress

At Petroliam Nasional Berhad (PETRONAS), we are committed to addressing growing energy needs responsibly and sustainably.

Established in 1974 as Malaysia's national oil and gas company to manage and develop the country's hydrocarbon resources, we have grown into a global energy and solutions partner with presence in over 100 countries. PETRONAS is ranked among the largest corporations on Fortune's Global 500® list.

We continue to expand our portfolio to offer integrated solutions across conventional and cleaner energy. We offer a diverse range of fuels, lubricants, petrochemical products, renewable energy, green mobility and biofuels to meet growing and evolving customers' needs amid the energy transition.

We aim to maintain our role as a trusted energy partner in the transition towards a lower-carbon future, further strengthened by our continued efforts to drive improved emissions performance, address impacts on nature and support social progress.

Malaysia Petroleum Management

Malaysia Petroleum Management oversees the management and development of Malaysia's oil and gas resources, and upstream petroleum industry as entrusted under the Petroleum Development Act 1974. We provide stewardship in building a robust and sustainable oil and gas ecosystem.

Our focus is on shaping Malaysia's upstream industry into a thriving investment destination by cultivating a competitive and conducive environment while ensuring optimum production through prudent and safe practices.

Upstream

The Upstream business is responsible for exploring and developing hydrocarbon resources, and managing oil and gas production assets in Malaysia and around 20 other countries. We focus on developing resources that are efficient and lower in emissions to help meet global energy demand while maintaining commercial viability.

As part of our emissions reduction efforts to support the energy transition, we are advancing carbon capture and storage (CCS) projects to reduce emissions from our operations and develop Malaysia's potential as a CCS hub in the Asia Pacific region.

Gas and Maritime

The Gas and Maritime business provides gas solutions and energy-related maritime services, which include liquefied natural gas, natural gas infrastructure and transportation, gas processing, and marketing and trading. We transport gas and petroleum products and supply maritime assets for offshore oil and gas resources extraction activities.

Through our integrated value chain, we contribute to a reliable supply of natural gas and liquefied natural gas. We work closely with customers to help meet their energy and transportation needs.

Ranked 1st
Most Valuable ASEAN Brand*

Top 10
Most Valuable Global Oil and Gas Brand*

Ranked Highest
ASEAN Brand for Sustainability Perceptions Value**

Ranked 167th
on Fortune's Global 500® list

* *Brand Finance Global 500 report.*

** *Brand Finance ASEAN 500 report.*

Downstream

The Downstream business converts hydrocarbon resources into a range of products for over 100 markets worldwide. Our operations span the refining, marketing and trading of crude oil and petroleum products, as well as the manufacturing and marketing of petrochemicals, derivatives and specialty chemicals.

Our venture into specialty chemicals aims to capture future growth opportunities in delivering long-term value to our customers. To reinforce our support for the shift in energy demand, we are further diversifying our portfolio by developing cleaner energy solutions such as biofuels, circular economy initiatives and advanced fluid technologies. Our convenience business continues to grow with products and services aimed at broader consumer needs.

+ *Please refer to Strategic Review on pages 60 to 81.*

Gentari

PETRONAS, through its subsidiary Gentari Sdn Bhd (Gentari), is supporting the adoption and commercialisation of cleaner energy solutions to complement existing energy systems. As a key driver in diversifying and future-proofing PETRONAS' portfolio, Gentari provides solutions in renewable energy, hydrogen and green mobility that align with customers' needs.

Our aspiration is for Gentari to become Asia Pacific's most valued clean energy solutions partner by 2030, grounded in customer-centric innovation, agile execution and strategic collaboration.

Other Business

Our other ventures include property investment and development, notably through our subsidiary, KLCCP Stapled Group, Malaysia's largest real estate investment trust and the only stapled security in the country, with landmark assets such as the PETRONAS Twin Towers.

PETRONAS Energy Solutions

Exploration, Development and Production

Natural Gas

Crude Oil

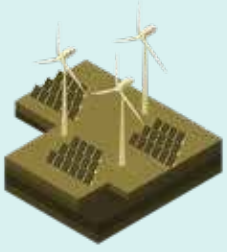
Renewables

Supply and Generation

Liquefaction

Processing

Refining



Renewable Energy

Products and Solutions

- Liquefied Natural Gas
- Processed Gas
- Liquefied Petroleum Gas
- Commodity Chemicals
- Specialty Chemicals
- Petroleum Products, including Bio-based
- Convenience Business
- Electricity and Storage
- Hydrogen
- Green Mobility
- Maritime and Logistics
- Carbon Capture and Storage*
- Properties

* *In development.*

Utilisation

- Power
- Industrial
- Commercial
- Residential
- Agriculture
- Transportation

2024 Key Highlights

Financial Performance

Revenue

RM320.0 billion

2023: RM343.6 billion

Profit After Tax

RM55.1 billion

2023: RM80.7 billion

Cash Flows from Operations

RM102.5 billion

2023: RM114.2 billion

Total Assets

RM766.7 billion

2023: RM773.3 billion

Core Business

More Energy, Less Emissions

Signed **14** Production Sharing Contracts under Malaysia Bid Round and Malaysia Bid Round Plus, the highest number in over a decade.

Achieved first hydrocarbon production for **21** projects, final investment decisions for **17** projects and **19** exploration discoveries.

Reached a milestone record of **2 million** barrels of oil equivalent per day, marking a significant achievement in Malaysia's oil and gas production.

Expanded Upstream oil and gas portfolio in Indonesia, Papua New Guinea and the United Arab Emirates - Abu Dhabi.

Delivered **35.7** metric tonnes (**548** cargoes) in total LNG sales volume, including **398** from PETRONAS LNG Complex (PLC) and **36** cargoes from our **2** floating LNG units, PFLNG SATU and PFLNG DUA.

Delivered average sales gas in Peninsular Malaysia of **2,315 million** standard cubic feet per day (MMscfd).

Operated a fleet of **102** vessels, including LNG carriers, petroleum and product tankers, with **24** newbuilds, comprising eco-efficient LNG carriers and dual-fuel petroleum tankers.

Owned **12** offshore floating solutions in Malaysia, Thailand, Vietnam and Brazil.

Recorded **21.1 billion** litres in total petroleum product sales volume.

Increased chemical product sales volume to **10.1 million** metric tonnes.

New Business

Capturing New Growth Opportunities

Perstorp inaugurated a state-of-the-art specialty chemicals plant in Bharuch, India, supplying pentaerythritol and calcium formate to Asia Pacific.

PETRONAS, Enilive S.p.A. and Euglena Co., Ltd. reached final investment decision for a biorefinery at Pengerang Integrated Complex.

Progressed carbon capture and storage in Malaysia via land acquisition for Southern hub and commencement of Front-End Engineering Design for Eastern hub.

Secured **8 gigawatts** of cumulative global renewable energy capacity, including both installed and under construction.

Expanded utility-scale renewables with hybrid projects involving wind with solar and solar with battery energy storage systems in India and Australia, and strengthened our commercial and industrial capabilities across Asia Pacific.

Matured **175** kilo tonnes per annum of hydrogen opportunities, formalised a partnership with SEDC Energy Sdn Bhd for a hydrogen hub in Sarawak and reached final investment decision for a green ammonia project in India.

Established a network of **1,060** charging points across Malaysia, Indonesia and Thailand, and deployed a combined fleet of **3,486** electric vehicles through Vehicle-as-a-Service across Malaysia, Indonesia and India.

Net Zero Carbon Emissions

Pathway to Net Zero

Accelerated the electrification of PETRONAS' assets through rooftop and ground-mounted solar installations, enabling the transition from grid-based electricity to on-site renewable energy.

Recorded greenhouse gas emissions of **46.55 million** tonnes of carbon dioxide equivalent (CO_2e) for core business operations in Malaysia, excluding Maritime, Corporate and Others (KLCC Group of Companies), within the target of not exceeding **49.50 million** tonnes CO_2e by the end of 2024.

62 per cent reduction in methane emissions from PETRONAS Groupwide natural gas value chain, 2019 baseline, exceeding our 2025 target of **50 per cent**.

Established the PETRONAS Energy and Loss Management System 3.0 and strengthened disclosure on Groupwide energy consumption.

Awards and Recognitions

PETRONAS has been recognised for its contributions to the industry through innovation and sustainability. These accolades reinforce our ongoing passion to build long-term value.

Scan the QR code to view our awards.

Branding

Asia Pacific Energy Capital Assembly (APAC) 2024 Awards

National Oil Company of the Year (PETRONAS)

PETRONAS was named National Oil Company of the Year for the second consecutive year, a recognition of excellence in the Asia Pacific energy sector. Evaluated by 28 industry experts, the award highlights our innovation, leadership in energy transition and commitment to achieving net zero carbon emissions by 2050.

National Oil Company of the Year award at the Energy Council's APAC Awards 2024.

Sustainability

Brand Finance ASEAN 500 Report

ASEAN Brand with the Highest Sustainability Perceptions Value

We received recognition in the Brand Finance ASEAN 500 report, under the 2024 Sustainability Perceptions Index, which ranked PETRONAS highest among ASEAN brands in sustainability perceptions value. According to findings from Brand Finance's global consumer research, the study highlights public trust in our commitment to sustainability.

Asian Downstream Summit Awards

Sustainable Plant of the Year 2024

PETRONAS' Pengerang Cogeneration Plant was named Sustainable Plant of the Year for successfully implementing an innovative, analytics-driven energy efficiency project designed to enhance operational efficiency, reduce carbon emissions and ensure plant reliability.

Thought Leadership

PETRONAS continues to lead dialogues and discussions around energy security and the energy transition through exhibitions and conference speaking opportunities, promoting collaboration, innovation and sustainable growth.

International Petroleum Technology Conference (IPTC) 2024, Saudi Arabia

12 – 14 February

We showcased integrated energy solutions, reinforcing our commitment to sustainability, digitalisation and operational excellence. A talent roadshow was also held to engage potential recruits and strengthen the PETRONAS brand.

Offshore Technology Conference Asia (OTCA) 2024, Malaysia

27 February – 1 March

PETRONAS hosted OTCA 2024 in Kuala Lumpur. Themed 'Excellence in Asia: Energising Now and for the Future,' the event featured technology showcases, discussions on the energy transition, and initiatives focused on talent development, investments and financing, highlighting the industry's commitment to responsible growth towards a low-carbon energy future.

CERAWeek 2024, United States of America

18 – 22 March

PETRONAS highlighted our advancements in carbon capture and storage, hydrogen and renewables, while sharing our progress in the energy industry over the last 50 years and reinforcing the message of the importance of a just energy transition for Asia.

Energy Transition Company of the Year (Gentari)

Gentari Sdn Bhd (Gentari) was named Energy Transition Company of the Year, reaffirming its position among leading clean energy companies. The recognition underscores excellence in delivering emissions reduction solutions for a cleaner energy future, while reflecting rapid growth and strategic collaborations, including partnerships with Northland Power for offshore wind and ReNew for 5 gigawatts of renewable energy assets, to advance the energy transition.

2024 Golden Flag Award

- The Golden Award for Corporate Public Relations Communication
- The Golden Award for Communication of 'To B' Industry (To Business)
- The Golden Award for Corporate Social Responsibility

The 20th China Golden Awards for Excellence in Public Relations

- The Golden Award for Corporate Social Responsibility
- The Silver Award for Corporate Brand Communication

PETRONAS Beijing Representative Office

PETRONAS Beijing Representative Office won several prestigious awards in China for public relations and brand communication efforts. These accolades were driven by two key projects, the 'PETRONAS 50th anniversary and PETRONAS China 20th anniversary: Continuing a legacy together for our future' and 'Student Voices 2024'. PETRONAS China, in collaboration with partners, showcased shared success and innovation while strengthening brand influence.

Technology and Innovation

Asian Oil and Gas Awards 2024

- Digital Transformation Initiative of the Year – Malaysia
- ESG Initiative of the Year – Malaysia

Upstream

PETRONAS secured two industry wins for innovation and sustainability efforts. The award-winning UP+ platform centralises critical operational data to improve decision-making and efficiency, while the Upstream GHG Digital Platform consolidates and streamlines GHG data across Malaysia operations to support emissions management and reporting.

The PETRONAS team accepting the ESG Initiative of the Year - Malaysia award at the Asian Oil & Gas Award 2024

Energy Asia Multi-Stakeholder Dialogue, Malaysia

24 August

Energy Asia by PETRONAS hosted a series of dialogues to align priorities and perspectives, gain insights from key sectors as well as support each other towards establishing just and responsible pathways in realising a lower carbon future. The dialogue saw 22 C-Suites from across the energy, finance, professional services and government-linked sectors convened under the theme 'Powering Economic Prosperity through Equitable Transition'.

International Greentech & Eco Products Exhibition and Conference Malaysia (IGEM) 2024, Malaysia

9 – 11 October

PETRONAS' commitment to accelerate the energy transition was highlighted at IGEM 2024, featuring key initiatives in renewable energy, circular economy and sustainable mobility. The event enabled PETRONAS to engage with policymakers, innovators and stakeholders in advancing Malaysia's low carbon economy agenda.

Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC) 2024, United Arab Emirates

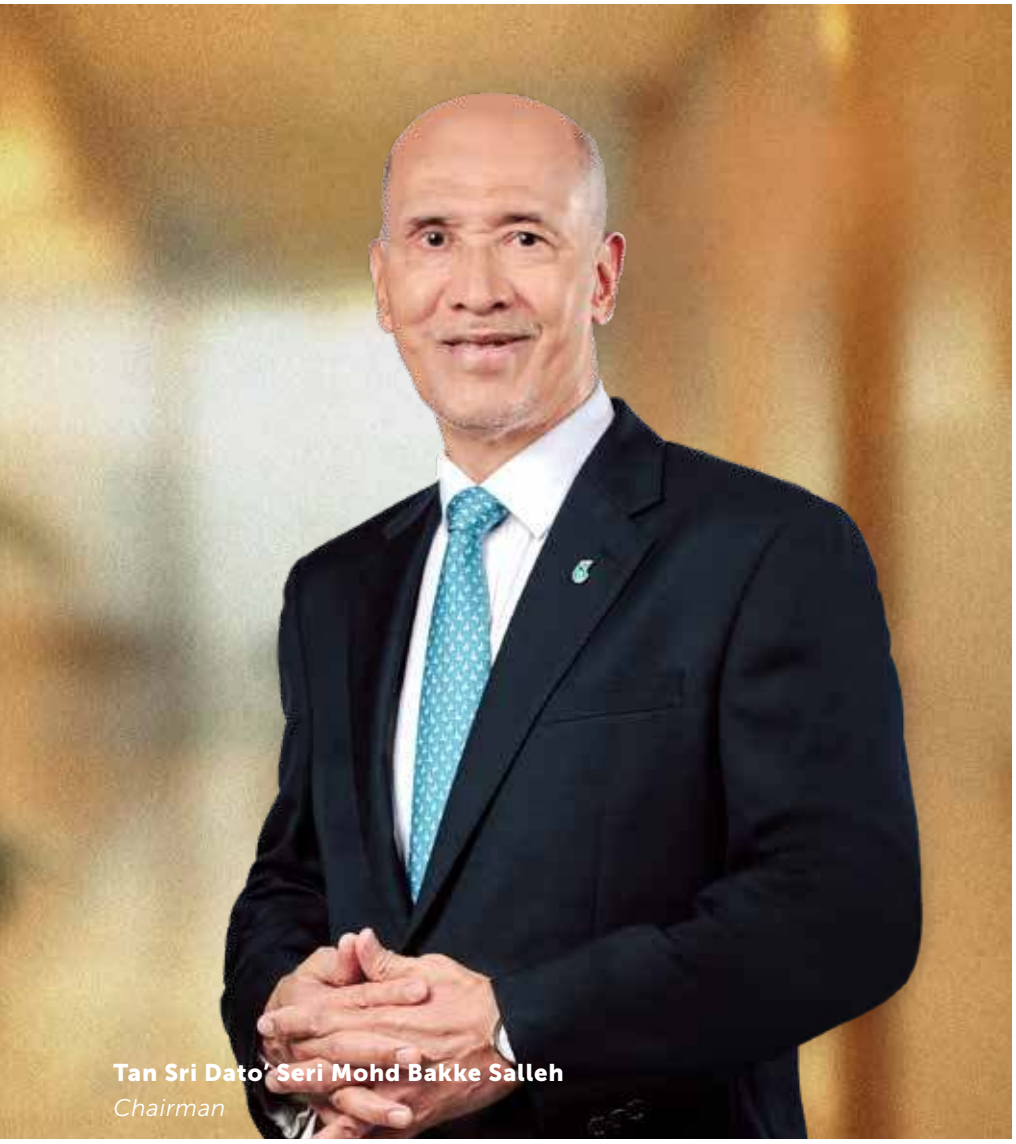
4 – 7 November

PETRONAS took part in ADIPEC 2024 to showcase our global upstream capabilities, emissions reduction efforts and technology-driven innovations. High-level discussions were held to explore strategic collaborations and investment opportunities to support a resilient and sustainable energy future.

Chairman's Letter

Dear Stakeholders,

Against a backdrop of persistent volatility that defined 2024, the PETRONAS Group remained steadfast in delivering our purpose. Across the world, intensifying geopolitical risks and ongoing conflicts further amplified the urgent need to reinforce energy systems and ensure security of supply. For PETRONAS, our Energy Transition Strategy remains a clear guide for the Group as we work to fulfil expectations of our stakeholders.



Tan Sri Dato' Seri Mohd Bakke Salleh
Chairman

On behalf of the Board, I am proud to recognise the achievements of our people, whose invaluable dedication and commitment have delivered a strong performance for the year in review, strengthening our foundations to create long-term sustainable value for our stakeholders.

50 Years of Nation-Building

PETRONAS commemorated its 50th anniversary in 2024. The milestone coincided with a period of uncertainty in the global operating environment. Despite the challenges, the PETRONAS Board and Executive Leadership Team continued to steer the organisation towards its purpose to be a progressive energy and solutions partner. In doing so, our efforts were channelled towards ensuring security of supply and generating profitable long-term growth.

For the year in review, PETRONAS made the scheduled dividend payment of RM32 billion to the Government of Malaysia. As the sole contributor to the National Trust Fund, PETRONAS also continued to make its contribution of RM500 million in the same period, resulting in a cumulative RM13.5 billion contribution to the Fund as of 2024.

Since its establishment in 1974, PETRONAS has contributed RM1.5 trillion to the nation's economy, in the form of dividends, taxes, cash payments and others.

Even as we contend with the intensifying pressures in the industry, I am also pleased to note that PETRONAS, as a key driver of Malaysia's National Energy Transition Roadmap, has stood resolute in delivering the targets under the Net Zero Carbon Emissions by 2050 Pathway, having successfully achieved our short-term emissions reduction target in 2024.

In that same vein, the Group also continued to uphold its commitment to pursue strengthened governance and compliance to meet the expectations of global stakeholders.

Making Impactful Progress

Powering Knowledge: Empowering STEM teachers through a comprehensive 24-month programme to boost student interest and competence in STEM subjects, while enhancing their higher-order thinking skills.

PETRONAS believes that true progress is achieved when organisations and communities grow together. Since inception, PETRONAS has collaborated with stakeholders and communities wherever we operate to deliver meaningful impact where it is most needed. For 50 years, the Group has remained closely attuned to societal development, tailoring our signature programmes to the demands of the era. In 2024, PETRONAS contributed RM700 million to more than 400 social impact programmes.

In the nascent years of Malaysia's oil and gas industry, we focused on nurturing talent through education by introducing the PETRONAS Education Sponsorship Programme (PESP), which has benefitted 39,000 students since 1975. We also established the Institut Teknologi PETRONAS (INSTEP) and Universiti Teknologi PETRONAS (UTP), which has been recognised as the Number One university in Malaysia by the Times Higher Education World University Rankings.

Chairman's Letter

Later, PETRONAS expanded its focus to uplifting societies through our *Memampankan Ekonomi Asas Rakyat* programme, providing access to necessities like water and electricity through the 'Water for Life' initiative and the installation of solar panels in rural areas. As our operations grew across borders, these initiatives were replicated and further customised to the needs of global communities.

In recent years, PETRONAS has introduced several environmental and social programmes, such as Rigs-to-Reef, mangrove conservation, the Imbak Canyon Conservation project, COVID-19 aid and flood relief. These efforts have had a lasting positive impact on Malaysians and local communities where PETRONAS operates.

Planting Tomorrow: Helping to rehabilitate vital mangrove forests and river reserve areas in Malaysia through community-based tree planting initiative.

Strengthening Foundations for Future Growth

PETRONAS has played a crucial role in shaping Malaysia's oil and gas landscape. As a regulator, we nurtured a competitive ecosystem by introducing balanced fiscal terms in Production Sharing Contracts to grow the value pie. We also dutifully managed Petroleum Arrangement Contractors, and Oil and Gas Services and Equipment (OGSE) players to ensure compliance with high standards and governance.

Through the Vendor Development Programme (VDP) and VDPx, PETRONAS has supported 171 small and medium enterprise (SME) vendors since 1993, where 20 have successfully expanded their businesses into international markets. On the vendor financing front, 357 vendors have benefitted from RM2.2 billion in funding to expand their operations since the Vendor Finance Programme (VFP) was introduced in 2018.

Meanwhile, the PETRONAS Supplier Support Programme (PSSP) which was launched in 2024, aims to equip SMEs with sustainability capabilities and access to transition financing necessary to remain competitive in a low-carbon future. In the year under review, 417 vendors have enrolled in the programme.

At PETRONAS, we believe that sustainable growth is only possible when all industry players grow in tandem. With increased complexity in the macro environment putting downward pressure on margins, innovation and efficiency are foreseen to be key factors in project feasibility and profitability.

Moving forward, it will be more pivotal than ever that Petroleum Arrangement Contractors, OGSE players and technology providers strike mutually beneficial partnerships to jointly contribute to a progressive sector in Malaysia.

The Year Ahead

As we look ahead to 2025, we anticipate unrelenting volatility to persist with geopolitical shifts continuing to redefine the trade landscape and realign priorities in the energy transition. The industry is already responding to these shifts with sharpened focus on portfolio resilience, prudent financial management and strategic industry partnerships. In this regard, PETRONAS has put in place a series of transformative measures that will best position us to continue executing our Energy Transition Strategy, deliver long-term value to our stakeholders, and fulfil our purpose as a progressive energy and solutions partner.

With Malaysia assuming the chair of ASEAN in 2025, PETRONAS also looks forward to playing a part in strengthening regional collaboration to shape the future of energy for this region.

In closing, I would like to take this opportunity to thank Datuk Johan Mahmood Merican, Dato Haji Ibrahim Haji Baki and Datuk KY Mustafa for their exemplary leadership and contributions as members of the PETRONAS Board of Directors. I wish them every success in their future endeavours.

I would also like to extend a warm welcome to our new Board members namely, Datuk Dr Shahrazat Haji Ahmad and Datuk Seri Abdul Rasheed Ghaffour. Their vast experience and diverse perspectives will be invaluable in steering PETRONAS forward.

On behalf of the Board, I would like to record my heartfelt appreciation to Tan Sri Tengku Muhammad Taufik, President and Group CEO of PETRONAS, and his Executive Leadership Team for steering the Group towards delivering business strategies with agility and integrity. My deep appreciation also goes out to all employees for their sheer dedication and upholding of our Shared Values in discharging their duties.

Finally, I am grateful to our valued stakeholders, including the Federal and State Governments of Malaysia, our host countries, partners and customers for their continued trust and support. As we set forth in this next chapter, PETRONAS looks forward to building on these enduring partnerships to continue enriching lives in the next 50 years and beyond.

The Angsi platform in the waters off Terengganu, Malaysia.

President and Group Chief Executive Officer's Letter

Dear Stakeholders,

The year 2024 was beset by wave upon wave of political change and technological disruptions that reshaped global markets, trade policies and the operating landscape at large. The radical shifts and the volatility in their wake have reinforced emphasis on energy security and affordability among countries around the world against the backdrop of a still-fragile global economy.

Tan Sri Tengku Muhammad Taufik
President and Group Chief Executive Officer

As PETRONAS crossed its 50-year mark in 2024, we remained steadfast in executing our Energy Transition Strategy with the aim of ensuring we would continue being able to deliver more value to shareholders and stakeholders reliably, responsibly and sustainably.

Alhamdullilah, we continued to grow our diverse portfolio through a relentless focus on operational and commercial excellence, strategically positioning the Group in order to remain resilient and dynamic in the ongoing energy transition.

Safety at the Forefront

The safety and well-being of our people remain our paramount priority.

In 2024, PETRONAS worked to reinforce safety culture and measures to create a safer working environment, recording zero major fire incidents and a 13 per cent reduction in Loss Time Injury.

Despite our best efforts, we regrettably recorded two tragic incidents that resulted in the loss of lives. We are deeply saddened by the loss suffered by their friends and families. The Group is now even more determined to do better towards delivering the only acceptable target in this regard – zero fatalities and injuries.

Delivering Value Reliably and Responsibly

Amid persistent uncertainty in the global landscape, PETRONAS made steady progress in our Energy Transition Strategy, which remains a clear and pertinent guide in the pursuit of long-term growth.

I am pleased to report that PETRONAS managed to deliver steady financial performance in 2024, with a Profit After Tax (PAT) of RM55.1 billion on the back of RM320.0 billion in revenue. Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA) stood at RM114.1 billion for the year under review.

The Group remained steadfast in its philosophy of practicing prudent financial management and disciplined capital allocation in an increasingly complex ecosystem. This ensured that we continued to drive long-term value, even as we reduced emissions as set out in the PETRONAS Net Zero Carbon Emissions (NZCE) by 2050 Pathway.

The milestone accomplishments in 2024 include:

1. Expanded global portfolio through 20-year extension for the Ketapang Production Sharing Contract (PSC) and a multi-year contract for the Bobara Working Area in Indonesia, acquisition of 50 per cent share of the Papua New Guinea Prospecting License and third concession of Onshore Block 2 in Abu Dhabi, United Arab Emirates.
2. Produced a record-breaking 2,000 thousand barrels of oil equivalent (kboe) per day from Malaysia operations.
3. Awarded 14 PSCs in the Malaysia Bid Round 2024 to 12 unique contractors.
4. Reached final investment decision (FID) for a 100MW power plant in Malaysia while making good progress towards first cargo from LNG Canada in 2025 and bringing onstream our third floating LNG facility by 2027.
5. Expanded maritime solutions on offer with seven contracts for vessel newbuilds and entered a joint venture to procure liquified carbon dioxide (LCO_2) carriers, adding to the current fleet of 102 LNG, petroleum and product vessels, as well as 12 Floating Production, Storage and Offloading (FPSO) and Floating Storage and Offloading (FSO) vessels.
6. Reached FID to construct a biorefinery in the Pengerang Integrated Complex in Malaysia with partners Enilive and Euglena, expected to be operational by 2028.
7. Signed a Memorandum of Cooperation to advance ASEAN grid interconnectivity with the export of renewable energy from Vietnam to Malaysia and Singapore.
8. Expanded renewables portfolio in India with a 200MW co-located solar-wind turbine project, 400MW interstate transmission system-connected wind-solar hybrid project, and delivery of 650MW renewable energy for the country's first renewable energy-green hydrogen production.
9. Entered a joint venture to develop a global scale hydrogen production hub in Malaysia with SEDC Energy.
10. Progressed towards large-scale carbon capture and storage (CCS) deployment with 11 agreements and Memoranda of Understanding to carbon dioxide storage solutions, infrastructure and value chain development, as well as regulatory compliance and certification.
11. Achieved the short-term GHG emissions target by limiting emissions from Malaysia operations to 46.55 million tones of CO_2 equivalent, below the target limit of 49.50 million tonnes of CO_2e, as laid out in our Net Zero Carbon Emissions by 2050 Pathway.

President and Group Chief Executive Officer's Letter

Transformation for Long-Term Resilience

As the oil, gas and energy industry weathered a tumultuous year of mounting market pressures, continued margin erosions and intensified geopolitical risks, it also became glaringly evident that reindustrialisation, deglobalisation and the artificial intelligence (AI) revolution are now set to collectively contribute to a surge in worldwide energy demands.

These contrasting complexities occurred as PETRONAS reached its remarkable 50-year milestone. Even as we celebrate in the achievements brought forth by steadfast focus on our strategy – strengthening Core Business, pursuing opportunities in New Businesses and responsibly managing emissions – the Group has now set in motion a transformative exercise to strengthen our long-term resilience against the current backdrop.

Measures in this regard are already being undertaken in an objective, transparent and respectful manner, including:

1. Increasingly prudent capital allocation and targeted reinvestment, with sharper focus on value accretive and revenue-generating businesses.
2. Pursuit of strategic partnerships and novel collaborative models, such as satellite models, equity partnerships and joint ventures to pursue returns even as risks multiply in the operating environment.
3. Transformation of our workforce by creating a fit-for-purpose structure, aligning process with purpose.
4. Reallocating resources and amplifying efforts to eliminate inefficiencies.

The Group is confident that this undertaking, as challenging as it may be, will place PETRONAS in an even more competitive and resilient position to grow our international portfolio and secure market positions with focused agility.

Importantly, the measures will ensure that we can continue to discharge our *Amanah* or duty of trust as Malaysia's national oil company – providing energy security, generating economic growth and contributing towards the nation's sustainability ambitions.

It is vital to also highlight that amid this transformation, PETRONAS will remain unwavering in our commitment to deliver on our decarbonisation targets as set out in our NZCE by 2050 Pathway. In this regard, PETRONAS can register that we have made continued progress since its introduction in 2020, and we continue to contribute to Malaysia's National Energy Transition Roadmap as well as its Nationally Determined Contributions.

PETRONAS' New Energy Technical Service Centre in Pinghu, Jiaxing, China.

Moving Forward with Purpose

In our first 50 years, PETRONAS has evolved significantly. From our humble beginnings as the regulator of Malaysia's oil and gas resources, we have evolved into an integrated and dynamic global energy company. We have contributed towards developing a thriving local oil and gas sector and fortified our reputation as a trusted energy and solutions partner, contributing to societies wherever we operate.

Together with our growing global footprint, PETRONAS has also built a strong reputation as a regional voice advocating for a just and equitable energy transition with collaboration as its cornerstone. With Malaysia taking up the mantle as chair of ASEAN and as PETRONAS once again partners with CERAWeek by S&P Global to organise the second edition of Energy Asia in 2025. The coming year is shaping up to be one of accelerated action towards the energy future of our collective vision.

In this opportunity, permit me to record my gratitude for the dedicated service of PETRONAS' global workforce, the exemplary leadership and support of the Executive Leadership Team, and the strong support of governments, authorities, stakeholders and partners, whose valued contributions have made the Group's accomplishments possible.

I would also like to extend my appreciation to our Chairman, Tan Sri Dato' Seri Mohd Bakke Salleh, and the PETRONAS Board of Directors for their trust and valuable counsel through a period of immeasurable uncertainty.

As the amazing employees tirelessly strive to strengthen PETRONAS' foundations for its next 50 years and beyond, I look forward to the progress we will continue to make together in delivering a sustainable future for all.

The Twin Torches, reunited on 17 August in celebration of PETRONAS' 50th anniversary. Brought by teams from across Malaysia, the torches serve to symbolise unity, camaraderie and resilience.

Executive Vice President and Group Chief Financial Officer's Letter

Dear Stakeholders,

PETRONAS' financial strategy is built on striking the right balance in reinforcing financial resilience while driving growth, securing Malaysia's energy needs while advancing sustainability, and optimising performance while ensuring commercial viability. Rather than pursuing short-term gains, we ensure that every investment is value-accretive for us to continue moving forward, especially as the world is evolving at an accelerated pace.

Liza Mustapha
Executive Vice President and Group Chief Financial Officer

Global economic instability in 2024 presented challenges across industries, and the energy sector was no exception. Sluggish economic activity, particularly in China and Europe, coupled with uncertainties over oil demand and global recovery, contributed to market volatility. Oil prices remained under pressure due to fears of a recession in the United States and easing supply concerns. At the same time, the call for energy transition remained strong and continued to compound the industry's complexity.

In navigating this complex landscape, PETRONAS remained guided by its core financial principles of strategic agility, sound risk management and value-driven decision-making. We have always applied rigour to our financial management, ensuring that every decision supports both our resilience and long-term growth. This means balancing three critical priorities: sustaining our Core Business, scaling up new growth opportunities under New Business and responsibly managing our emissions reduction journey under our Net Zero Carbon Emissions by 2050 Pathway. These priorities underpin PETRONAS' long-term vision allowing us to continue delivering secure, affordable and responsible energy for Malaysia and our global customers.

Financial Performance

In 2024, PETRONAS recorded revenue of RM320.0 billion, lower than the previous year by 7 per cent due to softer average realised prices, particularly in LNG. Nevertheless, increased sales volume provided a cushion against the decline. Revenue was also impacted by the divestment of Engen Limited and its subsidiaries (Engen Group), a South African-based downstream petroleum company in which PETRONAS had held a majority stake since 1998. Following the completion of the divestment in May 2024, only five months of Engen Group's financial results were included in PETRONAS' revenue for the year.

Profit After Tax stood at RM55.1 billion, reflecting the impact of lower prices and the absence of favourable tax adjustments recorded in 2023, which were mainly related to the recognition of deferred tax assets. The realisation of foreign currency translation reserves from the Engen Group divestment also contributed to the lower Profit After Tax. The Group's Earnings Before Interest, Tax, Depreciation and Amortisation was RM114.1 billion, in line with the decline in profits.

Despite these market headwinds, PETRONAS maintained a strong financial position, ending the year with total assets of RM766.7 billion, slightly lower by 1 per cent than 2023. Shareholders' equity increased to RM451.2 billion, mainly due to profit recorded during the year. Cash Flows from Operations remained robust at RM102.5 billion, providing sufficient liquidity to support business operations, capital expenditure, growth commitments, debt obligations and dividend payments to shareholders.

Revenue

RM320.0 billion *2023: RM343.6 billion*

Profit After Tax

RM55.1 billion *2023: RM80.7 billion*

Total Assets

RM766.7 billion *2023: RM773.3 billion*

Capital Allocation and Investment Strategy

PETRONAS applies a sharp and disciplined approach to its capital allocation framework to ensure financial strength while delivering shareholder value and funding future growth. Every investment decision is based on a careful balance between strengthening our Core Business, expanding into new opportunities and advancing emissions reduction efforts, with all three receiving equal focus to secure PETRONAS' resilience and long-term viability.

Our approach is not about pursuing short-term gains at the expense of long-term resilience but ensuring that every investment is value-accretive and aligned with our financial parameters to maintain a strong balance sheet.

In 2024, our capital expenditure stood at RM54.2 billion, primarily directed towards Upstream and Gas projects. More than 60 per cent of capital expenditure in 2024 was invested in Malaysian projects, a 27 per cent increase from the previous year, reinforcing PETRONAS' role in supporting Malaysia's Oil and Gas Services and Equipment ecosystem to strengthen energy supply and build future capabilities. Key projects included the PETRONAS Shore-based Floating LNG project in Sabah, which expanded LNG production capacity; and the Integrated Bekok Oil project in Peninsular Malaysia, which sustained upstream production.

Effective liquidity management underpins our capital allocation strategy, providing funding flexibility to meet obligations, support growth and navigate market uncertainties. PETRONAS maintains access to multiple financing levers, a structured cash management strategy and a strong credit rating, which supports continued access to capital markets.

Over the next five years, PETRONAS plans to maintain an average capital expenditure of circa RM50 billion annually, with 20 per cent allocated towards New Business and emissions reduction initiatives.

Executive Vice President and Group Chief Financial Officer's Letter

Energy Transition and Growth Strategy

Globally, energy transition commitments and efforts continue to unfold in complex and uneven ways. Some companies that moved aggressively into renewables are now pulling back, while others are recalibrating their ambitions in response to market realities. PETRONAS has remained steady and consistent in its approach to ensure that our transition is well-paced, financially sound, measured and sustainable for the long term.

Our Core Business remains the anchor of our financial strength. It continues to generate steady cash flow, which enables us to invest in emissions reduction efforts and support the growth of our New Business ventures. Rather than making abrupt shifts, we have been strengthening our oil and gas operations to be more efficient and responsible by integrating carbon capture, methane abatement and energy efficiency measures to reduce emissions while maintaining reliability and competitiveness.

We will continue to focus on gas as a transition fuel and prioritise emissions abatement over offsets by reducing emissions at source, as much as we can.

We aim to capture value-accretive growth opportunities to enhance business resilience and future-proof our portfolio. Our diversification strategy is designed to ensure that each new venture delivers long-term value, has the potential to achieve scale and incorporates differentiated risk management. By focusing on opportunities that align with our capabilities, we are expanding beyond our Core Business in a way that is both strategic and financially disciplined.

PETRONAS invested close to RM2 billion in emissions reduction activities and cleaner energy solutions under Net Zero Carbon Emissions by 2050 Pathway efforts in 2024.

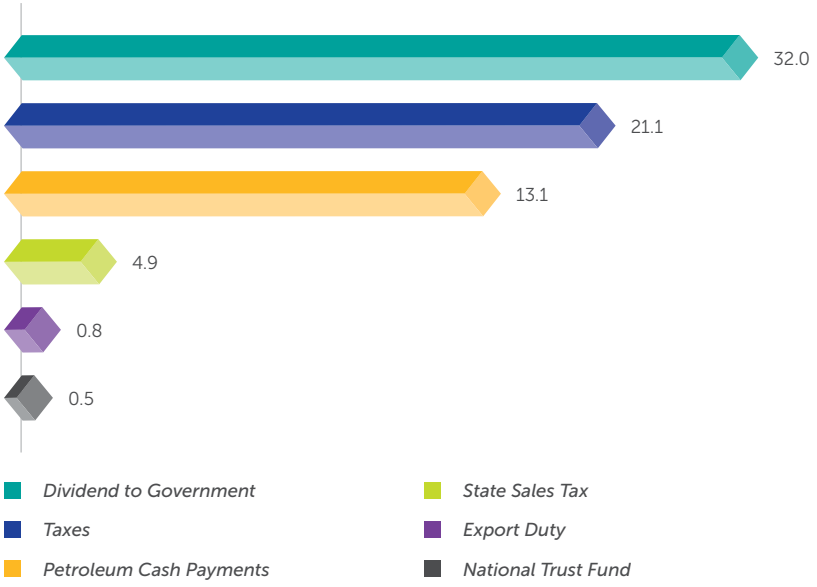
Sustaining Economic Growth through Financial Contributions

In 2024, PETRONAS contributed RM72.4 billion in dividend, taxes, cash payments and other financial commitments to the Government of Malaysia. This included RM32.0 billion in dividend to the Government, declared after full consideration of the Group's current and future commitments as well as growth plans. We also paid RM26.8 billion in taxes, including petroleum income tax, corporate income tax, state sales tax, export duties and other statutory payments. Cash payments of RM13.1 billion were made to Federal and State Governments for the value of hydrocarbon resources monetised by PETRONAS and contractors. PETRONAS also remains the sole contributor to the National Trust Fund, with RM0.5 billion contributed during the year.

These payments result from our strategic financial approach, where economic value is not only retained to fund operations, investments and the energy transition, but also distributed responsibly to sustain Malaysia's fiscal strength, empower state-level development and build national economic resilience. To date, PETRONAS has cumulatively contributed more than RM1.5 trillion to the nation in the form of such payments.

Beyond direct payments, PETRONAS' financial footprint creates broader economic value through its supply chain, workforce and industry partnerships. In 2024, the Group invested more than RM700 million in social impact initiatives globally, generating indirect economic benefits by improving access to education, skills development, clean energy and climate resilience in underserved communities.

Contributions to the Federal and State Governments of Malaysia, and the National Trust Fund (RM billion)



Governance and Risk Management

PETRONAS operates in an increasingly complex and dynamic environment where financial discipline, governance and risk management are essential to secure long-term value. In 2024, we enhanced our internal control framework to further strengthen financial compliance and risk oversight across our global operations. These improvements include tighter financial reporting standards, strengthened risk governance structures and enhanced due diligence measures for investment decisions.

Compliance and ethical considerations have long been part of our decision-making processes. These foundations are continuously strengthened through ongoing refinement of our enterprise risk management frameworks, improved financial transparency and deeper integration of climate-related financial disclosures in line with evolving industry standards.

Our financial strategy for 2025 will be shaped by key risks, including commodity price volatility, economic uncertainties, regulatory shifts and the ongoing energy transition, all of which require a structured and forward-looking approach to financial planning.

One of the top financial risks PETRONAS faces is commodity price fluctuations, which have become more volatile in recent years. To mitigate exposure, we apply a structured hedging strategy that protects against extreme price swings while maintaining financial flexibility. Our price assumptions for planning purposes are based on supply and demand fundamentals, ensuring robust investments.

Our investment decisions are guided by a strict risk-reward framework, prioritising financially viable, long-term projects. We take a highly selective approach, choosing projects that can withstand market volatility while actively managing commodity price risks.

Liquidity risk is also carefully managed through diverse funding strategies, including access to capital markets, securing trade finance facilities and revolving credit arrangements. By maintaining a conservative balance sheet, strong credit ratings and a disciplined approach to debt management, PETRONAS ensures sufficient financial strength to support ongoing business commitments and future investments.

We continue to make good progress on our sustainability disclosures, and aim to fully adopt international frameworks such as the IFRS Sustainability Disclosure Standards (IFRS S1 and S2) and Malaysia's National Sustainability Reporting Framework (NSRF). This alignment enhances transparency, supports accountability and reinforces our commitment to long-term value creation. We welcome the convergence of sustainability disclosures and reporting frameworks as a step towards more structured and consistent reporting.

Strengthening Financial Resilience for Future Growth

As PETRONAS advances into the future, balancing national energy security with commercial agility will be critical. Continued portfolio rationalisation will shape a leaner and more efficient organisation. This deliberate and structured approach provides PETRONAS with the agility to adapt to market shifts while maintaining stability, reinforcing its role as a trusted energy partner for today and the future.

Bekok C Platform.

Vice President and Group Chief Sustainability Officer's Letter

Dear Stakeholders,

For over 50 years, PETRONAS has been a nation-builder, maximising Malaysia's hydrocarbon resources to contribute to the nation's economic growth and social progress. Today, we continue this ethos with a refreshed approach to sustainability, shaping the future energy system and leading the next chapter of sustainable energy transformation for long-term success.

Charlotte Wolff-Bye
Vice President and Group Chief Sustainability Officer

In 2024, multilateral negotiations on climate change, biodiversity, and plastics were inconclusive, adding further fragmentation and inconsistency in frameworks and regulations across the world. Despite this, expectations for the energy sector to lead the charge on delivering energy security and cleaner energy remain high.

Our commitment to sustainability with a focus on 'Delivering Net Zero, Thriving with Nature and Fostering a Just Transition' remains steadfast. In practice, this means reducing the environmental impact of our operations, developing solutions to meet customers' energy needs, and collaborating across sectors to address significant sustainability challenges.

We continue to make progress in various aspects of sustainability performance. To enhance transparency, we have strengthened our disclosures by expanding the scope of independent assurance. We were also delighted to be recognised as the top brand in the 2024 Brand Finance ASEAN Sustainability Perceptions Index.

Delivering Net Zero

A functioning modern society relies on a stable and affordable supply of energy. Today, energy accounts for approximately three-quarters of global manmade greenhouse gas emissions. PETRONAS is committed to achieving better emissions performance from our oil and gas operations and creating new value-accretive opportunities by pursuing renewable energy and low-carbon solutions.

Technology development and strategic partnerships remain central to this transformation. PETRONAS leverages innovation through advanced research and development, digitalisation and artificial intelligence to deliver tailored emissions reduction solutions and drive sustainability across our operations. Our efforts support national decarbonisation ambitions across markets where we have industrial operations.

In 2024, PETRONAS' Malaysia operations successfully met our short-term target by limiting operational-control emissions to below 49.50 million tonnes of carbon dioxide equivalent (CO_2e), amounting to 46.55 million tonnes CO_2e, which is an almost 3 per cent increase from the previous year. Our Groupwide equity share emissions were 48.32 million tonnes CO_2e, up by around 4 per cent. Both increases were due to higher production levels, and strengthened accounting and monitoring accuracy. Overall, since launching our initial carbon commitments in 2012, we have reduced annual emissions significantly by over 21 million tonnes CO_2e.

We are making steady progress toward our 2030 target of reducing our Groupwide emissions by 25 per cent. Our efforts are focused on energy efficiency, eliminating routine flaring and venting, and electrification. Additionally, we have laid the groundwork to deploy carbon capture and storage technologies.

A notable achievement is a 62 per cent reduction in methane emissions from Groupwide operations, exceeding our 2025 target of a 50 per cent reduction from a 2019 baseline ahead of schedule. Our 2030 target of a 70 per cent reduction is now within reach. Accelerating methane emissions is important, given methane's potent impact on global warming.

We also established a Groupwide energy management system in preparation to meet Malaysia's Energy Efficiency and Conservation Act 2024 and enable continuous improvement consistent with industry best practices.

Our Net Zero Carbon Emissions by 2050 Pathway is not only about reducing our carbon footprint but also creating new opportunities for growth and resilience in a rapidly changing global market.

We are advancing commercial carbon capture and storage services to support high-emissions sectors such as steel, power, chemicals and cement.

Gentari Sdn Bhd (Gentari), our clean energy solutions entity, has secured 8 gigawatts of cumulative renewable energy capacity, including both installed and under construction, and has installed over 1,000 electric vehicle charging points globally.

Thriving with Nature

We recognise the intrinsic connection between natural ecosystems and the resilience of our business and society. To address nature and biodiversity loss, we concentrate on responsible resource use, circularity practices and ecosystem restoration, protection and conservation. This approach applies across all our operations, with emphasis on Malaysia, one of the world's most significant areas for ecological biodiversity.

In 2024, we established governance mechanisms to proscribe new project development in UNESCO World Heritage sites, with a commitment to help protect culturally and naturally significant locations. We continued biodiversity and ecosystem services risk assessments and improved our internal capabilities in how to engage Indigenous Peoples meaningfully and to help ensure our industrial activities are in better harmony with nature.

PETRONAS participated in Bursa Malaysia's auction of Malaysian nature-based carbon credits, marking an important step forward for the voluntary carbon market in Southeast Asia. We also formed a partnership with the Sarawak Forestry Corporation to develop Nature-based Solution projects. Carbon credits from such future projects will offset residual and hard-to-abate emissions, complementing our broader carbon reduction efforts.

Vice President and Group Chief Sustainability Officer's Letter

Our environmental performance showed mixed results in 2024. Freshwater withdrawal increased by 4 per cent to 82.6 million cubic metres, primarily due to additional requirements from the start-up operations. Hazardous waste generated rose by 23 per cent to 187,294 metric tonnes, reflecting the impact of expanded operational activities. However, other environmental indicators improved: Nitrogen Oxide (NOx) emissions decreased by 10 per cent, while Sulphur Oxide (SOx) emissions fell by 8 per cent.

Fostering a Just Transition

We are dedicated to contributing to an energy transition that respects human rights, and promotes inclusive development and prosperity. We call this effort 'Fostering a Just Transition'. In 2024, we published our updated Human Rights Policy, which is currently being implemented.

A successful energy transformation depends on a skilled, adaptable workforce. In 2024, PETRONAS continued strengthening talent development through our learning institutions.

Universiti Teknologi PETRONAS (UTP) expanded its academic programmes and launched the first-of-its-kind Bachelor of Integrated Engineering, combining mechanical, electrical and chemical disciplines under one curriculum to meet evolving industry demands.

Institut Teknologi Petroleum PETRONAS (INSTEP) enhanced technical competency development for emissions reduction and carbon accounting, while the PETRONAS Leadership Centre developed new programmes to advance sustainability leadership among talent, leadership, Board of Directors and external stakeholders.

Beyond talent development, we also launched our PETRONAS Supplier Support Programme, engaging over 1,000 vendors since August 2024. This free programme strengthens industry sustainability capabilities, and helps businesses in Malaysia serve emerging lower-carbon energy value chains.

Scaling Up Activity through Collaborations and Partnerships

Cross-sectoral partnerships are vital to enforce meaningful change, and PETRONAS has consistently taken a leading role in fostering such collaborations through regional outreach in Southeast Asia.

A key milestone in 2024 was the launch of the ASEAN Energy Sector Methane Leadership Programme 2.0 with our partners. We also announced plans to establish the Southeast Asia Methane Emissions Technology Evaluation Centre in collaboration with the Japan Organization for Metals and Energy Security.

At the climate summit COP29 in Baku, PETRONAS, together with other Southeast Asian partners, published a joint communiqué committing to a progressive approach to decarbonisation and methane emissions management in the region.

Sustainability as a Driver for Resilience and Value Creation

PETRONAS' approach remains rooted in strategic pragmatism, centering on energy security, affordability and sustainability.

We continue advancing our sustainability ambitions to remain strong amid changing geopolitics, market conditions and national policies. With robust governance, continued investment in technological solutions, skills and collaboration across the ecosystem, we are confident in our ability to bolster organisational resilience and creating long-term sustainable value.

PETRONAS Energy Transition Strategy

As the energy landscape continues to evolve, we remain steadfast in our commitment to a responsible and progressive energy transition. Our strategy is designed to balance energy security, affordability and sustainability to support Malaysia's long-term development, while responding to the world's growing energy demand. This strategy is anchored on three core pillars: generating value from our Core Business while reducing emissions, expanding cleaner energy solutions through New Business and advancing our Pathway to Net Zero.

Core Business

More Energy, Less Emissions

We play a key role in oil and gas industry to help meet growing energy demand, generate cash flow and deliver returns to shareholders.

New Business

Capturing New Growth Opportunities

We pursue New Business to strengthen the robustness of our long-term portfolio. Each business will move at its own pace and trajectory, depending on technological advancement and market environment.

Net Zero Carbon Emissions

Pathway to Net Zero

We take a strategic and responsible approach to emissions reduction, balancing technological constraints and evolving policies while ensuring long-term business resilience.

Key abatement levers have been identified to reduce greenhouse gas emissions, with focus on delivering near- and medium-term targets.

Focus Areas

Upstream

Advance exploration and development to address global energy demand, sustain vibrancy of Malaysia's oil and gas ecosystem, while high-grading our portfolio, to deliver lower-carbon fuels in a cost-efficient manner.

Gas and Maritime

Maintain market leadership in the liquefied natural gas sector by sustaining reliable production, optimising value from existing assets, and intensifying portfolio integration. Continue to explore new supply opportunities to strengthen global presence as a key differentiator in delivering reliable, competitive suite of energy solutions.

Downstream

Optimise margin through continuous operational and commercial excellence, while extending value across the chain through enhanced offerings to respond to changing customer requirements and better capture market opportunities.

Specialty Chemicals

Strengthen portfolio through innovation, profitability and access to new capabilities, markets and geographies.

Bio-based Value Chain

Scale up bio-based products and offerings aligned with evolving customer preferences, leveraging strategic partnerships.

Carbon Capture and Storage

Mature carbon capture and storage (CCS) solutions and position Malaysia as a leading regional hub.

Renewable Energy

Scale core market projects, emphasise renewable energy-hydrogen synergies and leverage long-duration energy storage value.

Hydrogen

Advance green hydrogen and ammonia projects, secure offtake agreements to underpin those projects, boost cost competitiveness and strengthen market position via partnerships and technologies.

Green Mobility

Expand electric vehicle charging points, and scale Vehicle-as-a-Service across Asia Pacific.

Key Abatement Levers

Zero Routine Flaring and Venting

Systematically eliminate routine flaring and venting in existing and new production sites.

Energy Efficiency

Optimise energy use across operations, through operational excellence, digital solutions, process and equipment optimisation.

Electrification

Electrify PETRONAS operations through asset modification, infrastructure development and sourcing for renewable energy, where feasible.

Carbon Capture and Storage

Mature CCS deployment to reduce carbon emissions at identified assets.

+ *Please refer to Strategic Review on pages 60 to 81.*

Value Creation Model

PETRONAS Energy Transition Strategy

Core Business
More Energy, Less Emissions

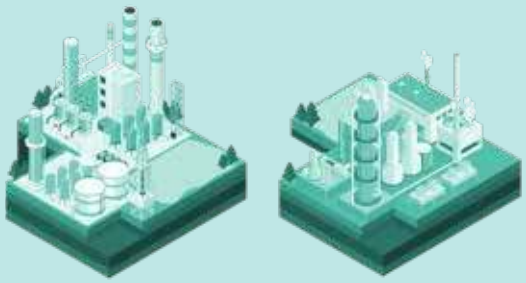
New Business
Capturing New Growth Opportunities

Net Zero Carbon Emissions
Pathway to Net Zero

Our Capitals	Inputs
FC Financial Capital Capital available to the Group to finance our operations, activities and investments in other growth areas.	• **RM766.7 billion** in total assets
MC Manufactured Capital Assets and infrastructure that underpin our business.	• **RM327.4 billion** in property, plant and equipment
HC Human Capital Our skilled workforce that drive and deliver our strategy and long-term value.	• **RM339.2 million** investment in training and development
IC Intellectual Capital Our proprietary technologies, solutions and organisational systems that deliver value and growth.	• **RM562.2 million** in technology investments
NC Natural Capital We depend on environmental resources across our operations and manage impacts on land, water, air and biodiversity through responsible use, waste management and greenhouse gas reduction.	• Over **RM7 billion** on emissions reduction projects and cleaner energy solutions, specifically on renewable energy, hydrogen, and carbon capture and storage projects • **8.64 billion** barrels of oil equivalent (boe) 2P Reserve* ***Note:*** ** 2P Denotes the best estimate of Reserves. The sum of Proved plus Probable Reserves.*
SRC Social and Relationship Capital Our engagements and relationships with stakeholders, including government agencies, local communities and customers.	• Contributed more than **RM700 million** worldwide on social impact programmes

Supply and Generation

Liquefaction **Processing**



Sustainability Approach

Creating Sustainable Value through Responsible Governance

Delivering Net Zero

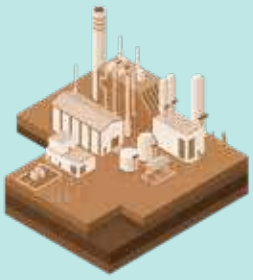
+ *Please refer to Our Approach to Sustainability on pages 48 to 49 and Material Topics on pages 50 to 53.*

Operating Landscape

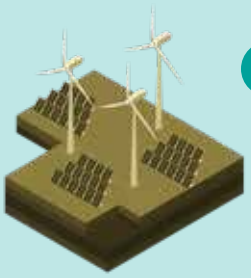
- Geopolitics and Macroeconomics
- Global Trade and Supply Chain Resilience
- Energy Market and Capital Discipline
- Energy Transition
- Sustainability including Climate Change Commitments

+ *Please refer to Operating Landscape on pages 32 to 33.*

Refining



Renewable Energy



Thriving with Nature

Fostering a Just Transition

Key Risks

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

+ *Please refer to Risks Linked to Creating Value on pages 34 to 47.*

	Outputs and Outcomes	Trade-offs	Stakeholders
FC	Sustaining profitability and growth to meet Malaysia's current and future energy needs through reinvestment, emissions reduction efforts and dividends. • **RM55.1 billion** profit after tax • **RM32.0 billion** dividend to the Government	• Investments in Manufactured, Natural and Intellectual Capitals, ranging from emissions reduction technologies to capability building, require significant Financial Capital. While this may create short-term financial pressure, these trade-offs are necessary to secure future value and long-term resilience.	FG SG C E SIC GIP CN IO
MC	Managing a resilient asset and infrastructure portfolio aligned with strategic goals for long-term productivity. • **35.7 million** metric tonnes LNG sales • **11.2 million** metric tonnes chemical production volume • **247.8 million** barrels of petroleum products sales volume		FG SG C SIC M GIP IO
HC	Strengthening a skilled talent and succession pipeline. • **56.9** hours of average training per employee	• Strengthening Intellectual and Human Capitals through talent development, innovation and knowledge-sharing may constrain Financial Capital in the short term. However, these investments build future talent capabilities that enhance operational effectiveness, innovation and competitiveness while contributing to Malaysia's socio-economic progress.	FG SG E SIC IO
IC	Strengthening long-term resilience by investing in research and development, technology and new businesses with lower-carbon emissions. • **20 per cent** of planned annual capital expenditure allocated to New Business and emissions reduction over the next five years • **31** patents secured • **2** proprietary formulations		FG SG E SIC GIP IO
NC	Responsible resource use and ecosystem management to ensure operational continuity, compliance and long-term value. • **2,451 thousand** barrels of oil equivalent (boe) per day crude oil, condensates and natural gas production • **1.3 million** tonnes carbon dioxide equivalent per year of greenhouse gas emissions reduced through emissions reduction projects • **47,620** tonnes total hazardous waste reused, recycled or recovered • More than **20,000** mangroves and other trees planted to restore and enhance local ecosystems		FG SG E SIC GIP IO
SRC	Supporting social progress through community projects. • **400** programmes globally across education, environment, and community well-being and development	• Building trust with communities, partners and stakeholders strengthens Social and Relationship Capital, which reduces reputational and regulatory risks. This, in turn, can put pressure on our Financial Capital but in the long run, protects our other Capitals.	FG SG C E SIC M GIP CN IO

Operating Landscape

The 2024 election supercycle saw about three billion voters across more than 60 countries head to the polls at a time of heightened geopolitical tensions and increased market volatility. Political transitions in key economies have shifted focus toward policies that prioritise domestic interests, with governments increasingly supporting the growth of local industries to strengthen employment and build resilient supply chains. While cross-border cooperation remains crucial, the increased focus on national priorities and new trade requirements has further complicated supply chain dynamics and affected economic collaboration, including in the energy transition. The move towards inward-looking policies, particularly by major economies, presents additional challenges to global business operations, limiting market access and posing risks to project deliveries.

The oil and gas sector navigated a challenging landscape marked by OPEC+ intervention, geopolitical tensions and energy transition pressures. Nevertheless, it remained resilient, with crude oil prices averaging above USD80 per barrel. Global gas demand reached a record high, driven by population growth and economic expansion in emerging markets. The upstream sector embraced capital discipline, focusing on shareholder returns, while the services sector pursued mergers and acquisitions to enhance competitiveness. Although upstream investment growth moderated to 4 per cent following previous double-digit gains, earnings remained strong due to cost management and relatively stable oil prices.

The chemical sector faced headwinds from weak consumption and oversupply, while the liquefied natural gas (LNG) market softened due to subdued global demand. Shifting political landscapes following the elections triggered widespread policy reviews, contributing to investment uncertainty and profitability pressures in the renewable energy and green mobility sectors.

The global climate summit COP29, held in Azerbaijan in November 2024, delivered incremental progress. A new framework for carbon markets was agreed upon, enabling international carbon credit trading. Developed countries pledged to triple climate finance to at least USD300 billion annually by 2035, with combined public and private financing targets reaching USD1.3 trillion per year.

Outlook

The global outlook for 2025 remains uncertain amid escalating trade disputes and increased geopolitical tensions. Trade disruptions, driven by higher tariffs and policy volatility, pose risks to global growth and international cooperation. Strained relations may lead to retaliatory measures, further dampening economic activity.

Heightened geopolitical instability, particularly in the Middle East and Europe, and the continued targeting of vessels in the Red Sea have disrupted global trade flows. These tensions have affected critical chokepoints such as the Suez and Panama Canals, the Straits of Malacca and the South China Sea, which together account for around half of global maritime commerce. The resulting rise in shipping rates is intensifying inflationary pressures and threatening supply chain stability. With no imminent resolution in sight, disruptions are expected to persist, particularly in the Red Sea, where attacks are forcing vessels to divert via the Cape of Good Hope. However, a de-escalation in trade conflicts could provide an upside to global growth as businesses gain clarity in policies and strategic direction.

The oil market is expected to remain volatile in 2025 due to sustained geopolitical instability and economic uncertainty. Production growth may lead to a surplus, although conflict-driven supply shocks could result in temporary price spikes. In the chemical sector, growing capacity and subdued demand could limit price gains, while in the LNG sector, prospects for growth may be dimmed by trade restrictions and policy uncertainties.

The energy transition is set to progress but will remain uneven due to regional disparities and the geopolitical climate. The 2025 update to Nationally Determined Contributions aims to prompt countries to raise their climate ambitions. However, rising defence spending and reduced international cooperation could hinder climate financing, even as advances in clean energy technologies and grid infrastructure enhance long-term prospects.

PETRONAS views the current environment as an opportunity to diversify market exposure through new alliances. We uphold strict capital discipline by adopting a value-over-volume strategy, focusing on capital-efficient, shorter-cycle projects that deliver quicker returns while safeguarding energy supply and advancing emissions reduction efforts. We remain committed to our Net Zero Carbon Emissions by 2050 Pathway while continuing to strengthen governance, due diligence, human capital practices and community engagement, and embedding sustainability more deeply across our value chain.

+ *Please refer to PETRONAS Energy Transition Strategy on page 29, Risks Linked to Creating Value on pages 34 to 47, Strategic Review on pages 60 to 81 and Sustainability Performance Review on pages 84 to 175.*

Risks Linked to Creating Value

Navigating volatile market conditions, technological disruptions and the complexities of the energy transition demands a robust and adaptive risk management approach. Recognising this, PETRONAS focuses on identifying, assessing and mitigating risks that could derail business ambitions and strategic objectives. By embedding risk considerations into decision-making processes, we safeguard our assets, ensure operational resilience and align with stakeholders' expectations. This approach enables us to drive strategic progress while reinforcing our commitment to contribute positively to the global energy landscape.

Strengthening Resilience through Risk Management

We implement a robust risk management and internal control system across PETRONAS and its subsidiaries (the Group), which is designed to manage exposures and leverage opportunities that drive sustainable value creation. The system provides reasonable assurance against material misstatements or losses.

Oversight of the system's adequacy and effectiveness rests with the PETRONAS Board, supported by the Risk Committee (RC), Audit Committee (AC) and Executive Leadership Team (ELT). Specific to the risk management system, a Risk Management Committee (RMC) and risk management functions support the implementation by ensuring an integrated approach when addressing risks and safeguarding organisational resilience.

Roles and Responsibilities

PETRONAS Board

Responsible for overseeing and ensuring a sound system of risk management and internal control across the Group.

RC
Risk Committee

Responsible for reviewing principal risks in the PETRONAS Corporate Risk Profile, as well as overseeing the adequacy and effectiveness of the risk management system for the Group.

AC
Audit Committee

Responsible for oversight functions in relation to the Group's internal controls.

ELT
Executive Leadership Team

Responsible for reviewing and reporting key risk management matters to RC and the Board.

+ *The above risk oversight structure shall be read together with Corporate Governance at PETRONAS on pages 186 to 205.*

RMC
Risk Management Committee

RMC serves as a central platform to support PETRONAS' Management and the Board in managing risks and maintaining acceptable levels of risks, as well as providing guidance and advisory on the Group's risk management system and its implementation.

Risk Management Functions

Risk management functions exist within the Group to drive risk management implementation, and provide risk reporting and assurance to PETRONAS Management and the Board that risks are effectively being managed across the Group.

How We Manage Risks

The PETRONAS Risk Policy underpins the Group's approach to risk management, driving the adoption of best practices and integrating risk-based decision-making into the processes of value protection and creation. By ensuring a balanced view of exposures, this approach aligns with our commitment to achieving business objectives while strengthening organisational resilience.

Supporting this policy is the PETRONAS Resiliency Model, which offers a cohesive framework for managing risks effectively across the organisation. It emphasises three core pillars of resilience: Enterprise Risk Management, Crisis Management and Business Continuity Management.

PETRONAS Risk Policy and PETRONAS Resiliency Model

PETRONAS Risk Policy

- **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.**

PETRONAS Resiliency Model

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, assets 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.

Risks Linked to Creating Value

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 mitigation measures, and monitoring of risk profile and risk appetite.

In intensifying our efforts to be a risk-resilient organisation, the 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 Risk Management Committee, Executive Leadership Team, Risk Committee and the Board.

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

Governance	Context Setting	Risk Assessment	Risk Treatment	Risk Monitoring and Review	Continuous Improvement
• Risk Policy • Organisation and Structure • Roles and Responsibilities	• External Context • Internal Context • Risk Appetite • Risk Criteria	• Risk Identification • Risk Analysis • Risk Evaluation	• Risk Treatment Strategy • Risk Treatment Plan	• Risk Reporting and Monitoring • Risk Information System	• Management System Review • Risk Assurance • ERM Capability Building

Crisis Management and Business Continuity Management

Crisis Management and Business Continuity Management are integrated processes, each governed by its respective PETRONAS Crisis Management Framework and Business Continuity Management Framework. These frameworks aim to prepare our domestic and international operations to effectively respond to crises and recover from any business disruptions.

For Crisis Management, we adopt a three-tiered response protocol that clearly defines roles and responsibilities at every level: emergency site management, operating unit management and corporate, while ensuring collaboration with internal and external response agencies and/or authorities. This structured approach enables us to respond effectively to crises that significantly impact the organisation's normal operations, particularly in terms of people, environment, assets and reputation, which could lead to substantial business disruption.

Meanwhile, Business Continuity Management focuses on strengthening our capabilities to recover and restore critical business functions to ensure the continuous delivery of products or services at predefined acceptable levels. This includes recovering effectively from prolonged crises that severely deteriorate and disrupt business operations and services and enabling a swift return to acceptable business operations with minimal disruption to stakeholders.

To drive continuous improvement and enhance capabilities, we periodically conduct testing and exercises by simulating crisis and business disruption scenarios identified in the respective crisis and business continuity plans. These exercises aim to ensure that the response and recovery strategies remain robust and effective.

Crisis Management and Business Continuity Management Frameworks

Governance	Crisis and Business Continuity Assessment	Response and Recovery Strategy	Testing and Exercising	Continuous Improvement
• Risk Oversight Structure • Roles and Responsibilities	• Identification of: – Crisis and business disruption scenario – Crisis threshold and critical business function	• Establishment of respective crisis and business continuity plan	• Conduct testing and exercises	• Management System Review • Risk Assurance • Crisis and Business Continuity Capability Building

Risks Linked to Creating Value

Risk Management in 2024

In 2024, we continued to address and manage material risks that are critical to our business and the nature of our operations. These risks, outlined below, have the potential to significantly impact the execution of our strategy and the continuity of our business operations, either directly or indirectly. Our proactive approach to risk management ensures we remain resilient and adaptive in an evolving landscape.

Material Topics CE CC EC IT LCT SC

Stakeholders C SIC GIP CN IO

Capitals FC MC IC NC

Market Risk MR

What It Means

The Group's performance is influenced by factors beyond our control. This includes market factors such as fluctuation in global and regional supply and demand for crude oil, gas and related products, competition from alternative energy sources, geopolitical tensions and macroeconomic headwinds. These factors can directly impact supply and demand, potentially leading to prolonged downturns or instability in crude oil, oil and gas product prices. Shifts in government policies and consumer preference toward cleaner and renewable energy sources as well as products could heighten the competition for conventional oil and gas products, requiring PETRONAS to diversify our core business.

Impact on Value

- **Price and Demand:** Geopolitical tensions, uneven growth across regions and slowdown in economic activities in key economies have contributed to weaker-than-expected demand for crude oil and related oil and gas products, limiting price growth, impacting our financial performance and shareholder returns.
- **Currency Fluctuations:** PETRONAS' revenue and costs are denominated in United States dollars. Movements in major currencies, particularly the dollar against the Malaysian Ringgit significantly impacts our revenue, operational costs and capital investments.
- **Changes in Market Preference:** A growing focus on climate change mitigation and adaptation, and increasing pressure to transition to a lower-carbon economy will continue to shape customer preferences, intensify competition in the energy market and affect returns for conventional oil and gas businesses, impacting our value chain.
- **Fulfilment of Contractual Obligations:** Changes in market dynamics will affect revenue, operational costs and counterparties' ability to fulfil contractual obligations as our commercial agreements are pegged to commodity prices. This could impede our growth prospects and ability to sustain our business.

Impact on Capital

- **Financial Capital:** Changes in market environment can disrupt steady returns and challenge the Group's future growth and business sustainability.
- **Manufactured Capital:** Changes in market conditions and increased market volatility can lead to fluctuations in the value of manufactured capital.
- **Intellectual Capital:** Rapid technological and market shifts can render existing intellectual capital redundant.
- **Natural Capital:** Shifting market environment 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 interventions through continuous monitoring and reviewing of portfolio composition and counterparty performance.
- Protect value, margin and cash flow against adverse crude oil and related oil and gas product price fluctuations and foreign exchange movements by undertaking hedging activities.
- Implement prudent financial risk management in accordance with principles stated in the PETRONAS Financial Policy and PETRONAS Financial Standards.
- Assess potential foreign exchange risk exposure for major capital projects at the investment decision phase to determine an appropriate risk management strategy.
- Advocate and raise awareness on business strategies by engaging with stakeholders, including governments, banks, financiers and investors to obtain support.

Tactical Opportunities

- The volatile commodity market presents opportunities for PETRONAS to capitalise on trading opportunities and unlock additional value by leveraging favourable price volatility. Growing awareness of climate change enables the inclusion of environmental, social and governance (ESG)-linked products into hedging and trading activities in line with the market's shift towards sustainable practices.
- Shifts in consumer preferences allow PETRONAS to diversify into new markets, including venturing into renewables and cleaner energy solutions and offering other ESG-related products.
- Geopolitical uncertainties may create new market avenues, supply bases and partnerships.
- Accelerating the use of digital and cost management tools and technology to mitigate the impact of price volatility provides an opportunity for PETRONAS to generate value.

Risk Movements

In 2024, persistent geopolitical tensions, particularly in the Middle East and Europe, alongside sustained price volatility and a prolonged elevated interest rate environment, continue to shape the global landscape. These ongoing concerns have heightened uncertainties in the value chain and global supply as well as demand for our products. If worsened, they will have a direct impact on our business. We will continue to manage these risks through the approved mechanisms, such as periodic strategic review of portfolio composition and hedging programmes, and monitor key signposts for early intervention.

Material Topics CC CG EC GHG IT LCT NB SC

Stakeholders FG SG HG C SIC IO

Capitals FC

Financial Liquidity Risk

FLR

What It Means

Our business activities require significant capital investments, sufficient operating cash flows and/or external financing for operational and growth projects in a timely manner. Influencing factors include unfavourable market conditions, any global and regional financial crisis such as the 2008 global financial crisis and 2023 US regional banking crisis, change in ESG and climate change-related regulations, and shifting operational and stakeholder requirements.

Impact on Value

- **Affordability and Capital Availability:** Our inability to maintain optimum liquidity position can reduce income, which can affect business agility and limit capital investment for future growth, as well as our ability to meet shareholders' expectations.
- **Credit Rating and Borrowing:** Lower income may lead to credit rating downgrades. Coupled with non-compliance with ESG and climate change requirements, this could increase our borrowing costs and limit our access to capital markets.
- **CAPEX Concentration:** Higher capital allocation towards new business and emissions reduction may impact our business portfolio and revenue stream due to delays in return realisation, resulting from lower yields compared to conventional oil and gas, challenges in securing the right talent and the timely deployment of technology.

Impact on Capital

Financial Capital: Regulatory changes, market conditions, stakeholder demands and business challenges can impact our financial and liquidity position, affecting our ability to maintain 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 line with the PETRONAS Financial Policy and PETRONAS Financial Standards to attain financial resiliency.
- 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 established oversight platforms.
- Drive timely interventions to address liquidity gaps through regular monitoring and reviewing of our liquidity position against our risk appetite on liquidity and indebtedness levels.
- Protect value and margins against adverse price movements by undertaking hedging activities and utilisation of approved financial derivatives such as forwards and swap contracts to provide greater predictability of financial results and to mitigate the downside risks.
- Improve PETRONAS' response in safeguarding the Group's financial sustainability by implementing liquidity crisis management and business continuity measures aligned with the established Liquidity Risk Contingency Protocol.
- Ensure readiness for external funding and borrowing through timely and comprehensive reporting and continuous engagements with stakeholders, including governments, banks, financiers and investors.

Risk Movements

Financial liquidity risk indicators remain elevated even with the implementation of controls and mitigations, including strict capital discipline and robust portfolio management amid the market's volatility, varying stakeholder demands, changes in regulatory requirements and business challenges. However, supplementary measures such as liquidity buffers and internal borrowings are in place to address gaps and ensure financial stability, if needed.

Risks Linked to Creating Value

Material Topics

CC CG CDP EM EI HR

Stakeholders

FG SG HG C SIC GIP IO

Capitals

FC HC SRC

Legal and Regulatory Risk

LR

What It Means

PETRONAS operates within a complex legal and regulatory landscape, adhering to critical laws with enterprise risk and extra-territorial effects such as ethics, anti-bribery, corruption, sanctions, competition and data privacy. Our business also requires adherence to a multitude of existing, evolving and emerging regulatory requirements at the operational level. We are also exposed to claims and legal proceedings involving human rights, tax, workforce non-compliance and others, which impact the broader organisation, including financials and reputation.

Impact on Value

- **Litigation Uncertainties:** Adverse litigation and commercial disputes can negatively affect our operations, financial condition and reputation.
- **Emerging Regulations:** The accelerated pace of the energy transition and evolution of regulatory requirements in other areas such as human rights exposes us to the need to adapt and comply with emerging regulations and policies, which could increase compliance costs and impact our licence to operate.
- **Policy Uncertainties:** Changes in the business landscape, including political and socio-economic landscape where we operate may expose PETRONAS to policy uncertainties and regulatory changes, which may impact the running of our businesses.

Impact on Capital

- **Financial Capital:** Legal and regulatory breaches and inability to meet regulatory requirements can lead to financial penalties, reduce our 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 confidence.
- **Human Capital:** Non-compliance with legal requirements could undermine our reputation as a preferred employer, leading to potential talent loss.

Mitigation Strategies

- Strengthen legal and regulatory governance by implementing frameworks such as the PETRONAS Code of Conduct and Business Ethics, PETRONAS Legal Compliance Framework and PETRONAS Contractors Code of Conduct on Human Rights.
- Establish Whistleblowing/Centralised Complaint Management System to foster accountability and ethical behaviour as part of ethics and integrity management. The system offers a secure platform for employees to express their views openly and to take decisive actions towards progress.
- Increase awareness and competency of our workforce through regular training and communication on applicable laws.
- Drive proactive interventions through regular monitoring and reviewing of our legal, regulatory and anti-corruption compliance against our risk appetite.
- Implement identified action plans with specific short-, medium- and long-term targets to achieve net zero carbon emissions by 2050 and manage other sustainability-related regulatory impacts.

Risk Movements

Legal and regulatory risk is elevated especially in the areas of critical laws and the sustainability space. Key contributing factors are persistent geopolitical tensions, national elections and fragmented alliances that heighten our exposure to sanction laws. Another factor impacting our business is the accelerated pace of emerging regulatory requirements. The impact to our business is managed through the implementation of the PETRONAS legal and integrity frameworks, as well as a dedicated sustainability regulatory oversight function. This ensures we continue to adhere to evolving and emerging laws and regulations, while also playing an advocacy role to shape the regulatory ecosystem.

Material Topics

CE CC EC EM GHG HW HR IT LCT NB SM SC

Stakeholders

FG SG HG C E SIC M GIP CN IO

Capitals

FC MC HC NC SRC

Sustainability Risk

SR

What It Means

PETRONAS acknowledges the scientific consensus on climate change and inconsistent stakeholder expectations for a lower-carbon economy. We are committed to our Net Zero Carbon Emissions by 2050 Pathway and continue to integrate sustainability into our strategy and operations. Adapting to evolving regulations and mandatory disclosure standards necessitates a further strengthening of efforts. In doing so, PETRONAS remains equally focused on compliance, reinforcing responsible operations and contributing towards a just and equitable transition that fosters greater social progress.

Impact on Value

- **Capital Market Access:** The inability to meet ESG requirements of financial institutions and investors may limit and constrain our access to capital, affecting our overall growth.
- **Competitive Standing:** Ineffective management of our sustainability-related risks and opportunities will impact our ability to retain preferred-partner status and capture opportunities in the energy transition in a timely manner. This may diminish our competitive edge in the energy industry and have an adverse effect on our long-term earnings, cash flows and financial condition.
- **Energy Transition Challenges:** The inability to offer competitive low-carbon energy solutions may impact our contribution to Malaysia's national energy transition efforts. If the market for cleaner energy projects weakens, or if PETRONAS is unable to meet expectations due to regulatory or technical challenges, adverse weather, or the inability to secure offtake agreements for energy generated from cleaner energy projects at economically viable terms, our revenue, liquidity and financial standing may be adversely affected.

Impact on Capital

- **Financial Capital:** Delivering our commitments on emissions reduction and developing lower-carbon solutions exposes us to higher capital and additional operating costs, as these technologies are new and may be less effective or more expensive than anticipated in the short term to achieve long-term benefits.
- **Manufactured Capital:** Physical impacts of climate change may cause damage to our assets, disrupt operations and adversely impact our value chains. A global transition to lower-carbon energy sources could reduce demand for many of PETRONAS' products, leading to lower revenue and potential asset impairment as they are no longer economically viable for development or operation.
- **Social and Relationship Capital:** If not well understood by the broader public, our energy transition strategy and efforts to shift towards a lower-carbon business may lead to a disconnect in expectations, potentially damaging our brand and reputation, eroding trust and confidence, and affecting our ability to secure resources and attract talent. Any erosion of PETRONAS' reputation may impede our strategic objectives and affect our overall financial performance.
- **Human Capital:** Transitioning to a lower-carbon business will require specialised skills that need to be acquired as part of our talent acquisition and development strategy. The inability to advance towards a just transition that respects human rights is detrimental to our operations and enterprise reputation.
- **Natural Capital:** The inability to mitigate our impact on nature and biodiversity could affect our reputation and long-term survivability.

Mitigation Strategies

- Pace the implementation of our action plans to realise our Net Zero Carbon Emissions by 2050 Pathway with specific short-, medium- and long-term targets, while closely monitoring our emissions reduction performance, evolving volatility in stakeholder expectations and customer sentiments.
- Invest in training, formal vocational and tertiary education to ensure skillsets match business needs.
- Systematically elevate our business activities according to international standards for human rights through the establishment of a Human Rights Policy and associated implementation.
- Maintain a disciplined approach to funding our emissions reduction projects and activities, and advancing lower-carbon energy solutions.
- Operationalise the PETRONAS Nature and Biodiversity Position to conserve, protect and restore nature in Malaysia and in countries where we operate, in support of our commitment to Net Zero Carbon Emissions by 2050 Pathway.
- Deepen the understanding of how climate change affects the resilience of our assets and value chains to ensure we remain adaptive and future-ready in a rapidly evolving risk landscape.

Tactical Opportunities

- Capture new growth opportunities in areas, including biofuels, specialty chemicals, circular economy, renewable energy and hydrogen value chains.
- Deployment of emissions reduction and lower-carbon solutions presents opportunities for new partnerships, collaborations and investment opportunities.
- Explore new revenue streams in carbon capture and storage, and energy efficiency solutions.
- Implement capacity-building programmes to support suppliers in strengthening their understanding of human rights and aligning with applicable legislation and PETRONAS standards.

Risk Movements

Inconsistent expectations from investors, customers and regulators continue to create expectation gaps, leading to intensified scrutiny on energy companies' ability to contribute towards energy security, deliver measurable emissions reductions and transform their business models. In this regard, we actively share our energy transition progress while implementing targeted greenhouse gas reduction projects to meet short- and medium-term goals. We are growing our cleaner energy solutions business through our subsidiary, Gentari Sdn Bhd (Gentari), while strengthening internal governance and sustainability capacity, including rolling out the PETRONAS Carbon Commitment, PETRONAS Position on Nature and Biodiversity, and PETRONAS Human Rights Policy across our business entities.

Risks Linked to Creating Value

Material Topics

CE CG CDP EC EAR EM HW HR IT NB SM SC

Stakeholders

FG HG C E GIP CN IO

Capitals

FC MC HC NC SRC

Health, Safety, Security and Environmental Risk

HSR

What It Means

Given the nature of the industry in which PETRONAS operates, health, safety, security and environmental (HSSE) risks may arise from our operations and project execution-related activities. There are also risks associated with regulatory compliance, operational challenges and threats from physical attacks or civil unrest in some of the countries where PETRONAS has investments. We also face emerging risks from technological advancements, including cyber-physical threats. Evolving regulations on product safety and environmental impact have further added to our operational complexities. Managing these risks requires vigilant oversight of our operations, as well as our stakeholders, assets and natural resources.

Impact on Value

- **Operational Incidents:** Any HSSE incident that results in injuries, loss of life or damage to assets and the environment can disrupt our operations, impact our reputation and increase cost of doing business.
- **Security Threats:** Security threats, particularly in high-risk countries, require thorough, disciplined and frequent internal assessments to safeguard our personnel, business operations and assets.
- **Stringent Regulations:** Evolving and more stringent regulatory requirements may increase cost of compliance and cause delay or failure to obtain regulatory approvals, impacting PETRONAS' business, financial position, operations and reputation.

Impact on Capital

- **Financial Capital:** HSSE incidents can result in penalties, compensation, asset damage and operational disruptions, impacting our financial position.
- **Social and Relationship Capital:** HSSE incidents can erode stakeholders' trust and damage our reputation.
- **Natural Capital:** The inability to contain HSSE incidents can damage the environment and threaten 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 favourable employer.
- **Manufactured Capital:** HSSE incidents can damage and impact the security of our assets.

Mitigation Strategies

- Sustain HSSE governance with dedicated health, safety and environmental (HSE) and security management systems, supported by the HSE Mandatory Control Framework and PETRONAS Security Standards.
- Enhance the competency of our employees, contractors and partners, leveraging digital solutions and technology for operational discipline through training programmes for HSSE business leads and practitioners.
- Enhance the culture of accountability by reinforcing positive behaviours and promoting collective commitment to HSSE excellence.
- Optimise HSSE readiness through continuous digital monitoring and use of predictive analysis platforms.
- Strengthen organisational resilience through the implementation and periodic reviews and simulation exercises of HSSE crisis and business continuity plans.

Risk Movements

While HSE risk remains inherent, the security risk landscape has elevated particularly for our operations in the Middle East. We manage these risks by continuously improving our processes and mitigation strategies. We focus on preventing major incidents, ensuring legal compliance and addressing evolving security threats to protect our people, environment, assets and reputation. Our efforts include strengthening the Accountability and Behaviour Reinforcement programme, conducting periodic HSSE crisis and business disruption simulation exercises and enhancing management oversight through management site visits to foster a strong Generative HSE Culture.

Material Topics

CG CDP EC EAR EI SC

Stakeholders

FG SG HG C SIC IO

Capitals

FC MC HC SRC

Geopolitical Risk

GR

What It Means

Our global footprint exposes our business activities to various political, legal and fiscal developments. This includes regulations and directives, which in turn, could limit development plans, production volumes, export limits, pricing and trade policies, local content prioritisation, environmental protection controls, commercial agreements sanctity, possible nationalisation of assets, expropriation and cancellation of rights. Additionally, the risk of armed conflicts and civil unrests will trigger asset and manpower reviews and reprioritisation. Developments in these areas have the potential to directly or indirectly impact our commercial and operational strategies, as well as our financial position.

Impact on Value

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

Impact on Capital

- **Financial Capital:** Unfavourable geopolitical developments may subject our business to penalties and litigations, disrupt business operations and growth, impacting cash flows and financial position.
- **Manufactured Capital:** Escalation of geopolitical incidents may cause disruptions to the supply chain and impact our assets in the affected locations.
- **Human Capital:** Escalation of geopolitical incidents may compromise the safety and security of our employees in the affected locations.
- **Social and Relationship Capital:** The inability to manage key relationships in areas where we operate may damage our reputation, erode stakeholder trust and affect our licence to operate.

Mitigation Strategies

- Execute effective and robust country risk management by establishing a dedicated and robust stakeholder management function in identified countries where we operate, to ensure effective implementation of legal and regulatory requirements and for intelligence gathering to identify emerging geopolitical risks in the respective countries.
- Conduct risk assessments and due diligence in supporting international investment decisions during all phases of the business value chain including but not limited to acquisition of assets phase, pre-entry, in-country, exit management and crisis management covering all phases of the business value chain. This includes continuous review of supply chain and sourcing strategies, contract renegotiations and identification of alternative sources.
- Drive proactive exposure management through periodic monitoring and review of our investment portfolio against our risk appetite.
- Improve the quality of life and socio-economic outcomes for communities where we operate through continuous social programmes.

Tactical Opportunities

- Seize opportunities in non-traditional markets to bridge supply-demand gaps and enhance energy security.

Risk Movements

Geopolitical risk is becoming more complex amid an increasingly dynamic and volatile geopolitical landscape, affecting oil and gas-producing nations. In 2024, the Middle East conflict and attacks on vessels in the Red Sea, and the South China Sea situation resulted in soaring global shipping rates, heightening our exposure, underscoring the need to safeguard our people and operations. We manage this risk by closely monitoring key developments, strengthening security measures and implementing targeted intervention plans. These efforts enable us to navigate uncertainties and ensure business resilience.

Risks Linked to Creating Value

Material Topics

CE EM EI GHG LCT SC

Stakeholders

FG SG HG C GIP IO

Capitals

FC MC IC

Hydrocarbon Reserves and Resources Risk

HR

What It Means

Our ability to produce and supply oil and gas is linked to successful discovery and effective development of such reserves and resources to fulfil our commitments. This involves exploration success, project maturation, reservoir performance, asset acquisition or reprioritisation, and commercial arrangements. Given the nature of the business, exploration activities are exposed to technical challenges and limited information, while production activities have to contend with issues relating to declining pressure, and equipment integrity and reliability. Changes in policies can also affect the valuation of our assets.

Impact on Value

- **Supply Shortfalls:** Insufficient supply can lead to third-party sourcing at a premium or otherwise failure to meet customer demands, resulting in contract non-performance, loss of trust, market share erosion and lower profitability.
- **Impairment Impact:** A downward revision of reserves can happen due to poor exploration results or technical challenges. This, in turn, will impact future cash flows and potentially result in the need to impair.

Impact on Capital

- **Financial Capital:** Inability to monetise resources, including a viable commercial arrangement, can jeopardise the Group's operations and financial stability.
- **Intellectual Capital:** Challenges in developing discovered resources and failure to integrate new technologies and innovations can erode project value and weaken asset performance.
- **Manufactured Capital:** Internal and external challenges such as technical, high contaminant fields may impact reserves and resources, reduce asset efficiency and disrupt operations.

Mitigation Strategies

- Strengthen resource path to monetisation through execution of area development plan, acceleration of resource maturity and increase reserves base according to the established plans.
- Improve reservoir and field performance through execution of robust operational excellence programmes to manage asset integrity and reliability issues, 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 to ensure stringent monitoring.

Tactical Opportunities

- Technical challenges have prompted the deployment of the Right Asset, Right Player strategy to align suitable assets with capable partners supported by progressive fiscal terms to ensure equitable returns for PETRONAS and partners.
- Leverage fit-for-purpose technologies to address technical challenges and enhance project and asset efficiency, value and investment appeal.

Risk Movements

Hydrocarbon reserve and resource indicators remain uncertain due to project deferments that can result in negative movements in the reserves and resources valuation. Nonetheless, targeted interventions are in place to manage reserves and resources, ensuring we meet our contractual commitments.

Material Topics CE CG CDP EC EM GHG IT SC

Stakeholders C E SIC

Capitals FC MC IC SRC

Technology Risk

TR

What It Means

Our expanding digital footprint unlocks new opportunities and enhances business processes but it invariably increases our vulnerability to cyber threats. Sophisticated attacks targeting vulnerabilities in inherent digital infrastructure pose risks to data and systems confidentiality, integrity and availability. Identity theft and unauthorised access further heighten our security concerns. Aside from cyber security risks, rapid technological advancements and digital shifts present risks of obsolescence, challenging our long-term competitiveness.

Impact on Value

- **Cyber Security Threats:** Undetected cyberattacks have the potential to disrupt our operations, compromise the safety of our employees, and result in legal and regulatory penalties, thereby damaging our reputation.
- **Technological Obsolescence:** Ineffective development and deployment of technology can materially impact our strategic delivery and operational credibility.

Impact on Capital

- **Manufactured Capital:** Failure to innovate and adapt to technological advancements and digital shifts in a timely manner can lead to operational disruptions and technological obsolesence.
- **Intellectual Capital:** Ineffective innovation and adaptation to technological advancements and digital shifts can result in the obsolescence and inability to create value from our intellectual assets.
- **Financial Capital:** Inability to innovate and adopt new technologies and digital shifts may impact our competitiveness and financial returns.
- **Social and Relationship Capital:** Inadequate implementation of cyber defence measures can harm our reputation and erode stakeholder confidence.

Mitigation Strategies

- Maintain robust digital, and information and communication technology governance through continued focus on cyber security, enterprise architecture, enterprise data and digital project delivery, including enforcing Enterprise Cyber Security Governance Framework, PETRONAS Cyber Security Incident Response Procedure and Cyber Security Ransomware Crisis Management.
- Enhance organisational resilience through implementation and periodic review of the relevant information and communication technology, and cyber security crisis management and business continuity measures that are supported by the established security operations centre and related cyber security monitoring, threat hunting and incident management capabilities.
- Increase competitive advantage by executing in-house research and innovation solutions, leveraging PETRONAS Technology Management System.
- Establish an artificial intelligence Centre of Excellence to govern and scale artificial intelligence capabilities effectively, strengthen implementation oversight and promote responsible use.
- Foster innovation culture by establishing platforms for employees to develop innovative ideas and incorporating technology considerations into investment strategies and decisions, particularly for new businesses.
- Protect innovation and Intellectual Property through establishment and periodic review of policies at the enterprise level.
- Ensure availability of capable resources to develop and deploy technology by recruiting experts for research and development, and continuously upskilling our researchers.
- Advocate for and implement the Cyber Security Act 2024 for the oil and gas industry in Malaysia.

Tactical Opportunities

- Innovative practices and new technology, including advancement and deployment of artificial intelligence, will foster an ecosystem that creates value for the organisation, accelerates growth efforts and supports emissions reduction initiatives.
- Rapid technological advancements present opportunities for monetisation through matured technologies and innovative solutions.

Risk Movements

Technology risk continues to evolve amid a rapidly changing operating landscape. In 2024, the growing prominence of artificial intelligence has further heightened exposure to technological and cyber security threats. As these risks become more sophisticated, we are strengthening technology management, cyber resilience, responsible artificial intelligence usage and information security. We also implement innovative measures, including adopting the latest technologies and leveraging artificial intelligence-driven solutions to stay ahead of emerging threats and drive continuous improvement.

Risks Linked to Creating Value

Material Topics

CE CC CG CDP EC EM EI HW HR IT SM SC

Stakeholders

FG SG HG E SIC GIP IO

Capitals

FC MC IC SRC

Execution Risk

ER

What It Means

Our business is dependent on the successful delivery of complex, long-term and capital-intensive projects, and maintaining high levels of asset integrity, in providing value-added solutions for our customers. The challenges faced include technical issues and supply chain disruptions which could impact the ability to achieve the target schedule, budget and scope.

Impact on Value

- **Project Delivery Delays and Cost Escalations:** Delays in the execution and cost overruns of capital-intensive projects can adversely impact our business strategy, operations and financial condition.
- **Supply Chain Disruptions:** Disruptions in the supply chain can lead to delays in delivery and cost escalations for critical goods, jeopardising production continuity and the ability to meet customer demands while weakening competitive market positioning.
- **Capital Investment Gap:** Insufficient capital investment can compromise project viability, hindering production targets, competitiveness and sustainability goals in an evolving market.

Impact on Capital

- **Financial Capital:** Poor planning, ineffective execution of projects, disruptions in supply chain as well as lack of skilled manpower, can lead to project and operational disruptions. If these exposures are not well managed, they can significantly impact our financial standing, future earnings, cash flow and operations flow.
- **Intellectual Capital:** Lack of innovation in our execution may lead to outdated intellectual property and improper technology application, resulting in economic loss.
- **Social and Relationship Capital:** Operational disruptions, product quality reliability issues, disruptions in the supply chain, including challenges from our vendors and partners, may damage our reputation and erode stakeholders' confidence.
- **Manufactured Capital:** Poor project execution and improper management of assets can weaken operational performance and damage our assets and facilities.

Mitigation Strategies

- Dedicate adequate time and resources during the Front-End Loading phase, project execution and operational activities, to ensure strict gatekeeping and adherence to compliance frameworks such as the PETRONAS Group Project Management System, PETRONAS Asset Management System, PETRONAS Procurement Standard, and Plant and Facility Risk Management Guideline.
- Strengthen organisational resilience through implementation and periodic review of the relevant crisis management and business continuity measures, including re-evaluation of sourcing strategies, contract renegotiations and identification of alternative sources.
- Foster innovative partnerships with Malaysian financiers for vendor financing and nurture local vendors through the identified vendor development programmes.
- Enhance the competency of employees through capability development programmes and collaboration with contractors, peers and partners.
- Ensure efficient delivery of planned projects through established line-of-sight platforms, targeted discussions, identified quick wins and implemented structural changes to facilitate early intervention.

Tactical Opportunities

- Amid an increasingly complex environment, achieving project and operational excellence presents an opportunity to strategise on ensuring long-term security of supply at competitive prices and maintaining competitive advantage through strategic partnerships with key suppliers.

Risk Movements

Execution risk continues to evolve mainly due to volatility and disruptions in the supply chain as a result of regulatory changes, demand fluctuations and raw material shortages. Taking cue from the escalation of prices and a heated market, the industry's ability to adapt and innovate in response to rising cost is vital to ensure resilience and long-term growth. We manage this risk through the implementation of proactive and strategic supply-demand planning, robust asset management and procurement strategy, as well as business continuity measures that are periodically reviewed and tested to ensure our adaptability to the volatile environment.

Material Topics

CE CG EC EAR EI HW IT LCT SM

Stakeholders

FG SG HG E SIC GIP CN IO

Capitals

FC MC HC IC SRC

Human Capital Risk

HCR

What It Means

Our people are vital to PETRONAS' pursuit of business goals and the successful execution of the PETRONAS Energy Transition Strategy and our Net Zero Carbon Emissions by 2050 Pathway. Attracting the right talent, retaining critical skills and fostering continuous talent development remain key challenges as we build a continuously strong workforce in the face of a rapidly evolving industry landscape, heightened competition and technological advancements.

Impact on Value

- **Talent Pipeline:** The inability to attract and retain skilled talent can weaken our talent pipeline and ability to remain competitive.
- **Strategy Delivery:** The inability to create and have the right mix of capable workforce with the right culture and mindset that aligns with the company's goals may affect timely execution of our strategies and aspirations, leading to potential opportunity loss and impact our long-term goals and sustainability.

Impact on Capital

- **Human Capital:** Failure to retain our standing as a preferred employer may impact our ability to attract and retain talent.
- **Social and Relationship Capital:** Failure to retain our position as an employer of choice may impact our reputation, eroding stakeholder confidence.
- **Intellectual Capital:** Failure to recruit, develop and align talent aspiration 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 ineffective strategy execution and operational disruptions.
- **Financial Capital:** Failure of PETRONAS employees to adapt to the right work culture and mindset, can impede the successful execution and realisation of PETRONAS' strategy and can have adverse impact on earnings, cash flows and financial standing.

Mitigation Strategies

- Implement strategic workforce planning through analytical tools to improve talent fulfilment.
- Keep our workforce competitive and agile by developing programmes with reputable learning institutions and intensifying upskilling and reskilling efforts in key business areas.
- Strengthen and ensure a sustainable pipeline of talent through education sponsorship programmes, partnerships and on-the-job training.
- Foster a high-performance culture through the implementation of various programmes and activities anchored on the PETRONAS Cultural Beliefs, Shared Values, and diversity and inclusion initiatives.
- Enhance leadership capabilities through structured assessments and development programmes.

Tactical Opportunities

- Heightened competition for talents creates opportunities for us to establish long-term partnerships with government agencies and learning institutions for better access to resources and research and development.
- Technological advancements provide opportunities to enhance how we work through automation, upskilling, reskilling and more efficient use of data to meet evolving workforce needs.

Risk Movements

Human capital risk remains amid evolving workforce expectations, technology advancements and ongoing challenges in acquiring, retaining and developing talent. These dynamics are relevant across both core and emerging business areas in line with the pace of the energy transition. In response to this, we continuously refine our approach to strategic workforce planning, anchoring on meritocracy, inclusivity and continuous growth to ensure a resilient workforce.

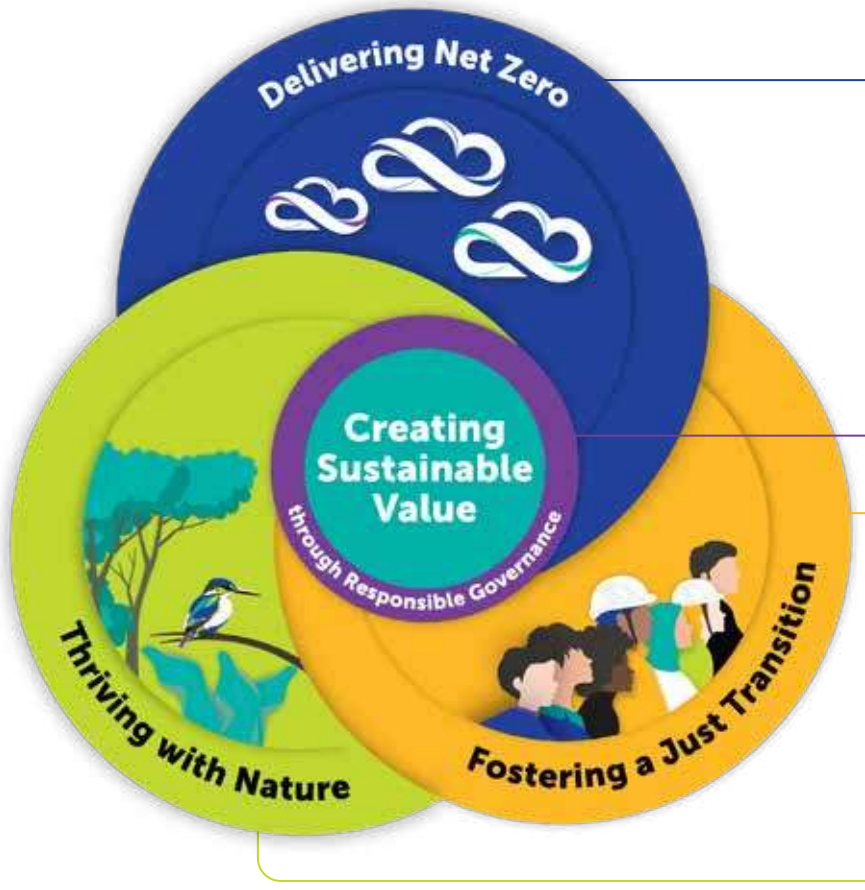
Our Approach to Sustainability

The refreshed PETRONAS Sustainability Approach provides a unified approach to navigate and support the delivery of the PETRONAS Energy Transition Strategy, while grounded in responsible governance.

This approach marks a new step in our sustainability journey, moving us from ambition to action to create an enduring positive impact.

It is designed to seamlessly integrate climate change, nature and social considerations into our practices and processes, making sustainability a value driver to our Core and New Business functions.

By thoroughly embedding sustainability across the organisation, we aim to strengthen resilience, drive results and create desired impact wherever we operate.



Creating Sustainable Value through Responsible Governance

Delivering Net Zero

Thriving with Nature

Fostering a Just Transition

Scan the QR code to access PETRONAS' Sustainability Governance Structure.

	Material Topics	Align with UN SDGs
With our purpose guiding our efforts to be a progressive energy and solutions partner, we believe that creating sustainable value and practising responsible governance are essential for organisational resilience. This approach supports our PETRONAS Energy Transition Strategy, including our ambitions of achieving net zero carbon emissions, thriving with nature and fostering a just transition.	CG Corporate Governance CDP Cyber Security and Data Protection EC Economic Contribution EI Ethics and Integrity IT Innovation and Technology LCT Lower-Carbon and Energy Transition Business SM Safety Management	7, 8, 9, 13, 16
The evolving energy landscape requires urgent action to respond to the expanding challenge of climate change. To deliver on our Net Zero Carbon Emissions by 2050 Pathway, we will reduce emissions across our core operations while also investing in lower-carbon business growth opportunities, and deepen our understanding of how climate change affects the resilience of our assets and value chains to ensure we remain adaptive and future-ready.	CC Climate Change GHG Greenhouse Gas Emissions	7, 13
Nature and biodiversity are essential for sustaining life on Earth and we recognise our operations' impact on them and our dependency on healthy ecosystems. We are committed to using natural resources responsibly, promoting circular practices and, where possible, addressing the loss of nature and biodiversity. We engage in practices that restore, protect and conserve ecosystems in Malaysia and the countries where we operate.	CE Circular Economy EM Environmental Management NB Nature and Biodiversity	9, 12, 13, 14, 15
While energy transition will vary from country to country, it must always be inclusive and drive broader societal progress. We are committed to advancing a just transition that upholds human rights and support our employees, contractors, suppliers, partners and communities to have access to equitable opportunities for socio-economic growth.	EAR Employee Attraction, Retention and Development HW Health and Well-being HR Human Rights SC Sustainable Supply Chain	3, 4, 8, 12

Material Topics

Identifying and managing material topics enable us to focus on the issues that have the greatest impact on our long-term business performance and are most important to our stakeholders. This ensures our strategy remains aligned with both external expectations and operational priorities.

In 2024, our sustainability priorities remain anchored to the material topics identified through our materiality assessment. We continue to strengthen our materiality assessment process in line with the latest developments in sustainability reporting. This includes new regulatory and disclosure requirements, such as the European Sustainability Reporting Standards (ESRS) and Malaysia's National Sustainability Reporting Framework (NSRF), which are aligned with the IFRS Sustainability Disclosure Standards.

Since 2022, we have applied a double materiality approach to assess the impacts of material topics to the external environment (impact materiality) and the financial implications of the material topics to our business (financial materiality).

Impact Materiality

Evaluated from both positive and negative aspects, covering actual and potential impacts from our own operation on society and environment, and business relationships in the upstream and downstream value chain.

Financial Materiality

Evaluated in terms of negative consequences from reputational, financial or commercial risks associated with the material topics, as well as positive upside risks or opportunities.

Our materiality assessment identifies 16 key topics that are material to PETRONAS, guiding the management of sustainability efforts. This assessment highlights the significance of perceived impacts and trends compared to the previous year.

Sustainability Approach

Creating Sustainable Value through Responsible Governance

Material Topics	Descriptions
CG **Corporate Governance**	Corporate Governance is crucial for ensuring accountability, performance and transparency within PETRONAS. Strong governance can enhance business resilience and attract investors, fostering trust among stakeholders and promoting long-term sustainability.
CDP **Cyber Security and Data Protection**	Cyber Security and Data Protection is vital as PETRONAS increasingly employs digital solutions. A strong cyber security framework and investment in advanced protective measures ensure business continuity and safeguard stakeholder information, maintaining trust and operational integrity, in an environment where cyber attacks pose greater security threats.
EC **Economic Contribution**	Our ability to drive long-term business growth goes hand-in-hand with the prosperity of the markets and communities in which we operate. We contribute to development that benefits multiple segments of society through the generation of economic value from our products and services, capital payouts, payments to government, compensation to employees and vendors, as well as financial contribution towards social and environmental causes.
EI **Ethics and Integrity**	Ethics and Integrity are fundamental to maintaining PETRONAS' reputation and enabling responsible business practices. Fostering strong ethical practices can enhance stakeholder relationships, operational integrity, and a culture of high ethical standards and trust.
IT **Innovation and Technology**	Innovation and Technology drive PETRONAS' ability to adapt to industry shifts and deliver sustainable energy solutions. Investing in technologies presents an opportunity to position PETRONAS as a leader in the energy transition, with positive impacts including enhanced operational efficiency and sustainable practice.
LCT **Lower-Carbon and Energy Transition Business**	Lower-Carbon and Energy Transition Business presents opportunities for PETRONAS in renewables and lower-carbon energy solutions. Our PETRONAS Energy Transition Strategy directs our efforts to invest in promising new energy value chain reduce emissions and better meet stakeholder expectations while contributing towards global climate goals in a financially prudent manner.
SM **Safety Management**	Safety Management is essential for ensuring the safety of our employees, contractors and communities. Implementing strong safety practices can mitigate risks and improve operational efficiency.

After two revalidation cycles of our material topics in 2022 and 2023, we completed a comprehensive assessment in 2024. Our double materiality assessment process in 2024 included an overview of our value chain, and alignment of impact thresholds with risk thresholds, as per our Risk Quantification Guideline. We also considered the impact of our material topics and the associated risks and opportunities over the short-, medium- and long-term.

Our Materiality Assessment Process

Identification

We identified potential material topics by considering regulatory requirements on reporting and disclosure standards, stakeholder perspectives, peer-benchmarking and media insights.

Stakeholder Engagement

We gathered stakeholder views through external surveys and through internal workshops. Guided by the PETRONAS Risk Quantification Guideline, these inputs were used to assess the impact and financial materiality of the various topics.

Prioritisation

Topics were further prioritised in response to Board and Executive Leadership Team insights, and recalibrated in consultation with Group strategy and risk management teams to align with our strategic priorities and risk profile.

Endorsement

The materiality assessment results were endorsed by the PETRONAS Sustainability Committee and approved as per company internal governance.

Legend: ●○○ *Material* ●●○ *More Material* ●●● *Most Material* ▲ *Increase In Impact* = *No Changes In Impact* ▼ *Decrease In Impact*

Impact Materiality		Financial Materiality		Our Response
Significance	Trend Compared to 2023	Significance	Trend Compared to 2023	
●●○	▲	●●○	=	+ *Please refer to Corporate Governance at PETRONAS on pages 186 to 205.*
●●○	=	●●○	▲	+ *Please refer to Cyber Security and Data Protection on pages 90 to 91.*
●●●	▲	●●●	▲	+ *Please refer to Key Messages on pages 14 to 28.*
●●○	▲	●●○	=	+ *Please refer to Commitment to Governance on pages 176 to 205.*
●●○	=	●●○	▲	+ *Please refer to Strategic Review on pages 60 to 81.*
●●●	=	●○○	▼	+ *Please refer to Strategic Review on pages 60 to 81 and Delivering Net Zero on pages 92 to 111.*
●●○	=	●●●	=	+ *Please refer to Safety Management on pages 85 to 89.*

Material Topics

Sustainability Approach	Material Topics	Descriptions
Delivering Net Zero	CC Climate Change	Climate change presents both challenges and opportunities for PETRONAS. This include potential physical risks to PETRONAS' assets and value chain, as well as transition risks that encompass regulatory and market challenges associated with climate change. Proactive climate risk management offers the opportunity to protect assets, enhance business continuity, ensure resilience and build stakeholder confidence. However, failing to manage these risks may pose significant threats to assets in the form of extreme weather events reducing demand for our products and disrupt operations, potentially leading to financial losses, regulatory non-compliance and reputational damage.
	GHG Greenhouse Gas Emissions	Managing our Greenhouse Gas (GHG) Emissions is critical for PETRONAS to achieve our commitment to net zero carbon emissions by 2050. Our emissions reduction efforts are carried out through four key abatement levers to attain our emissions reduction targets. Failure to address our emissions could lead to financial losses and reputational damage.
Thriving with Nature	CE Circular Economy	Circular Economy practices promote resource efficiency and waste reduction. Creating value from waste presents new business opportunities, enhances regulatory compliance and strengthens stakeholder trust.
	EM Environmental Management	Our Environmental Management is guided by responsible resource utilisation, pollution prevention and sustainable practices. Our internal standards steer our operations in managing air emissions, wastewater, waste, water use and oil spill prevention, ensuring regulatory compliance and protecting natural resources.
	NB Nature and Biodiversity	With climate change being a significant driver of biodiversity loss and the risk of irreversible damage to ecosystems, PETRONAS is committed to deepening our understanding of both our impacts on and dependencies upon Nature and Biodiversity. Our ability to address our impacts responsibly is essential to maintaining our social licence to operate, avoiding fines, operational disruptions, financial losses, and ensuring long-term business resilience.
Fostering a Just Transition	EAR Employee Attraction, Retention and Development	Employee Attraction, Retention and Development is vital for cultivating an agile, skilled and motivated workforce. Investing in employee development helps build a future-ready workforce, driving business success and ensuring continuity in delivering our strategy. Retaining and developing existing talent can strengthen business sustainability and resilience in the long run.
	HW Health and Well-being	The Health and Well-being of employees is important to PETRONAS to ensure a productive and healthy working environment. Proactive measures to foster a sound work culture negate the risks of employees feeling undervalued, experiencing low morale or facing reduced productivity.
	HR Human Rights	Respecting Human Rights across our operations and supply chains is fundamental to ethical and sustainable business practices at PETRONAS. Upholding human rights practices fosters trust, strengthens stakeholder relationships and promotes fair labour practices. Failure to address human rights risks can lead to human rights abuses, legal consequences, financial losses and reputational harm, ultimately impacting business resilience and long-term success.
	SC Sustainable Supply Chain	Sustainable Supply Chain management promotes ethical sourcing while minimising environmental and social impacts across the value chain. It ensures that products are safe, sustainable and responsibly managed. These initiatives also drive cost efficiencies, foster innovation in sustainable materials and processes, and strengthen brand reputation, ultimately creating value for both the business and our stakeholders.

Legend: ●○○ *Material* ●●○ *More Material* ●●● *Most Material* ▲ *Increase In Impact* = *No Changes In Impact* ▼ *Decrease In Impact*

Impact Materiality		Financial Materiality		Our Response
Significance	Trend Compared to 2023	Significance	Trend Compared to 2023	
●●○	▼	●●○	▼	+ *Please refer to Delivering Net Zero on pages 92 to 111.*
●●●	=	●●●	=	+ *Please refer to Delivering Net Zero on pages 92 to 111.*
●○○	▼	●○○	▼	+ *Please refer to Circular Economy on pages 124 to 129.*
●●○	=	●●○	=	+ *Please refer to Environmental Management on pages 118 to 123.*
●●○	=	●○○	▼	+ *Please refer to Nature and Biodiversity on pages 113 to 117.*
●●○	▲	●●○	=	+ *Please refer to Employee Attraction, Retention and Development on pages 147 to 158.*
●○○	=	●○○	=	+ *Please refer to Health and Well-being on pages 159 to 162.*
●●●	▲	●●○	=	+ *Please refer to Human Rights on pages 132 to 144.*
●●○	=	●○○	▼	+ *Please refer to Sustainable Supply Chain on pages 145 to 146.*

Engaging with Stakeholders

Celebrating our 50th anniversary with national badminton players, and local youth and children.

Creating Value in the Pursuit of Progress and Prosperity

PETRONAS' growth over the past 50 years was built on the trust of our stakeholders, which paved the way for enduring collaborations, leveraging each other's strengths and capabilities to further mutual objectives. These shared experiences have strengthened our relationships and built resilience. We strive to forge meaningful partnerships and engage closely with our stakeholders. Their support is critical to every PETRONAS achievement and venture, and will continue to be key in shaping a more agile, value-centric and resilient PETRONAS.

Frequency

- **O** Ongoing
- **Q** Quarterly
- **A** Annually
- **AR** As Required

Chairman of PETRONAS, Tan Sri Dato' Seri Mohd Bakke Salleh, celebrating Hari Raya with employees and their families.

President and Group Chief Executive Officer of PETRONAS, Tan Sri Tengku Muhammad Taufik, and President and Chief Executive Officer of Mitsubishi Corporation, Katsuya Nakanishi, at the signing of a Memorandum of Understanding (MoU) ceremony in September 2024.

Frequency

O Ongoing Q Quarterly A Annually AR As Required

Federal Government

FG

Why They Matter to Us

A strong, trust-based relationship with the Federal Government of Malaysia, key ministries, regulators and agencies ensure smooth business operations while reinforcing our commitment to national development.

Common Areas of Interest

- Nation-building agenda
- Compliance with laws and regulations
- Ethical business practices
- Health and safety
- Socio-economic and industry development
- Environment and climate change
- Sustainable development

Our Response

- Actively participated in national policy discussions to support Malaysia's energy security, energy transition and carbon management efforts.
- Strengthened alignment with the Government's net zero and sustainability goals through consultation on transition plans and implementation of responsible operational practices.
- Collaborated with government agencies and regulators to strengthen energy industry standards, prioritise safety and enhance environmental compliance.
- Partnered with federal agencies to drive community-based sustainability initiatives and strengthened environmental stewardship.

+ *Please refer to Key Messages on pages 14 to 28, Strategic Review on pages 60 to 81, Creating Sustainable Value through Responsible Governance on pages 84 to 91, Delivering Net Zero on pages 92 to 111, Thriving with Nature on pages 112 to 129 and Fostering a Just Transition on pages 130 to 162.*

Meaningful Outcomes

- Continuous nation-building through economic contribution.
- Human capital and industry upliftment.
- Credible thought-partner in shaping energy policies that support Malaysia's energy transition aspirations.

Engagement Mode and Frequency

In-person engagements	O
Statutory reporting, meetings and briefings	O
Participation in government-related initiatives	O
Periodical performance briefings	Q
Roundtable discussions	A

State Governments

SG

Why They Matter to Us

Strong relationships with State Governments foster productive collaborations that create valuable opportunities for local industries and empower communities. These efforts directly contribute to both state and ultimately national economic growth. By maintaining continuous and close engagement, we minimise potential disruptions and ensure smooth, safe operations within the regulatory frameworks set by state authorities. We are committed to uphold operational excellence and safety where we operate.

Common Areas of Interest

- State economic growth and reliable energy supply
- Local participation and industry development
- New energy and sustainability opportunities
- Social development
- Biodiversity conservation

Our Response

- Collaborated with State Governments through formal platforms and joint committees to align on shared development goals and economic priorities.
- Engaged in strategic dialogues with state leadership to explore business opportunities and strengthen energy access and resilience.
- Supported local socio-economic development through community-focused partnerships through Yayasan PETRONAS.
- Contributed to disaster preparedness and climate adaptation through coordinated state-level responses.

+ *Please refer to Strategic Review on pages 60 to 81, Creating Sustainable Value through Responsible Governance on pages 84 to 91, Delivering Net Zero on pages 92 to 111, Thriving with Nature on pages 112 to 129 and Fostering a Just Transition on pages 130 to 162.*

Meaningful Outcomes

- Uplifted lives and communities.
- Business opportunities for local industries.
- Progressed energy transition ambitions through state-level collaborative initiatives.

Engagement Mode and Frequency

In-person engagements	O
Joint Coordination Committee and Joint Working Committee meetings	Q
Participation in State Government programmes	Q
Strategic dialogues	A
Site visits	A
Engagements with various state agencies	AR

Engaging with Stakeholders

Frequency

O Ongoing Q Quarterly A Annually AR As Required

Host Governments

HG

Why They Matter to Us

Proactive engagement with Host Governments where we operate outside of Malaysia fosters favourable diplomatic relations and strategic partnership. This helps us to effectively navigate geopolitical risks and support sustainable growth in an ever-evolving global business landscape. Regular interaction with Host Governments helps us understand complex regulatory and legal frameworks, ensuring compliance and preserving our licence to operate. This is to ensure our presence is welcomed by Host Governments, thereby minimising disruptions to our international activities.

Common Areas of Interest

- Economic contribution
- Operational efficiencies
- Compliance with laws and regulations
- Ethical business practices
- Health and safety
- Human rights
- Community development
- Greenhouse gas emissions

Our Response

- Fostered strong and continuous engagement with Host Governments, authorities and embassies.
- Collaborated with key ministries and stakeholders to align on national energy priorities, human rights, investment opportunities and resource development.
- Participated in global and bilateral dialogues to advance energy transition goals and strengthen PETRONAS' international positioning.
- Supported government-to-government and business-to-government ties through regular engagements to safeguard our licence to operate and strengthen relationships.
- Implemented social impact initiatives tailored to the needs of local communities in host countries.

+ *Please refer to Strategic Review on pages 60 to 81, Creating Sustainable Value through Responsible Governance on pages 84 to 91, Delivering Net Zero on pages 92 to 111, Thriving with Nature on pages 112 to 129 and Fostering a Just Transition on pages 130 to 162.*

Meaningful Outcomes

- Economic growth in host countries.
- Socio-economic and community development for the local communities.
- Good bilateral and multilateral relations between Malaysia and host countries.

Engagement Mode and Frequency

In-person and virtual engagements	O
Meetings and briefings	Q
Participation in Host Government-related initiatives	A
Site visits	A

Customers

C

Why They Matter to Us

Our valued customers are essential to our business. Their insightful feedback drives continuous improvement of our energy solutions, products and services, including reliable after-sales support and timely delivery. This customer-centric approach addresses evolving needs and environmental concerns, ensuring our business continues to grow.

Common Areas of Interest

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

Our Response

- Delivered safe, sustainable and high-performance hydrocarbon products to our business customers, supported by continuous innovation and strategic partnerships.
- Enhanced customer satisfaction and engagement through tailored experiences and ongoing relationship-building efforts.
- Maintained consistent communication and collaboration with customers across local and international markets.
- Incorporated customer insights to drive product development and service improvements.

+ *Please refer to Strategic Review on pages 60 to 81 and Creating Sustainable Value through Responsible Governance on pages 84 to 91.*

Meaningful Outcomes

- Strengthened customer loyalty and brand equity by consistently delivering safe, reliable and innovative products and services.
- Deepened long-term partnerships and enabled customer-centric solutions through continuous engagement and feedback integration.
- Development of new products and service offerings by responding to customers feedback.

Engagement Mode and Frequency

In-person meetings	O
Social media engagements	O
Customer feedback system	O
Marketing activities and outreach programmes	O
Online customer surveys	O
Customer appreciation programmes	Q
Events, dialogues, roadshows and engagements	Q

Frequency

O Ongoing Q Quarterly A Annually AR As Required

Employees

E

Why They Matter to Us

The collective expertise and commitment of employees shape operational excellence, fostering growth and enabling our organisation to navigate challenges and seize opportunities. We are committed to nurturing a respectful and supportive work environment that prioritises employee well-being.

Common Areas of Interest

- Safe and healthy work environment
- Learning and development opportunities
- Career progression
- Diversity and inclusion
- Work culture rooted in Shared Values
- Ethical and sustainable business practices
- Flexible working arrangements

Our Response

- Reinforced a safe, healthy and supportive work environment across operations, anchored in a strong culture of ethics, compliance and generative safety practices.
- Provided learning, development and upskilling opportunities to maximise employee potential.
- Promoted diversity, inclusion and employee well-being by strengthening wellness programmes, creating inclusive workspaces and fostering a culture of openness.
- Strengthened governance and transparency through structured initiatives on ethics, integrity and compliance.
- Recognised employee contributions and supported engagement initiatives.

+ *Please refer to Creating Sustainable Value through Responsible Governance on pages 84 to 91 and Fostering a Just Transition on pages 130 to 162.*

Meaningful Outcomes

- Fostered a safe, inclusive and supportive workplace culture.
- Enabled continuous development through upskilling, wellness support and engagement initiatives, strengthening both professional and personal well-being.
- Established the Culture Professionals Network to drive a positive and high-performance organisational culture.

Engagement Mode and Frequency

Internal communications	O
Knowledge-sharing engagements and forums	O
Townhalls	A
Organisational culture survey	A
Upskilling sessions (in-person, virtual, hybrid)	AR

Shareholders, Investors and Credit Rating Agencies

SIC

Why They Matter to Us

Clear and consistent communication on financial and strategic information builds trust and confidence, enabling business growth through improved access to capital and reduced borrowing costs. Through regular engagements, we gain market insights to adapt to financial and capital market trends, contributing to our long-term strategic goals.

Common Areas of Interest

- Business and industry outlook
- Progress and deliverables of projects
- Financial position and shareholder returns
- Energy transition initiatives
- Sustainable value creation
- Environmental, social and governance performance

Our Response

- Maintained transparent and timely communication through regular reporting, financial disclosures and performance updates.
- Demonstrated financial resilience and strengthened confidence by delivering robust fundamentals and clear strategic guidance.
- Enhanced sustainability disclosures in line with international standards to provide greater transparency on PETRONAS' long-term commitments and Net Zero Carbon Emissions by 2050 Pathway.

+ *Please refer to Key Messages on pages 14 to 28, How We Create Value on pages 29 to 59, Strategic Review on pages 60 to 81, Sustainability Performance Review on pages 82 to 175, Commitment to Governance on pages 176 to 205, and Financial Review and Other Information on pages 206 to 218.*

Meaningful Outcomes

- Ensured consistent access to accurate financial, strategic and sustainability information to support investment decisions and credit assessments.
- Demonstrated financial resilience and strategic alignment, contributing to stable investor relations and credit ratings.

Engagement Mode and Frequency

In-person and virtual engagements	O
Meetings and briefings	O
Financial results announcements	Q
Analyst briefing	Q
Annual General Meetings	A
Announcements and disclosures via corporate websites	AR

Engaging with Stakeholders

Frequency

O Ongoing Q Quarterly A Annually AR As Required

Media

M

Why They Matter to Us

Ongoing media engagement strengthens PETRONAS' visibility and shapes perceptions among target audiences, including industry observers and the general public. By sharing impactful content, we build brand strength, safeguard reputation, enhance media rapport and foster strong, accessible relationship with the media.

Common Areas of Interest

- Business and strategy
- Financial performance
- Leadership
- Governance
- Products and services
- Environmental and sustainability efforts

Our Response

- Implemented robust media strategies to ensure timely, accurate and transparent communication.
- Fostered open and constructive engagement with media partners to strengthen relationships and support shared initiatives.
- Supported media causes and recognising excellence in journalism through sponsorships and awards, while fostering strong relationships with the media.

Meaningful Outcomes

- Strengthened PETRONAS' reputation as a credible and responsible organisation through timely and transparent media engagement.
- Enhanced public understanding of PETRONAS' business strategies, sustainability commitments and innovation efforts.
- Improved issue mitigation capabilities.

Engagement Mode and Frequency

In-person and virtual engagements	O
Meetings and briefings	O
Digital updates through websites and social media	O
Press conferences, press releases and interviews	AR
Responses to media queries and maintained open communication channels	AR

Government-linked Companies and Industry Partners

GIP

Why They Matter to Us

Collaboration with industry partners is vital to operations, elevating standards and advancing sustainable energy technologies. Partnerships with Malaysia Government-linked Companies and other key industry partners ensure alignment with national objectives while fulfilling PETRONAS' energy security, revenue-generation, environmental and social commitments. These collaborations enable collective contributions to advance economic progress, energy transition, the development of innovative solutions and the promotion of sustainable business practices.

Common Areas of Interest

- Governance and integrity
- Industry requirements, regulation and policies
- Business continuity and energy transition relevance
- Health, safety and environment
- Business opportunities and participation in the industry
- Industry partner capability development

Our Response

- Strengthened strategic partnerships with Government-linked Companies and industry partners to drive business and sustainable energy initiatives.
- Engaged through structured forums, formal agreements and thought leadership platforms to unlock exploration opportunities and support partners.
- Expanded vendor communication and development programmes to raise industry standards and promote sustainability in the oil, gas, services and equipment sector.
- Facilitated collaborative industry initiatives and events that enhance digital expertise, competitive and resilient market practices.

+ *Please refer to Strategic Review on pages 60 to 81, Creating Sustainable Value through Responsible Governance on pages 84 to 91 and Fostering a Just Transition on pages 130 to 162.*

Meaningful Outcomes

- Enhanced industry standards and regulations.
- Contributed to the resilience and competitiveness of the oil and gas services and equipment sector.
- Facilitated sector capability and market access by aligning partner efforts with national energy transition goals and sustainable practices.

Engagement Mode and Frequency

In-person and virtual engagements	O
Meetings and briefings	O
Forums, conference and exhibitions	Q
Company events	AR
Familiarisation visits	AR

Frequency

O Ongoing Q Quarterly A Annually AR As Required

Communities and Non-Governmental Organisations

CN

Why They Matter to Us

Collaborating with communities and non-governmental organisations (NGOs) helps address social and environmental concerns. These engagements uplift the well-being of communities, support environmental stewardship and build public trust, which are essential for long-term success.

Common Areas of Interest

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

Our Response

- Collaborated with NGOs, academic institutions and local partners to promote environmental protection, conservation and sustainable development.
- Facilitated open and transparent engagement with communities and NGOs, including providing platforms for dialogue and grievance resolution.
- Contributed to education and skills development through funding, training and industry-focused programmes aimed at long-term socio-economic growth.
- Supported communities through targeted relief, livelihood improvement and capacity-building initiatives, especially in underserved areas.

+ *Please refer to Creating Sustainable Value through Responsible Governance on pages 84 to 91, Delivering Net Zero on pages 92 to 111, Thriving with Nature on pages 112 to 129 and Fostering a Just Transition on pages 130 to 162.*

Meaningful Outcomes

- Improved community resilience and socio-economic well-being through inclusive, needs-based interventions.
- Strengthened environmental stewardship and local capabilities through collaborative partnerships.

Engagement Mode and Frequency

Meetings and briefings	O
PETRONAS' signature social impact programmes: Powering Knowledge, Uplifting Lives and Planting Tomorrow	O
Engagements with local communities	AR

International Organisations

IO

Why They Matter to Us

Fostering long-term partnerships with international organisations based on shared objectives enable inclusive participation, meaningful discussions and coordinated actions towards a just energy transition. These strategic engagements strengthen PETRONAS' global presence and enhance our capacity to navigate the complexities of the dynamic energy industry.

Common Areas of Interest

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

Our Response

- Built strategic partnerships and facilitated knowledge exchange to advance climate, nature and energy transition actions at regional and global levels.
- Collaborated with international organisations and industry groups to co-develop solutions for decarbonisation and methane emissions reduction.
- Contributed to global dialogues and publications on sustainability, climate policy and carbon markets.
- Invested in internal capacity-building by engaging global experts to enhance sustainability leadership and awareness.

+ *Please refer to Key Messages on pages 14 to 28, Strategic Review on pages 60 to 81, Creating Sustainable Value through Responsible Governance on pages 84 to 91, Delivering Net Zero on pages 92 to 111, Thriving with Nature on pages 112 to 129 and Fostering a Just Transition on pages 130 to 162.*

Meaningful Outcomes

- Strengthened PETRONAS' role in shaping inclusive and collaborative approaches to the energy transition and climate action.
- Enabled knowledge sharing and solution development across borders in areas such as decarbonisation, biodiversity and market-based climate mechanisms.

Engagement Mode and Frequency

Meetings and briefings	O
Dialogues, panels and roundtable discussions	Q
In-person and virtual engagements	AR

Core Business

More Energy, Less Emissions

Focus Areas

Core Business remains an important and substantial pillar in our portfolio, serving as a primary source of cash generation, funding present commitments and future investments in New Business, to support energy security. PETRONAS' Core Business encompasses of Upstream, Gas and Maritime, and Downstream, through which, we aim to serve the growing global needs for energy and solutions. Our Core Business also supports the vibrancy of Malaysia's oil and gas value chain. We strive to execute our Core Business safely, reliably and sustainably.

Upstream

Our focus is to increase Malaysia's oil and gas production by replenishing resources and accelerating the monetisation of discovered fields. To support this, we actively promote investment opportunities, prioritise commercial viability, and maximise value from existing assets to ensure long-term supply security.

Internationally, we continue to optimise our Upstream portfolio and pursue selective growth opportunities to generate competitive returns.

Gas and Maritime

We are leveraging our strong gas position, which accounts for two-thirds of PETRONAS' hydrocarbon portfolio, to support rising energy demand while progressing the energy transition. Our focus is growing liquefied natural gas (LNG) sales volume, particularly in Asia by maximising the value of our existing assets, pursuing new opportunities to secure long-term contracts, diversifying our portfolio, integrating our gas operations and strengthening maritime capabilities as a key differentiator in delivering reliable and competitive solutions.

Downstream

We are strengthening our Downstream assets to capitalise on favourable commodities outlook, enhance operational and commercial excellence, and expand product offerings and solutions to meet evolving customer preferences.

Upstream

Malaysia Bid Round Sets Record with 14 New Production Sharing Contracts

> ***Malaysia continues to be a top-tier destination for upstream investment, offering extensive opportunities for industry players to expand their portfolios. The 14 PSCs awarded under MBR 2024 and MBR+ reinforces Malaysia's competitive edge and reflects strong investor confidence in the country as a leading Advantaged Energy hub.***
>
> **Datuk Ir. Bacho Pilong**
> *Senior Vice President Malaysia Petroleum Management*

Malaysia's upstream sector continues to gain momentum, reinforcing our role as a reliable energy hub. Through the Malaysia Bid Round 2024, including Malaysia Bid Round Plus, 14 new Production Sharing Contracts were signed, the highest in the past decade. These were awarded to 12 operators, encompassing 11 Discovered Resource Opportunities and three exploration blocks.

With energy demand rising, exploration and development activity remained active. In 2024, 80 exploration and development wells were drilled, over 600 million barrels of oil equivalent (boe) resources were discovered and 17 projects achieved first hydrocarbon, supporting domestic needs and long-term industry growth.

Point of Interest

Malaysia reached a new production milestone, achieving 2 million barrels of oil equivalent per day.

Scan the QR code to read more about Malaysia Bid Round Plus, which complements the annual Malaysia Bid Round licensing, providing an additional avenue for investors to participate in Discovered Resource Opportunities and Late Life Assets in Malaysia.

Activating Exploration Across Five Frontier Basins

We are activating exploration across five frontier basins in Malaysia with an annual investment of RM500 million, expanding 3D seismic coverage from under 15 per cent to 50 per cent by 2030. This is equivalent to mapping 50,000 sq km of unexplored terrain. This deeper data coverage will reduce exploration risks and provide valuable insights for smarter investment decisions. The effort is already gaining traction with the new approach of Technical Evaluation Agreements signed for the Langkasuka Basin in the Straits of Malacca and the Layang-Layang Basin off the coast of Sabah. These agreements have attracted new entrants such as bp and Eni, and enabled partners to conduct detailed studies leveraging PETRONAS' 2D seismic data and future 3D seismic acquisitions, both fully funded by Malaysia Petroleum Management.

We are strengthening our global Upstream operations through targeted exploration achievements and collaborative ventures, diversifying our resource base across conventional and unconventional plays alongside sustainable development initiatives.

Mohd Jukris Abdul Wahab
Executive Vice President and Chief Executive Officer, Upstream

Unlocking New Resources

We achieved major exploration successes in Malaysia and Suriname. In Peninsular Malaysia, the Bekok Deep-1 discovery revealed a previously unexplored oil and gas play, with strong hydrocarbon flow rates confirming significant untapped potential and making it the most promising find in this mature basin in over a decade.

Internationally, we attained a series of exploration successes with three consecutive discoveries in Block 52 offshore Suriname. The Sloanea-2 appraisal well validated earlier finds and demonstrated potential for a Floating Liquefied Natural Gas development, while the Fusaea-1 well confirmed our third hydrocarbon discovery. Building on insights from Roystonea-1 and Sloanea-1, we are now evaluating an integrated development strategy that could unlock the block's full potential. These successes demonstrate PETRONAS' unique capability to uncover new resources across both established and emerging basins.

A Double Upstream Boost

We are expanding Upstream's global footprint with new exploration concessions in Abu Dhabi, Indonesia and Papua New Guinea, strengthening our presence in key energy markets. In Abu Dhabi, we secured 100 per cent equity and operatorship in Onshore Block 2, further enhancing our portfolio in the Al Dhafra region alongside Unconventional Blocks 5 and 1. In Indonesia, we acquired the Bobara Working Area as part of our expansion into Eastern Indonesia.

Meanwhile, we made a new entry into Papua New Guinea by acquiring a 50 per cent share of the Papua New Guinea Petroleum Prospecting License.

Point of Interest

PETRONAS' acquisition of the Bobara Working Area is our first-ever operated deepwater block in Indonesia, creating new opportunities in one of the country's most promising offshore basins.

Hidayah Field Development

PETRONAS reached a final investment decision for the Hidayah field in East Java, advancing our Upstream growth strategy in Indonesia. The development includes oil production wells, an unmanned wellhead, a central processing platform and a Floating Storage and Offloading unit to support efficient and reliable operations.

This project builds on our 2021 oil discovery in the North Madura II Contract Area and reflects our commitment to responsible resource development. Indonesia serves as an integrated growth market for PETRONAS, where we continue to strengthen our activities in Upstream, LNG and lubricants to deliver long-term value and support the country's energy aspirations.

The Hidayah field represents strategic asset development, leveraging innovative technology to maximise resource potential and strengthen PETRONAS' position in the Indonesian energy market.

Core Business

More Energy, Less Emissions

On-Target Delivery through Innovation-led Execution

PETRONAS' Project Delivery and Technology team ensures capital projects are executed safely, efficiently and on schedule. In 2024, we managed 444 projects with an annual capital expenditure of RM13.3 billion, achieving 38.13 million hours worked across operations. Key milestones include first gas from Kasawari Gas Development Project and Gansar Gas Field Development, and progress on PETRONAS' Shore-based Floating LNG project.

Key Project Highlights

Kasawari Gas Development Project

- Heaviest offshore structure platform built in Malaysia, with gas processing capacity of 900 million standard cubic feet per day (MMscf/d)
- Features the largest acid gas removal system on a topside
- Achieved Ready for Start-Up on 17 May 2024
- First gas exported via Trunk Line 1 to PETRONAS LNG Complex on 12 August 2024

Gansar Gas Field Development

- Developed to unlock 22.94 million boe recoverable resources for Upstream
- Achieved First Gas on 7 October 2024
- Ensures continuous gas supply to meet Peninsular demand

ZLNG Project

- Construction of the Shore-based Floating Liquefied Natural Gas plant strengthens our gas extraction capabilities
- Achieved steel-cutting milestone on 16 February 2024

PROTEAN: Revolutionising Equipment Reliability

PETRONAS' Predictive Rotating Equipment Analytics (PROTEAN) digital solution is now deployed across Upstream operations covering Malaysia and international assets, including Turkmenistan, Indonesia, and Canada. It is also applied in Gas and Maritime business assets, including both floating liquefied natural gas facilities and PETRONAS LNG Complex.

Designed to enhance rotating equipment reliability through predictive analytics covering more than 500 critical rotating equipment, PROTEAN has issued 1,800 alerts to date, helping to prevent RM250 million in potential unplanned production deferment losses and major maintenance cost avoidance. With its adoption across the entire fleet, this solution is poised to drive rotating and equipment operational excellence throughout PETRONAS' assets.

AI-Driven Precision towards Operational Efficiency

PETRONAS' Enhanced Resource Monetisation Artificial Intelligence (ERMAI) is revolutionising petrophysical analysis. The ERMAI Real-Time Petrophysics suite was built upon hundreds of well logging data, both raw and interpreted petrophysical analysis, to generate objective and robust automated interpretation.

Its web-based machine learning platform delivers lithology, porosity, permeability and fluid saturation interpretations in real-time, reducing drilling and completion costs while ensuring objective petrophysical analysis imbued with artificial intelligence or machine learning.

In 2024, ERMAI saved 82 rig hours in Baram and Kumang Cemumar platforms, and added 2.07 million boe to Besar Project reserves. This technology helps accelerate optimal decision-making and drives value creation from additional reserves and resources addition.

Well Intervention Fluid Innovation Solving Industry Challenges

A successful pilot deployment of Well Intervention Fluid-Friction Modifier at the Baram platform in Sarawak enabled a gas lift valve change in a highly deviated well. This intervention extended the well's depth by 2,470 feet, supporting the gas lift deepening programme. A similar deployment at the Temana production facility further enabled us to unlock 400 barrels of oil per day.

Key Highlights

- Increased oil production by 190 barrels per day
- Generated about RM7.3 million in additional value

Membrane Contactor Technology Reaches Maturity

In March 2024, PETRONAS successfully tested the multi-cartridge membrane contactor system for natural gas at Terengganu Gas Terminal, advancing this technology to enhance the CCS value chain. Building on this success, we expanded its potential for post-combustion carbon dioxide capture through a demonstration plant at PETRONAS Energy Canada Ltd, supporting our efforts to decarbonise operations.

Core Business

More Energy, Less Emissions

Gas and Maritime

Strengthening Global Supply Security for LNG

PETRONAS has signed a 15-year agreement with Abu Dhabi National Oil Company for the Ruwais LNG project, securing the supply of 1 million tonnes per annum (MTPA) of LNG. This strategic partnership enhances our global LNG portfolio, strengthening security of supply for our customers, as well as fostering deeper government-to-government collaboration. The project, which is currently under development in Al Ruwais Industrial City, Abu Dhabi reflects our expanding presence in the growing LNG market. Deliveries are set to begin in 2028.

> ***Securing reliable, long-term LNG supply through strategic partnerships position us to better serve our customers while reinforcing our role in supporting energy security through a diversified and competitive portfolio.***
>
> **Datuk Adif Zulkifli**
> *Executive Vice President and Chief Executive Officer, Gas and Maritime Business*

Expanding Maritime's South American Footprint

Under Maritime, we achieved first oil for the Marechal Duque de Caxias Floating Production Storage and Offloading (FPSO), which is a significant milestone in our deepwater operations. This accomplishment showcases our ability to deliver complex deepwater offshore projects. It highlights our technical expertise and strengthens our position in the global deepwater FPSO market. Now fully operational in the Santos Basin, the FPSO expands our offshore presence in Brazil.

Point of Interest

FPSO Marechal Duque de Caxias is engineered to operate in water depths of approximately 2,000 metres. It boasts a production capacity of 180,000 barrels of oil per day, a storage capacity of 1.4 million barrels and a total gas handling capacity of 440 million standard cubic feet per day (MMscfd).

The facility is equipped with Water Alternating Gas reinjection technology, as well as efficient stripping and reinjection of carbon dioxide from fuel gas production. It has the capacity to compress up to 48 MMscfd of carbon dioxide, minimising impact to the environment.

Enhancing Malaysia's Energy Security

We have reached a final investment decision for a 100 megawatt power plant in Kimanis, Sabah, strengthening the state's energy security aligned with the Sabah Energy Roadmap and Master Plan 2040. Developed in collaboration with Yayasan Sabah Group, this RM700 million project enhances energy security in Malaysia and represents a significant milestone in our expansion into adjacent gas value pools.

Downstream

Melaka's Energy Evolution

The rebranding of the Melaka Refinery Complex to Melaka Energy Park signals a bold transformation. The energy park will focus on further expanding capabilities to fulfil the needs for cleaner and more efficient energy. This will fuel industries across borders, from aviation to manufacturing, and strengthen our role in shaping the future of energy with scale, adaptability and innovation.

Expanding Global Footprint

Revving Up in Brazil

We are making our mark in South America through our first brand licensing initiative in Brazil. Partnering with SIM Distribuidora, it is rolling out three pilot fuel retail stations, bringing PETRONAS Primax™ fuel and further extending PETRONAS Syntium™ lubricants availability to drivers in Brazil.

Powering Precision in China

With the launch of the PETRONAS New Energy Technical Service Centre in Jiaxing, China, PETRONAS Lubricants International is deepening its commitment to the Chinese market. The centre delivers customised technical services to Original Equipment Manufacturers and auto parts suppliers, ensuring innovative solutions that drive sustained growth and innovation in the region.

Sustainable Performance Unleashed

PETRONAS Lubricants International (PLI) and Stellantis N.V. introduced Selenia SUSTAINera, a high-performance engine oil designed with sustainability in mind and formulated using premium recycled base oils. It delivers top-tier engine protection while reducing environmental impact. The packaging is fully recyclable and made with 50 per cent recycled plastics.

Using 30 per cent recycled base oils, Selenia SUSTAINera offers the same exceptional engine protection as lubricants made with virgin base oils. This innovation demonstrates that high-performance lubricants can be both powerful and more sustainable.

Stronger Operations, Smarter Petrochemicals Growth

PETRONAS Chemicals Group Berhad demonstrated operational excellence with plant utilisation improvements for both its olefins and derivatives segments, as well as fertilisers and methanol segments, reflecting heightened reliability and reduction in unplanned shutdowns.

PETRONAS Chemicals Group Berhad's operational strength was further supported by increased sales volume in both segments, underpinned by operational efficiency efforts and its highest-ever strategic sourcing volume to date.

In meeting evolving customer needs, PETRONAS Chemicals Group Berhad introduced a new olefins and derivatives product, HL701, a high Renewable Carbon Index surfactant, aligning with the industry's shift towards sustainable solutions.

Core Business

More Energy, Less Emissions

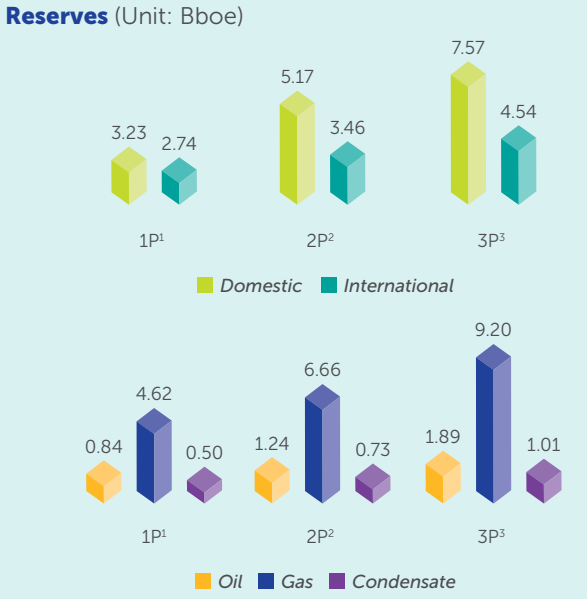
Performance in 2024

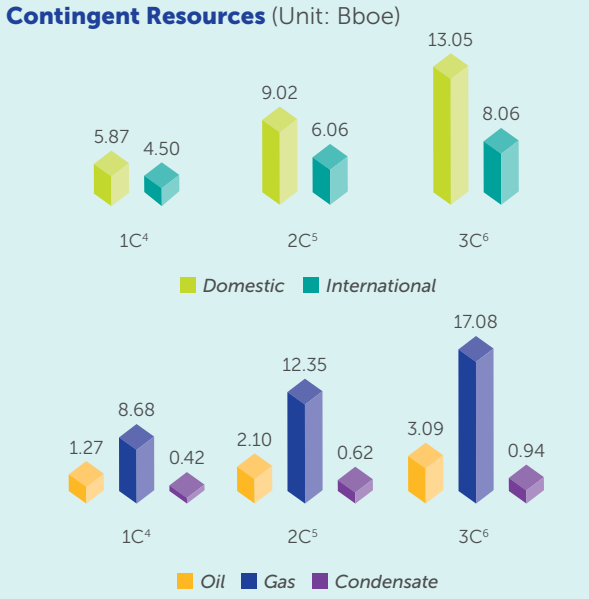
Upstream

Governance and Disclosure (Reserves and Resources)

As of 1 January 2025, our total petroleum 2P[2] net entitlement Reserves stood at 8.64 billion barrels of oil equivalent (boe), a decrease of 8 per cent compared to 2023. For our Contingent Resources, the total net entitlement 2C[5] stood at 15.08 billion boe, a decrease of 7 per cent from 2023. This signifies a challenging Upstream performance, but with a focus on value enhancement through project deferments. We expect the negative movements will be reversed upon the sanctioning of new projects.

(i) Annual Review of Petroleum Resources 1 January 2025 Reserves and Contingent Resources





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

(ii) Reserves and Resources Performance Indicators

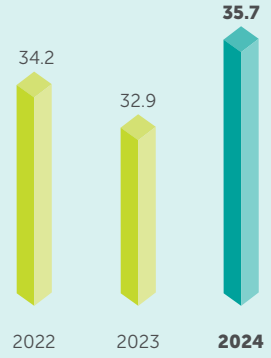
Notes:
1. *1P Denotes low estimate of Reserves (i.e. Proved Reserves). Equal to P1.*
2. *2P Denotes the best estimate of Reserves. The sum of Proved plus Probable Reserves.*
3. *3P Denotes high estimate of Reserves. The sum of Proved plus Probable plus Possible Reserves.*
4. *1C Denotes low estimate of Contingent Resources.*
5. *2C Denotes best estimate of Contingent Resources.*
6. *3C Denotes high estimate of Contingent Resources.*

Gas and Maritime

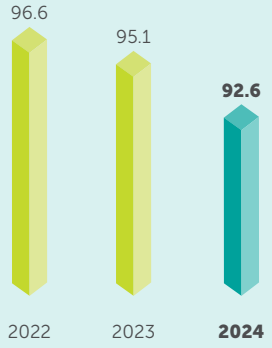
Gas and Maritime recorded an Overall Equipment Effectiveness of 92.6 per cent. Despite a lower Overall Equipment Effectiveness compared to 2023, we achieved a higher sales volume of 35.7 million metric tonnes in 2024, reflecting an 8.5 per cent increase. This growth was driven by sustained production, improved trading and optimisation opportunities, as well as stronger customer demand.

We delivered LNG globally, with significant volumes from the PETRONAS LNG Complex in Bintulu and floating LNG facilities, PFLNG SATU and PFLNG DUA, while sustaining steady sales gas supply in Peninsular Malaysia. Our Maritime fleet was further expanded with new charter contracts, complementing the existing diverse portfolio of LNG, petroleum and product vessels, as well as offshore floating production systems.

Gross LNG Sales (million metric tonnes)



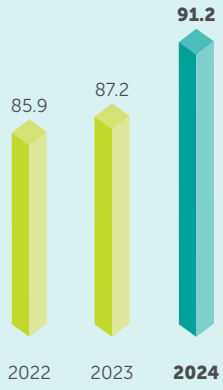
Gas Overall Equipment Effectiveness (%)



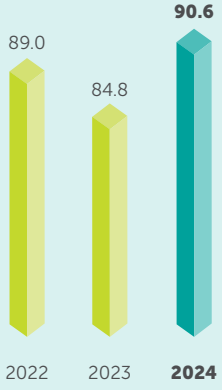
Downstream

Downstream delivered a strong performance in 2024 with improved Overall Equipment Effectiveness and higher sales volumes across our businesses. The petrochemicals segment saw increased production, contributing to overall sales growth, while the lower Overall Marketing Sales Volume was the result of the divestment of Engen Limited and its subsidiaries (Engen Group), a South African-based downstream petroleum company in which we had held a majority stake since 1998. Meanwhile, PETRONAS Dagangan Berhad achieved its highest-ever annual sales volume.

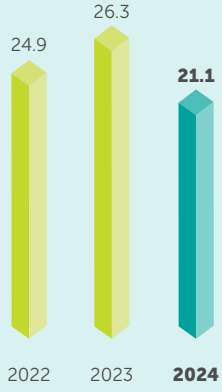
Downstream Overall Equipment Effectiveness (%)



Petrochemicals Plant Utilisation (Nexant) (%)



Overall Marketing Sales Volume (billion litres)



Core Business

More Energy, Less Emissions

Challenges, Mitigation and Opportunities

We continue to face fluctuating material prices and inflationary pressures. To navigate rising industry costs and supply chain complexities, we will leverage advanced analytics and strategic forecasting, optimise resources and strengthen project execution.

Malaysia's undiscovered oil reserves in deepwater areas require advanced technology and strategic investment to unlock their full potential. We are addressing this by expanding exploration efforts and leveraging the Malaysia Bid Round to attract global expertise. These efforts aim to strengthen Malaysia's position as a competitive energy investment hub, while securing the nation's long-term production capacity.

Safety and environmental excellence is essential to our operations. We strive to foster a proactive safety culture, empowering frontline teams through relevant programmes, real-time surveillance and best-in-class health, safety and environment practices. By embedding a safety-first mindset across our workforce, we continue to strengthen operational integrity.

Outlook and Priorities

Upstream

Short-term

Our focus remains on resource replenishment and integrated value chain optimisation to meet Malaysia's growing energy demand. This includes accelerating exploration and development activities to ensure long-term supply security.

To enhance value and support Malaysia's decarbonisation agenda, we aim to reduce emissions across Malaysian exploration and production operations while strengthening overall asset performance.

Internationally, we will high-grade our Upstream portfolio by monetising high-value and low-carbon intensity resources and expanding our unconventional gas presence in Canada and Abu Dhabi. These efforts are aimed at reinforcing long-term value creation and energy resilience.

Commitment to sustaining production continues, with a focus on high-value, lower-carbon barrels and maintaining cost-efficient operations across our portfolio.

Medium- to long-term

We continue to create and maximise value for our shareholders while emphasising emissions reduction efforts across our value chain. This includes deploying innovative technology with industry partners in Malaysia and abroad.

In strengthening our Upstream business, the focus remains on delivering operational excellence and driving continuous emissions reduction to ensure safe, cost-efficient and lower-emissions operations.

Gas and Maritime

Short-term

We are expanding our LNG supply portfolio with a focus on identified growth projects in Canada and Malaysia, while maximising value from existing assets.

Under our Maritime segment, efforts will centre on strengthening core operations, expanding into new energy solutions and enhancing our emissions reduction efforts. This includes rejuvenating our fleet with more efficient vessels, such as LNG and ammonia dual-fuel vessels, and expanding into carbon, offshore wind and future fuels value chains.

Medium- to long-term

Over the medium to long term, as global demand continues to grow, we remain focused on maintaining LNG market leadership while offering a suite of energy solutions tailored to customer needs.

In the Maritime business, our strategic priorities include identifying new opportunities to expand our business and asset portfolio, capitalising on the global energy transition as the world evolves towards a circular economy.

Downstream

Short-term

We are enhancing operational efficiency and reliability to capitalise on the recovery in the global petroleum market and to ensure resiliency in an uncertain petrochemical industry. Despite volatile markets, we work to enhance our competitiveness by focusing our efforts on optimising production, improving supply chain resilience and expanding product offerings to meet evolving customer needs.

Medium- to long-term

We are committed to strengthening operational and commercial excellence of our refineries and petrochemical plants to deliver safe and reliable operations. In ensuring a more diversified and resilient energy mix, investments in advanced processing technologies and infrastructure growth will support the transition towards future energy solutions, enabling PETRONAS to adapt to changing market dynamics while securing leadership in the downstream sector.

New Business

Capturing New Growth Opportunities

Focus Areas

PETRONAS' New Business strategy focuses on pursuing new businesses to future-proof our portfolio while addressing evolving customer needs and delivering cleaner, more affordable energy solutions. To deliver sustainable results for New Business, we pursue both organic and inorganic growth. We seek collaborations with partners, deploy new technologies and synergies within the Group, leverage existing expertise as well as develop new capabilities to manage new ventures.

Specialty Chemicals

We continue to expand our footprint in specialty chemicals to reduce exposure to industry cycles of the broader petrochemical industry. Our focus is on expanding the value chain to unlock new capabilities and markets, support long-term growth and strengthen our existing product portfolio.

Bio-based Value Chain

We are positioning PETRONAS firmly in the sustainability space to meet the growing demand for bio-based products and offerings. Our efforts in this regard are accelerated by leveraging integration with our existing assets.

Carbon Capture and Storage

Carbon capture and storage (CCS) is a key lever to reduce emissions from PETRONAS' portfolio. It is designed to meet regional demand and position Malaysia as a leading CCS hub by leveraging our technological strengths, strategic location and skilled talent.

Renewable Energy

We aim to capitalise on the large and fast-growing market, driven by the rising share of renewables in the global energy mix, seizing opportunities to operate at scale while enabling integrated solutions, including hydrogen.

Hydrogen

We are expanding into emerging lower-carbon solutions by leveraging our core capabilities and existing value chain to support the decarbonisation of hard-to-abate sectors.

Green Mobility

We capture opportunities in the accelerated growth of electric vehicle adoption by offering integrated cleaner energy solutions, including electric vehicle charging infrastructure, Vehicle-as-a-Service and digital platforms that support lower-carbon transport.

Specialty Chemicals

Perstorp Opens New Penta Plant in India

PETRONAS Chemicals Group Berhad, through its subsidiary Perstorp, has inaugurated a state-of-the-art pentaerythritol plant in Bharuch, India. The plant produces pentaerythritol, calcium formate and International Sustainability and Carbon Certification PLUS-certified Voxtar™ M40, catering to the growing demand in Asia Pacific.

Point of Interest

The pentaerythritol produced at Perstorp's new plant is a component of everyday products such as high-performance alkyd-based coatings, hot-melt adhesives and synthetic lubricants.

Bio-based Value Chain

PETRONAS in Partnership with Enilive and Euglena to Build First Biorefinery

This collaboration brings together the strengths of three industry leaders to accelerate the production of sustainable fuels in the region. With this biorefinery, we are solidifying our standing in the biofuels value chain beyond trading, paving the way for the establishment of a bio-based ecosystem in Malaysia and beyond.

Datuk Sazali Hamzah
Executive Vice President and Chief Executive Officer, Downstream

PETRONAS, Enilive S.p.A. and Euglena Co., Ltd. have established a joint venture company and reached a final investment decision to construct our first biorefinery at PETRONAS' Pengerang Integrated Complex in Johor, Malaysia. The joint venture, Pengerang Biorefinery Sdn Bhd, with PETRONAS Mobility Lestari Sdn Bhd and Enilive S.p.A. as majority shareholders, will develop the biorefinery, which is set to begin operations in the second half of 2028. Designed to process 650,000 tonnes of raw materials annually, the biorefinery will produce Sustainable Aviation Fuel, Hydrogenated Vegetable Oil and bio-naphtha, supporting the rising global demand for low-carbon aviation and transportation fuels.

Advancing Bio-based Innovation

A bio-based emollient co-developed by PETRONAS Research Sdn Bhd and PETRONAS Chemicals Group Berhad, and marketed by BRB International B.V., Emfinity® CGSA 200B offers superior product benefits and texture, making it ideal for skincare, suncare, and makeup applications. The product was pre-launched at the premier 'in-cosmetics Global' exhibition in Paris, France, where it received strong engagement from industry leaders, generating significant interest in sampling and incorporating Emfinity® CGSA 200B into their formulations.

Carbon Capture and Storage

Global Partnerships for Advancing CCS

In 2024, PETRONAS signed 11 agreements and Memoranda of Understanding with key players, including Abu Dhabi National Oil Company, Storegga Limited and JERA Co., Inc, to advance carbon dioxide storage solutions, infrastructure, value chain development and regulatory compliance. These partnerships strengthen our operational capacity and lay the foundation for large-scale CCS deployment.

Progressing CCS Hub in Peninsular Malaysia

PETRONAS CCS Solutions Sdn Bhd signed a land rental agreement with Kuantan Port Consortium Sdn Bhd to advance its Southern CCS hub in Pahang, Malaysia. The hub, expected to begin its first injection by 2029, will help reduce emissions for hard-to-abate industries in Malaysia and internationally while creating new economic opportunities.

PETRONAS and DNV Partner to Certify Carbon Dioxide Storage Sites for CCS Projects in Malaysia

PETRONAS CCS Ventures Sdn Bhd and DNV have signed a Master Price Agreement to certify carbon dioxide storage sites and associated facilities for CCS projects in Malaysia. This certification will ensure the emerging Malaysian CCS industry meets international standards and best practices.

New Business

Capturing New Growth Opportunities

Renewable Energy

Unlocking Hydropower Synergies with Floating Solar

Our partnership with Masdar and Sarawak Energy unites leading global stakeholders in a shared vision to drive progress in clean energy adoption, optimising technological advancements to more effectively integrate renewables into our energy systems.

Sushil Purohit
Chief Executive Officer, Gentari

Gentari Renewables Sdn Bhd, a wholly-owned subsidiary of Gentari Sdn Bhd (Gentari) signed a Joint Study Agreement with SEB Power Sdn Bhd and Abu Dhabi Future Energy Company PJSC (Masdar) to explore a groundbreaking 1,000 megawatts floating solar project at the Murum Hydroelectric Plant. This large-scale initiative has significant potential to expand Sarawak's renewable energy capacity while contributing to Malaysia's low-carbon ambitions. Floating solar solutions optimise land use, reduce water evaporation and offer potential synergies with existing hydroelectric infrastructure.

PETRONAS and Petrovietnam to Advance Cross-border Renewable Energy

PETRONAS and Vietnam National Industry - Energy Group (Petrovietnam) signed a Memorandum of Cooperation on renewable energy to strengthen regional energy connectivity. The agreement facilitates the export of renewable energy from Vietnam to Malaysia and Singapore, contributing to ASEAN's goal of an integrated power grid and a more resilient, lower-carbon energy future.

Connecting India's Renewable Energy to Demand Centres

Gentari through its subsidiary, Amplus Energy Solutions Pte. Ltd., or Amplus, successfully commissioned its first Interstate Transmission System-connected solar project in India, with a total capacity of approximately 363 megawatts. The Interstate Transmission System is a national grid in India that links power generation sources across state boundaries, enabling efficient transmission of electricity from surplus regions to areas with higher demand and is crucial for transmitting renewable energy from remote wind and solar parks to consumption centres.

Innovative Pathway to a Renewable Future with CEFORE

PETRONAS, supported by Universiti Malaysia Terengganu as well as Arema Energies, Schneider Electric, Citaglobal and Honeywell, is establishing the Centre for Offshore Renewable Energy (CEFORE) in Terengganu, Malaysia. CEFORE aims to provide clean, reliable and continuous power by leveraging a mix of offshore and onshore renewable energy sources, such as solar, wind and wave, with on-site energy storage and management systems. CEFORE also supports edu-tourism, infrastructure development, and economic opportunities for local communities, including local fishing communities, which can benefit from renewable energy-powered cold storage and ice-making equipment provided at no cost. In 2024, CEFORE completed the Floating Lidar Photovoltaic assembly.

Hydrogen

Sarawak Hydrogen Hub with SEDC Energy: Scaling Up Clean Energy in Malaysia

Gentari, through its wholly-owned subsidiary, Gentari Hydrogen Sdn Bhd is developing the Sarawak Hydrogen Hub in partnership with SEDC Energy Sdn Bhd. The Hub is designed as a modular, plug-and-play solution that makes large-scale hydrogen production more efficient and investment-ready. This milestone initiative aligns with Sarawak's vision of becoming a commercial hydrogen powerhouse by 2027, driving the region's transition towards cleaner energy.

* *Image is for illustration purposes only.*

Driving Clean Ammonia Solutions

Gentari, through its wholly-owned subsidiary, Gentari Hydrogen Sdn Bhd and MISC Berhad are collaborating to explore the development of integrated shipping and floating solutions for clean ammonia with the aim of delivering end-to-end solutions that streamline the clean ammonia value chain.

Point of Interest

Ammonia has long been used in fertiliser production and refrigeration, with established global logistics infrastructure - making clean ammonia a viable energy carrier in the energy transition.

Partnering with AM Green to Deliver Global Green Ammonia

Gentari International Renewables Pte. Ltd., a wholly owned subsidiary of Gentari and AM Green BV, have joined forces to drive large-scale green hydrogen production, unlocking new possibilities for global energy supply. Their joint investment into AM Green Ammonia Holdings BV (AM Green Ammonia), a green ammonia platform, aims to produce up to 5 million tonnes per annum of green ammonia by 2030, by leveraging round-the-clock renewable energy to deliver hydrogen in its most stable and transportable form. AM Green Ammonia has achieved the final investment decision for its first million-tonne green ammonia project in India.

From left: Sushil Purohit, Chief Executive Officer of Gentari; Michèle Azalbert, Chief Hydrogen Officer of Gentari; Mahesh Kolli, Founder of Greenko Group and AM Green; M Shahrulikraam M Yassin, Head of Commercial, Gentari India; and Low Kian Min, Chief Renewables Officer of Gentari, following the signing of a Power Purchase Agreement between Gentari (via its subsidiary Gentari Renewables India Castor One Private Limited) and AM Green Ammonia India Private Limited.

New Business

Capturing New Growth Opportunities

Powering Singapore's Hydrogen Future

Gentari's wholly owned subsidiary, Gentari Hydrogen Sdn Bhd and Senoko Energy Pte. Ltd. are exploring the importation of hydrogen gas from Malaysia to Singapore. This partnership aims to boost efficiency while significantly cutting emissions by integrating hydrogen into Senoko Energy's existing and new combined cycle gas turbine assets. In its first phase alone, this initiative could reduce 18,000 tonnes of carbon dioxide equivalent (CO_2e), which is equivalent to removing 4,000 cars from the roads.

Generating Turquoise Hydrogen Without Carbon Dioxide Emissions

PETRONAS Research Sdn Bhd advanced its hydrogen ambitions by successfully producing turquoise hydrogen, a low-carbon solution derived from natural gas without carbon dioxide emissions. By leveraging methane pyrolysis combined with proprietary molten catalytic technology, the process generates hydrogen and converts carbon into solid form, preventing greenhouse gas emissions. A milestone was reached with the first successful production of hydrogen gas on 17 December 2024.

Green Mobility

Gentari Go: Turning Cleaner Energy into Everyday Rewards

Gentari, through its subsidiary Gentari Green Mobility Sdn Bhd, has launched Gentari Go - a digital platform that simplifies the transition to more sustainable choices across Asia Pacific. Whether it is electric vehicle charging or green mobility services, Gentari Go users can adopt sustainable solutions while earning incentives. Businesses, including fleet operators, charging point providers and automotive companies, can also leverage the platform to enhance their offerings and drive the shift toward a clean energy future.

Paving the Way for Electric Vehicle Adoption and Charging in Sabah

Gentari Green Mobility Sdn Bhd, a wholly-owned subsidiary of Gentari and EV Connection Sdn Bhd have made history as the first charging point operators in Sabah to receive licences for public installation of electric vehicle charging systems from the Energy Commission of Sabah. This milestone not only expands Sabah's electric vehicle infrastructure but also ensures that every installation meets strict safety standards.

Strategic MoUs with Financial Institutions and Insurance Companies to Expand Green Mobility

Gentari Green Mobility Sdn Bhd, a wholly-owned subsidiary of Gentari, is accelerating green mobility through key partnerships with financial institutions and insurance companies including CIMB Group Holdings Bhd, Mastercard, Malayan Banking Berhad (Maybank) and Zurich Malaysia.

CIMB Partnership
Facilitating electric vehicle adoption with value-added services and financing solutions.

Mastercard Partnership
Driving electric vehicle adoption in public transportation through marketing, promotions and secure digital payments.

Maybank Partnership
Facilitating easier access to green mobility and renewable energy solutions, starting with the installation of charging points at select Maybank branches in Malaysia.

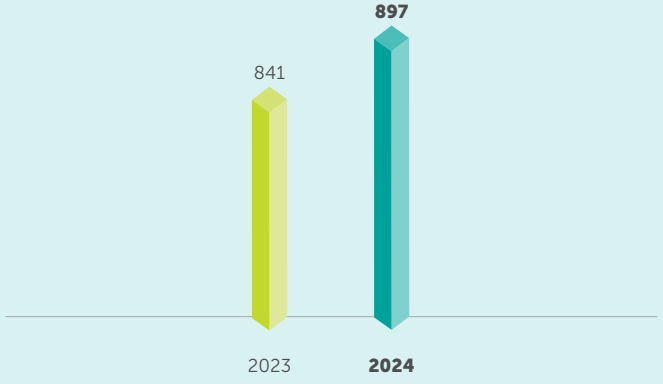
Zurich Malaysia Partnership
Promoting electric vehicle adoption via installation of electric vehicle charging infrastructure and value-added services at its premises and public locations.

New Business

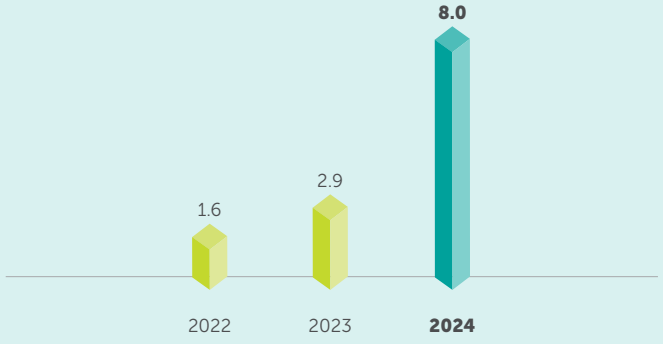
Capturing New Growth Opportunities

Performance in 2024

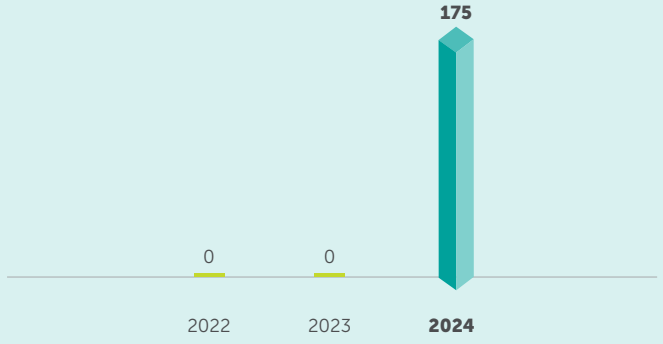
Specialty Chemicals
Sales Volume (kilometric tonnes)



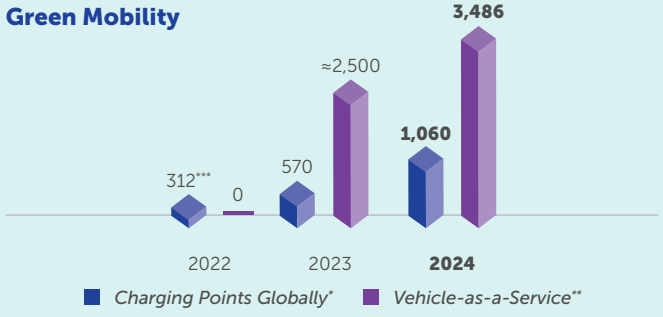
Renewable Energy
Total Capacity (Installed and Under Construction) (gigawatt)



Hydrogen
Matured Hydrogen Opportunities Achieved
(kilo-tonnes per annum)



Green Mobility



Notes:
- * *Gentari's growing global network of charging points is now available in Malaysia, Thailand and India.*
- ** *Vehicle-as-a-Service is now available in Malaysia, Indonesia and India.*
- *** *Comprising 151 charging points in Malaysia and 161 in India.*

Our specialty chemicals business recorded a notable rise in sales volume compared to 2023, supported by stronger market demand and improved cost competitiveness from lower raw material prices.

Meanwhile, our subsidiary, Gentari, continued to scale its operations across its three core pillars in 2024, securing a total of 8 gigawatts in installed and under-construction renewable energy capacity. This growth was supported by its entry into utility-scale projects in India and the expansion of commercial and industrial solutions in key markets.

The business matured 175 kilo-tonnes per annum of hydrogen opportunities and progressed several collaborations across the region. In Green Mobility, Gentari expanded its reach with 1,060 electric vehicle charging points and a fleet of 3,486 electric vehicles deployed across Malaysia, Indonesia and India, as it continues to build the foundations for long-term growth in Asia Pacific.

Challenges, Mitigation and Opportunities

Volatile market conditions, geopolitical tensions and inflationary pressures continue to impact the specialty chemicals market, affecting product demand. PETRONAS remains agile by focusing on portfolio diversification, cost optimisation and strategic partnerships to strengthen our market position.

Scaling electric mobility, renewable energy and hydrogen requires overcoming challenges such as consumer adoption, land scarcity and the need for competitively priced solutions. Simplifying the electric vehicle charging and payment experiences, developing innovative and space-efficient infrastructure, and fostering industry collaboration are key to accelerating the transition. We are addressing these barriers by enhancing accessibility, refining cost structures, forging industry alliances and advancing scalable business models for sustainable energy. With growing demand for longer-duration power solutions to address industrial decarbonisation needs, including from data centres, electric vehicle manufacturers and other hard-to-abate sectors, we are strengthening our cleaner energy value chain and are well-positioned to capitalise on these emerging opportunities.

Outlook and Priorities

Specialty Chemicals

Short-term

PETRONAS will focus on strengthening the specialty chemicals portfolio by maximising value from BRB and Perstorp, identifying key growth areas and innovating new products to meet evolving market demands.

Medium- to long-term

We aim to expand beyond our current footprint through strategic acquisitions, delivering key growth projects and implementing targeted market expansion to enhance our competitive edge and drive sustainable growth in the specialty chemicals sector.

Bio-based Value Chain

Short-term

We are set to accelerate the development of our bio-based ecosystem, focusing on strategic partnerships to secure feedstock and establish market channels ahead of the completion of PETRONAS' first biorefinery. We strengthen our presence in key markets to meet the increasing demand for lower-carbon fuels, particularly in aviation and transportation that are subject to emission standards or controls.

Carbon Capture and Storage

Short-term

We will enhance our CCS business by advancing domestic projects and engaging with potential emitters. The focus will be on establishing a solid commercial and regulatory investment foundation as PETRONAS plans to provide cost-effective CCS solutions to industrial emitters in the Asia Pacific region. By leveraging our storage capacity and infrastructure, we aim to be a regional decarbonisation partner, assisting neighbouring countries in achieving climate goals through reliable carbon storage in Malaysia.

Medium- to long-term

To support a scalable CCS value chain, we will expand our portfolio. This will include international ventures, strategic partnerships and technology integration. Our efforts aim to improve storage efficiency and lower costs per tonne of sequestered carbon dioxide. Developing reliable and multi-user CCS hubs is key to building long-term customer trust. These initiatives will create new business models, diversify revenue streams and speed up decarbonisation in hard-to-abate sectors in Malaysia, the region and beyond.

Renewable Energy

Short-term

Gentari will continue expanding its renewable energy portfolio across core markets, with a focus on integrating renewable power with hydrogen production to enhance efficiency and scalability. Gentari aims to create a more flexible and transportable energy supply by leveraging solar and wind energy for green hydrogen production.

Medium- to long-term

Moving forward, energy storage technologies will be a key enabler, ensuring longer-duration value, and strengthening the resilience of the renewable energy ecosystem to support the growing demand for lower-carbon solutions.

Hydrogen

Short-, medium- to long-term

Gentari will drive the development of green hydrogen and ammonia projects, focusing on securing early offtake agreements and delivering cost-competitive solutions. Strategic partnerships and breakthrough technologies will play a key role in strengthening Gentari's market position and accelerating the adoption of hydrogen as a viable lower-carbon energy source.

Green Mobility

Short-, medium- to long-term

Gentari will continue advancing the green mobility transition by expanding electric vehicle charging networks, scaling Vehicle-as-a-Service solutions and enhancing cross-border roaming across Asia Pacific. These efforts will strengthen infrastructure, improve accessibility and support the region's shift towards sustainable transportation growth.

Net Zero Carbon Emissions

Pathway to Net Zero

Focus Areas

We continue to advance four main abatement levers, focusing on practical and scalable solutions to reduce emissions and enhance long-term operational resilience.

Zero Routine Flaring and Venting

This measure will systematically eliminate routine flaring and venting in existing and new production sites. We aim to avoid routine flaring in new field developments and seek solutions to end routine flaring at existing production sites by 2030.

Energy Efficiency

We optimise energy use across operations, including operational excellence, digital solutions, process and equipment optimisation.

Electrification

We invest in and develop renewable energy infrastructure to electrify our operations. This encompasses asset modification, infrastructure development and sourcing, where feasible.

Carbon Capture and Storage

We are advancing carbon capture and storage deployment to reduce carbon emissions at identified assets.

+ *The following pages provide a snapshot of our efforts. For a detailed breakdown of our Net Zero Carbon Emissions by 2050 Pathway and progress, please refer to pages 92 to 175.*

Zero Routine Flaring and Venting

Monetising Flared Gas

Through cross-division collaboration, we have transformed previously flared and combusted hydrocarbons into additional sales gas at the Terengganu Gas Terminal. This initiative reduces greenhouse gas emissions by 0.36 million tonnes of carbon dioxide equivalent (CO_2e) per year mainly from carbon dioxide flaring, while lowering utility costs by an average of 25 per cent per month. It also strengthens our cash flow through reduced operational expenditure and increased sales for Upstream.

Terengganu Gas Terminal.

Cutting Carbon, One Project at a Time

We deployed 41 emissions reduction projects across our operations in Malaysia, successfully lowering approximately 1.3 million tonnes CO_2e. This has advanced our emissions reduction efforts across the Group. Key initiatives include reducing acid gas at the Terengganu Gas Terminal, curbing flaring at Erb West and minimising venting at Miri Crude Oil Terminal.

Energy Efficiency

Driving Energy Efficiency

By taking measures to optimise fuel burning, integrating renewable electricity and enhancing energy efficiency, we have successfully reduced Scope 1 and Scope 2 greenhouse gas emissions across our activities. The K30 compressor replacement in PFLNG SATU alone has helped reduce over 10,000 tonnes of CO_2e in 2024.

Notes:
Scope 1: Direct emissions from company-owned or controlled facilities and operations.
Scope 2: Indirect emissions from energy we purchase.

PETRONAS Floating LNG.

Point of Interest

Floating LNG (FLNG) plants eliminate the need for long pipelines. This means every efficiency upgrade, such as the K30 compressor replacement, has a multiplier effect on emissions reduction.

Electrification

Enterprise Electrification

We are accelerating our electrification strategy through the installation of rooftop and ground-mounted solar panels at PETRONAS' assets. This initiative allows our facilities to transition from grid-based electricity to on-site renewable energy solutions.

Installing rooftop solar panels at Universiti Teknologi PETRONAS.

Leveraging Innovative Solutions

As one of our material topics, Innovation and Technology is central to improving operational performance, driving cost efficiency and reducing emissions. Our approach is anchored on four focus areas that collectively enhance performance and resilience: delivering projects with excellence, operating smarter, advancing sustainable energy solutions and powering progress through strong partnerships.

In 2024, we invested RM562.2 million in technology, compared to RM644 million in 2023. This investment was channeled to 166 research and development initiatives, and 39 technology pilot projects. A significant portion of this investment was directed toward technologies to advance the PETRONAS Energy Transition Strategy and support our commitment to deliver net zero carbon emissions by 2050. This includes allocations to seven focus areas: carbon capture, utilisation and storage, specialty chemicals, hydrogen, renewable oil, fluid technology solutions, renewable energy, advanced materials and subsea technologies.

Several targeted programmes are being implemented, which includes our research and development in carbon capture, utilisation and storage aimed at developing technology solutions to reduce Groupwide greenhouse gas emissions. Our hydrogen and renewable energy initiatives aim to lower the levelised cost of energy, enabling more cost-efficient operations. Additionally, through our work in advanced materials and subsea technologies, we deliver complete subsea solutions and extend the life of facilities and fields to support operational excellence. The streamlined allocation reflects greater delivery efficiency and a continued emphasis on solutions with clear value potential.

Innovation with Impact

At our state-of-the-art research centre in Bangi, PETRONAS Research Sdn Bhd is advancing technologies that solve operational challenges while shaping the Group's long-term competitiveness.

Anchored by the PETRONAS Technology Agenda, the research centre focuses on translating research into practical solutions that support PETRONAS' core business and create pathways for growth in new areas, while aligning with our net zero carbon emissions by 2050 commitment. PETRONAS strategically advanced multiple innovative technologies, progressing them towards market readiness and delivering business impact.

The multi-cartridge membrane-based contactor system for natural gas, successfully tested at the Terengganu Gas Terminal, is now poised for broader applications, including post-combustion carbon dioxide capture. Further development is underway to support emissions reduction efforts at PETRONAS Energy Canada Ltd.

In the specialty chemicals space, PETRONAS introduced Emfinity® CGSA 200B, a patented, bio-based emollient developed from renewable, biodegradable sources. It offers hydration and protective features for skin, as well as enhances shine for hair, and can be easily incorporated into various types of personal care formulations.

Complementing these commercialisation milestones, we also delivered immediate business impact through targeted technology deployments. The Well Intervention Fluid-Friction Modifier increased production at key Upstream assets. Meanwhile, the application of Well-to-Seismic Data Reconstruction (RESEIS), using deep learning, redefined field potential by generating high fidelity subsurface insights and uncovering previously untapped opportunities within existing fields in Malaysia.

PETRONAS Iona Tera, a liquid coolant designed specifically for data centres to accelerate efficiency across the high-performance computing industry, was launched to explore opportunities in the growing immersive cooling market.

In addition, the practical application of functionalised graphene oxide (F-GO) as a rust converter paint achieved notable cost avoidance. These efforts demonstrate our commitment to translating technological advancements directly into operational excellence and sustained value creation.

Next-Generation Project Management for Faster Decision-Making

The PETRONAS Project Command Centre is transforming project management with real-time data, artificial intelligence and digital tools. This central hub enhances visibility, transparency and efficiency for faster decision-making. Piloted at selected key projects, it streamlines our operations, ensuring proactive solutions and seamless execution.

Enhancing Asset Reliability and Integrity to Unlock Value

We ensure regulatory compliance, safety and asset continuity through risk-based approaches. In collaboration with the Department of Occupational Safety and Health, the Risk-Based Certificate of Fitness enables us to strengthen operational efficiency and safety across PETRONAS' assets.

Fit-for-Purpose Technical Standards to Unlock Value

To ensure consistency and efficiency, the Portfolio Based Technical Requirements streamline PETRONAS Technical Standards with the International Association of Oil & Gas Producers' Joint Industry Programme 33 specifications and international standards. We have delivered RM35.3 million in savings for pipeline projects by implementing the Portfolio Based Technical Requirements 4.0 Pipeline and Riser in 14 projects.

Powering Progress through Partnerships

At PETRONAS, we harness the power of innovation and technology to achieve marked progress through seamless project delivery and smarter operations, while ensuring a resilient energy future. We are steadfast in pursuing these towards meeting evolving energy demands under a concerted effort, especially through building purposeful partnerships.

Ir. Mohd Yusri Mohamed Yusof
Senior Vice President, Project Delivery and Technology

PETRONAS and Sinopec Driving Innovation

PETRONAS and China Petrochemical Corporation (Sinopec) joined forces to drive innovation, growth and emissions reduction across the energy value chain. From specialty chemicals to cleaner energy solutions, this strategic collaboration aims to reduce carbon footprint and enhance industry competitiveness.

Powering Exploration with Intelligence and Innovation

We continued to push the boundaries of digital innovation in Upstream activities through strategic collaborations and cutting-edge technology. In partnership with Earth Science Analytics and Amazon Web Services, we integrated artificial intelligence and machine learning into PETRONAS' myPROdata platform to accelerate exploration in the Malay Basin and deliver advanced, data-driven insights to users. To further strengthen digital capabilities, PETRONAS signed Memoranda of Understanding with Schlumberger WTA (Malaysia) Sdn Bhd, Velesto Drilling Sdn Bhd and NOV Inc. to enhance subsurface data management and introduce drilling automation and robotics. These are key innovations toward optimising rig operations and expanding the use of advanced technologies across our exploration and production activities.

Collaborating for a Smarter, Lower-carbon Future

We are deepening our collaborations with Telekom Malaysia Berhad (TM) and CelcomDigi Berhad to accelerate digitalisation and enable lower-carbon solutions across sectors. Through a partnership with TM, we are working to strengthen data centre infrastructure, scale advanced cloud capabilities and enhance connectivity to support Malaysia's digital growth. The collaboration also explores the integration of cleaner energy solutions, with Gentari Renewables Sdn Bhd, a wholly-owned subsidiary of Gentari, deploying solar power and electric vehicle charging stations at TM facilities. Meanwhile, PETRONAS and CelcomDigi Berhad are advancing the use of 5G to enable smarter operations and sustainability-focused enterprise offerings. Building on the successful rollout of 5G private network in 2023, PETRONAS has extended implementation to two additional facilities in 2024, reinforcing our drive for efficiency and future-ready operations.

Sustainability Performance Review

PETRONAS takes an integrated approach to sustainability, embedding responsible practices across our operations, decision-making and value creation processes. We focus on balancing energy security with climate ambitions, while ensuring accountability in how we manage environmental and social impacts. By aligning with global standards and stakeholder expectations, we aim to build long-term resilience, support a just transition, and contribute to national and global sustainability goals.

Climate Change (CC)

- Site validation for **11** prioritised assets, which were identified based on desktop assessments for climate-related physical risks.

+ *Please refer to Delivering Net Zero on pages 92 to 111.*

Greenhouse Gas Emissions (GHG)

- **46.55 million** tonnes of carbon dioxide equivalent (CO_2e) from Scope 1 and Scope 2 emissions for PETRONAS' Malaysian operations, remaining within our 2024 target of limiting emissions to below **49.50 million** tonnes CO_2e.
- Achieved a **62 per cent** reduction in methane emissions from 2019 levels, exceeding the 2025 target of a **50 per cent** reduction for the Groupwide natural gas value chain.

+ *Please refer to Delivering Net Zero on pages 92 to 111.*

Economic Contribution (EC)

- **RM72.4 billion** in taxes, dividends, cash payments and other financial commitments to the Government.
- More than **RM700 million** into over **400** social impact programmes globally, including **RM2.4 million** for disaster relief efforts.
- **RM71 million** in research grants to 25 universities for low-carbon and renewable energy studies through the PETRONAS Academia Collaboration Dialogue.

+ *Please refer to Key Messages on pages 14 to 28.*

Lower-Carbon and Energy Transition Business (LCT)

+ *Please refer to Strategic Review on pages 60 to 81 and Delivering Net Zero on pages 92 to 111.*

Corporate Governance (CG)

- Three sustainability-related policy-level documents developed: the PETRONAS Commitment to net zero carbon emissions by 2050, PETRONAS Position on Nature and Biodiversity and PETRONAS Human Rights Policy, to provide consistent direction Groupwide.

+ *Please refer to Corporate Governance at PETRONAS on pages 186 to 205.*

Innovation and Technology (IT)

- **RM562.2 million** invested in technology.
- Secured **31** patents and **2** proprietary chemical formulations through research and development, strengthening long-term resilience.

+ *Please refer to Strategic Review on pages 60 to 81.*

Cyber Security and Data Protection (CDP)

- No major incident since 2022.
- Phishing test click rate of under **4 per cent** since 2022.

+ *Please refer to Cyber Security and Data Protection on pages 90 to 91.*

NB Nature and Biodiversity

- **273** potential new projects screened to ensure no new operations are located within UNESCO World Heritage Sites and to identify overlaps with Protected Areas and Key Biodiversity Areas.
- Signed Memorandum of Understanding between PETRONAS and Sarawak Forestry Corporation to explore and develop Nature-based Solutions (NbS).

+ *Please refer to Nature and Biodiversity on pages 113 to 117.*

CE Circular Economy

- The MTBE and Propane Dehydrogenation plants at PETRONAS Chemicals MTBE achieved recycling rates of **93 per cent** and **87 per cent** for hazardous waste, respectively.

+ *Please refer to Circular Economy on pages 124 to 129.*

EM Environmental Management

- **7.9 per cent** reduction of Nitrogen Oxide (NOx) emissions compared to 2023.
- **121,809** tonnes of hazardous waste disposed.
- **82.6 million** m^3 of freshwater withdrawn.

+ *Please refer to Environmental Management on pages 118 to 123.*

HR Human Rights

- Launched PETRONAS Human Rights Policy in 2024.
- **28,000** employees completed the human rights e-learning training.
- **66 per cent** of auxiliary police officers completed human rights awareness training in Malaysia.

+ *Please refer to Human Rights on pages 132 to 144.*

HW Health and Well-being

- Extended the Employee Assistance Programme to family members of employees, subject to evaluation and recommendation.
- Increased utilisation of Preventive Health Screening from **7.5 per cent** in the first quarter to **46 per cent** in the fourth quarter through promotion and deployment of on-site mobile clinics.

+ *Please refer to Health and Well-being on pages 159 to 162.*

EI Ethics and Integrity

- **806** integrity and training sessions conducted to enhance employee awareness.

+ *Please refer to Commitment to Governance on pages 176 to 205.*

SC Sustainable Supply Chain

- **81 per cent** of targeted internal stakeholders completed training on sustainable supply chain management.
- **417** PETRONAS vendors registered with PETRONAS Supplier Support Programme to equip licensed and registered vendors with sustainability tools and training.

+ *Please refer to Sustainable Supply Chain on pages 145 to 146.*

SM Safety Management

- Reduced Lost Time Injury Frequency (LTIF) by **9 per cent** from 2023.
- Reduced Total Recordable Occupational Illness Frequency (TROIF) by **66 per cent** from 2023.
- Recorded **2** fatalities.

+ *Please refer to Safety Management on pages 85 to 89.*

EAR Employee Attraction, Retention and Development

- Upskilled more than **23,220** PETRONAS employees and **13,612** industry technical talents.
- Scored **3.85** out of **5** in the agile awareness survey.

+ *Please refer to Employee Attraction, Retention and Development on pages 147 to 158.*

Creating Sustainable Value through Responsible Governance

Safety is our priority.

The global energy transition is an urgent and complex challenge that requires business, government and society to work together to achieve a lower-carbon future. This transition calls for a transformation in how we produce, transport and consume energy, along with investments in infrastructure on a scale not seen for several decades. With significant changes on the horizon, it is essential to ensure that the energy transition strengthens society and creates better prospects for more people, thereby uplifting communities. A just transition considers the social and economic impact of shifting to cleaner energy, particularly on the workforce, the supply chain and the communities who are directly impacted.

For PETRONAS, a just transition means upholding human rights, safeguarding the well-being of employees, equipping our people with the necessary skills for the future and ensuring that our supply chain evolves responsibly, while maintaining a strong commitment to safety and ethical business practices.

Our Material Topics

Safety Management 85

Cyber Security and Data Protection 90

SM Safety Management

Why This Is Important to Us

We operate in the energy industry, where exposure to hazardous conditions poses significant risks. We strive to embed a strong safety mindset across our operations to create a workplace where everyone returns home safely each day. By upholding the highest safety standards and strengthening our safety culture, we minimise risks, enhance operational reliability and safeguard lives. This commitment reinforces trust among our stakeholders and supports the long-term sustainability of our business.

Our Approach

PETRONAS is committed to Health, Safety and Environment (HSE) excellence in all our activities, wherever we operate, as outlined in our HSE Policy. We align our HSE Management System and HSE Mandatory Control Framework with the International Organisation of Standardisation's (ISO) 14001:2015 and ISO 45001:2018. This system and framework applies to all operations under our operational control.

Our Safety Management Approach

Compliance	Culture	Competency
• Drive compliance and operating discipline to manage risks and safeguard our licence to operate. • Leverage self-regulation to reinforce safety compliance.	• Strengthen implementation of the Generative HSE Culture programme at all levels. • Instil leadership and accountability through the HSE Accountability and Behaviour Reinforcement programme.	• Intensify human, asset and system capabilities, and HSE competency in delivering sustainable HSE performance. • Use of technology and digital tools to drive HSE excellence, derive performance insights, trends and emerging risks to enable proactive interventions.

Performance in 2024

Lost Time Injury (LTI)

13% 2024: 27 *2023: 31*

Lost Time Injury Frequency (LTIF)

9% 2024: 0.10 *2023: 0.11*

Total Recordable Occupational Illness (TROI) - Employees

64% 2024: 31 *2023: 86*

Total Recordable Occupational Illness Frequency (TROIF) - Employees

66% 2024: 0.22 *2023: 0.66*

Reduced Total Recordable Cases (TRC) by **6 per cent** in 2024 vs 2023

Recorded **zero** Major Fires and a reduction in Minor Fires

Increase in Major Loss of Primary Containment (LOPC) cases to **6** in 2024 from **4** in 2023

Recorded **2** fatalities

Our continuous efforts to cultivate a Generative HSE Culture, enhance contractor management and leverage digital solutions have contributed to key improvements across our operations. We acknowledge that safety is a journey, and while we have seen progress, we also recognise the areas where we must do better.

We deeply regret the loss of two lives in our operations in 2024. Every life matters and we remain steadfast in our commitment to strengthening our safety culture, learning from these incidents and ensuring that safety remains our top priority. Every incident is one too many and we will continue strengthening our safety systems, processes and mindset to ensure that every worker goes home safely. We extend our heartfelt condolences to the families, colleagues and communities affected.

We also observed an increase in Major Loss of Primary Containment (LOPC) cases from four in 2023 to six in 2024, despite our ongoing efforts to enhance process safety and risk management. This rise underscores the need for continued focus on vigilance, stricter controls and strengthened safety protocols.

Creating Sustainable Value through Responsible Governance

Compliance

We remain steadfast in our commitment to maintain the highest standards of safety compliance across PETRONAS operations, ensuring full adherence to both national and international safety regulations. We continue to drive improvements in operational safety and governance by implementing strategic initiatives across the organisation.

Operational Safety

Ensuring safety in daily operations is critical to maintaining compliance, mitigating risks and enhancing workforce capability. Through standard processes, digital solutions and strengthened contractor governance, we foster a safety-first culture across all activities.

The Digital Permit to Work system has been standardised to further eliminate risks associated with backdating, enhancing traceability and ensuring full compliance with joint site visit requirements. The system covers over 70 per cent of PETRONAS' target assets and maintains high customer satisfaction. It significantly contributes to safety and compliance while delivering substantial cost savings.

In line with Malaysia's Occupational Safety and Health (Amendment) Act 2022, we redefined our contractor management practices through a clearer demarcation of roles and responsibilities. We also conducted site verifications to identify potential risks early, ensuring compliance with safety protocols.

Process Safety

We continued our efforts in enhancing process safety by focusing on risk management, digital solutions, and inter-departmental collaboration and knowledge-sharing sessions for continuous improvement.

Integrated Process Safety System and HSE Integrated Risk Assessment Module on Process Safety have been enhanced, especially on Pre-Activity Safety Review for commissioning activities. The integrated Pre-Activity Safety Review system now connects with multiple enterprise systems, enabling fully traceable, evidence-based reviews at the source level.

We sustained our Process Safety performance via the Brilliant at Basics Programme to strengthen compliance with Bolted Flange and Joint Integrity, alarm management, operational integrity and corrosion management to complement Process Safety LOPC Reduction, and Fire Prevention and Mitigation Framework implementation. Key outcomes include:

- Trained Joint Integrity Team assessors and verifiers, strengthening on-site Bolted Flange and Joint Integrity implementation.
- Fully deployed Digital Flange Integrity Tools to prevent joint leaks and improve process compliance.

Self-Regulation

We continue to strengthen self-regulation by enhancing governance, ensuring the readiness of occupiers, which are PETRONAS-owned assets, for Special Scheme of Inspection Class B certification and implementing structured assurance activities. Through the development of supplementary documentation, readiness assessments and comprehensive audits, we reinforced compliance and operational excellence across all our operations.

Through our efforts, eight occupiers achieved readiness for the Special Scheme of Inspection Class B certification, ensuring compliance with regulatory requirements. We also completed planned assurance activities in nine occupiers, encompassing Adequacy Audit, Document Review Audit and Readiness Audit, ensuring compliance and operational readiness.

HSE Digital and Technology

PETRONAS is advancing HSE digital and technology by leveraging data-driven solutions, automation and predictive analytics to enhance safety, improve efficiency and strengthen risk management across operations.

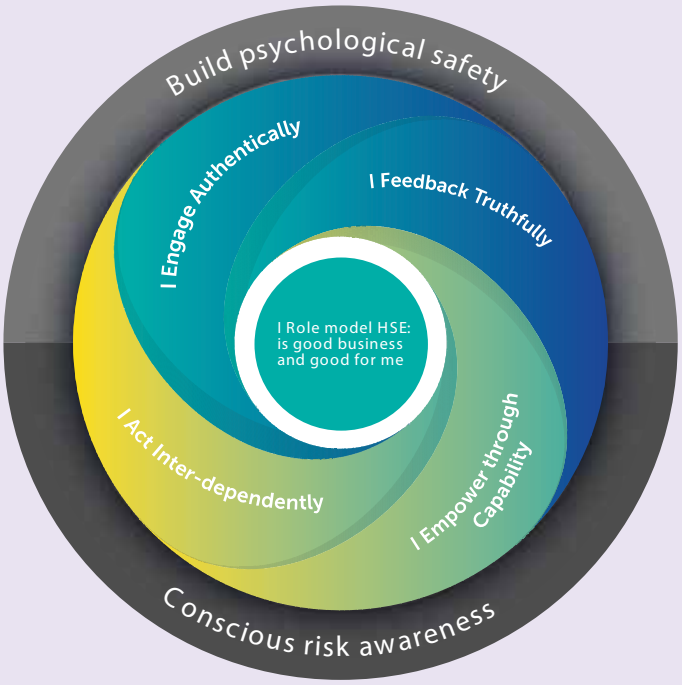
Since 2018, our in-house Artificial Intelligence Incident and Risk Analytics (AIIRA) has been fully operationalised into Project Delivery and Technology division-managed projects and facilities, enhancing data-driven HSE risk management. This division applies a risk-based approach to balance corporate and operational risks, ensuring safety and compliance. AIIRA's predictive analytics enables prioritisation of critical activities and high-risk projects, aligning assurance efforts with actual risk landscapes.

The implementation of risk-based assurance intervention by the Project Delivery and Technology division reduced assurance fatigue and improved focus and effectiveness. As a result, our first line assurance achieved more than 90 per cent schedule compliance with no overdue actions and observed a 38 per cent reduction in planned assurance by eliminating redundant activities.

In 2024, AIIRA was extended to the Downstream and Upstream businesses, further reinforcing enterprise-wide HSE risk management. We also introduced Smart Risk Analytics, which automates and enhances proactive risk management by delivering near real-time insights on HSE risks, critical activities, hazards and peak incident periods. Smart Risk Analytics marks a major advancement in proactive HSE risk management across PETRONAS. More operations are expected to onboard AIIRA, accelerating the uptake of artificial intelligence in the organisation.

Culture

Since 2017, PETRONAS has adopted a Generative HSE Culture, where safety is embedded in the organisation's mindset, shaping behaviours and decision-making at all levels. Rooted in the principle of care, PETRONAS defines Generative HSE Culture as 'Doing the right things right, even when no one is watching'. This culture is built on five core Generative HSE Culture Behaviours that guide actions and decision-making across all levels.



I Role model HSE: is good business and good for me

Treat HSE as a core value by role modelling HSE as an integral component of business operations, strategic decisions and personal well-being.

I Engage Authentically

Show genuine care in co-workers' safety, role model safe behaviours and find solutions to problems.

The Generative HSE Culture Model, Generative HSE Culture Behaviours, and Generative HSE Culture Leadership Programmes are intellectual properties of PETRONAS.

I Feedback Truthfully

Speak up when something does not seem right and pay attention to others who raise concerns.

I Act Interdependently

Work collaboratively with others to achieve consistent HSE and business goals.

I Empower through Capability

Build capability to ensure everyone can perform tasks safely and effectively.

HSE Leadership is the key lever in driving this culture, supported by our proprietary suite of targeted Generative HSE Culture leadership programmes. Since 2017, we have trained 2,927 leaders and 3,820 frontliners to demonstrate the five Generative HSE Culture Behaviours and reinforce consistent safety messaging through daily actions and moments of influence. By doing so, we create an immersive experience that shapes Generative HSE Culture, supported by ongoing communication, targeted engagement programmes, roadshows and business-led initiatives.

Creating Sustainable Value through Responsible Governance

We designed and rolled out targeted Generative Culture Leadership Programmes to suit leaders at all levels.

Since 2017, 2,927 leaders and 3,820 frontliners have been trained and upskilled via our Generative Culture Leadership Programmes

Generative Culture for Top Leaders
781 leaders trained

Generative Culture for Middle Managers
2,146 leaders trained

Rakan HSE (Friends of HSE)
3,820 frontliners trained

Strengthening Generative HSE Culture through HSE Accountability and Behaviour Reinforcement Programme

The HSE Accountability and Behaviour Reinforcement framework strengthens our Generative HSE Culture by fostering accountability and reinforcing safety behaviours at all levels. It outlines principles for Positive Reinforcement to recognise and reward employees who comply with HSE requirements. Our investigation teams review major incidents and non-compliance cases and identify behavioural factors with structured reinforcement measures determined by each business' HSE Accountability and Behaviour Reinforcement Committee. Integrated into our Generative HSE Culture Leadership Programme and various HSE campaigns, the framework ensures continuous reinforcement of accountability and proactive safety behaviours across the organisation.

Competency

We place strong emphasis on developing and enhancing the competency of our workforce in safety leadership and technical expertise. Through targeted training and development programmes, we ensure that our leaders and frontline personnel possess the necessary skills and knowledge to uphold safety standards and drive operational excellence.

Operational Safety

We strengthened site leadership by standardising the selection and assessment process for our supervisors. Competency and selection criteria were established to ensure merit-based hiring, outlining minimum experience requirements and relevant technical trade expertise needed for effective supervision.

In 2024, more than 1,000 supervisors were assessed for competency, ensuring that only qualified and capable individuals oversee critical operations. Training sessions were conducted using standardised training and assessment modules, enabling all operations to follow a standard framework and maintain consistent site compliance.

Crisis Management

Effective crisis management is crucial for a rapid, coordinated and resilient emergency response, protecting people, assets and operations. We adopt a structured and proactive approach to enhance preparedness and response effectiveness.

We enhanced crisis management efficiency and capability by incorporating technology solutions into our in-house developed Crisis Management Information System. Key outcomes include:

- Completed proof-of-concept in the integration of identified technologies such as drones, Internet Protocol cameras and wearables, with the Crisis Management Information System.
- Mandatory implementation of the Crisis Management Information System across all our operations beginning 2025.

To strengthen disaster preparedness and response in our operations, we enhanced the capabilities of the Natural Disaster Management Committee by conducting engagement sessions, workshops and tabletop exercises across six regions in Malaysia - Central, Northern, East Coast, Southern, Sabah and Sarawak.

Incident Management

As part of our efforts to strengthen safety via continuous learning, we established a structured, closed-loop process and governance to institutionalise Organisational Learning From Incidents that includes incident investigation, analysis, sharing of incident learnings, as well as conducting Site Verification and Attestation exercises.

Our centralised Organisational Learning From Incidents portal achieved a 29 per cent increase in engagement compared to 2023, reflecting strengthened organisational emphasis on HSE-related learning. We also conducted 12 Site Verification and Attestation exercises ensuring accountability and driving continuous improvement in HSE practices.

Health, Safety and Environmental Capability

We continue to strengthen our HSE capabilities by equipping our workforce with the right skills and structured development programmes, utilising digital solutions and emerging technologies to drive HSE Operational Excellence.

Our portfolio of Technology Inventories and Rulers was updated to align with evolving priorities in HSE technology, sustainability and digitalisation. Additionally, we established three new HSE sub-disciplines to respond to the shift in global demands. To strengthen governance, we also implemented a structured talent management approach to ensure strategic oversight of HSE talents through the execution of the HSE Staff Development Committee.

We enhanced our HSE learning and talent databases by incorporating immersive virtual reality experiences, HSE e-Learning modules and digital dashboards. A key highlight was the development of the 'Working at Height– Scaffolding' virtual reality module, uniquely designed using actual PETRONAS assets. Unlike generic off-the-shelf modules, this approach offers greater realism and reinforces safer, site-specific work practices.

PETRONAS Working at Height: Scaffolding virtual reality module, uniquely designed using actual PETRONAS assets.

Contractor capability was strengthened through collaboration with industry stakeholders and regulators, including the Malaysian Oil, Gas & Energy Services Council and the National Institute of Occupational Safety and Health by advocating safety practices and providing a platform for the exchange of HSE knowledge and ideas.

Moving forward, safety management will continue to evolve with a stronger emphasis on proactive risk mitigation, digital integration and industry collaboration. Embedding a Generative HSE Culture remains our priority. We will focus on enhancing HSE capability development through structured training, leadership engagements and upskilling programmes to build a highly competent workforce with a safety-first mindset. Strengthening partnerships with regulatory bodies, contractors and business stakeholders will drive higher safety standards across the industry. By advancing innovation, refining governance frameworks and reinforcing accountability, we will ensure safety excellence remains our key priority to ensure a resilient and secure operating environment for all.

Creating Sustainable Value through Responsible Governance

Cyber Security and Data Protection

Why This Is Important to Us

We integrate digital solutions across our operations to enable smarter systems and interconnected networks. However, this rapid digital adoption also heightens cyber security risks, making robust cyber resilience critical to safeguarding operations, protecting sensitive data and ensuring business continuity.

PETRONAS' risk-based Enterprise Cyber Security Governance Framework is designed to drive robust risk management processes and protect sensitive information. This approach helps us safeguard the resilience of both our physical and digital assets, and maintain international standards for cyber security and data privacy in a constantly evolving threat environment.

Our Approach

As cyber threats become increasingly sophisticated, PETRONAS recognises the need for a holistic approach in strengthening cyber resilience. Our strategy centres on a risk-based approach and is supported by robust governance, which ensures compliance with laws and directives. Governance plays a critical role in protecting our assets, managing risks and staying compliant with regulations.

Frameworks and Standards

The Enterprise Cyber Security Governance Framework ensures that the right people and processes are in place to safeguard our systems, assets, data and operations. This framework includes:

The Control Framework and The Control Standard	The Cyber Security Risk Management Guideline
• Developed based on the United States National Institute of Standards and Technology (NIST) Framework for cyber security. • Provides clear guidelines for managing cyber security through the five core functions of Identify, Protect, Detect, Respond and Recover.	• Aligns with PETRONAS' Enterprise Risk Management Framework. • Integrates PETRONAS' Risk Policy. • Outlines the approach for managing cyber security risk and accountability, providing a standardised method to assess, respond to, and monitor these risks across PETRONAS.

Compliance with Regulations

We continuously monitor and adapt to evolving regulatory requirements to ensure compliance with cyber security laws and directives across our operations.

Regulatory Compliance Updates in 2024	
• Reviewed the Network and Information Systems Directive 2's requirements to ensure our cyber security controls meet regulatory requirements for our European operations.	• Assessing local regulations, including the Malaysia Cyber Security Act 2024 and updates to the Personal Data Protection Act 2010, with enhancements to be implemented to strengthen compliance.

Measuring Assurance

We adhere to the PETRONAS Integrated Assurance framework to ensure Groupwide cyber security compliance. A centralised assurance platform monitors Information Technology and Operational Technology functional checklists across PETRONAS' businesses.

Measuring Cyber Resilience in 2024
• We continue efforts to establish methods to measure cyber security resilience. Having established strong fundamentals across key cyber security functions, our focus now is on sustaining and enhancing resilience guided by recommendations on effective metrics from the World Economic Forum (WEF) and other industry players.

Data Privacy and Protection	We integrate data privacy requirements into our Cyber Security Control Standards and conduct Data Protection Impact Assessments on our systems handling personal data to ensure compliance with digital data processing laws.
	Enhanced Data Protection Measures in 2024
	• Strengthened controls by incorporating a General Data Protection Regulation aligned breach notification process into the Crisis and Incident Response Plan, ensuring consistency with Malaysia's Personal Data Protection Act.

Our Action Plan

PETRONAS' expanding digital presence, driven by advancements in information and operational technology, increases our vulnerability to sophisticated cyber threats. These threats exploit not only vulnerabilities in the internal digital infrastructure but also in the broader business value chain.

To mitigate these risks, we adhere to the PETRONAS Enterprise Cyber Security Governance Framework and prioritise employee education, as they often form the first line of defence. By raising cyber awareness and fostering a cyber-safe culture, we aim to protect our systems, data and intellectual property from malicious attacks.

Focus Areas	Initiatives in 2024
Strengthening Core Capability	We strengthened core cyber capabilities by reinforcing controls at application and device levels, and participated in a government cyber drill on critical infrastructure at the national level in Malaysia. We developed an internal Cyber Security Academy, designed to centralise general training for our employees, as well as role-based training for topics ranging from cyber governance, third-party risk management to cyber security for operational technology.
Optimisation and Efficiency	We continued to optimise our cyber security performance by maximising the value of existing tools, processes and capabilities. Through strategic cyber security portfolio streamlining, we improved operational efficiency, strengthened continuous monitoring and enhanced our ability to manage growing threat volumes effectively.
Enabling Capable Personnel	We strengthened our cyber resilience by empowering our people to become active defenders in the digital space. The 2024 Global Cyber Security Month, themed Cyber Defenders Carnival, engaged employees through interactive events and learning opportunities designed to deepen awareness and promote behavioural change. Ongoing initiatives such as monthly tips, video series, virtual forums and targeted sessions kept cyber security front-of-mind throughout the year. Our annual 'Cyber Security & You' assessment recorded a 92 per cent completion rate, reflecting strong engagement and commitment to strengthening our cyber security posture across the organisation.
Driving Strategic Growth through Partnerships	We enhanced our security response capabilities through close collaborations with enforcement agencies and business partners. During the year, we participated in industry forums and cyber security crisis management exercises to share insights on safeguarding critical infrastructure. We also engaged third-party vendors and partners to raise awareness, assess their cyber readiness, address gaps and improve overall supply chain security.

As cyber threats grow more sophisticated, PETRONAS remains committed to safeguarding business integrity and continuity through a robust, risk-based approach to cyber security. As an appointed Sector Lead for Malaysia's National Critical Information Infrastructure, we take our responsibility to establish and uphold robust security standards across our operations and value chain with a deep sense of duty. In 2025 and beyond, we will continue strengthening internal defences, enhancing third-party readiness, and promoting a culture of cyber awareness to ensure a secure and resilient digital environment for Malaysia's energy future.

Delivering Net Zero

PETRONAS Leadership Centre incorporates green building principles.

Our Material Topics

The escalating risks of climate change demand a structured and urgent response. We are committed to reducing greenhouse gas (GHG) emissions across our core operations while strengthening our resilience towards climate-related physical risks, in an evolving regulatory and market landscape.

Climate Change 93

Greenhouse Gas (GHG) Emissions 93

Why This Is Important to Us

The urgency of climate change and the shifting energy landscape demand decisive action. As the world moves towards a lower-carbon future, PETRONAS is committed to delivering net zero, ensuring that sustainability and business growth go hand-in-hand.

The PETRONAS Net Zero Carbon Emissions by 2050 Pathway reflects this commitment and guides our efforts to reduce emissions across our operations while investing in new lower-carbon business opportunities.

Through our Net Zero Carbon Emissions by 2050 Pathway, we are taking proactive steps to cut emissions, collaborate with partners across the value chain, and invest in solutions that support a more sustainable energy mix. Achieving this ambition strengthens PETRONAS' resilience, mitigates environmental risks, and positions us to thrive in a low carbon economy.

Our Approach

PETRONAS is committed to achieving net zero carbon emissions by 2050, guided by our PETRONAS Energy Transition Strategy and driven by our Statement of Purpose: *A progressive energy and solutions partner, enriching lives for a sustainable future*.

In support of climate goals, there is an increasing demand from stakeholders for enhanced transparency around economy-wide emissions. Businesses are expected to advance corporate GHG emissions disclosures to encompass Scope 1, Scope 2 and Scope 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.

PETRONAS quantifies emissions based on both Operational Control and Equity Share approaches. This includes material Scope 3 categories' emissions. The Equity Share approach reflects the company's economic interest, which is defined as the extent of rights the company has to the risks and rewards associated with an operation.

Equity Share emissions are now incorporated into PETRONAS' reporting for both core and non-core businesses.

In 2024, we achieved our short-term target of limiting Scope 1 and Scope 2 emissions from Malaysia operations below 49.50 million tonnes of carbon dioxide equivalent (CO_2e). Furthermore, we are making good progress in achieving our medium- and long-term targets. Our approach is shaped by our business context, national policies, international frameworks and the scientific consensus on climate change.

Our Net Zero Carbon Emissions by 2050 Pathway Targets (Scope 1 and Scope 2)

2024 and 2025	2030	2050
Short-term Targets	**Mid-term Targets**	**Long-term Target**
☑ **49.50 million tonnes CO_2e** Cap emissions at 49.50 million tonnes CO_2e from PETRONAS' Malaysia operations by 2024.	Achieve **25 per cent** reduction against 2019 baseline in PETRONAS Groupwide emissions, including:	NET ZERO 2050 Net zero carbon emissions.
☑ **50 per cent** reduction in methane emissions from PETRONAS Groupwide natural gas value chain by 2025.	**70 per cent** reduction in methane emissions from PETRONAS Groupwide natural gas value chain.	
	☑ **50 per cent** reduction in methane emissions from Malaysia's natural gas value chain.	

☑ *Achieved*

Delivering Net Zero

Guided by International Principles, Frameworks and Standards

PETRONAS' net zero efforts are guided by internationally recognised principles, frameworks and standards to ensure transparency, consistency and alignment with global best practices. These references shape our approach to greenhouse gas (GHG) quantification, reporting and emissions reduction, strengthening the accuracy and comparability of our climate-related disclosures. This practice also supports progress towards key United Nations Sustainable Development Goals (SDGs), particularly those related to climate action, clean energy, and responsible consumption and production.

Scan the QR code to view the full list of references and guidelines we adhere to.

Transparency in Climate Action

We adhere to international standards in assessing and quantifying our GHG emissions by integrating them into operational practices, which are guided by internal governance frameworks and the PETRONAS Carbon Commitments that ensure accountability in delivering our Net Zero Carbon Emissions by 2050 Pathway across the Group. We continuously refine our reporting practices to enhance transparency, aligning with internationally recognised frameworks. Since 2022, we have reported publicly through the CDP (formerly the Carbon Disclosure Project) disclosure platform.

IFRS Sustainability Disclosure Standards

Our strategic approach to climate risk management aligns with internationally recognised disclosure frameworks, including the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). This enables us to effectively manage climate-related risks and opportunities as we work towards delivering our Net Zero Carbon Emissions by 2050 Pathway. As global reporting standards evolve, we are progressing towards adopting the International Financial Reporting Standards (IFRS) Sustainability Disclosure Standards S1: General Requirements for Disclosure of Sustainability-related Financial Information and S2: Climate-related Disclosure Standards, collectively known as the International Sustainability Standards Board (ISSB) Standards, which fully incorporate TCFD recommendations, ensuring enhanced transparency and accountability in climate-related disclosures.

Governance

The PETRONAS Board actively shapes and oversees the Group's strategy on climate-related risks and opportunities, ensuring consistent implementation across the organisation. Recognising climate change as a material business issue, the Board integrates climate considerations into decision-making to guide PETRONAS' long-term strategic direction. As the Group accelerates efforts to reduce GHG emissions and pursue lower-carbon business opportunities, the Board remains central in steering the direction that enhances resilience and sustainability.

+ *Please refer to Corporate Governance at PETRONAS for the role of the Board in climate-related matters on page 186.*

Strategy

The PETRONAS Energy Transition Strategy focuses on strengthening our Core Business, capturing new growth opportunities for New Business and responsibly managing carbon emissions to accomplish the goals of our Net Zero Carbon Emissions by 2050 Pathway. At its core, the Pathway guides the realisation of our strategy. It outlines our aspirations for strategic growth areas and defines key emissions reduction targets, supported by four main abatement levers which are Zero Routine Flaring and Venting, Energy Efficiency, Electrification, and Carbon Capture and Storage (CCS).

+ *Please refer to PETRONAS Energy Transition Strategy on page 29.*

Quantification of Climate-related Risks and Opportunities

We continue to utilise previously established quantification methods for assessing the risks and opportunities impacting our business. We employ three distinct scenarios from the International Energy Agency (IEA): the Stated Policies Scenario (STEPS), the Announced Pledges Scenario (APS) and the Net Zero Emissions by 2050 Scenario (NZE). These scenarios were chosen for their thorough consideration of global energy compositions and carbon dioxide emissions levels. They offer three unique climate pathways, with projections of temperature increases ranging from below 2°C to 2.7°C by 2100, alongside detailed regional data analyses.

The time horizons considered include short-, medium- and long-term. Among other opportunities, we have identified renewable energy, hydrogen and green mobility based on their impact on our Earnings Before Interest, Taxes, Depreciation and Amortisation (EBITDA) for PETRONAS' New Business by 2030.

Delivering Net Zero

Risks

We apply a Groupwide approach to risk management through the PETRONAS Risk Policy, described on page 35, complemented by the PETRONAS Resiliency Model, which is part of our Enterprise Risk Management Framework, described on pages 35 to 36. The Policy and Framework provide an integrated and holistic view of the overall system for effective risk management. Our Enterprise Risk Management Framework includes the tools and processes involved in systematically assessing, managing and monitoring various types of risks, including climate-related risks.

Climate-related Transition Risk

a) Climate-related Market Risk

What This Means

Our asset portfolio is exposed to volatile commodity prices and fluctuations in demand, driven by an accelerated energy transition towards a lower-carbon future. Key drivers for price and demand fluctuations are regulatory changes, shifts in customer preferences, availability of alternative energy sources and technological advancements that directly influence market and operating conditions as well as investor sentiment.

Potential Material Impact

Diminished revenue, cash generation and return realisation

Accelerated energy transition spurred by concerns over climate change will impact oil and gas margins as consumer preferences shift and renewable energy sources gain more prominence. Furthermore, the energy transition may drive market sentiments against oil and gas, which may, in the long term, impact the future prices of these commodities. This would, in turn, affect the value of our property, plant and equipment.

b) Climate-related Compliance Risk

What This Means

As the energy transition evolves, PETRONAS is exposed to various challenges and scrutiny, including adapting and complying with emerging regulations and policies.

Potential Material Impact

Impact on business/strategy/financial planning

Climate-related regulatory requirements, such as carbon pricing through taxes or emissions trading schemes, emissions caps and targets, combined with incentives for research and development, and the application of alternative energy sources and technological solutions, will serve as additional factors in strategy development, investment evaluations and operations planning. These factors will impact cost allocation and risk-reward trade-off considerations.

Compliance complexity

Operating in diverse and constantly evolving regulatory environments may lead to compliance gaps, fines and litigation.

Cost Increase

Government policies introducing limits or costs to fossil fuel extraction, production and consumption, as well as emissions of such activities, may increase operational and capital costs and establish additional needs for capital expenditure. These impacts may be further amplified by changes in financiers appetite for providing funding and terms to fund oil and gas activities.

c) Climate-related Reputational Risk

What This Means

The PETRONAS Net Zero Carbon Emissions by 2050 Pathway demonstrates our commitment to sustainability. It directs the organisation towards the necessary shifts and changes that are needed for the long term. The Pathway, performance and associated disclosures are subject to scrutiny by stakeholders.

Potential Material Impact

Damage in Reputation

Inadequacy of efforts to communicate and educate stakeholders on the Group's strategy and investment plans may negatively impact reputation and erode trust among stakeholders.

Erosion of Trust in Delivery Capability

Inability to undertake necessary investments and execute project delivery to meet stated targets may affect overall confidence in our capability to deliver on the PETRONAS Energy Transition 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.

Climate-related Physical Risk

Physical risks resulting from climate change can manifest in the form of acute or chronic risks due to climate events such as extreme precipitation, droughts, rising sea levels and increasing global temperature. With operations presence in more than 100 countries, our physical assets and ongoing projects are directly or indirectly exposed to the impact of these climate-related physical risks.

Past incidents across our global operations highlight the real impacts of climate-related physical risks, reinforcing the need for proactive risk management. These have included flooding affecting our asset in Miri, Malaysia; wildfires disrupting operations in Canada and heat waves exposure impacting personnel in Iraq. We continue to implement mitigation measures in response to such events.

We continue to enhance our understanding and efforts to manage the physical impact of climate change through dedicated climate-related physical risk assessments of our assets. The outcomes of these assessments inform our climate change mitigation efforts and support the resilience of our assets and value chains to climate-related physical risks, thereby helping us to remain adaptive and future-ready in a rapidly evolving risk landscape.

Delivering Net Zero

Impact Assessments

In 2023, we commenced risk assessments on the physical impacts of climate change on our global portfolio of assets. The Shared Socio-economic Pathway (SSP) 2-4.5 climate scenario, as defined in the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report, was chosen as the most plausible path as an intermediary GHG scenario.

Based on assessments conducted on 1,309 assets under operational control globally, seven key climate hazards were identified that may, by 2050, pose High, Very High and Extreme risk. These hazards include extreme precipitation, lightning, droughts, heat waves, storm surges and fluvial and pluvial floods. The results revealed that most of the high-risk sites are located in Malaysia. A prioritisation approach was established to identify critical assets, followed by site validation to confirm the hazards and conduct deeper vulnerability assessment to inform adaptation plans.

In 2024, we conducted site validation of 11 prioritised assets, confirming the outcomes of desktop risk assessments by evaluating the current and potential future impact of climate hazards. This process also included an assessment of the existing mitigation measures and asset design to ensure their adequacy in addressing climate-related physical risks. For instance, to mitigate lightning impact, assets have enhanced their lightning protection systems and installed dome roofs for hydrocarbon storage tanks as part of their existing mitigation measures. Where necessary, identified assets were recommended to adopt adaptation plans.

To further understand the impact of climate-related physical risks to our value chains, PETRONAS is developing a financial quantification methodology for business interruption. This methodology will assess the potential impact of such risks on our material value chains. We conducted a benchmarking exercise with industry peers, risk underwriters, consultants and regulators to establish materiality criteria aligned with industry best practices. This approach enables us to prioritise high-risk areas with most significant financial and operational impact to ensure targeted and effective climate adaptation plans.

Resilience to Physical Risk

Efforts are ongoing to enhance our capability to manage climate-related physical risks. This includes strengthening systems and processes, and developing human resource capability on climate-related physical risks to inform comprehensive assessments of the financial impact of these risks to our organisation.

In 2024, we developed a procedure to identify, assess and manage climate-related physical risk that impact our assets. This process is integrated with our Health, Safety and Environment Management System, under the Hazards and Effects Management Process and aligned with the Enterprise Risk Management Framework approach and processes, to ensure the risks are captured and managed effectively. Existing climate hazards such as flooding, lightning, droughts and storm surges are already being monitored in the affected areas.

We continue conducting capability development programmes at every level to create awareness on climate-related physical risks.

Metrics and Targets

Overall Emissions Performance Against Net Zero Carbon Emissions by 2050 Pathway Targets

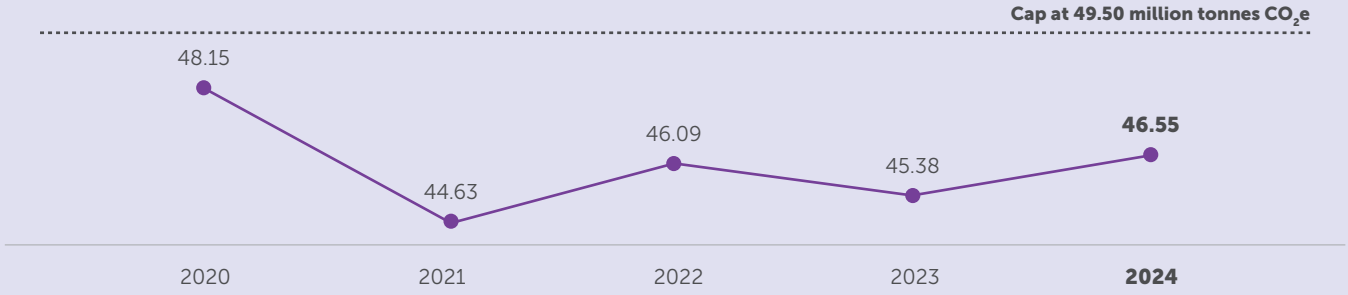
We track the performance of all assets under PETRONAS' control, with clear accountability and influence to manage short-term and mid-term emissions reduction. The PETRONAS Net Zero Carbon Emissions by 2050 Pathway's mid- and long-term targets are based on the Equity Share approach to reflect the portfolio view of the company. This approach supports our Energy Transition Strategy by enabling the monitoring of our long-term climate actions and portfolio shifts. It also ensures PETRONAS' future investments are in line with our Net Zero Carbon Emissions by 2050 Pathway.

To achieve our stated targets, we are allocating 20 per cent of our capital expenditure to emissions reduction initiatives and the development of cleaner energy solutions from 2022 to 2026. We are also expediting advancements in technology and innovation to balance growth in our Core Business and New Business, while striving to reduce GHG emissions.

GHG Emissions from PETRONAS' Malaysian Core Business Operations, Operational Control

In 2024, we successfully achieved our short-term GHG target by limiting emissions below 49.50 million tonnes CO_2e for our Malaysian operations, excluding Maritime, Corporate and Others, recording 46.55 million tonnes CO_2e, which is 3 per cent higher than the previous year, and 6 per cent lower than the target announced in 2020. The higher emissions numbers were due to enhanced GHG accounting to improve accuracy. These enhancements provide PETRONAS with a better understanding to track and manage emissions more effectively. Achieving the short-term target reflects the ongoing emissions reduction efforts across PETRONAS' assets since the establishment of the PETRONAS Carbon Commitments in 2013 focusing, to date, mainly on vent-to-flare conversion, flare and vent reduction, as well as energy efficiency improvements.

GHG Emissions from PETRONAS' Malaysian Core Businesses Operations, Operational Control
(million tonnes CO_2e)



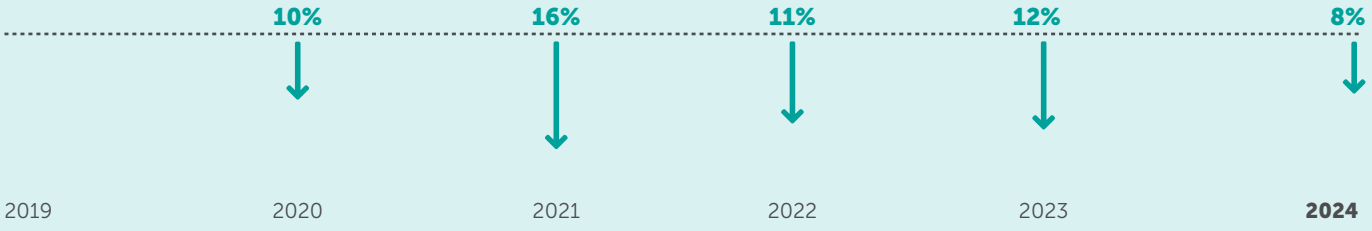
Note:
GHG Protocol defines that a company has operational control over an operation if the company or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operations.
Boundary: GHG Emissions from PETRONAS Malaysia Core Business Operations under Operational Control (excluding Maritime, Corporate and Others).

GHG Emissions from PETRONAS Groupwide, Equity Share

PETRONAS is progressively reducing equity share emissions by implementing comprehensive measures that align with our commitment to achieving net zero carbon emissions by 2050. This includes collaboration with partners to further reduce GHG emissions across all equity-held assets. In 2024, PETRONAS recorded 48.32 million tonnes CO_2e in Groupwide (Equity Share) emissions, which was 4 per cent higher than the previous year (2023: 46.41 million tonnes CO_2e) and lower by 8 per cent than the 2019 baseline, demonstrating progress towards 25 per cent emissions reduction by 2030. The annual increase in emissions was due to higher emissions from our Malaysian operations, while international operations recorded a 9 per cent reduction.

GHG Emissions from PETRONAS Groupwide, Equity Share
(million tonnes CO_2e)

Percentage reduction from base year 2019



Note:
PETRONAS Groupwide GHG emissions based on Equity Share approach Scope 1 and Scope 2 for 2019 (baseline year) was readjusted post external verification from 54.25 million tonnes CO_2e to 52.67 million tonnes CO_2e.
Boundary: GHG Emissions from PETRONAS Groupwide based on Equity Share approach.
Reduction percentage is against baseline year of 2019.

Delivering Net Zero

Methane Emissions from PETRONAS Groupwide Natural Gas Value Chain

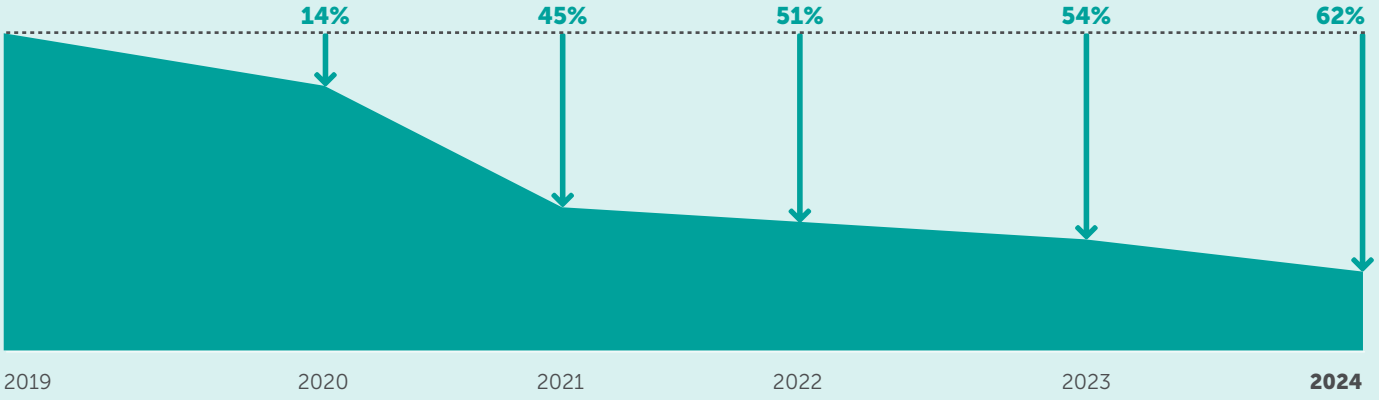
Methane emissions are a significant contributor to global warming. Since the extraction of hydrocarbons can be a source for methane emissions, reducing methane emissions remain a critical priority for the oil and gas sector, and a component of PETRONAS' Net Zero Carbon Emissions by 2050 Pathway.

Our efforts in methane emissions reduction have led to a 62 per cent reduction in methane emissions from the Groupwide natural gas value chain in 2024, surpassing our 2025 target of a 50 per cent reduction from 2019 levels. This progress was driven by the effective implementation of flaring and venting reduction projects across both Upstream and Gas businesses.

We are on track to achieve our mid-term target, which is 70 per cent methane emissions reduction from 2019 baseline by 2030.

Methane Emissions Reduction from PETRONAS Groupwide Natural Gas Value Chain

Percentage reduction from base year 2019



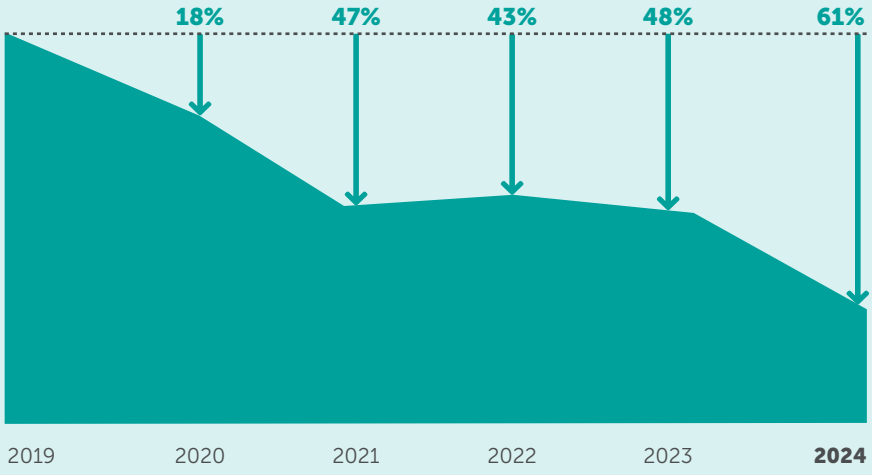
Boundary: PETRONAS Groupwide natural gas value chain, covering Upstream and Gas businesses.
Reduction percentage is against baseline year 2019.

Methane Emissions from Malaysia's Natural Gas Value Chain

To support Malaysia's commitment to the Global Methane Pledge, PETRONAS has taken an active role through Malaysia Petroleum Management as the oil and gas regulator, in driving methane emissions reductions. In 2024, we recorded a 61 per cent reduction in methane emissions compared to the 2019 baseline, surpassing our target of 50 per cent reduction for Malaysia's natural gas value chain by 2030. This significant progress is largely due to the elimination of venting sources through vent-to-flare projects as well as vent reduction achieved through membrane improvements in acid gas removal units across Malaysia's Upstream operations, including assets operated by our joint-venture partners. Additionally, there were improvements in methane emissions quantification.

Methane Emissions from Malaysia's Natural Gas Value Chain

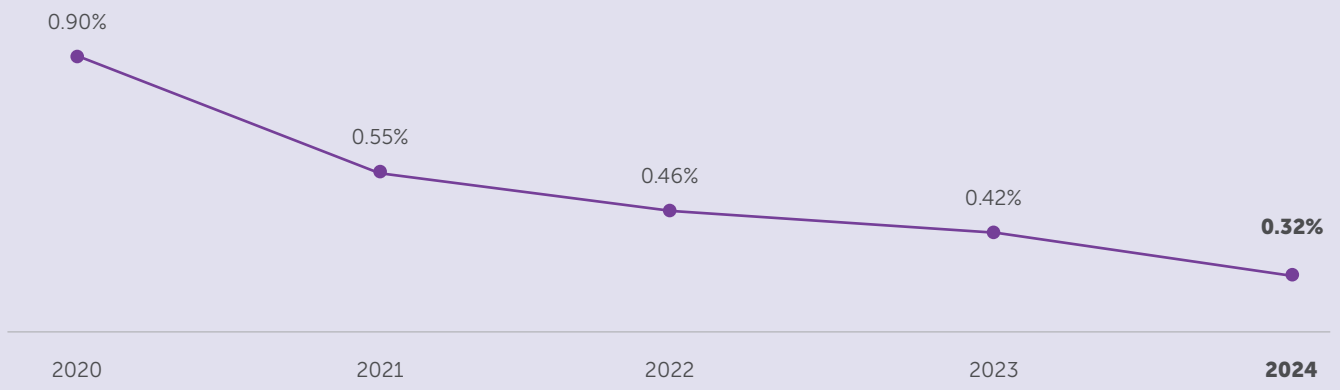
Percentage reduction from base year 2019



Boundary: PETRONAS Malaysia's natural gas value chain covering Upstream and Gas businesses.
Reduction percentage is against baseline year 2019.

Methane Emissions Intensity from PETRONAS Groupwide Natural Gas Value Chain

PETRONAS Methane Emissions Intensity



Boundary: PETRONAS Groupwide natural gas value chain, covering Upstream and Gas businesses.
Methane emissions intensity calculation is aligned with the Oil and Gas Climate Initiative (OGCI), i.e. methane emissions (m^3) / total gas sold (m^3).

Our undertaking to reducing methane emissions is also driven by our commitments to the Oil and Gas Decarbonisation Charter, which includes the goal of achieving near-zero methane emissions* by 2030. As of 2024, we remain on track to meet this target, having attained a methane emissions intensity of 0.32 per cent for PETRONAS-operated assets. We intend to further reduce methane emissions through the implementation of GHG abatement projects in both Upstream and Gas businesses.

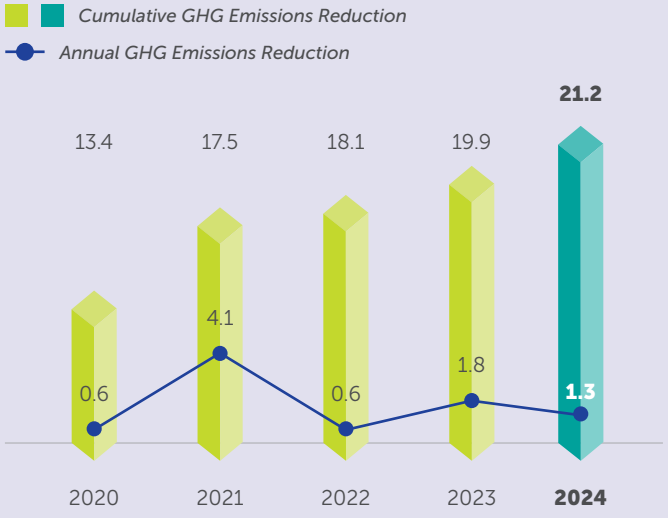
Note:
** Near-zero methane emissions is defined as below 0.2 per cent methane emissions intensity, as per the formulation by the Oil and Gas Climate Initiative (OGCI).*

Performance by Emissions Key Abatement Levers

Our pledge to achieve net zero carbon emissions by 2050 involves a comprehensive strategy encompassing innovation, collaboration and responsible resource management. The Net Zero Carbon Emissions by 2050 Pathway addresses technological constraints and evolving policies while balancing commercial acumen.

PETRONAS is continuously finding opportunities to reduce GHG emissions to meet net zero carbon emissions by 2050 by deploying enhanced practices and adopting new technologies. In 2024, PETRONAS completed 41 projects and initiatives, including energy efficiency improvements, vent and flare reductions, vent-to-flare conversions and renewable energy adoption across Core Business operations in Malaysia. Together, these efforts delivered 1.3 million tonnes CO_2e per year operational improvement. Since 2013, PETRONAS has cumulatively reduced 21.2 million tonnes CO_2e of annual emissions from our operations.

GHG Emissions Reduction from Projects, Operational Control
(million tonnes CO_2e/year)



Note:
GHG emissions reductions do not reflect the year-on-year GHG emissions differences.

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Emissions Reduction Per Year by Key Abatement Levers

Flaring and Venting	Energy Efficiency	Electrification
Flaring and venting reduction projects reduced emissions by 1.131 million tonnes CO_2e per year.	Energy efficiency projects reduced emissions by 0.165 million tonnes CO_2e per year.	Electrification projects reduced emissions by 0.001 million tonnes CO_2e per year.

Flaring and Venting

Addressing gas flaring and venting is a key priority in reducing emissions, while also ensuring valuable resources are used for energy and not wasted.

In 2024, PETRONAS implemented several flare gas recovery projects, improvements in compressor capacity, vent-to-flare conversions, and vent recovery projects.

We made significant strides in reducing routine flaring as part of our commitment to the World Bank's Zero Routine Flaring by 2030 initiative and Oil and Gas Decarbonisation Charter, pledging to avoid routine flaring in new oil field developments and phase out such practices at existing production sites by 2030. These commitments apply to PETRONAS Upstream operations Groupwide within operational control, and excludes safety and non-routine flaring.

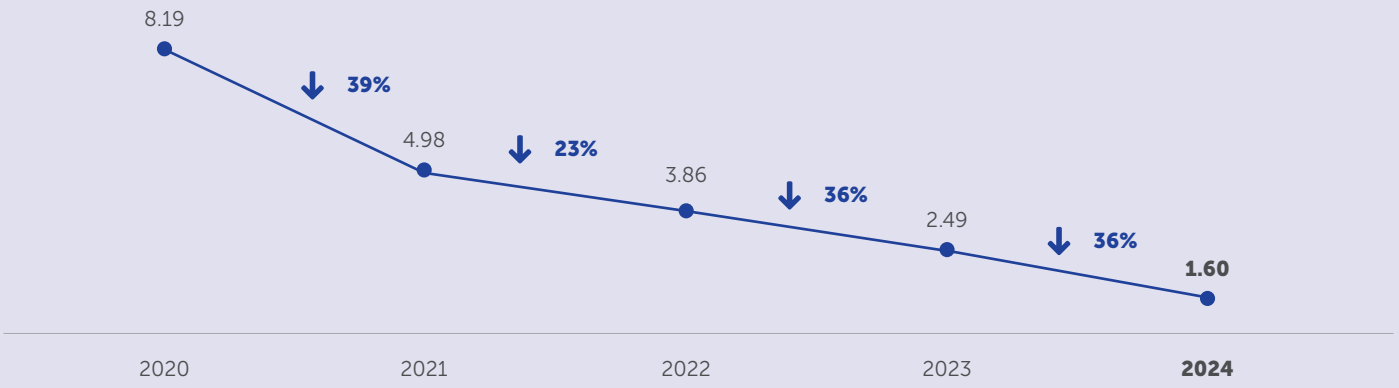
We began disclosing our flaring data to the World Bank for 2022 data (Operational Control). In 2023, we improved our flaring disclosure by distinguishing between total and routine flaring data, with total flaring volume recorded at 1,562 million standard cubic meter (sm^3) and routine flaring volume at 898 million sm^3, following the World Bank's Zero Routine Flaring initiative boundary. PETRONAS recorded a flaring intensity of 9.89 sm^3/boe in 2023.

PETRONAS Upstream has planned to eliminate routine flaring for the remaining oil fields by 2030, while all new and existing oil field development projects must undergo PETRONAS Carbon Commitments assessments to ensure alignment with the PETRONAS Net Zero Carbon Emissions by 2050 Pathway.

Note:
A barrel of oil equivalent (boe) is a unit of energy measurement used to standardise and compare the energy content of different energy sources, such as oil, natural gas and coal, by equating them to the energy contained in one barrel of crude oil. The data above refer specifically to Upstream oil assets, in line with the World Bank's Zero Routine Flaring initiative boundary.

Erb West Platform, Sabah, Malaysia.

PETRONAS Groupwide Venting Reduction, Operational Control
(million tonnes CO_2e)



Routine venting of gas remains a major source of PETRONAS Core Business GHG emissions. The embedment of zero routine flaring and venting requirements in PETRONAS Carbon Commitments has effectively delivered changes in operating procedures that have reduced routine venting, as shown above. In line with these commitments, emissions from venting of unwanted gases from hydrocarbon production have declined by 36 per cent, from 2.49 million tonnes CO_2e in 2023 to 1.60 million tonnes CO_2e in 2024. Additionally, Upstream had set a target for zero routine venting by 2024, a goal successfully achieved for all of its Malaysia-operated assets.

Energy Efficiency

Energy efficiency is a key abatement lever. According to the International Energy Agency, energy efficiency is called the 'first fuel' in clean energy transitions, as it provides some of the quickest and most cost-effective GHG mitigation options, while lowering energy costs and strengthening energy security.

The Malaysian Government has acknowledged the importance of energy efficiency by signing the Global Renewables and Energy Efficiency Pledge at COP28 in 2023, identifying energy efficiency as a key lever in the National Energy Transition Roadmap, and enacting the Energy Efficiency and Conservation Act (EECA) 2024.

In 2024, recognising the opportunity to further strengthen Groupwide energy governance, the PETRONAS Energy and Loss Management System 3.0 was introduced to enable continuous improvement and align with industry best practices.

2024 Progress

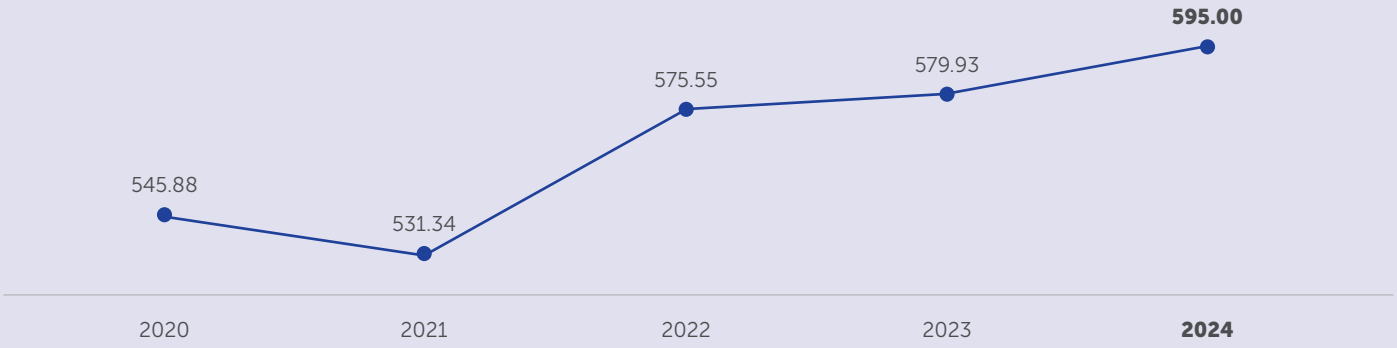
- Established PETRONAS Groupwide energy management system aligned with ISO 50001.
- Reported 2023 Groupwide energy consumption through the CDP Climate Change 2024 survey.
- Quantified Groupwide total energy consumption and business-specific energy intensity.
- Enhanced human resources capability through Decarbonisation Programme and embedded energy-related competencies into internal capability evaluation standards.

Delivering Net Zero

Energy Consumption of PETRONAS Groupwide, Operational Control

In 2024, PETRONAS' energy consumption was 595 petajoules, which is 3 per cent higher than the previous year. The increase in the annual energy consumption was the result of the increasing trend in production in each business.

Energy Consumption of PETRONAS Groupwide, Operational Control
(petajoules)

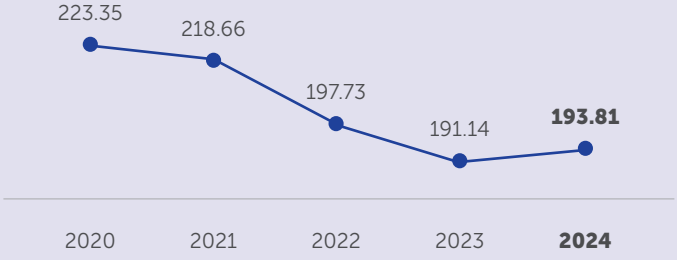


Note:
The energy consumption includes 3,050 megawatt-hour (MWh) of solar energy generated for self-consumption.

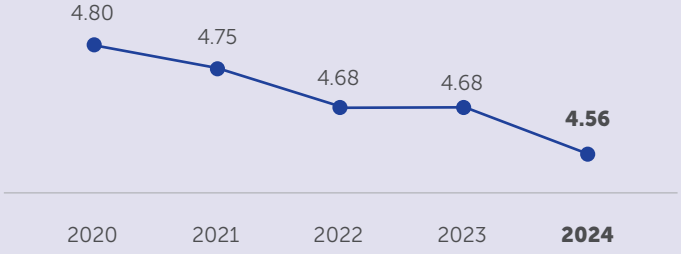
Despite an increase in total energy consumption, there is a decreasing long-term trend in energy intensity across most of the businesses. Groupwide, energy efficiency has been strengthened through enhancements in operating modes, utilisations of process automation and improvements in equipment efficiency.

Energy Intensity by Business, Operational Control
(gigajoules per business-specific denominator)

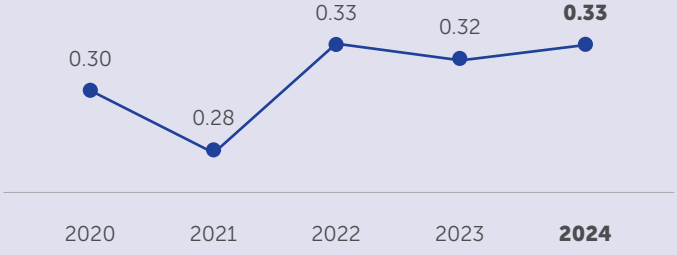
Upstream
(gigajoules per kilobarrel of oil equivalent)



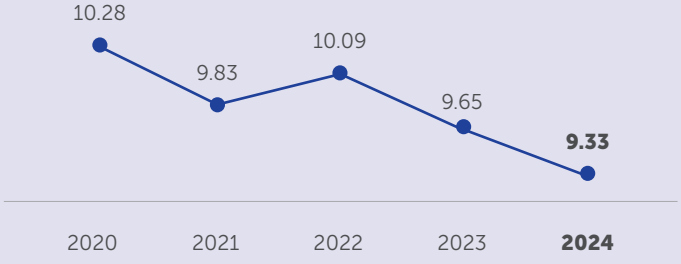
LNG and Gas Processing
(gigajoules per tonne of production)



Downstream - Refineries
(gigajoules per barrel of oil)



Downstream - Petrochemicals
(gigajoules per tonne of production)



There is a general downward trend in energy intensity between 2020 and 2024, showcasing improvement in energy efficiency. The increase in energy intensity in refineries, including a sudden spike from 2021 to 2022, due to the upgrade of the Melaka refinery to meet EURO V Diesel product specifications, in compliance with the Environmental Quality (Control of Petrol and Diesel Content) (Amendment) Regulations 2015.

In 2024, energy efficiency was enhanced in multiple ways, including through optimisation of operating modes. In gas processing plants, scenario modelling allows switching between sales gas and liquid hydrocarbon maximisation based on the prevailing operating environment. In the Pengerang Integrated Complex, the optimisation of the steam spinning reserve at the co-generation facility has led to energy consumption reduction of more than 664,000 gigajoules, equivalent to a reduction of around 37,000 tonnes of CO_2e per year. In the Upstream business, the optimisation of power generation has led to approximately 29,000 gigajoules of energy reduction, equivalent to around 1,700 tonnes CO_2e reduction per year.

Energy efficiency was also enhanced through equipment improvements, such as primary reformer tube upgrades, steam trap upgrades and rejuvenations in PETRONAS Chemicals Group Berhad assets, in 2024. In Downstream Refineries, the implementation of innovative maintenance practices, for example dry ice cleaning, and heat integration to further enhance heat recovery, has resulted in a reduction of approximately 65,400 gigajoules of energy consumed, equivalent to 3,700 tonnes CO_2e reduction per year. In Upstream business, machine efficiency revival has resulted in approximately 503,200 gigajoules of energy reduction, equivalent to 31,100 tonnes CO_2e reduction per year.

The use of real-time optimisers and advanced process control was expanded to further drive energy efficiency. In 2024, Utilities Gebeng successfully commissioned Utility Real-Time Optimiser, an automated model that optimises energy consumption during normal plant operations. This resulted in an energy reduction of approximately 51,600 gigajoules, equivalent to about 2,600 tonnes CO_2e with potential to achieve up to 3,800 tonnes CO_2e reduction per year.

Energy efficiency initiatives are supported by consistent monitoring of energy performance and timely interventions. This includes the use of in-house tools and methodologies, as well as enhancements of the energy management systems that provide a structured framework for systematically driving improvements.

Electrification

PETRONAS continued to advance emissions reduction across our assets by progressing electrification initiatives across our operations. This included installation of rooftop solar panels at our facilities throughout 2024.

+ *Please refer to Strategic Review on page 79.*

Carbon Capture and Storage

PETRONAS, through Malaysia Petroleum Management, is spearheading Carbon Capture and Storage (CCS) projects in Malaysia's Upstream sector to enable the monetisation of high carbon dioxide fields while mitigating greenhouse gas emissions.

Once operational, the Kasawari Gas Development project, coupled with CCS, is expected to sequester 3.3 million tonnes CO_2e annually. It will be a stepping-stone for future gas exploration in high carbon dioxide fields, providing a pathway for sustainable resource development.

Delivering Net Zero

Strengthening GHG Emissions Management

Improving the accuracy and reliability of GHG emissions data is critical to ensuring credible reporting and enabling emissions reduction efforts to be based on accurate information.

Our emissions accounting adheres to recognised international standards and frameworks, including the Greenhouse Gas Protocol : A Corporate Accounting and Reporting Standard, API Compendium of Greenhouse Gas Emissions Methodologies for the Natural Gas and Oil Industry, Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories. These international standards and frameworks inform our internal governance and the PETRONAS Carbon Commitments guideline, which was strengthened in 2024 to support implementation of emissions reduction efforts. We also apply international best practices to improve emissions tracking, verification and disclosure in line with evolving regulatory and stakeholder expectations.

To enhance data integrity, we established PETRONAS Enterprise GHG Analytics and Solutioning User System (PEGASUS), a centralised hub for enterprise GHG data for Scope 1 and Scope 2 emissions under Operational Control. The implementation of this dashboard has facilitated efficient data monitoring and analytics, providing timely management of GHG data and enabling interventions.

We continue our efforts to upskill employees in GHG management to strengthen expertise. The GHG Community of Practice, launched in August 2024, fosters knowledge-sharing and capability-building across the organisation. As part of the Decarbonisation Programme training, the Basic GHG Accounting module was introduced to institutionalise key competencies across operating units, and their technical, operational, and strategic domains.

Independent GHG Emissions Data Verification

The GHG emissions verification process was conducted independently by LRQA Inspection Malaysia Sdn Bhd. This data verification provides assurance on PETRONAS' emissions data, enhancing reporting reliability and transparency.

PETRONAS has set 2019 as the base year for tracking the progress towards achieving the Net Zero Carbon Emissions by 2050 Pathway targets. As part of our efforts to enhance the reliability of disclosed GHG emissions data, PETRONAS has embarked on a three-year external verification exercise from 2023 to 2025, based on ISO 14064-3:2018. Independent assurance has been obtained as follows:

GHG Accounting Approach	Level of Assurance	Data in Years	Boundary	GHG Scope
Operational Control	Limited	2023	PETRONAS Core Business Operations (Upstream, Gas and Downstream)	Scope 1 and 2
Operational Control	Reasonable	2024	PETRONAS Core Business Operations (Upstream, Gas and Downstream)	Scope 1 and 2
Equity Share	Limited	2019 - 2023	PETRONAS Groupwide Operations	Scope 1 and 2
Operational Control and Equity Share	Limited	2019 - 2023	PETRONAS Core Business and Groupwide Operations	Scope 3 (Category 11: Use of Sold Products)

As a result of the independent assurance exercise, some historical GHG data have been restated.

Strengthening Methane Emissions Management

We are committed to enhancing transparency, strengthening methane emissions management and building stakeholder trust in support of our emissions reduction efforts. To align with industry standards, we are a signatory to the following initiatives:

- Methane Guiding Principles (2020)
- World Bank Zero Routine Flaring by 2030 Initiative (2021)
- Oil and Gas Methane Partnership 2.0 (2022)
- Oil and Gas Decarbonisation Charter (2023)
- Joint Statement on Decarbonisation and Methane Emissions Reduction from Organisations in the Southeast Asian Energy Sector (2024)

Malaysia Petroleum Management plays a crucial role as the host authority in advocating and regulating methane emissions in Malaysia's Upstream sector, supporting to achieve Malaysia's natural gas value chain methane emissions target.

Delivering Net Zero

Scan the QR code to read more about the PETRONAS Oil and Gas Methane Partnership 2.0 Report related to the Signatory Commitments.

Scan the QR code to read more about the PETRONAS Methane Guiding Principles Report related to the Signatory Commitments.

Scan the QR code to read more about the PETRONAS Zero Routine Flaring Report related to the Signatory Commitments.

Oil and Gas Methane Partnership 2.0

By implementing standardised methodologies and tools under the Oil and Gas Methane Partnership 2.0 framework, we have improved the accuracy and consistency of methane emissions reporting across different regions and operations.

Understanding the Oil and Gas Methane Partnership 2.0 Reporting Levels

The Oil and Gas Methane Partnership 2.0 framework for methane emissions reporting consists of five levels, each offering increasing detail and accuracy. This tiered approach helps companies progressively improve their methane emissions monitoring and reporting practices.

- Level 1 involves high-level estimation using generic emissions factors.
- Level 2 and 3 apply mass balance methods and specific component factors, respectively.
- Level 4 uses source-level measurements.
- Level 5 is referred to as the Gold Standard, requires reconciling source-level measurements with site-level data to ensure comprehensive and accurate reporting.

In 2024, PETRONAS completed the Oil and Gas Methane Partnership 2.0 Level 3 methane emissions quantification across all assets and began phased quantification of Level 4 and Level 5 at identified material assets. To enhance accuracy, we applied direct measurements for the following sources, where deemed material:

Flare	Measure flare volume using flowmeter readings to calculate flare efficiency based on actual site data and gas composition determined through gas sampling.
Vent	Measure vent volume using flowmeter readings and gas composition determined through gas sampling.
Pneumatic devices	Measure emissions from all pneumatic devices in the process line using clamp-on flowmeter, measured at the header.
Compressor seal	Measure emissions at compressor seals using a Quantitative Optical Gas Imaging camera, which is capable of detecting, measuring and quantifying methane emissions from fugitive sources, local vents and compressor seals.

We also conducted site-level measurements and Level 5 reconciliation at selected assets, one year ahead of schedule. The reconciliation exercise provided valuable insights to further improve our measurement and reporting practices of methane emissions.

In 2024, we achieved the Oil and Gas Methane Partnership 2.0 Gold Standard Pathway for the second consecutive year, reinforcing our commitment to achieve Level 4 and Level 5 reporting for operated assets by 2025 and non-operated assets by 2027.

We attained our methane emissions targets of a 50 per cent reduction by 2025 for the Groupwide Natural Gas Value Chain and a 50 per cent reduction by 2030 for Malaysia's Natural Gas Value Chain, ahead of schedule. One of the key drivers of this progress is our commitment to the World Bank's Zero Routine Flaring by 2030 Initiative, which has been incorporated into our internal guideline, the PETRONAS Carbon Commitments. This has contributed significantly to reducing methane emissions from our operations and has strengthened our readiness to meet future regulatory requirements.

Deployment of Technologies for Enhancement of Methane Emissions Measurements and Reporting

We continue to enhance methane emissions management by exploring and piloting innovative measurement technologies across our operations. To complement source-level measurements, we have been testing site level measurements using drones, unmanned aerial vehicles, aircrafts and satellite technology to identify the most reliable, cost-effective site level methane emissions measurement methods.

Through PETRONAS Research Sdn Bhd, we are collaborating with Universiti Teknologi PETRONAS to develop video image methane emissions quantification technology for flare emissions. This artificial intelligence and machine learning-driven technology, combined with computational fluid dynamics analysis, will enable methane emissions quantification based on video imaging from flare monitoring cameras.

PETRONAS engaged drone measurement service providers to conduct site-level methane emissions measurements at selected material sites. These efforts represent a significant step forward in advancing methane emissions measurement technologies, though challenges remain in measurement accuracy, data collection methodologies and ensuring continuous improvement. The maturity and suitability of these technologies across PETRONAS' global operations continue to be key areas of focus, particularly in challenging geographical locations as some countries have limitations on utilisation of drones or unmanned aerial vehicles.

Methane Emissions Reduction Advocacy and Collaboration

We continue to play a key advocacy role in accelerating global progress towards reducing methane emissions through collaborative efforts. PETRONAS is championing methane emissions management beyond our own operations, as the original convenor of the ASEAN Energy Sector Methane Roundtable, and by driving capacity building across Southeast Asia in support of the Methane Guiding Principle's Advancing Global Methane Reductions initiative. This commitment is implemented through the ASEAN Energy Sector Methane Leadership Programme, which was first launched in June 2023. The second phase, announced in October 2024, is a joint effort between 18 partners representing oil and gas producers, technology providers, industry associations, international organisations, government agencies and non-governmental organisations. The Methane Leadership Programme promotes collaboration in the oil and gas sector among stakeholders through masterclasses and workshops focused on methane emissions reduction plans, targets and financing options.

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Initiative	2024 Progress Update
ASEAN Energy Sector Methane Roundtable	The 6th ASEAN Energy Sector Methane Roundtable was held in Indonesia. The Roundtable gathered government representatives and programme members from the Philippines, Thailand, Indonesia, Laos and Cambodia to engage on how to translate methane emissions reduction pledges into action. A Methane Leadership Programme masterclass was held in conjunction with the Roundtable. The 7th Roundtable was organised in conjunction with the 49th ASEAN Council on Petroleum (ASCOPE) Council meeting, hosted by PETRONAS in Malaysia. The discussions explored specific strategies for accelerating methane emissions reduction. During the COP29 climate summit held in Baku, Azerbaijan, eight of the roundtable organisations issued the 'Joint Statement on Decarbonisation and Methane Emissions Reduction from Organisations in the Southeast Asian Energy Sector'. This statement outlines their ambition and commitment to support global priorities on climate change and establish a regional methane emissions baseline.
Upstream Asset Management Summit 2024	Organised by PETRONAS through Malaysia Petroleum Management, a dedicated dialogue brought together 20 leaders from 16 Petroleum Arrangement Contractors and service providers across Malaysia, to discuss and identify tangible opportunities for methane emissions reduction efforts across the oil and gas value chain.
Global Advocacy on Methane Emissions Management	PETRONAS prominently promoted collaboration for methane emissions reduction through multiple international events, including the Advancing Global Methane Reductions Impact Conference at Baku Climate Action Week, the Oil and Gas Methane Partnership 2.0 Forum, and the Oil and Gas Decarbonisation Charter CEO gathering, held during the Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC), as well as at Malaysian events and dialogue forums.
Methane Leadership Programme	The first iteration of the Methane Leadership Programme concluded successfully, leading to the launch of Methane Leadership Programme 2.0, in October 2024, that focuses on strengthening emissions reduction targets and enhancing coordination between business and government. The programme has expanded its membership from 13 to 18, with PETRONAS obtaining Oil and Gas Methane Partnership 2.0 Gold Standard Pathway for two consecutive years, while PTT Exploration and Production (PTTEP) and Pertamina have also become signatories to Oil and Gas Methane Partnership 2.0, reflecting significant progress in regional methane emissions management collaboration.
Southeast Asia Methane Emissions Technology Evaluation Centre	Under the Methane Leadership Programme 2.0, PETRONAS is collaborating with the Japan Organization for Metals and Energy Security (JOGMEC) to establish the first Southeast Asia Methane Emissions Technology Evaluation Centre (METEC). The centre will support regional methane emissions measurement, monitoring, reporting and verification efforts while driving research and development initiatives. It will be located at Institut Teknologi Petroleum PETRONAS (INSTEP) in Terengganu and Universiti Teknologi PETRONAS in Perak, Malaysia.

Maturing Scope 3 Emissions Quantification

PETRONAS recognises the importance of measuring and reporting Scope 3 emissions in the oil and gas industry, as well as in other businesses we operate in, to inform emissions reduction efforts across value chains. According to the GHG Protocol, Scope 3 emissions are indirect emissions that are emitted as a consequence of our activities, but occur from sources that are not owned or controlled by PETRONAS.

Guided by the document 'Estimating Petroleum Industry Value Chain (Scope 3) Greenhouse Gas Emissions' by Ipieca, a global oil and gas association for advancing environmental and social performance across the energy transition, the use of sold products is typically the most significant contributor to emissions for fuel-producing companies and accounts for more than 80 per cent of total Scope 3 emissions.

To strengthen our understanding of PETRONAS' Scope 3 emissions, we conducted a quantification study across all 15 Scope 3 categories to assess their materiality within our value chain in accordance with the GHG Protocol, Ipieca and peer benchmarking. Through the materiality assessment, PETRONAS identified two material Scope 3 categories: Category 11 (Use of Sold Products) and Category 1 (Purchased Goods and Services). In 2024, PETRONAS Groupwide quantified emissions from Category 11 was 298.16 million tonnes CO_2e (Operational Control approach) and 292 million tonnes CO_2e (Equity Share approach). Meanwhile, Category 1 was 23.88 million tonnes CO_2e (Operational Control approach).

Addressing Scope 3 emissions is a complex and challenging task. It involves emissions that are not within the direct control of the energy producer, originating from various sources, including suppliers and consumers. These emissions can be difficult to quantify due to limited data availability and lack of transparency across value chains.

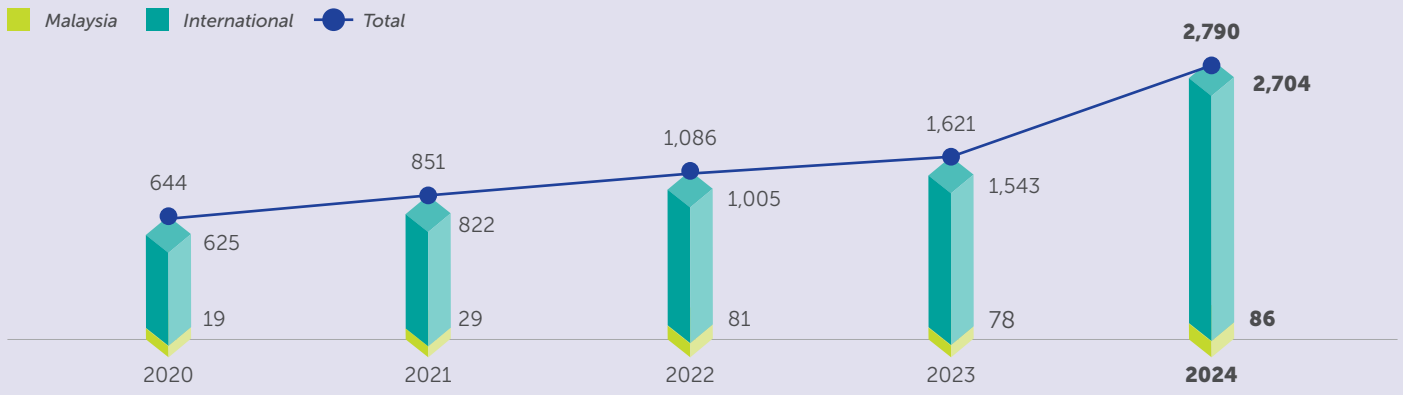
PETRONAS is taking progressive steps to further our understanding of value chain emissions and their quantification. We are identifying areas for improvement and engaging with our stakeholders in the value chain to foster transparency and develop effective strategies to reduce our Scope 3 emissions.

In 2024, we launched the PETRONAS Supplier Support Programme to improve suppliers' maturity in sustainability, including emissions disclosure. We support value chain emissions reporting through the Bursa Malaysia Centralised Sustainability Intelligence (CSI) Solution, which promotes the disclosure of carbon emissions and other indicators across the Malaysian industry. Additionally, we continue to explore targeted emissions reduction opportunities, where possible. Current efforts include battery swap services for two-wheelers in India and electric vehicle charging services across Southeast Asia. We are also undertaking a co-combustion ammonia test with Tenaga Nasional Berhad, a leading Malaysian utility company with international operations, and examining Carbon Capture and Storage (CCS) with third-party customer organisations.

Growing Lower-Carbon Energy Solutions

PETRONAS is advancing lower-carbon energy solutions through a diverse portfolio. We are leveraging strategic partnerships, technological innovation and large-scale projects to deliver on our Energy Transition Strategy. Currently, six New Business growth areas are being pursued to strengthen and diversify the portfolio, which include renewable energy, hydrogen, green mobility, CCS, biofuels and specialty chemicals. Through disciplined investments and effective project management, both internally and through new partnerships, we aim to strategically scale our presence in these areas to meet the evolving demands of the energy landscape.

Cumulative Renewable Energy Installed Capacity
(megawatts)



+ *Please refer to Strategic Review: New Business on pages 70 to 77.*

Thriving with Nature

Imbak Canyon Conservation Area in the heart of Sabah, Malaysia is home to a variety of flora, fauna and unique landscapes.

Nature and biodiversity are fundamental to sustaining life and ensuring the resilience of ecosystems that support communities, economies and industries, including the energy sector. As a responsible energy business, PETRONAS recognises that our operations depend and have an impact on natural ecosystems, and we are committed to addressing our environmental footprint.

Through sound environmental management practices, we strive to use natural resources responsibly, integrate biodiversity considerations into our operations, and promote circular economy principles to reduce waste and maximise resource efficiency.

Our Material Topics

Nature and Biodiversity	**113**
Environmental Management	**118**
Circular Economy	**124**

NB Nature and Biodiversity

Why This Is Important to Us

Biodiversity is essential for sustaining ecosystems that provide fresh water, food, medicine and climate regulation. The balance of life on land and in the ocean supports livelihoods, human well-being and economic stability. The loss of biodiversity threatens these vital services. Furthermore, forests and wetlands absorb carbon, protect coastlines and provide habitats for species. Without them, the effects of climate change worsen, putting communities, economies and industries at risk.

PETRONAS operates in diverse and ecologically sensitive environments. Our ability to responsibly manage our operations in relation to nature is essential to maintaining our social licence to operate, mitigating environmental risks, and ensuring long-term business resilience.

Biodiversity loss and ecosystem degradation can directly impact our operations, supply chains and surrounding communities, as a healthy, natural environment is essential not only for sustaining ecosystems but also for supporting economic development.

Our Approach

We aim to make a positive impact on nature and biodiversity by engaging in practices that restore, protect and conserve nature and biodiversity in Malaysia and the countries in which we operate. PETRONAS recognises that climate and nature are interconnected. Evidence shows that robust and healthy ecosystems can aid in combating climate change while also building resilience and enabling us to adapt to climate impacts.

The PETRONAS Position on Nature and Biodiversity addresses environmental concerns and expresses our intent to integrate biodiversity considerations into our business practices. This policy document aims to strengthen oversight of our nature and biodiversity footprint, and support the delivery of our Net Zero Carbon Emissions by 2050 Pathway. Our approach is informed by international agreements, global frameworks and national policies, and is delivered through five key areas of action. We are also scaling up our participation in the voluntary carbon markets.

PETRONAS Position on Nature and Biodiversity

1	2	3	4	5
Establishing voluntary exclusion zones	**Managing nature and biodiversity risks**	**Promoting nature and biodiversity through partnerships and collaborations**	**Supporting public policy that aims to protect nature and biodiversity**	**Promoting high-quality nature-based climate solutions**

Thriving with Nature

Our Action Plan

In 2024, guided by the PETRONAS Position on Nature and Biodiversity, we strengthened our commitment by enhancing risk assessments, embedding governance processes, integrating nature considerations into Groupwide decision-making and deepening partnerships to support conservation.

PETRONAS Position on Nature and Biodiversity - Five Areas of Action

1 **Establishing voluntary exclusion zones**	As of 2024, we have committed to not starting any new operations or projects within UNESCO World Heritage Sites. During the year, we screened 273 potential new projects to ensure none were located in or overlapped with these sites, Protected Areas or Key Biodiversity Areas. This safeguards globally significant ecosystems and cultural heritage. The effort reflects our implementation of Areas of Action 1 and 2 outlined in our Position.
2 **Managing nature and biodiversity risks**	We recognise the importance of conserving nature and biodiversity, and strive to ensure no or minimal impact from our existing operations and projects. Starting in 2024, we aim to achieve net positive impact on biodiversity for new projects in Protected Areas and Key Biodiversity Areas. We will establish a site-specific inventory of important biodiversity features at our existing locations and consider additional conservation measures using a risk-based approach. • In 2024, we completed a Biodiversity and Ecosystem Services Risk Profiling exercise for our existing international assets by analysing the 'Likelihood' and 'Severity' of operational impacts on surrounding nature and biodiversity. • This exercise identified one asset categorised as 'Very High' risk and one as 'High' risk. We will evaluate the effectiveness of existing mitigation measures at these sites through the Biodiversity and Ecosystem Services Risk Assessment. • A Biodiversity Action Plan will be developed for assets requiring further improvements in risk mitigation, while best practices will be documented for assets with adequate risk mitigation already in place.
3 **Promoting nature and biodiversity through partnerships and collaborations**	PETRONAS promotes nature and biodiversity through partnerships and collaborations, working with the Malaysian Government, global organisations, industry associations, the private sector and communities to drive action in addressing biodiversity loss in countries where we operate. **Key Engagements in 2024** **Ipieca** PETRONAS co-led the oil and gas industry discussions, through the Ipieca Nature Positive Taskforce, on developing industry-specific metrics and targets for nature and biodiversity. These discussions are pivotal in strengthening collective industry actions and refining approaches to integrating Nature Positive principles into business strategies. **WBCSD Nature Action** PETRONAS actively supported and engaged in the World Business Council for Sustainable Development (WBCSD) Nature Action working group, by contributing insights and collaborating with industry peers.

4 Supporting public policy that aims to protect nature and biodiversity

We support the Kunming-Montreal Global Biodiversity Framework and Malaysia's National Policy on Biological Diversity. We also recognise the nature and biodiversity policies and ambitions of the countries in which we operate.

Key Engagements in 2024

Nature and Biodiversity Dialogue for Business
PETRONAS organised, in collaboration with the Malaysian Ministry of Natural Resources and Environmental Sustainability, a Malaysian private-sector dialogue session to gather input ahead of the 16th meeting of the Conference of Parties (COP16) to the Convention on Biological Diversity, held in Colombia. The discussion provided valuable insights on adopting a nature-positive approach to business development.

ASEAN Business and Biodiversity Forum
PETRONAS hosted the ASEAN Business and Biodiversity Forum, organised in partnership with the ASEAN Centre for Biodiversity and the Malaysian Ministry of Natural Resources and Environmental Sustainability. The forum brought together governments, private sectors, non-governmental organisations and the academia to share their experiences in addressing climate change, biodiversity loss and pollution, through proactive investments and activities.

Malaysia Platform for Business and Biodiversity
PETRONAS provided key inputs on opportunities for the private sector in addressing biodiversity loss, as part of our contribution to the Business and Biodiversity Strategic Roadmap and Action Plan for Malaysia. This Roadmap aims to establish a coherent policy direction, enabling businesses across Malaysia to take a unified and collective approach to nature and biodiversity. It also seeks to mainstream biodiversity by translating global ambitions into national policies.

5 Promoting high-quality nature-based climate solutions

As part of our aspiration to achieve our Net Zero Carbon Emissions by 2050 Pathway, protecting nature and biodiversity is an integral part of supporting nature-based solutions. We actively explore opportunities to invest in high-quality nature-based solutions that apply internationally recognised certification standards.

PETRONAS signed a Memorandum of Understanding with the Sarawak Forestry Corporation to explore and develop Nature-based Solutions (NbS).

Thriving with Nature

PETRONAS Canada Leading Sustainable Operations in Biodiversity and Resource Management

Site visit as part of the Biodiversity and Ecosystem Services Risk Assessment exercise for PETRONAS operations in Canada.

Since adopting the PETRONAS Position on Nature and Biodiversity in 2022, we have worked actively to integrate biodiversity protection into our operations, acknowledging that nature-related issues are location-specific, and require localised assessments and responses.

In 2024, a Biodiversity and Ecosystem Services Risk Profiling exercise was carried out for PETRONAS' operations in Canada to evaluate potential inherent nature and biodiversity risks. As the assessment did not factor in existing mitigation measures, the Group's Upstream asset in Canada was initially categorised as 'Very High' risk, primarily due to the biodiversity sensitivities around the asset, including the presence of the woodland caribou, a species at risk.

Following a review of PETRONAS Energy Canada Ltd. (PETRONAS Canada) internal frameworks, management plans, processes and partnerships with competent advisors and First Nations communities to incorporate nature and biodiversity considerations into daily operations, the risk rating was lowered to 'Medium'.

Best practices implemented at the site include improving water use efficiency in response to historical water stress in the operating area. PETRONAS Canada also developed a system capable of achieving a 99 per cent recycling rate of produced water. The recycled water not only meets operational needs but is also shared with other producers, at no cost.

PETRONAS Canada's approach to biodiversity restoration goes beyond compliance, guided by a 'construct with the end in mind' philosophy. PETRONAS Canada aims to restore the land by prioritising ecosystem function and cultural priorities, rather than just vegetation regrowth. Old sumps are used as experimental plots to determine the most effective restoration methods, including seeding, mounding and varying degrees of coarse woody debris. Monitoring plays a key role in evaluating the effectiveness of these restoration initiatives.

To further strengthen land stewardship efforts, PETRONAS Canada is also developing a mechanism to establish an environmental offset bank, supporting broader conservation goals and long-term ecological resilience.

PETRONAS and Sarawak Forestry Corporation collaborate on Nature-based Solutions

Scan the QR code for link to the media release.

PETRONAS and the Sarawak Forestry Corporation signed a Memorandum of Understanding to identify potential sites in Sarawak for developing Nature-based Solutions (NbS) projects aimed at conserving and restoring natural ecosystems to remove greenhouse gas emissions, and providing benefits for local communities and biodiversity. These projects must also meet high-quality, internationally recognised certification standards to ensure integrity and effectiveness.

The effort reflects the importance of collaboration on NbS to sequester carbon emissions and support forest conservation. The partnership with Sarawak Forestry Corporation will allow PETRONAS to unlock the potential of NbS while benefiting the environment and local communities.

Carbon credits generated through NbS play a vital role in PETRONAS' strategy to offset residual and hard-to-abate emissions, supporting our Net Zero Carbon Emissions by 2050 Pathway. PETRONAS follows a carbon mitigation hierarchy that prioritises avoiding and reducing emissions before offsetting them.

PETRONAS Planting Tomorrow

Nurturing Ecosystems and Empowering Communities

The Planting Tomorrow programme integrates biodiversity conservation, community resilience and sustainable development.

Through collaboration with government agencies, local communities and non-governmental organisations, we strive to target initiatives on waste management, terrestrial ecosystem restoration and disaster preparedness. These efforts are designed to address environmental challenges on the ground while delivering measurable outcomes.

One example is the nature-based climate adaptation framework funded by Yayasan PETRONAS to empower local authorities and communities in Batu Pahat, Johor, Malaysia. The initiative not only offers insights into the development of future climate adaptation strategies, but also improves community preparedness for extreme weather events and long-term climate risks.

In China, we engaged around 945 students in environmental awareness through a speech competition on sustainability solutions.

In support of reforestation, we planted more than 10,000 trees at the Sabah Kungkular Forest Reserve and more than 980 mangroves at the Selangor Banjar Forest Reserve, both in Malaysia, and an additional 10,000 mangroves in Gresik, Indonesia.

We also deployed 50 cheeseblock artificial reef structures in collaboration with the Malaysian Department of Fisheries at the Redang Island Marine Park, Terengganu, Malaysia, to enhance marine biodiversity, boost ecotourism and drive economic growth for coastal communities.

Yayasan PETRONAS' strategic partnerships with the Department of Fisheries and Sabah Biodiversity Centre promote and advance seagrass mapping and conservation in Peninsular Malaysia and Sabah. Through these partnerships, we engage in educational and awareness initiatives for local communities, highlighting the significance of seagrass ecosystems and strengthening community resilience against future climate challenges.

PETRONAS will continue to strengthen our commitment to environmental stewardship and aim to make a positive impact by restoring, protecting and conserving nature and biodiversity, where possible. This includes enhancing risk assessment practices, integrating biodiversity considerations into decision-making and embedding them into our business strategies. We will also expand our efforts in NbS to help unlock Malaysia's potential in carbon markets.

Thriving with Nature

EM Environmental Management

Why This Is Important to Us

Environmental management is critical to PETRONAS because it directly impacts our ability to operate responsibly, safeguard ecosystems and maintain long-term business resilience.

We focus on resource use and management of waste, air emissions, water and oil spill prevention to reduce the environmental impacts across our operations and support long-term ecological balance. We are committed to ensuring that our products comply with all relevant regulations and are developed, transported, used and disposed of safely and responsibly.

Our Approach

PETRONAS applies a structured approach to environmental management, ensuring our assets adhere to relevant regulatory and industry standards for air emissions, wastewater, waste, water use and spill prevention. We integrate pollution prevention and resource conservation measures into our facility design, reinforcing our commitment to minimising environmental impact from the outset.

Advancements in sensor technology and process controls enhance our ability to monitor pollution, comply with regulations and improve efficiency. We leverage online sensors that provide real-time data on air emissions and wastewater discharges to enable proactive intervention. We also track key environmental performance indicators and leverage digital tools to monitor hazardous waste generation, treatment and disposal. Our site-specific environmental management plans ensure that our operations and projects prioritise environmental safeguards.

We work closely with authorities, suppliers and other stakeholders to drive responsible practices across our value chains. By fostering a strong culture of compliance and sustainability, we encourage the adoption of practices that reduce environmental impact while strengthening long-term operational resilience.

Guided by International Principles, Guidelines and Standards

Our environmental management approach aligns with internationally recognised principles, guidelines and standards to ensure best practices across our operations, as follows:

- **Guidelines from Ipieca and International Association of Oil & Gas Producers**
- **World Bank/ International Finance Corporation Group Environmental, Health and Safety Guidelines**
- **Host Country Standards for the Design and Operation of Pollution Prevention and Control Equipment**
- **Global Reporting Initiative 2021 Standards**

Maximising Waste Value through Circular Economy

PETRONAS integrates circular economy principles to minimise waste, extend material life cycles and optimise resource use. We actively support efforts to reduce, reuse and recycle plastics while applying the same approach to industrial waste and decommissioned assets to reduce landfill disposal and maximise resource recovery. Through waste valorisation and waste-to-products initiatives, we convert by-products into valuable raw materials, reducing pollution at the source. By closing resource loops within our operations and supply chain, we lower our overall environmental impact.

+ *Please refer to Circular Economy on pages 124 to 129.*

Our Performance

Waste Management

Our waste management strategies are structured based on the specific type, volume and frequency of generation to ensure its proper handling, treatment and disposal are in line with country requirements and industry best practices.

Waste	2022	2023	2024
Total Hazardous Waste Generated (tonnes)			
Malaysia	82,051	66,444	**80,116**
International	62,569	85,593	**107,178**
Total	**144,620**	**152,037**	**187,294**
Total Hazardous Waste Reused, Recycled and Recovered (3R) (tonnes)			
Malaysia	63,133	52,147	**55,707**
International	10,510	5,277	**2,876**
Total	**73,643**	**57,424**	**58,583**
Total Hazardous Waste Disposed (tonnes)			
Malaysia	24,449	20,023	**17,562**
International	52,036	76,287	**104,247**
Total	**76,485**	**96,310**	**121,809**

A total of 121,809 tonnes of hazardous waste was disposed in 2024 compared with 96,310 tonnes in 2023. The increase in waste disposal is mainly attributed to limited waste recycling options.

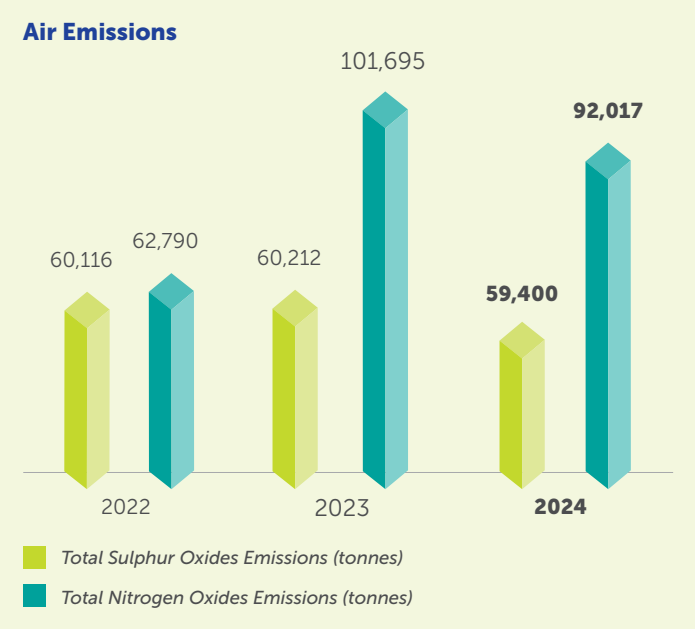
Air Emissions

PETRONAS strives to reduce air emissions across our operations, where possible, through monitoring, control measures and technological advancements. We ensure compliance with regulatory requirements while continuously improving our approach to emissions management.

We use an online monitoring platform to track air emissions 24/7, assess risks and detect rising emissions trends early. Our approach includes periodic sampling of Sulphur Oxides (SOx) and Nitrogen Oxides (NOx) to ensure compliance with regulatory requirements and minimise environmental impact.

Thriving with Nature

Beyond monitoring, we implement emissions reduction strategies such as optimising combustion efficiency, adopting new technologies and reducing gas flaring and venting activities.



Nitrogen Oxides emissions decreased to 92,017 tonnes in 2024 from 101,695 tonnes in 2023 mainly due to lower fuel gas consumption from our maritime operations.

Enhancing Air Emissions Management through Secure and Efficient Monitoring

In 2024, we enhanced the PETRONAS Continuous Emissions Monitoring System, a centralised platform that connects all continuous emissions units across our operations. This live dashboard displays the status of air emissions by equipment, allowing for remote monitoring and early intervention. Several measures have been incorporated in the system including access control, authentication, encryption, authorisation and surveillance to avoid cyber security breaches and strengthen security measures across all operations, helping to reduce the risk of operational disruptions.

+ *Please refer to our efforts on reducing flaring and venting, and methane emissions reduction activities on pages 102 to 103.*

Water Management

We prioritise water accounting, availability assessment and efficient utilisation to ensure responsible freshwater management. Our policies, standards and practices are designed to optimise freshwater use while promoting water circularity. All of the freshwater utilised in our operations is sourced from rivers, where 77 per cent is withdrawn from non-water stressed regions.

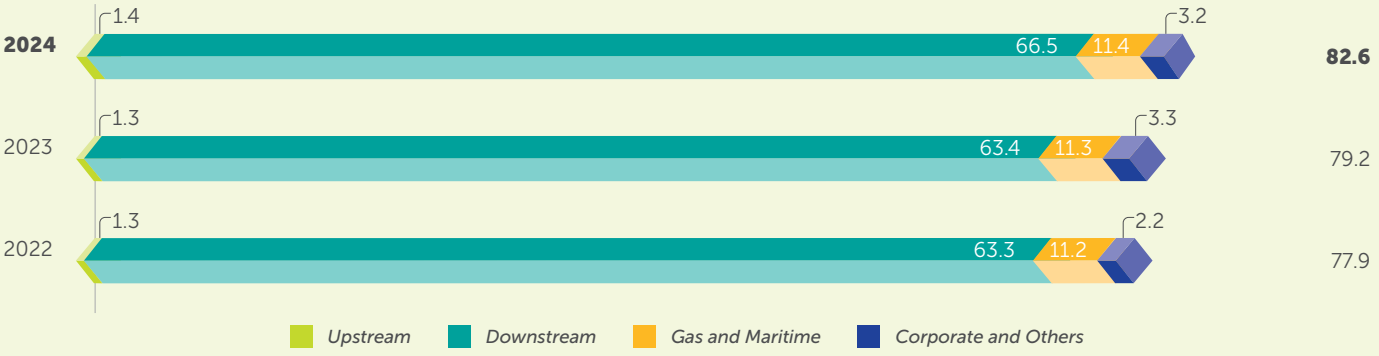
Phosphate Elimination for Enhanced Water Efficiency

In 2024, we improved our water management by implementing a non-phosphate programme under the Phosphate Elimination at Cooling Water Environment initiative, which was piloted at a refinery in Malaysia. This initiative removes phosphate from the cooling water, reducing the risk of calcium phosphate deposition and optimising the reusability of water with lower scaling or chemical deposition. This minimises the need for turnaround cleaning. As a result, we achieved freshwater savings of up to 3,000 cubic metres per month in 2024. Moving forward, we plan to expand this programme to all cooling water systems, ensuring continuous improvements in water efficiency.

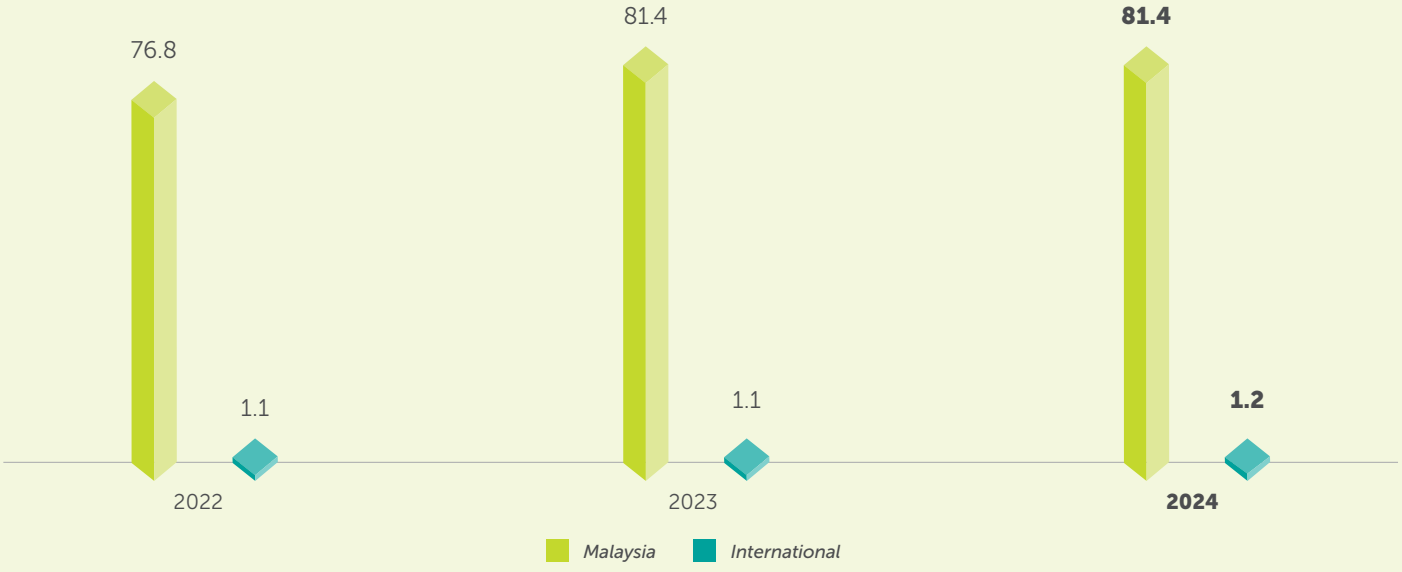
Water

Freshwater Withdrawal *(million cubic metres per year)*

By Business



By Geography



Our freshwater withdrawal increased by 4 per cent to 82.6 million m^3 due to additional requirements from the start-up operations.

Thriving with Nature

Oil Spill Prevention

Our oil spill response management, including the Oil Spill Response Capability Assessment, Spill Impact Mitigation Assessment, Oil Spill Response Plan and Oiled Wildlife Response, strengthens our preparedness and response capabilities. We prioritise prevention and effective recovery by maintaining asset integrity, adherence to the PETRONAS Technical Guideline for Standard Operating Procedure, and equipping our personnel with technical capabilities as per international standards, such as those issued by the International Maritime Organization.

Hydrocarbon Spills Over One Barrel

In 2024, we recorded an increase in the number of hydrocarbon spills over one barrel due to factors such as operational handling, connection failures and breaches in secondary containment. To prevent recurrence, we have intensified site supervision, introduced upskilling programmes for frontliners, and undertaken more rigorous inspections of secondary containment systems to strengthen spill prevention.

PETRONAS will continue to enhance environmental management, particularly in hazardous waste reduction, freshwater withdrawal optimisation and air emissions control.

Our PETRONAS Continuous Emissions Monitoring System will also undergo further improvements to ensure seamless compliance reporting and enhanced air emissions monitoring. To further strengthen oil spill response preparedness, we will continue to enhance capability-building programmes, industry benchmarking, and structured assessments to improve response capabilities and operational readiness.

Product Stewardship

We reinforce product stewardship practices that align with global industry benchmarks and embed such principles aimed at meeting, and where feasible, exceeding, regulatory and industry expectations. This includes integrating safety, environmental responsibility and ethical governance into our product life cycle management. For instance, PETRONAS' fertiliser product was certified under the International Fertilizer Association's Protect & Sustain programme, scoring above 95 per cent and exceeding the Product Stewardship Excellence rating requirement of 80 per cent. This certification involves comprehensive assessments that encompass management system, product development and planning, sourcing and contractor management, manufacturing techniques, supply chain, marketing, sales and application. Our approach aims to ensure that every product we develop, manufacture and distribute adheres to stringent safety protocols, environmental standards and responsible business practices.

PETRONAS MG3DF

We prioritise product safety and regulatory compliance to ensure our solutions meet the highest environmental and health standards. In 2024, we conducted ecotoxicity tests on our products, including MG3DF, a synthetic drilling base fluid derived from Low Sulphur Waxy Residue feedstock.

The results of the ecotoxicity testing confirmed that MG3DF exhibits low toxicity to both aquatic and sediment-dwelling organisms. The product also demonstrated ready biodegradability in marine environments, advancing our responsible environmental stewardship in product use. In 2025, we aim to register MG3DF under the Offshore Chemical Notification Scheme, which is a key step in ensuring international regulatory compliance and maintaining market competitiveness.

Toxicology

PETRONAS regularly conducts product data reviews to ensure all product hazards are accurately profiled in accordance with relevant regulations in markets where our products are sold. Toxicological and eco toxicological tests are performed to close data gaps. The newly-established PETRONAS Toxicology Laboratory facilitates toxicity and ecotoxicity assessments at the early stages of research and development to identify potential human health and ecological hazards of candidate chemicals.

In 2024, the PETRONAS Toxicology Laboratory achieved a major milestone by establishing five non-animal test methods, validated by the Organisation for Economic Co-operation and Development's (OECD) Guidelines for the Testing of Chemicals, covering toxicity endpoints for chromosomal damage, eye damage, skin sensitisation and ecotoxicity endpoint for Daphnia immobilisation. With this addition, the laboratory now offers a total of 12 non-animal OECD-validated test methods for assessing human health and ecological hazards of products under research and development, strengthening its capabilities in advancing safer, more sustainable innovation.

Ceremony marking the inauguration of PETRONAS Toxicology Laboratory.

Product Sustainability

Product sustainability addresses the environmental and social impacts of products throughout their life cycle, ensuring they are more sustainable, circular and resource efficient. It is operationalised through five key focus areas comprising environmental footprint, circular economy, sustainable supply chain, product disclosure, and declaration and carbon tax regulation.

Life Cycle Assessment is a science-based approach used to assess the environmental impacts of a product throughout its life cycle, guided by ISO 14040/44 and ISO 14067. PETRONAS is establishing a life cycle assessment baseline of its product portfolio to systematically assess its environmental performance. In 2024, we completed life cycle assessments for 47 products and finalised the life cycle assessment baseline for our gas processing plants in Malaysia and a series of base oils. Notably, PETRONAS piloted the life cycle assessment for Sustainable Aviation Fuel and introduced governance structures within the New Product Development framework to ensure that sustainability principles are embedded into every stage of our product innovation.

Thriving with Nature

CE Circular Economy

Why This Is Important to Us

PETRONAS recognises the need to move away from the linear 'take-make-waste' model and adopt a more sustainable approach to resource stewardship. We aim to mitigate our environmental impact while safeguarding natural resources by promoting the sustainable use of finite materials through bio-based chemicals, low-carbon and carbon dioxide utilisation, and circular economy solutions. Circular economy practices, such as repurposing, repairing, reusing and recycling, extend material life cycles, minimises waste and reduces dependency on raw materials.

Our commitment to circularity also supports carbon footprint reduction through circular carbon systems that prioritise reducing, reusing, recycling as well as removing GHG emissions. These efforts contribute to our sustainability objectives by promoting cleaner and more efficient operations. In addition to environmental benefits, circularity stimulates innovation and business opportunities by fostering new technologies, business models and circular supply chains. Converting waste into valuable products presents an opportunity to create new revenue streams for the Group while conserving resources and reducing costs. Collaborations and partnerships can further optimise resource use by distributing risks and pooling investments.

Our Approach

A holistic approach to the circular economy is applied through the PETRONAS Five Approaches to Circular Economy, which are bio solutions, waste to products, circular carbon, repurpose and reuse, and the sharing model. Circular economy projects across PETRONAS vary in scale and maturity. We also focus on addressing single-use plastics and championing a New Plastics Economy to minimise environmental impact and unlock new value streams.

According to the Ellen MacArthur Foundation, the New Plastics Economy applies the principles of circular economy and brings together key stakeholders to rethink and redesign the future of plastics, with a vision that plastics never become waste.

PETRONAS' Five Approaches to Circular Economy

Bio Solutions	The use of bio-based inputs or products to reduce dependency on finite materials.
Waste to Products	The change of waste to base materials or other products to create new revenue lines.
Circular Carbon	Closed loop system involving 4Rs (reduce, reuse, recycle, remove) to manage GHG emissions.
Repurpose and Reuse	Life cycle extension of materials or facilities to their original or new purpose to reduce waste.
Sharing Model	Optimisation of resources via shared platforms to increase cost efficiency and reduce waste.

Our Action Plan

Bio Solutions

PETRONAS is broadening the biofuels value chain beyond trading to establish a comprehensive bio-based ecosystem in Malaysia. This initiative aims to enhance sustainable practices, optimise resource utilisation, reduce carbon emissions and promote circular carbon systems. Some examples include:

i) Biorefinery at the Pengerang Integrated Complex

A new biorefinery at the Pengerang Integrated Complex in Johor, Malaysia, developed in collaboration with Enilive S.p.A, and Euglena Sustainable Investment Limited, is expected to be operational by the second half of 2028. The biorefinery is targeting a production of 650,000 tonnes per year of biofuel products, such as Sustainable Aviation Fuel, Hydrogenated Vegetable Oil and bio-naphtha from waste and residue feedstocks, including used vegetable oils, animal fats, waste from vegetable oil processing and other biomass. Additionally, we will explore the use of microalgae in the medium term.

The biorefinery will enable PETRONAS to respond to growing biofuel demand and strengthen Malaysia's role in the global biofuels market by providing a reliable supply of Sustainable Aviation Fuel and Hydrogenated Vegetable Oil, driving innovation and economic growth.

ii) Emfinity® CGSA 200B

PETRONAS Chemicals Group Berhad introduced Emfinity® CGSA 200B, a bio-based emollient designed for skincare and cosmetics applications. This marks our first entry into the bio-based personal care sector.

iii) Used Cooking Oil Collection

Following the successful pilot project on recycling used cooking oil by PETRONAS' Refining, Marketing and Trading business, PETRONAS Dagangan Berhad has since expanded the initiative into its Social Impact Flagship Programme, growing from three to 54 stations nationwide as of December 2024.

In collaboration with the Ministry of Plantation and Commodities, PETRONAS Dagangan Berhad aims to increase the volume of used cooking oil collected while promoting circular economy practices. Communication, education and public awareness activities were implemented in collaboration with municipal councils and institutions to drive public participation. These included the *Ikhlas Ramadan Bersama Gas PETRONAS 2024* events at five Ramadan bazaars with the Subang Jaya City Council and Kuala Lumpur City Hall, recycling competitions organised with the Penang Island City Council and awareness programmes with Universiti Teknologi MARA.

Since its inception, the programme has collected more than 700,000 kilograms of used cooking oil and benefitted over 190,000 individuals across Malaysia.

Thriving with Nature

Waste to Products

We view waste as a potential resource that can be transformed into new value streams. By converting waste into base materials or new products, we reduce reliance on raw materials, enhance operational efficiency and create sustainable revenue opportunities. Some examples of these products include:

i) Used Lead-Acid Batteries to New Automotive Batteries

PETRONAS Chemicals Olefins, Glycols and Derivatives recycles used lead-acid batteries to produce new automotive batteries. Besides recovering precious metals from used lead-acid batteries for recycling, the initiative has also contributed to profit generation and cost avoidance related to disposal.

ii) New Plastics Economy

PETRONAS is committed to transitioning to a New Plastics Economy by addressing challenges posed by single-use plastics. This approach focuses on minimising waste, promoting responsible waste management and reducing reliance on raw materials. By supporting a circular supply chain, we extend material life cycles through recycling, reuse and recovery mechanisms.

The New Plastics Economy fosters innovation in waste reduction, recovery and recycling technologies, promoting sustainable practices that minimise waste and address plastic pollution. We continue to actively assess novel recycling methods to further support our ambitions.

Our efforts in plastic circularity and waste management include eliminating unnecessary single-use plastics in company operations, developing systemic collection and recycling mechanisms, and participating in global initiatives such as Operation Clean Sweep® to prevent plastic resin loss.

PETRONAS' New Plastics Economy Workstreams	
Innovation Partner with technology providers to transform plastic waste into circular polymers, boosting efficiency and reducing impact.	**Infrastructure** Develop strategic partnerships and collaborations for an effective, sustainable waste recovery system.
Education Impart knowledge and education of plastic use and waste to address misconceptions and promote change in behaviour and culture.	**Clean-Up** Enhance awareness of caring for the environment through reduce, reuse and recycle (3R) education, social impact activities and green campaigns.

PETRONAS Planting Tomorrow

Advancing Circular Solutions for Sustainable Communities

In supporting the circular economy, one of our priority areas is to cultivate sustainable waste management practices in the communities where we operate. Led by our subsidiary PETRONAS Chemicals Group Berhad, the programme involves clean-up initiatives and aims to educate local communities on the importance of environmental preservation through proper waste and plastic management. The programme fosters responsible waste management behaviour and helps reduce plastic leakage into the environment. In 2024, PETRONAS Chemicals Group Berhad expanded its reach by doubling the number of schools engaged from 50 in 2023 to 100. Additionally, river and beach clean-up initiatives in Thailand and Indonesia promoted collaborative sustainability efforts between neighbouring countries, diverting more than 20,000 kilograms of plastics from entering the oceans.

We also launched a signature programme on sustainable waste management in Terengganu, Sabah and Sarawak, Malaysia, focusing on three key activities, which are clean-up drives, upskilling workshops and sustainability education at schools. The clean-up activities collected a total of 1,657.65 kilograms of waste and we provided upskilling workshops for 280 participants on managing plastics, textiles and used cooking oil. Of these, 211 participants attended a sustainability awareness workshop, while 191 joined a business and marketing workshop aimed at helping them explore ways to convert waste into useful products such as coasters, beads, soaps and bags. We also introduced proper waste management practices in 14 *Duta Guru* schools, engaging students through hands-on activities using the Plastic, Sustainability and You Education module published by PETRONAS Chemicals Group Berhad and made publicly accessible on its website.

In another effort, QuinTerra, a social enterprise nurtured through SEEd.Lab, addresses food waste by converting discarded food into resources for a closed-loop sustainable farming system. Organic waste is repurposed to cultivate fish and vegetables, creating a sustainable source of fresh produce. In recognition of its impact, QuinTerra was selected to represent Malaysia at the ASEAN Circular Economy Forum 2024 in Thailand. As of December 2024, the enterprise has benefitted 319 lives and processed 3,092 kilograms of waste, which helped cultivate 874 kilograms of fish and water spinach.

Circular Carbon

PETRONAS has been practising circularity initiatives for over a decade. Boil-off Gas from Liquefied Natural Gas (LNG), which is generated from LNG tanks and during the loading of LNG ships, is reliquefied at the Boil-off Gas Reliquefication Unit and converted back into LNG. This method offers not only a more sustainable alternative to gas flaring, it also provides a higher product value for Boil-off Gas in its liquefied form, as compared to consumption in fuel gas form.

In addition, flaring and venting reduction efforts are helping to lower emissions, with Upstream business advancing towards zero routine flaring and continuing work on methane emissions management. Flare and vent gas recovery projects at our Upstream facilities leverage cost effective and operational excellence approaches that maximise gas utilisation in terms of gas export for sales, and gas reinjection into wells for reservoir pressure maintenance.

+ *Please refer to Delivering Net Zero on pages 92 to 111.*

Thriving with Nature

Repurpose and Reuse

PETRONAS embraces repurposing and reusing by extending the life of materials and facilities, whether through continued use, new applications or responsible decommissioning.

Decommissioning

Decommissioning is a critical phase in the life cycle of industrial structures, which requires careful planning to minimise environmental impact and ensure safety. PETRONAS, through Malaysia Petroleum Management, applies a Decommissioning Options Assessment* for each project to ensure that decommissioning activities are environmentally sound and align with best practices.

Note:

* *Decommissioning Option Assessment is a process used to evaluate and compare different methods for decommissioning facilities, such as full removal and onshore disposal, reefing at the current offshore location or at an alternative site, or repurposing for other uses. It involves analysing the options identified for the facilities based on various factors including cost, environmental impact, safety and regulatory requirements to determine the most feasible and efficient approach for decommissioning.*

Rigs-to-Reef

One of the key approaches we have implemented is the Rigs-to-Reef initiative in Malaysia, where decommissioned offshore structures are repurposed as artificial reefs. This approach not only reduces waste but also supports marine biodiversity by restoring and enhancing underwater habitats. Scientifically proven to benefit marine ecosystems, the initiative helps sustain fish populations while contributing to the circular economy.

The Rigs-to-Reef programme began in 2004 with the successful reefing of the storm-damaged Baram-8 platform near the Miri-Sibuti area in Sarawak. The site has evolved into a haven of biodiversity and as a destination for recreational diving and tourism. This area has since been gazetted as a Marine National Park in 2007. In 2017, the Kapal platform near Pulau Kapas, Terengganu, along with D30 and Dana structures off the coast of Sarawak, were also converted into reef habitats.

To date, PETRONAS has successfully completed five Rigs-to-Reef projects and one Tubular-to-Reef project.

The latest Rigs-to-Reef deployment, completed in September 2024, involved the South Angsi-A appurtenances (structural equipment components) at Pulau Tenggol, Terengganu. Based on monitoring activities in 2021, conducted in collaboration with the Malaysia Department of Fisheries, fish species at designated reefing areas increased by over 30 per cent. This contributed to a rise in commercial fish yield by approximately 2,500 kilograms per harvest, boosting fishermen's income and improving livelihoods, with an estimated 5 per cent annual growth in the local fisheries economy.

Beyond ecological benefits, the Rigs-to-Reef initiative creates new opportunities for ecotourism and recreational activities, establishing scuba diving sites and fishing zones. It also aligns with the National Food Security Policy Action Plan, supporting efforts by the Ministry of Agriculture and Food Security to enhance fishery resources and food security.

To ensure long-term impact, PETRONAS is collaborating with the Department of Fisheries on a 10-year Malaysia Master Reefing Plan, starting in 2024. This initiative aims to establish multiple reefing villages across Malaysia, enhancing marine conservation while creating sustainable opportunities for coastal communities.

Tanjong Baram Field

PETRONAS successfully decommissioned the Tanjong Baram field in April 2023, with the objective of repurposing offshore infrastructure. Approximately 40 per cent of the original Tanjong Baram structure, mainly the topside, which is the upper structure above sea level, was modified, integrated and safely reinstalled in June 2024 at the South Furious-30 field, located off the coast of Sabah, avoiding 126 metric tonnes of steel waste. The substructure, or the 'legs' of the platform, was transferred to an onshore yard for reuse, where possible, ensuring materials remain in circulation.

Extending Asset Life Cycles and Repurposing Industrial Waste

PETRONAS applies, where possible, circular economy principles by extending asset life cycles and repurposing industrial waste. We strive to minimise our environmental impact, reduce landfill dependency and optimise resource efficiency through initiatives such as decommissioning of offshore facilities, waste-to-resource conversion and others.

i) Recycle, Repurpose and Reuse Hazardous Waste

PETRONAS Chemicals Group Berhad identified several types of hazardous waste which could be recycled, repurposed and reused. In 2024, the Methyl Tertiary Butyl Ether and Propane Dehydrogenation plants at PETRONAS Chemicals MTBE Sdn Bhd achieved recycling rates of 93 per cent and 87 per cent for identified hazardous waste, respectively.

Key waste streams include spent catalyst electrical waste, which is processed to recover precious metals; solvent waste oil-water mixtures, which are reprocessed into higher-grade oil; and spent lube oil, which is converted and reused as lubricant for heavy machinery. Additionally, spent activated carbon and spent adsorbent are repurposed as raw materials for cement production, while contaminated containers are cleaned and reused.

Sharing Model

We employ a sharing model that allows multiple users to access common resources to optimise resource use, extend product life cycles and minimise waste.

i) Resource Efficiency with VISMA

VISMA, or Virtual Integrated Solution for Material, is a cloud-based application that provides visibility of available materials to enable efficient sharing across the business. It shows near real-time data of project leftover items and spare parts across PETRONAS' value chain, supporting smarter and more efficient resource use. By enabling seamless material sharing between operations, VISMA helps to reduce generated waste, limit unnecessary material purchase and improve business operation cash flow. Through VISMA, we aim to achieve RM200 million in savings over the next five years.

ii) Vessel Sharing through 'Uberisation' of the Logistics Control Tower

We optimise offshore logistics through the Uberisation of the Logistics Control Tower System by promoting vessel resource sharing across our Upstream operations. In 2024, this initiative enabled us to eliminate the need to secure 95 additional common offshore support vessels, from the initial requirement of 325 vessels, therefore improving efficiency and minimising redundancy.

Through focused fuel management efforts, we also achieved a 35 per cent reduction in vessel fuel consumption, saving 53 million litres of fuel. These results establish a precedence for further infrastructure and resource sharing.

PETRONAS embeds circular economy principles across its operations by improving resource efficiency, minimising waste and fostering innovation in resource use. We continue to actively advocate circularity by engaging with industrial partners and the Malaysian Government to strengthen related policies and practices.

Fostering a Just Transition

We strive to advance a just transition that ensures our stakeholders have access to equitable opportunities.

The energy transition represents a transformative shift towards cleaner energy systems on a global scale. This transition will impact all aspects of society, including the ways we produce, distribute and consume energy.

As technology becomes more accessible and new measures are implemented, the transition towards a lower-carbon economy will create new jobs and business opportunities, reduce pollution and atmospheric emissions. However, it also has the potential to disrupt existing labour markets across the entire energy value chain.

Respecting human rights throughout the energy transition fosters inclusive societies, promotes equitable social and economic growth, and prevents exploitation and discrimination. Since our inception, we have steadfastly delivered on our mandate for nation-building and broader industrial ecosystem development, contributing to economic growth and societal progress.

Our Material Topics

Human Rights	**132**
Sustainable Supply Chain	**145**
Employee Attraction, Retention and Development	**147**
Health and Well-being	**159**

We understand that the energy transition will vary from country to country, but parallel efforts must prevail to support inclusive societal progress.

We are dedicated to implementing our Energy Transition Strategy in a manner that promotes a just transition that respects human rights and considers the needs of energy sector employees, suppliers and communities. By doing so, we aim to ensure that new investments lead to enhanced opportunities and improved prospects for stakeholders.

Future-proofing the Workforce

The energy transition is reshaping industries, demanding both technological advancements and a capable, agile workforce to drive progress. Innovation alone is not enough. Technology and talent must work hand-in-hand. We are committed to building a future-ready workforce by continuously investing in education, reskilling and upskilling, and industry collaboration while reshaping the organisation to better respond to evolving technologies and market dynamics.

For several decades, we have steadily invested in nurturing talent, ensuring that our employees are equipped to leverage new technologies. To stay ahead, we are enhancing workforce planning, strengthening skills and capacity in emerging energy fields and fostering agility through lifelong learning and technical training.

We assure that the well-being of the workforce continues to be our priority and all matters relating to workforce are handled responsibly, in accordance with our policies and prevailing employment laws. We uphold employee rights and engage constructively through dialogue with employees and their representative bodies through dedicated programmes and strategic efforts.

Strengthening the Supply Chain

The energy transition can only succeed with the support of an evolving and thriving supply chain ecosystem. We recognise that small and medium-sized enterprises, which make up a significant portion of our Malaysian energy supply chain, may lack the necessary awareness and knowledge to address emissions, strengthen environmental performance and integrate human rights principles into their operations.

To support our vendors, suppliers and partners in remaining competitive and resilient in the energy transition, the PETRONAS Supplier Support Programme, launched in 2024, provides assistance to PETRONAS suppliers in adopting and disclosing sustainability practices. This support includes tools, capacity-building training and access to sustainable financing facilities.

Supporting Community Resilience

We uphold our commitment to respecting human rights. We aim to foster inclusive community engagement, consult and collaborate with community stakeholders to gain new perspectives, and understand the aspirations of those who may be affected by our decisions. Our goal is to contribute positively towards societal and economic development in the areas where we operate. In doing so, we support communities to be more resilient and better able to respond to and benefit from the changes brought about by the energy transition.

PETRONAS' social impact investment programmes are designed with this in mind and prioritises three areas of action:

Powering Knowledge: We provide access to education and capability building through sponsorships and upskilling and reskilling programmes.

Uplifting Lives: We promote sustainable livelihoods by providing access to basic needs and fostering social entrepreneurship.

Planting Tomorrow: We support nature and biodiversity conservation and provide training for communities to increase their capacity and capability in mitigating potential risks.

Fostering a Just Transition

HR Human Rights

Why This Is Important to Us

We strive to advance a just transition that respects human rights and ensures that stakeholders, especially our employees, suppliers and communities, have access to equitable opportunities for socio-economic growth. PETRONAS is committed to upholding internationally recognised human rights to ensure fair treatment, prevent exploitation and foster inclusivity. Failing to uphold human rights can have far-reaching consequences, including labour rights violations, unsafe working conditions and unethical supply chain practices, which can undermine the well-being of workers and communities. These risks can also erode trust, damage stakeholder relationships and jeopardise our social licence to operate. As we make progress on realising our Energy Transition Strategy, we aim to support development where workers, suppliers and communities benefit from sustainable growth.

Our Approach

PETRONAS takes a structured and principle-based approach to human rights. This approach is built on three core pillars:

Policy | **Due Diligence** | **Access to Remedy**

These principles are embedded into our business practices. Our responsibility extends beyond employees to the communities and individuals connected to our operations and value chains.

We prioritise four key areas, which are labour and working conditions, supply chain practices, responsible security, and community well-being. These areas represent PETRONAS' salient human rights issues, identified through internal assessments and stakeholder engagements. Climate change, environmental pressures and the ongoing energy transition, influence human rights risks and responses across our operations and value chain.

Policy

PETRONAS Human Rights Policy

In 2024, the PETRONAS Human Rights Commitment was elevated to a Human Rights Policy, which reinforces what we stand for in respecting and promoting human rights across our operations and supply chains. This Policy provides a clear steer for ethical and responsible practices, embedding human rights principles into our business. It also establishes a structured approach to addressing human rights risks and ensuring accountability across operations and the value chain.

Please refer to Human Rights Policy.

PETRONAS is committed to respecting all internationally recognised human rights as outlined in the International Bill of Human Rights and the International Labour Organization's Declaration on Fundamental Principles and Rights at Work. Our approach is guided by the United Nations Guiding Principles on Business and Human Rights, and the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises on Responsible Business Conduct.

The PETRONAS Human Rights Policy applies to all employees and directors of PETRONAS. Third parties performing work or services on our behalf, joint ventures where PETRONAS does not hold a controlling stake and associate companies are encouraged to adopt this Policy or implement similar principles and standards to safeguard rights holders.

PETRONAS requires contractors and suppliers to adhere to the PETRONAS Contractors Code of Conduct on Human Rights, which sets clear expectations for ethical and responsible business conduct. This includes addressing critical labour rights issues and risks such as forced labour, child labour, discrimination, inhumane treatment, restrictions on freedom of association and violations of labour rights. These principles are fundamental to ensuring fair, safe and inclusive working conditions across our supply chain.

Please refer to PETRONAS Contractors Code of Conduct Governance and Ethics | PETRONAS Global.

The Human Rights Policy was approved by the Board of Directors while the Executive Leadership Team oversees its implementation and governance. This structure holds PETRONAS accountable for embedding human rights considerations into our business practices and decision-making.

PETRONAS ensures that its Human Rights Policy is not a standalone commitment but is embedded within its broader governance structure, with existing policies and efforts aligned with its intent.

Our Human Rights Policy is anchored on five key principles that guide our commitment to ethical conduct, accountability and responsible business practices across our operations:

PETRONAS Human Rights Policy Key Guiding Principles

1. **Respect and acknowledgement of internationally recognised human rights.**
2. **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 Groupwide disclosures and reporting.**

Internal and external stakeholders, including employee representatives, national and regional human rights organisations, and industry peers, were engaged in the development of the PETRONAS Human Rights Policy to help ensure that perspectives and evolving expectations were considered. Going forward, we will periodically review the Policy to strengthen its alignment with evolving international standards and responsible business practices.

PETRONAS is committed to avoid causing or contributing to adverse human rights impacts across our operations. We embed human rights requirements into our processes to help identify actual and potential human rights risks, mitigate them, and strengthen our human rights implementation and decision-making. In addition to our direct activities, we also collaborate with partners from various stakeholder groups to prevent or mitigate adverse impacts linked to our operations, products or services. These efforts are supported by remediation processes that prioritise transparency and accountability.

Raising the Bar: PETRONAS Canada Achieves Higher Rating in ESG Certification

PETRONAS Energy Canada Ltd. (PETRONAS Canada) operates in North America's highly competitive natural gas market, with significant resources in the Montney shale basin. Since 2023, PETRONAS Canada has certified its natural gas production under the Equitable Origin (EO100) Standard for Responsible Energy Development, an internationally recognised Environmental, Social and Governance (ESG) performance standard for energy companies.

PETRONAS Canada's inaugural EO100 Responsibly Sourced Gas certification assessment in 2023 acknowledged the strong operational practices and its respect for human rights. However, the absence of a specific, comprehensive human rights policy was identified as a key area for improvement.

In 2024, PETRONAS Canada addressed this gap by formally adopting the PETRONAS Human Rights Policy. The updated verification score acknowledged this progress, raising its EO100 rating from B– to B+. The Policy affirms PETRONAS Canada's commitment to respect all internationally recognised human rights, comply with applicable laws and be guided by the United Nations Guiding Principles on Business and Human Rights. The Policy clearly states its applicability to every employee, director and officer of PETRONAS Canada. In addition, human rights principles are now further embedded through integration into core policies such as the Security Policy and the Contractors Code of Conduct on Human Rights.

The adoption of the Human Rights Policy signals a clear step forward in how PETRONAS Canada integrates respect for people and the environment across its operations. This progress is reinforced by enhancements to existing policies on Indigenous relations, reclamation and biodiversity, as well as increased corporate disclosures.

PETRONAS Canada continues to embed human rights as a business priority through strengthened governance, integration into core policies and clearer internal accountability. This commitment is reflected in how the organisation deepens community partnerships, raises expectations across the supply chain, and aligns operational decisions with responsible and sustainable practices.

Fostering a Just Transition

Aligning PETRONAS Policies and Guidelines with Our Human Rights Policy

The PETRONAS Code of Conduct and Business Ethics serves as the foundation for ethical behaviour and decision-making across the organisation, including business partners and suppliers. It reinforces our commitment to integrity, accountability and respect for human rights by integrating human rights principles, including:

- Embedding key human rights considerations, such as the prohibition of modern slavery and child labour.
- Preventing unlawful discrimination, upholding fair labour practices and respecting diversity as core elements of our organisational culture.

Embedding Human Rights Principles in Core Business Processes

In 2024, the implementation of the PETRONAS Human Rights Policy included the enhancement of human rights requirements in core business processes, as described below:

Salient Human Rights Issues

Labour and Working Conditions

We embed human rights principles into our workforce practices by aligning with international standards and frameworks. PETRONAS promotes diversity, inclusion and respect for freedom of association as integral parts of our workplace culture. We also provide ongoing human rights training to employees to foster a culture of accountability and strengthen awareness of labour rights.

Supply Chain Management

Human rights issues in the supply chain may stem from limited supplier awareness, insufficient capacity to implement responsible practices and a lack of embedded human rights due diligence processes. These conditions heighten the risk of forced labour, poor working conditions and discrimination. PETRONAS addresses these challenges by raising awareness, improving supplier compliance and strengthening human rights due diligence throughout the supply chain.

We require our contractors and suppliers to respect human rights, including labour rights, workplace safety and non-discrimination, as guided by the PETRONAS Contractors Code of Conduct on Human Rights. PETRONAS leverages the Licensing Management System to identify and mitigate risks related to forced labour, child labour and unethical practices. To further strengthen supplier performance, we offer capacity-building programmes to enhance understanding of human rights and compliance with legislation and PETRONAS standards. Periodic assessments help monitor adherence to human rights-related laws and identify areas for improvement.

Responsible Security

Security practices, if not properly managed, can lead to human rights violations, particularly in high-risk environments or when involving third-party security providers. To mitigate these risks, PETRONAS promotes responsible security by aligning operational practices with international human rights standards, and embedding these principles across relevant functions and contracts.

We conduct ongoing training to build awareness of human rights, ethical conduct and cultural sensitivity among our security personnel. PETRONAS monitors training compliance for contracted personnel and incorporates responsible security provisions into new contracts, while progressively updating existing agreements to meet evolving expectations. Human rights considerations are integrated into security risk assessments, and regular training is provided to support ethical and rights-respecting practices. These efforts include embedding the Voluntary Principles on Security and Human Rights into contractual arrangements, and strengthening trust with local communities and stakeholders, particularly in high-risk locations.

Community Well-being

We develop and refine technical standards and guidelines to strengthen due diligence processes, including those related to Indigenous Peoples, cultural heritage, land acquisition, involuntary resettlement and grievance mechanisms. Potential human rights risks across our operations and project life cycles are identified, mitigated, tracked and monitored through our Social Risk Assessment process, which takes into account potential impacts on communities. Proactive engagement with rights holders allows us to discuss matters related to land use, cultural heritage, Indigenous Peoples and community health and safety, ensuring their perspectives are considered in our activities. We also engage communities by providing information on hazards, safety and emergency protocols through public sessions, in line with the Control of Industrial Major Accident Hazards (CIMAH) regulations.

Due Diligence

We have established a due diligence process to identify, assess and address human rights risks across our operations and value chains. Our aim is to address potential and actual issues transparently and minimise risks by upholding our commitments. We continue to integrate key human rights findings into decision-making, monitor the effectiveness of our actions and communicate our progress openly.

Assessing Impacts

We have identified and assessed human rights risks across our human rights salient issues, as below.

Social Risk Assessment

We evaluate potential human rights risks across key social dimensions to address salient issues that may impact workers, supply chain partners, security and communities.

Labour and Working Conditions	• Forced labour • Child labour • Discrimination • Inhumane treatment • Restrictions on freedom of association • Violations of labour rights • Ineffective grievance mechanisms
Supply Chain Management	• Supplier and contractor involvement in forced and child labour • Failure to uphold labour rights, ensure non-discrimination, allow freedom of association and prohibit inhumane treatment of workers • Corruption and bribery
Responsible Security	• Complicity to human rights violation by public security • Misconduct by third-party security • Inadequate human rights training
Community Well-being	• Poor land management, including issues with rights of way, compensation and access to natural resources • Violation of Indigenous Peoples' rights • Violation of cultural rights • Unsafe community health and safety • Exploitation and abuse of in-migration workers • Ineffective grievance mechanisms

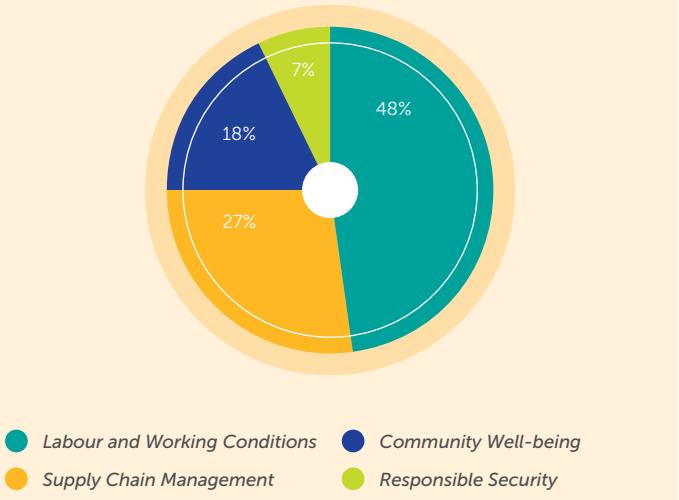
Fostering a Just Transition

The Social Risk Assessment process takes into account the following considerations:

- Conduct due diligence to proactively identify, prevent and mitigate adverse human rights impacts where we operate, through Social Risk Assessments and Third-Party Risk Management practices to address potential and actual risks.
- Take into consideration geographic risk indices to identify areas and operations prone to human rights risks enabling targeted mitigation strategies.
- Engage relevant stakeholders through structured assessments, including interviews and consultations, to identify human rights risks.
- Conduct site visits to gather insights on human rights performance and potential risks.

In 2024, PETRONAS conducted 15 Social Risk Assessment exercises. All identified findings were addressed and mitigated in a timely manner, with no outstanding Social Risk Assessment actions recorded.

2024 Social Risk Assessment Findings



The majority of findings, 48 per cent, were related to Labour and Working Conditions. These primarily stemmed from inaccurate interpretations of labour rights among employees and contractors. To address this, PETRONAS initiated labour rights training and conducted engagement sessions with contract owners and contractors to reinforce compliance and promote best practices.

Findings linked to Supply Chain Management accounted for 27 per cent of the total findings. These were largely associated with contractor performance in upholding labour rights and managing grievances effectively. PETRONAS responded by continuing its periodic assessments under the PETRONAS Code of Conduct on Human Rights to ensure compliance among contractors.

Community well-being findings made up 18 per cent of the total findings, with most issues revolving around limited awareness of grievance mechanisms. Mitigation actions focused on improving both the visibility and effectiveness of these mechanisms to ensure communities are informed and empowered to raise concerns.

The remaining 7 per cent of findings were related to Responsible Security. These findings highlighted opportunities to strengthen grievance management processes within security functions. PETRONAS continues to drive human rights awareness among security personnel to reinforce responsible conduct.

Contractor Due Diligence

PETRONAS implements a dedicated process to uphold Human Rights Due Diligence principles across both potential and existing contractors. These requirements are integrated into our procurement processes to safeguard human rights and ensure ethical business conduct across our supply chain.

The screening process begins with upfront due diligence as a prerequisite, which includes:

- Completion of the Contractor Code of Conduct on Human Rights Self-Assessment, where contractors declare their human rights practices.
- Attestation of full compliance with PETRONAS' Contractor Code of Conduct on Human Rights, including the prohibition of forced and child labour.

Data from these assessments are analysed to identify potential human rights risks. Contractors flagged for concerns are subject to further evaluation.

In addition, prospective suppliers undergo screening through the Know Your Counterparty process and complete questionnaires covering PETRONAS' key legal focus areas, including Ethics and Integrity, Data Privacy, Sanctions and Export Control.

PETRONAS' licensed and registered vendors are required to comply with the PETRONAS Contractors Code of Conduct on Human Rights as part of the licensing and registration process. These obligations are embedded in contractual agreements. Ongoing monitoring ensures continued adherence to the PETRONAS Human Rights Policy.

Performance in 2024

- Enhanced the PETRONAS Contractors Code of Conduct on Human Rights to strengthen human rights due diligence across our supply chain, expanding the depth and coverage of assessments across all supplier tiers.
- Out of **5,456** companies registered in the PETRONAS Licence and Management System, **3,647** have completed the Contractor Code of Conduct on Human Rights Self-Assessment and attested to full compliance with the PETRONAS Code of Conduct on Human Rights.
- **63** Contractors Code of Conduct on Human Rights assessments conducted in 2023 which resulted in **135** Corrective Action Plans issued to address identified areas for improvement. Of these, **109** Corrective Action Plans have been successfully completed and closed in 2024.
- PETRONAS' Human Rights Due Diligence approach and Social Risk Assessments were assessed by an independent third-party and found to be partially aligned with the UN Guiding Principles on Business and Human Rights.

+ *Please refer to Tracking Effectiveness of Actions on page 138.*

Security Due Diligence

PETRONAS conducts human rights due diligence on responsible security risks in countries where we operate. In the period under review, assessments have been completed in Iraq, India, Indonesia, Mexico and Thailand, to determine whether each is classified as a focus or non-focus country for responsible security.

To build awareness and ensure alignment between PETRONAS' human rights focus areas and the activities of its Business and Operating Units, communications on human rights governance, expectations, and compliance have been disseminated across international operations. In Upstream operations, briefing sessions were held with country offices to outline responsible security objectives. Businesses in Iraq, Turkmenistan, Brunei, Gabon, Suriname, Brazil, Vietnam, Abu Dhabi and Indonesia also conducted readiness mapping to support adoption of the Human Rights Policy.

Efforts are ongoing to integrate responsible security contractual provisions into new and existing agreements with third-party security providers.

While risk assessments remain complex due to differing socio-political contexts and perspectives on intervention, we continue to refine our methodology for more consistent and objective evaluations. Improved compliance is expected to support measurable improvements in security performance, driven by proactive risk identification and enhanced monitoring. We aim to align our practices with the Voluntary Principles Initiative, a globally recognised framework that guides companies in maintaining ethical conduct and upholding human rights in security operations.

Indigenous Peoples Assessment

We conduct the PETRONAS Indigenous Peoples Assessment to understand and address potential impacts on Indigenous Peoples in relation to new projects and ongoing operations, modifications or expansions of existing facilities, decommissioning or abandonment of current facilities, and acquisitions of businesses, facilities or equity interests in assets. These assessments are undertaken when potential risks or impacts to Indigenous Peoples are identified during the early stages of project planning or evaluation. Free, Prior and Informed Consent practices are required, with the decision to proceed with an assessment made by subject matter experts based on the nature, location and potential impact of the activity. This process recognises the rights of Indigenous Peoples to participate in decision-making on matters that affect them, including economic development, natural resource management and social development.

In 2024, no Indigenous Peoples Assessments were conducted, as no project activities triggered the requirement. Additionally, there were no reported violations involving Indigenous Peoples' rights or activities related to land acquisition or involuntary resettlement during the year.

Fostering a Just Transition

Land Acquisition and Involuntary Resettlement Assessment

Acquiring land for projects and operations might lead to either voluntary or involuntary resettlement of communities or affect their livelihood. 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. In Malaysia, a Government-led process guides projects and operations to work closely with relevant authorities to minimise adverse impacts on affected communities and ensure necessary compensation. Stakeholder engagement and communication plans are developed to keep communities informed and to gather their feedback throughout the project. We are commited to respect the local and Indigenous Peoples' land, passage and usage rights on company-controlled land, and engage with local communities and Indigenous Peoples to understand how to best honour their traditional practices and cultural heritage. No Land Acquisition Assessments were conducted in 2024, as there were no projects requiring such assessments during the year.

Human Health Risk Assessment

We conduct Human Health Risk Assessments to safeguard the health of communities in areas where we operate. In 2024, we commissioned an independent verification on PETRONAS' internal standard for Environmental Health Risk Assessment and the associated Human Health Risk Assessment reports. The verification provided independent assurance that our internal standard and reporting practices comply with both Malaysian and international requirements, while also identifying opportunities for continuous improvement.

Integrating Human Rights Risks into Decision-Making

The PETRONAS Technical Standard on Social Risk Assessment requires that identified risks are prioritised based on 'severity' and 'likelihood'. Corresponding interventions must be designed and documented in the Social Performance Plan for leadership endorsement.

Project and operations teams are responsible for implementing mitigation measures, supported by business units, where needed. Appointed leaders track progress and report status updates to enable process improvement and targeted support.

+ *Please refer to Monitoring and Accountability on page 141.*

Tracking Effectiveness of Actions

PETRONAS continues to improve tracking efforts to prevent and address human rights risks across our operations and our supply chain. This enables us to assess effectiveness, identify areas for improvement and support more informed decision-making over time.

A third-party verification of PETRONAS' Human Rights Due Diligence process and implementation was conducted based on the United Nations Guiding Principles on Business and Human Rights. The assessment confirmed that PETRONAS' Human Rights Due Diligence policies and practices, specifically the Social Risk Assessment, partially aligned with the United Nations Guiding Principles on Business and Human Rights. PETRONAS received a rating of 6/10 for processes and 5/10 for implementation, indicating opportunities for further improvements. To further enhance our practices, efforts include the revision of human rights governance documents, upskilling of social performance practitioners in the implementation of assessments, and the enhancement of the social risk assessment digital tool in 2025.

PETRONAS' Human Rights Due Diligence Rating

PETRONAS' processes are Partially Aligned.

PETRONAS' implementation is Partially Aligned.

Communicating Impacts

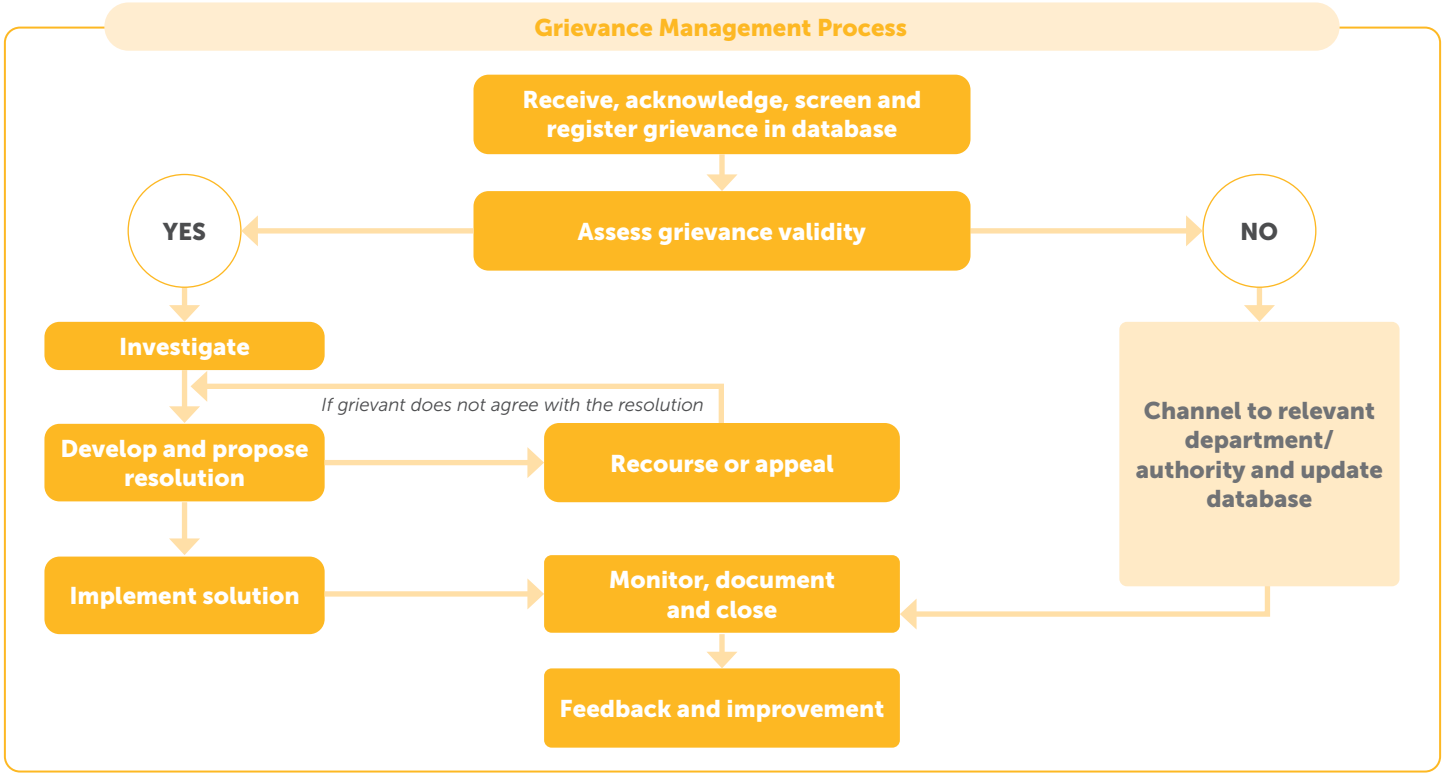
As part of our human rights due diligence process, we continue to strengthen communication on how human rights risks are identified and managed across our operations and value chain. We disclose our approach and progress through sustainability reporting and the PETRONAS corporate website.

Access to Remedy

PETRONAS recognises the importance of effective grievance mechanisms in addressing human rights concerns and supporting fair outcomes for all stakeholders. We aim to strengthen transparent and structured processes to address potential adverse human rights impacts, particularly in situations where PETRONAS may have caused or contributed to them. Our procedures are designed to enable rights holders, whether acting individually or collectively, to access grievance mechanisms that are impartial, confidential and free from retaliation.

Grievance Mechanism

PETRONAS aims to maintain a robust grievance management process that ensures fairness and transparency. Governed by internal procedures, the process involves receiving and acknowledging grievances through designated channels, conducting thorough assessments and investigations, developing and monitoring corrective actions, and communicating findings and resolutions to relevant stakeholders. This systematic approach helps ensure accountability and supports continuous improvement in addressing concerns.



Our grievance mechanisms are designed to meet the United Nations Guiding Principles on Business and Human Rights effectiveness criteria:

Legitimate	**Predictable**	**Transparent**	**A Source of Continuous Learning**
Accessible	**Equitable**	**Rights-compatible**	**Based on Engagement and Dialogue**

PETRONAS provides various grievance channels for rights holders, including employees, supply chain workers and affected community members. These mechanisms are designed with the aim to ensure grievances can be easily lodged, received, reviewed and addressed in a fair, transparent and timely manner.

Fostering a Just Transition

Employees

We have established a grievance mechanism tailored for employees, ensuring it is accessible and maintains confidentiality. This provides a formal and safe channel for employees to raise concerns while protecting their privacy. Grievance mechanisms are aligned with the PETRONAS Code of Conduct and Business Ethics, ensuring that concerns are addressed through appropriate procedures.

We respect the right of employees to act individually or collectively, including through trade unions, without fear of prejudice or retaliation. To support this, we provide multiple reporting channels including a formal Grievance Form and confidential whistleblowing platforms to ensure employees have clear and accessible avenues to raise workplace-related concerns. Issues can also be addressed directly with immediate supervisors as a first course of action and unresolved matters may be escalated to Group Human Resources Management for further review and resolution. On average, grievances are resolved within seven days. In 2024, there were no records of violations to human rights reported through this mechanism.

Contractors' Grievance Management

PETRONAS upholds a robust grievance management process to ensure fairness and transparency. This process includes the receipt and acknowledgement of grievances through designated channels, thorough assessment and investigation, the development and monitoring of corrective actions, and the communication of findings and resolutions to relevant stakeholders.

This systematic approach ensures accountability and promotes continuous improvement in addressing concerns. Any unresolved grievances are escalated through appropriate avenues, while confirmed violations are addressed through internal disciplinary measures.

In alignment with the Contractors Code of Conduct on Human Rights requirements, contractors are required to establish grievance mechanisms that are accessible to their employees, workers, contract personnel and any party involved in delivering works or services to PETRONAS. These mechanisms must be clearly communicated in languages understood by the affected parties and must incorporate appropriate follow-up measures, while safeguarding the identity of the complainant.

Grievances are addressed with due process and prioritised based on their nature and potential impact. PETRONAS remains committed to a timely resolution of grievances and continuously monitors its processes to ensure their efficiency and effectiveness.

Communities and Rights Holders

The PETRONAS Technical Standard on Grievance Mechanism outlines the provision of operational-level grievance mechanisms to support external stakeholders, including communities affected by our operations, in raising concerns effectively. These mechanisms are designed to be culturally appropriate and accessible both online and in-person.

In 2024, several sites continued to operate community-facing grievance channels, supported by over 120 Groupwide grievance focals and community liaison officers who facilitated communication and response on the ground. A total of 34 Health, Safety and Environment (HSE) Grievance Mechanism procedures have been established across PETRONAS' Operating Units.

A dedicated grievance channel is available to address concerns related to HSE, security and social impacts arising from our operational activities. Grievances may be raised by individuals, groups or authorised representatives through various channels, including direct engagement with Community Liaison Officers or designated grievance focals, as well as via telephone calls, text messages, complaint boxes or email.

Whistleblowing

The Whistleblowing channel is available for reporting misconduct and criminal offences, including those involving human rights-related grievance. Reports can be submitted via:

Email : whistle@petronas.com
Website : www.petronas.com/whistleblowing
P.O. Box : No. 11646, Pejabat Pos Besar Kuala Lumpur

+ *Please refer to the whistleblowing section on page 205.*

Protection from Retaliation for Raising Complaints

PETRONAS is committed to protecting individuals who raise concerns by ensuring non-retaliatory procedures are in place. It is essential that employees, contractors and external stakeholders can report grievances without fear of retaliation. Awareness campaigns and training sessions are conducted to ensure widespread understanding.

PETRONAS provides options for anonymous reporting, further safeguarding individuals who come forward.

Remedying Adverse Impacts

We continue to refine our approach in remedying adverse human rights impacts. While not all grievances received are found to be valid, we take steps to address those that are substantiated. This reflects our ongoing commitment to support rights-compatible outcomes and to improve access to remedy for affected individuals and communities.

Performance in 2024

- **83** employee grievances cases recorded
- **15** supply chain grievance cases recorded
- **38** community grievance cases recorded
- **Zero** security personnel grievance cases recorded
- **Zero** grievance cases of forced and child labour within PETRONAS' operations recorded

Monitoring and Accountability

PETRONAS' commitment to human rights is embedded at the highest levels of leadership. The Human Rights Command Centre within the Corporate Sustainability Division continues to strengthen the integration of human rights principles across PETRONAS' operations, supporting the progressive implementation of our Human Rights Policy.

The PETRONAS Board of Directors plays an active role in overseeing human rights strategies and performance, ensuring alignment with international standards and best practices. To strengthen decision-making, PETRONAS engages external experts to provide insights on evolving human rights expectations and emerging global best practices, offering an outside-in perspective to enhance our approach.

Strategic oversight is further supported by the Sustainability Executive Leadership Team, chaired by the President and Group Chief Executive Officer of PETRONAS. The team provides strategic direction to ensure human rights are prioritised in operational and business decisions, that human rights considerations are integrated within PETRONAS' broader governance framework.

+ *Please refer to Corporate Governance at PETRONAS on page 186.*

Human Rights Command Centre

PETRONAS has established a dedicated Human Rights Command Centre, whose leader reports directly to the President and Group Chief Executive Officer, to drive the implementation of human rights policies and processes across all business operations. The Human Rights Command Centre ensures effective management of human rights practices across the Group ensuring line of sight through various senior leadership teams and committees, enabling structured governance and alignment at functional levels. These platforms facilitate cross-functional integration, meaningful dialogues and tracking of progress on key sustainability priorities.

The Human Rights Command Centre and other key business functions proactively identify and manage human rights risks across the organisation as part of day-to-day operations, supported by social performance technical professionals.

Fostering a Just Transition

Resourcing and Capacity Building

PETRONAS allocates adequate financial and human resources to support the effective implementation of our human rights commitments. We invest in continuous training and capacity-building programmes to enhance understanding and strengthen the organisation's ability to manage human rights risks across all levels. These efforts are supported by communication of our Human Rights Policy to employees, contractors, suppliers, business partners and other relevant stakeholders. Training and engagement activities reinforce our commitment to embedding human rights principles across the broader PETRONAS ecosystem.

Employees

Following the launch of the PETRONAS Human Rights Policy, employees were engaged through multiple communication channels, with over 40 physical and virtual sessions conducted to raise awareness, ensure accessibility and enhance accountability across all levels of the organisation. Communications and outreach were further strengthened by engaging the Health, Safety and Environment (HSE) fraternity through various platforms, including conferences, programmes and leadership forums.

In 2024, a total of 231 participants took part in various capacity-building sessions, expert sharing forums and targeted trainings to strengthen understanding of human rights risks and responsibilities. This included participants who completed the Human Rights for Human Resources training. In addition, personnel from key functions attended a grievance management workshop to enhance organisational response capability and received training on human rights management, social risk assessment, grievance mechanisms and engagement with Indigenous Peoples. The sessions also covered modules on Free, Prior and Informed Consent, as well as Social Impact Assessment.

These targeted efforts are part of our broader commitment to upskilling employees involved in implementing human rights policies across employee-related functions. To further embed human rights principles into day-to-day business practices, PETRONAS also conducted expert sharing sessions, interactive discussions and thematic workshops.

To deepen understanding, PETRONAS conducted online and classroom-based training on human rights principles and their application in daily operations. As of December 2024, about 28,000 employees have completed the human rights e-learning training.

Brown Bag Series: Navigating the Intersection Between Business and Human Rights, held on 10 September 2024.

Function-Specific Capability Building

We continued to build technical capacity across specialised functions. Technical professionals in Social Performance lead due diligence efforts by identifying, mitigating, tracking and monitoring risks related to human rights. They are supported by technical standards and guidelines covering Social Risk Assessment, Indigenous Peoples, cultural heritage, land acquisition, involuntary resettlement and grievance mechanisms.

To support security-related awareness, 100% of auxiliary police officers in Malaysia operations had completed human rights training as of December 2024. In Iraq, training was also delivered to relevant business leaders, and a separate engagement plan is being developed to raise awareness among Iraqi authorities on the limitations and responsibilities of responsible security practices.

Supply Chain

PETRONAS communicated the Contractors Code of Conduct on Human Rights Self-Assessment to 5,456 licensed and registered vendors via email and the PETRONAS Licensing Management System. Awareness of the Code's requirements was further reinforced through engagement with 1,016 vendors under the PETRONAS Supplier Support Programme. The Human Rights Policy and the Contractors Code of Conduct on Human Rights is also publicly accessible through the PETRONAS corporate website.

To strengthen human rights compliance across the supply chain, PETRONAS provides governance frameworks, training and resources to support ethical business conduct. We enhanced implementation of the Contractors Code of Conduct on Human Rights by requiring mandatory compliance for all contractors and promoting broader awareness of sustainability expectations within the Oil and Gas Services and Equipment ecosystem.

+ *Please refer to Sustainable Supply Chain on pages 145 to 146.*

Strengthening Capability in Human Rights on Community Well-being

To enhance organisational capability in managing community-related human rights risks, PETRONAS continued to build awareness and knowledge across key functions. A total of 466 employees participated in the Social Performance Forum, which facilitated discussions on human rights implementation and best practices across businesses, operating units, functions and projects. Another 396 employees took part in the Social Performance Masterclass on Indigenous People's Rights and Free, Prior and Informed Consent, which deepened understanding of engagement with Indigenous communities. In addition, internal audit personnel were upskilled in Social Risk Assessment and Grievance Mechanism.

Reviewing Human Rights Risks in Human Resources Governing Documents

In 2024, we assessed human rights risks within PETRONAS' internal Human Resource governance by evaluating the alignment of existing guidelines and processes with Malaysian laws and international standards. Supported by an expert external party, the exercise aimed to identify and address gaps in relevant governing documents and address them accordingly. The review focused on stipulations relevant to Malaysian operations to ensure alignment with international human rights frameworks and country-specific labour regulations. Following the assessment, we finalised updates to internal Human Resource governance documents, including those guiding policy implementation, procedures and grievance mechanisms.

Monitoring and Continuous Improvement

PETRONAS conducts assessments and audits in accordance with the annual assurance and assessment plan, monitoring compliance with company policies and international human rights standards. Findings from these assessments, guide continuous improvement and strategic decision-making. We also monitor legislative developments and compliance related to workers' rights to ensure alignment with regulatory requirements. Corrective measures are implemented where necessary, with outcomes reported to senior leadership to reinforce accountability.

Fostering a Just Transition

PETRONAS Uplifting Lives

Supporting Pathways for Sustainable Livelihoods

We have various initiatives aimed at improving access to essential services and economic opportunities for our communities, including solar panel installation, clean water and learning programmes for the indigenous Orang Asli children in Malaysia.

Through the use of solar energy, the initiative delivered over RM2.5 million in energy cost savings, adding 1.24 million hours of lighting for education, work and daily activities. Complementing the programme further, the Orang Asli teachers were trained on how to conduct classes and construct learning syllabus to suit the needs of students.

PETRONAS strives to nurture social well-being by ensuring that vulnerable communities have access to care and support during festive seasons such as Hari Raya, Chinese New Year, Deepavali, Gawai, Kaamatan, as well as Christmas. Yayasan PETRONAS contributed food and essential items to underprivileged communities, enabling them to celebrate with dignity, joy and a sense of belonging. Yayasan PETRONAS also extended RM2.3 million in donations to various healthcare institutions and social organisations such as Diabetes Malaysia, Jabatan Kesihatan Negeri Sabah (Sabah State Health Department) and Yayasan Sayang Malaysia.

PETRONAS in Turkmenistan supports access to basic necessities by providing uninterrupted fresh water supply through a joint project with Turkmengaz in the construction of water supply infrastructure for around 2,000 people in Kiyanly and Guwlymayak villages, replacing the current reliance on tanker water supply.

We continue to strengthen community resilience by promoting social entrepreneurship and skills development, helping to foster self-sufficiency and financial stability. In Malaysia, Yayasan PETRONAS has rolled out entrepreneurship training programmes in Johor, Kelantan, Terengganu, Pahang, Kedah and Perlis, helping lower income households improve their livelihoods and income streams. These programmes have helped 1,408 individuals by providing training, tools and mentorship.

Additionally, Yayasan PETRONAS collaborated with SIRIM in Malaysia to train 140 participants in the East Coast Economic Region and 97 participants in the Northern Corridor Economic Region.

In East Malaysia, PETRONAS is empowering local farmers in Lawas, near the Sabah-Sarawak Gas Pipeline, by commercialising homegrown produce such as Adan Rice, Arabica Coffee and Adan Arabica Coffee through the establishment of a production house equipped with machineries and specialised tools.

In addition, through strategic collaborations with Institut Kemahiran MARA Bintulu and the District Office, 33 rural youths from Lawas secured job placements by completing a two-week technical training on scaffolding.

We also partnered with the Department of Fisheries Malaysia to deploy 40 Fish Aggregating Devices in Sabah over two years (2023-2024) and contributed over 300 fish trawls, increasing local fishermen's income by more than 20 per cent and promoting sustainable fishing practices.

We also support self-sustaining social enterprises nurtured by SEEd.Lab, such as Sagemaker Asia, that has helped harness sewing talents among 24 women from underprivileged communities, enabling them to create educational 'busy books' for children, which generated a cumulative income of RM23,547 for the beneficiaries. Another SEEd.Lab enterprise, Sejolly has developed a digital tool for Autism Early Intervention, enabling continuous therapy collaboration between therapists and parents to reinforce therapy at home, with 1,233 lives touched since 2022.

Our programmes also extend to Turkmenistan and also international initiatives that empower housewives through micro, small and medium enterprise development within the local community in Indonesia. In Manyarsidorukun Village, East Java, 10 women improved their livelihoods by gaining employment and skills in batik production. In Kramat Village, Bungah Subdistrict, 11 out of 14 women from the local community rose above the poverty line through the success of the locally produced Krupy Fish Crackers.

PETRONAS remains committed to respecting human rights in all aspects of our operations. We will continue strengthening our internal processes and procedures, implementing a unified grievance mechanism and developing structured capability programmes to ensure consistent and effective human rights management across the organisation. We will also enhance communication and disclosure to foster greater transparency and accountability.

SC Sustainable Supply Chain

Why This Is Important to Us

Our operations are driven by a resilient and sustainable supply chain that goes beyond procurement and logistics, connecting us to a broad global network of suppliers within the Oil and Gas Services and Equipment (OGSE) sector. These suppliers deliver a wide range of products and services that not only propel our business but also contribute to the growth and strength of Malaysia's energy ecosystem. We are dedicated to maintaining an ethical and sustainable supply chain through responsible business practices.

Our Approach

We integrate environmental, social and governance principles into our operations, upholding ethical business standards and respect for human rights. We also prioritise supplier growth and resilience, particularly for small and medium-sized enterprises, through targeted development programmes.

The PETRONAS Sustainable Supply Chain microsite covers our position on four key material topics in supply chain sustainability, namely integrity; health, safety and environment; human rights; and greenhouse gas emissions. The microsite supports transparency and alignment with stakeholder expectations. PETRONAS also introduced the Supplier Sustainability Hub, a customised e-learning platform featuring industry-specific modules, case studies and self-assessment tools. Actively used by vendors under the PETRONAS Supplier Support Programme, the online resource supports capacity building and promotes responsible business practices across the value chain.

For more information, please refer to Sustainable Supply Chain.

Our Action Plan

Vendor Development and Recognition Programmes

We empower our suppliers through financing, business development programmes and structured support to enhance their resilience, efficiency and sustainability. Our initiatives have enabled vendors to scale their operations and compete locally and internationally.

Access to Financing

The Vendor Financing Programme, launched in 2018, has facilitated RM2.2 billion across 357 applications to date. In 2024 alone, RM328.3 million was disbursed to 39 applications. We also renewed partnerships with all nine participating financial institutions.

The Special OGSE (SOS) Financing Programme remains an alternative financing option for smaller-scale vendors. Since 2022, it has facilitated RM73.4 million for 47 applicants, with RM31.9 million disbursed to 20 applications in 2024.

The Road to Bursa programme has coached 34 companies towards listing on the Malaysian stock exchange, with three successfully listed in 2024.

Vendor Development, Innovation and Technology Programmes

Established in 1993, the Vendor Development Programme aims to foster a competitive local supply chain, promote the development of small and medium-sized enterprises and integrate Malaysian companies into the global oil and gas value chain. To date, the programme has supported 171 vendors, enabling over 20 to expand into international markets.

Meanwhile, the Technology Innovation and Adoption (TITAN) programme supports OGSE vendors in adopting technology through sandbox opportunities that act as a safe space to test new innovations and development grants in partnership with agencies such as SIRIM, and the National Technology and Innovation Sandbox. Launched in 2023, the programme has, as of 2024, facilitated access to 20 sandboxes and provided RM5.7 million in development grants to 23 companies.

OGSE Talent Development

Led by the Malaysia Petroleum Resources Corporation, in collaboration with PETRONAS and the Malaysia Oil, Gas and Energy Services Council, the Industry Talent Framework (InTAF) analyses talent demand and supply in the OGSE sector for the next three years. Insights from InTAF are expected to be published in 2025 under the National OGSE Industry Blueprint 2021-2030.

The Human Resources Development Corporation, in partnership with the Construction Industry Development Board and PETRONAS is allocating funds under *Program Latihan Madani* to support OGSE-specific upskilling programmes. This initiative aims to equip local graduates with industry-relevant skills for the oil and gas sector.

Fostering a Just Transition

Strengthening Industry Relations

In 2024, we recognised 47 Sarawak-based vendors who were awarded major contracts for their contributions to regional industry advancement, as part of our Sarawak Commemoration Day 2024.

Meanwhile, our OGSE Partners Day was held in Sabah, Kuala Lumpur and Terengganu to engage with vendors and stakeholders in encouraging collaboration and building a sustainable and resilient OGSE ecosystem.

Upholding Sustainable Practices in the Supply Chain

In 2024, we launched the PETRONAS Supplier Support Programme to equip licensed and registered vendors, with tools and training on environmental, social and governance practices to strengthen their sustainability management. In collaboration with Bursa Malaysia, the United Nations Global Compact Network Malaysia & Brunei (UNGCMYB) and Bank Negara Malaysia, the programme provides capacity bulding, access to digital tools like the Centralised Sustainability Intelligence platform for guided sustainability reporting and financing opportunities to facilitate a just energy transition.

From left: Executive Director, UNGCMYB, Faroze Nadar, Chief Executive Officer, Bursa Malaysia, Datuk Muhamad Umar Swift, Executive Vice President and Group Chief Financial Officer, PETRONAS, Liza Mustapha, Assistant Governor, Bank Negara Malaysia, Datuk Norhana Endut and Vice President and Group Chief Sustainability Officer, PETRONAS, Charlotte Wolff-Bye, officiated the launch of the programme together.

Engaged with **1,016** PETRONAS suppliers through **23** virtual and in-person sessions held across Kuala Lumpur, Terengganu, Johor, Sabah and Sarawak, Malaysia

PETRONAS Supplier Support Programme

4.7 out of **5** satisfaction rating achieved from the engagement sessions

96 per cent improved sustainability knowledge, as reported by beginner training participants

417 PETRONAS vendors registered through the ESG START Maturity Assessment

We will continue to drive industry engagements to strengthen supplier resilience, reduce emissions and promote sustainability across the energy value chain. We aim to shape a future-ready energy sector that thrives in a lower-carbon economy through strong health, safety and environmental standards, operational excellence and sustainable growth.

EAR Employee Attraction, Retention and Development

Why This Is Important to Us

The oil and gas industry continues to adapt its workforce in response to changing business needs in this evolving environment. With the energy transition reshaping workforce requirements, talent strategies focusing on cultivating broad and specialised capabilities to support productivity and business continuity, while addressing potential skill gaps.

Our Approach

We recognise that a skilled and engaged workforce is essential to supporting our business. Our approach to attracting, retaining and developing talent is anchored in meritocracy, inclusivity and continuous growth that ensures our employees are equipped to navigate the evolving energy landscape.

Employee Attraction	Employee Retention	Employee Development
Building a Competitive Talent Pipeline	Fostering a High-Performance Culture	Strengthening Future-Ready Capabilities

We attract talent by offering competitive remuneration, career progression opportunities and a purpose-driven work culture. Our people strategy foster an inclusive and high-performance environment where employees feel valued, supported and empowered to contribute meaningfully. To build future-ready capabilities, we invest in structured learning, leadership development and upskilling initiatives, integrating digitalisation and sustainability-focused competencies into our talent development efforts.

We also believe in nurturing early interest in science, technology, engineering and mathematics (STEM) to help ensure a consistent pipeline of skilled talent. Our PETRONAS Powering Knowledge initiatives comprise education sponsorships, vocational training assistance and Discover PETRONAS@Schools programmes.

Our Action Plan

Building a Competitive Talent Pipeline

Our workforce spans diverse regions worldwide, ensuring a stable presence where we operate to support our international operations. PETRONAS is committed to upholding the highest standards of integrity, ethical behaviour and professionalism, adhering to all applicable laws in all our operations. We ensure that foreign or migrant employees are fully compliant with the labour and immigration laws of the host country.

PETRONAS welcomed 2,029 graduates under the Graduate Employability Enhancement Scheme and 2,050 interns in 2024. The Graduate Employability Enhancement Scheme equips unemployed graduates with essential skills and work experience through a structured one-year training focused on experiential learning, soft skills, basic entrepreneurial knowledge and technical skills, facilitating their transition into the job market. Interns, primarily final-year university students, gain practical experience relevant to their fields of study.

We also nurtured young talent through scholarships and graduate recruitment, with 328 PETRONAS scholars joining the workforce, representing 89 per cent of all scholars recruited. In addition, 14 scholarships were awarded to non-Malaysians at Universiti Teknologi PETRONAS.

Fostering a Just Transition

To foster employee growth, PETRONAS ensured that 100 per cent of eligible employees, 37,928 in total, received regular performance and development reviews. Initiatives such as the Goal Setting Campaign, Check-In Conversation Campaign, behavioural nudges and various upskilling and coaching sessions strengthened engagement and supported growth-oriented career development. These efforts reflect PETRONAS' commitment to building a future-ready, high-performing workforce.

Employee Benefits

PETRONAS upholds remuneration parity principles, ensuring fair and competitive compensation that reflects employees' roles, contributions and market standards. Our structured remuneration framework covers both monetary and non-monetary benefits, fostering inclusivity and employee well-being.

Full-time employees in Malaysia receive a comprehensive benefits package, including salary, leave entitlements, allowances, medical coverage and talent development opportunities. Contract employees' benefits vary based on contract type and duration, with differences in medical coverage, financing options, leave entitlements and development programmes. For employees based outside Malaysia, benefits are provided in accordance with the terms and conditions applicable in their respective countries.

Our merit-based remuneration policy aims to ensure that all employees receive fair and competitive compensation, regardless of gender, age, nationality, ethnicity or religion. In Malaysia, the average entry-level salary for PETRONAS employees exceeds the national minimum wage by 35 per cent.

Shaping the future with purpose.

Benefits Overview

The benefits provided cover approximately 36,000 employees, including 1,700 temporary employees. Of these temporary employees, 68 per cent are based in Malaysia.

General Benefits	Salary, leave entitlements, allowances, medical coverage, financing options and talent development opportunities.
Contract Employee Benefits	Vary based on contract type and duration; certain benefits may differ from those provided to permanent employees.
Permanent Employee Benefits	Include dental and optical coverage, preventive health screening, assistance for employees with special needs children, Hajj/Umrah and pilgrimage leave, home and vehicle financing, substance misuse rehabilitation assistance and the Staff Development Programme.

Employee Working Hours

Managing and Monitoring Working Hours

Managing working hours effectively is essential for maintaining a productive and healthy work environment. PETRONAS monitors and regulates working hours in line with national labour laws and international human rights standards to ensure compliance while promoting employee well-being.

The average working hours for shift and regular offshore employees are 42 hours per week, while other employees work 39 hours per week. Non-executive employees required to work on their rest or off days are compensated based on rates agreed in the collective agreement.

PETRONAS provides two rest days per week to eligible employee groups. This entitlement applies across various work arrangements, including standard office hours and shift-based schedules. All employees are entitled to at least one rest day per week, as stipulated under the Malaysian Employment Act. An exemption has been granted by the Ministry of Human Resources for 1,983 offshore employees, given the nature of their work.

Through structured tracking mechanisms, PETRONAS ensures:

- Compliance with regulated work hours and mandated rest periods to prevent fatigue and burnout.
- Monitoring of overtime practices to ensure fair compensation and prevent excessive workloads.
- Flexible work arrangements, where feasible, to support work life integration.
- Regular reviews and engagement with employees to strengthen workforce management practices.

+ *Please refer to Human Rights on pages 132 to 144.*

Fostering Productive Trade Union Engagement

PETRONAS is committed to fostering open communication and mutual respect between employees and the organisation. Through active collaboration with trade unions, we ensure meaningful dialogues, fair employment practices and workplace harmony.

We recognise five trade unions representing 8,728 non-executive employees, which make up approximately 20 per cent of Malaysia-based employees, all of whom have the right to collective bargaining. Five collective agreements are currently in place, signed every three years upon the conclusion of negotiations. In 2024, we have successfully concluded our collective bargaining with all five trade unions for the next 3 years. These agreements define employment terms and conditions, which are also extended to non-executive employees not covered by a collective agreement. For other employee groups, terms are governed by company policies, guidelines and individual contracts. Any modifications to a collective agreement requires negotiation and agreement by both parties.

Our engagement includes regular trade union dialogues, structured grievance mechanisms and capability-building initiatives to enhance transparency, strengthen industrial harmony and improve employee satisfaction.

As part of our broader sustainability agenda and as an expression of respecting human rights, PETRONAS upholds social dialogues and constructive stakeholder engagement on different aspects of the energy transition, ensuring fair labour practices amid workforce transformations.

In 2024, a total of 45 engagement sessions were held with trade union representatives. By fostering constructive collaboration, we empower our employees and uphold our long-term commitment to workplace excellence.

Fostering a Just Transition

Notice of Operational Changes

In PETRONAS, the notice period and provisions for consultation and negotiation are specified in collective agreements as per the following details:

- The collective agreement's term is three years. If a new agreement has not been agreed upon before the expiry date, the current agreement continues to be valid until superseded by a new one.
- Either party may serve a three-month written notice to negotiate a new agreement before the expiry of the current one, unless both parties agree to commence negotiations earlier.
- During the term of the collective agreement, both parties may seek to vary, alter, modify, annul or add to any of the provisions by jointly submitting an agreement to the Industrial Court.

Collective agreements also set out provisions for consultation and negotiation, including fixed agreement terms, procedures for renewal or renegotiation through written notice, and processes for amending terms by mutual consent during the agreement period.

Transition Assistance Programmes

PETRONAS provides comprehensive support to employees navigating employment transitions, ensuring their continued employability through structured assistance programmes. These programmes, facilitated by a third-party consultant, include a range of services that can help employees transition effectively. Key components of the transition assistance programme includes:

Outplacement Support
Impacted employees receive outplacement support to help them transition to new employment opportunities.

Resume and Interview Preparation
Assistance is provided with preparing resume and practicing interview techniques to enhance employability.

Career Coaching and Training
Personalised career coaching and training sessions are provided to help employees identify their career aspirations and develop the necessary skills to achieve their goals.

Job Search Assistance
Impacted employees benefit from support in searching for job opportunities, including access to job listings and networking resources.

The programme takes a holistic approach, offering support from career counseling to job search assistance, ensuring that employees are well-prepared for their next career steps. It has a high success rate, with a notable percentage of employees successfully finding new job opportunities through the services provided.

Fostering a High-Performance Culture

We strive to create an inclusive environment where employees feel valued, empowered and motivated to contribute. PETRONAS continues to drive cultural transformation by fostering collaboration and knowledge-sharing internally and externally. We encourage continuous learning and innovation to enable a productive and positive work environment.

Diversity and Inclusion

Diversity and inclusion are fundamental to human rights, ensuring all individuals, regardless of gender, nationality, age or background, are treated with fairness, respect and dignity. Our approach to Diversity and Inclusion aligns with the PETRONAS Human Rights Policy, by promoting equitable opportunities and strengthening inclusivity across the organisation. In 2024, PETRONAS continued to prioritise gender representation, multinational workforce, age inclusivity and cultural behavioural shift for employees.

We strengthened accountability for Diversity and Inclusion by embedding performance measurement into the top management long-term incentive plan. Inclusive practices were formalised through metrics and performance indicators that drive performance.

The Diversity and Inclusion Committee continued to guide progress and steer the overall delivery of targeted outcomes.

Drivers	Key Indicators	Achievements
Institutionalise Diversity and Inclusion accountability through strengthened commitments	Measuring progress for the areas of: gender, multinational, age and culture, and stewardship of the Diversity and Inclusion Committee, ensuring progress in advancing equitable representation, diverse talent inclusion and culture shift.	• Gender (Women) in Senior Leadership Roles - 29 per cent (target exceeded). • Multinationals in Senior Leadership Roles – 14 per cent (target exceeded). • Young talents in Corporate and Business priorities – 26 per cent (target exceeded). • Diversity and Inclusion Culture measured at Quartile 3, Progressing level (target met).
	Implement measurement for top management, focusing on education and engagement to advocate and role-model inclusive practices.	• Approved performance measurement for top management roles to embed inclusion in culture and practices.

Our approach to strengthening inclusivity focuses on raising awareness among employees and enhancing leadership capabilities and decision-making touchpoints involved in talent development and progression. Key programmes implemented during the year included Conscious Inclusion for People Development Committee leaders, Disability Equality Training for targeted roles, and Diversity and Inclusion awareness modules for employees.

To advance inclusion for neurodivergent talents, we implemented a range of awareness and support programmes aimed at educating line managers, leaders and employees. These initiatives were complemented by cross-industry knowledge sharing through a practitioner-led community of practice, which contributed to the continuous refinement of our talent management approaches.

Training and coaching efforts supported inclusive hiring, which included targeted recruitment of Persons with Disabilities and neurodivergent talents.

Drivers	Approach	Achievements
Strengthen awareness and capability in inclusive leadership through expanded training and awareness programmes to foster deeper understanding of practices	Conscious Inclusion Programme for Leadership teams, and Diversity and Inclusion training modules	• Conducted 58 regional sessions, equipping 339 leaders with tools. • Train-the-Trainer Bootcamp for 47 internal and external facilitators to embed Conscious Inclusion. • Diversity and Inclusion awareness modules to fast-track awareness and understanding, reaching 1,115 employees.
	Disability Equality Training and Awareness programme on Neurodiversity	• 8 Disability Equality Training sessions delivered to Diversity and Inclusion Committee members, upskilling 176 leaders on Persons with Disabilities inclusion, training extended to project teams and hiring managers to mainstream disability inclusion into recruitment and workplace practices. • Neurodiversity awareness sessions reached 1,600 employees. • Conducted Training for Line Managers on performance management and understanding neurodivergent talents, supported by three certified job coaches from the Department of Social Welfare.
	Integrate inclusive hiring into talents strategy, ensuring equitable opportunities for People with Disabilities, including neurodivergent talents	• Persons with Disabilities were recruited at PETRONAS Dagangan Berhad, mainly at PETRONAS service stations, while neurodiverse individuals were recruited at PETRONAS Digital Sdn Bhd.

Fostering a Just Transition

Guided by PETRONAS' Shared Values and the PETRONAS Cultural Beliefs, we are committed to cultivating an empowered workforce and an inclusive work environment, where every employee is heard, valued and empowered to contribute their unique perspectives and creativity.

PETRONAS conducts an annual Groupwide survey to monitor employee engagement, sentiment and emerging trends. The PETRONAS Organisational Culture Survey provides valuable insights for management, helping to identify areas for improvement, strengthening retention and promoting a supportive and engaging workplace.

The 2024 survey focused on four areas which relate to engagement, psychological safety, diversity and inclusion, and change readiness. Within the Diversity and Inclusion dimension, seven key elements were assessed, namely a larger purpose, inclusive leadership, discrimination, challenging the status quo, intentional inclusivity, speaking up and managing difficult conversations. These elements were designed to deepen the understanding of employee perceptions around workplace culture and inform targeted actions.

To strengthen internal engagement, we launched the Spokesperson and Advocates Programme, appointing management leaders and line managers across the business and human resource functions. These advocates serve as connectors to leadership teams and support the implementation of Diversity and Inclusion initiatives. Their role also includes enabling engagement and embedding inclusivity throughout the talent practices.

We exchange information and raise awareness on topics such as gender diversity, women in technical role and neurodiversity. These efforts contribute to a more inclusive and informed industry dialogue.

We will continue collaborating with leading organisations to advocate Diversity and Inclusion, share best practices and foster continuous enrichment among industry leaders. At the same time, we will reinforce internal practices in alignment with our Human Rights Policy.

Drivers	Approach	Achievements
Culture and Engagement Strengthen internal practices and steer industry-wide Diversity and Inclusion progress, advocating for equitable workplace practices at industry and regional platforms	Foster an inclusive workplace that reinforces shared responsibility for role-modelling culture	• Improved Inclusive Leader score in the PETRONAS Organisational Culture Survey from 72 in 2023 to 73 in 2024. • Diversity and Inclusion Spokesperson and Advocates Programme - Appointment of five leaders and 22 line managers across Business and Human Resource functions to drive progress on Diversity and Inclusion initiatives.
	Position PETRONAS as a Diversity and Inclusion advocate in driving industry-wide awareness and best practices across the Asia Pacific region, with a focus on women, women in technical roles and neurodiversity	• Co-developed the Diversity, Equity and Inclusion (DEI) Implementation Guide for Malaysia with the CEO Action Network, launched in May 2024. • Co-sponsored the APAC-DEI Summit 2024 in collaboration with LeadWomen, contributing to the orchestration and curation of Diversity and Inclusion-focused dialogues. • Held two Neurodiversity roundtables and a co-creation workshop to build an inclusive ecosystem for future workforce. • Shared insights at events including the Offshore Technology Conference Asia, Leaders Conversation (JP Morgan and Khazanah Nasional), Malaysia's National Training Week 2024, and 2024 World Women Economic and Business Summit.

PETRONAS Lean Six Sigma

PETRONAS deployed the Lean Six Sigma approach in 2016 at the enterprise level to equip employees with globally recognised and structured process improvement methodologies. Accredited by the International Association for Six Sigma Certification and The Council for Six Sigma Certification, the programme standardises the business process improvement facilitation across the organisation.

The programme received international recognition as a finalist at the Business Transformation and Operational Excellence Summit Awards 2024, in the United States. Fully driven by in-house specialists with global recognition, the programme integrates continuous improvement into daily operations, fosters cross-functional collaboration and delivers measurable value. It also strengthens talent development while enhancing overall business performance.

In 2024, we enhanced our Lean Six Sigma programme by establishing the Yellow Belt as a prerequisite for Green Belt certification, thereby streamlining learning pathways to improve project execution. The Kaizen Squadron was activated as a platform for certified practitioners to exchange insights and support ongoing process improvement. To broaden access, the Yellow Belt e-learning was rolled out via the online portal myLearningX to all employees, reducing training time to five hours from the previous 1.5 days.

Facilitation of process improvement projects led to the optimisation of 186 initiatives, generating RM2.31 billion in value and saving more than 270,000 hours worked. Average cycle efficiency reached 64 per cent. In terms of capability development, 732 employees were trained in Yellow Belt, 248 in Green Belt, and 37 in Black Belt. A total of 121 employees were certified as Green Belts and eight as Black Belts.

Agile Capability and Awareness

We integrate agility into our talent development strategy by embedding agile practices across the organisation. Agile capability focuses on equipping leaders, coaches and practitioners with the necessary skills, while agile awareness broadens understanding of agile principles at all levels.

In collaboration with the PETRONAS Leadership Centre, Agile Enterprise designs learning experiences to foster adaptability, continuous improvement and alignment with industry best practices, ensuring the workforce is resilient and responsive to business challenges.

Our initiatives are to build a sustainable ecosystem for practitioners to exchange knowledge, collaborate and drive agile maturity across business units and across industries. In 2024, these included excursions to Telekom Malaysia, AIA and Maybank, which provided opportunities for cross-organisational learning, enabling participants to exchange experiences, skills and best practices, including innovative facilitation techniques such as LEGO SERIOUSPLAY, for improved effectiveness.

Agile Capability

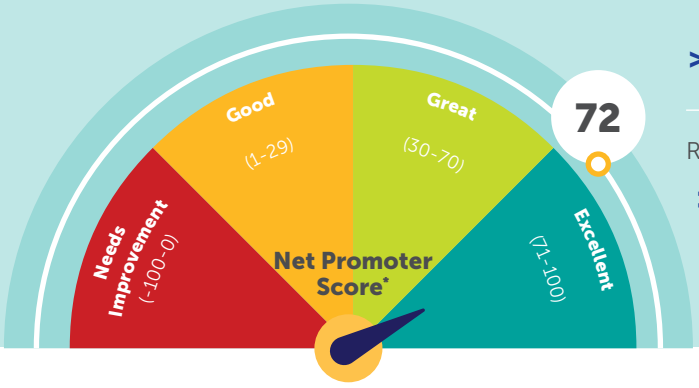
In 2024, we upskilled:

Beginner's Guide to Agile	Introduction to Agile	Professional Scrum Master	Professional Scrum Product Owner	Agile Coach Enablement
1,041	**944**	**218**	**76**	**69**

Agile Awareness Survey (Pulse Check)

2024: Score of **3.85/5.0**
(2023: Score of 3.45/5.0)

Total additional agile employee bench strength
1,421



>14.6k Total online engagement

Roadshows and Engagements

>900 Employees engaged

Note:
** Net Promoter Score is a method that uses a single survey question to gauge employee satisfaction by measuring how likely employees are to recommend agile programmes or activities. The Net Promoter Scores are based on total average.*

Fostering a Just Transition

Driving Talent Growth through Coaching

The 2024 Coaching Campaign set out to embed coaching as a catalyst for talent growth, business success and team excellence. The goal was to inspire leaders to embrace and role-model a coaching culture, strengthening PETRONAS' foundation for future-ready leadership.

The campaign focused on building essential coaching skills. Participants engaged in real-time learning, developed coaching habits, explored regional demands and tackled challenges in fostering a coaching culture. This interactive approach not only strengthened skills but also empowered participants to view coaching as an everyday leadership tool.

The campaign results surpassed expectations, attracting 1,848 unique visitors or 134 per cent above the initial target of 1,380. Development opportunities were above projections, at 2,792, a more than threefold increase. Key to this success was the contribution of 30 internal PETRONAS coaches, who served as facilitators, panelists and moderators, exceeding the initial target of 12.

Strengthening Future-Ready Capabilities

We focus on upskilling and reskilling our people to deliver on our business strategies in the new energy landscape. This means heavily investing in our people to become a highly-skilled, innovative and agile workforce, in critical areas, such as leadership, innovation and core skills.

A transition-specific Skills Gap Assessment is conducted annually, focusing on carbon management, renewables and digitalisation. The findings guide curriculum design at Universiti Teknologi PETRONAS, INSTEP and internal learning pathways, ensuring alignment with PETRONAS' Energy Transition Strategy.

Talent Reshaping Programme

This programme aims to cultivate system-thinkers and broad-based technical professionals equipped with digital skills, business acumen and adaptability. The programme supports alignment with our organisational priorities, provides structured onboarding for new hires and strengthens collaboration across technical functions.

In 2024, we enrolled more than 500 junior technical executives from four business units into the programme, representing more than 60 per cent of the targeted group, with the remainder expected by June 2025. We developed and optimised career paths for 11 technical skill groups and completed a General Technology Inventory and Ruler, embedding sustainability elements across each group.

The Talent Reshaping Framework and Tactical Strategy for technical junior executives to general managers, set the foundation for development across technical levels. The Talent Reshaping Playbook was published on the internal web portal to support consistent implementation.

Looking ahead, we plan to expand the Talent Reshaping Programme to junior executives, introduce technical tools for senior talent and transition existing professionals from specialised roles to broader skill-based groups.

Institut Teknologi Petroleum PETRONAS

As the technical training arm of PETRONAS, Institut Teknologi Petroleum PETRONAS (INSTEP) provides a comprehensive competency-based learning experience through hands-on exposure to projects on campus grounds. Aligned with our goal of enriching the energy workforce for a sustainable future, INSTEP offers structured development programmes such as Executive Technical Solutions and Non-Executive Technical Solutions for engineers and technicians, along with Technical Certification Solutions, which deliver competency-based training for employees at all levels.

In 2024, INSTEP achieved 36,832 development opportunities through 2,186 training sessions, reflecting its strong role in advancing technical capabilities. These efforts upskilled more than 23,220 PETRONAS employees and 13,612 external industry technical talents.

Strengthening Leadership Development

Our leadership development strategy is executed through two distinct initiatives, Leadership EDGE and behavioural science in leadership programme, both aimed at building adaptable, forward-thinking leaders.

In 2024, PETRONAS expanded the Leadership EDGE programme to include executive secretaries and auxiliary police, supporting our competency-driven talent development approach. These upskilling sessions equipped 310 employees with a deeper understanding of EDGE, its sub-competencies and their practical applications. Additionally, 557 employees undertook the Leadership Competency Assessment, where the results guided progression decisions. This initiative strengthened decision-making, teamwork and continuous learning, fostering a more adaptable workforce.

To further enhance leadership effectiveness, we integrated behavioural science principles into leadership programmes. Workshops such as Change the Conversation, Elevating Careers for Top Talents and Conscious Inclusion guided leaders in overcoming ingrained behaviours and hesitation to adopt new approaches, improving decision-making and adaptability. The approach encourages habit formation and alignment with PETRONAS' cultural goals, with data insights supporting personal growth.

PETRONAS plans to expand behavioural science integration to mid and entry-level leadership programmes, collaborate with academic institutions for advanced research and implement continuous feedback loops to refine interventions dynamically.

Fostering Innovation and Entrepreneurship through PING

The PETRONAS Innovation Garage (PING) programme aims to nurture entrepreneurial thinking and become the catalyst for transformative ideas and impactful ventures within the Group. To date, PING has received 185 ideas from employees, with 21 venture ideas incubated from the first two cohorts.

PING's success extends beyond programme participation. In 2024, five of the venture teams launched their solutions as independent start-ups while four other teams were transferred internally within PETRONAS to advance solutions that address operational challenges.

Within just a year of incubation, PING's ventures have delivered impressive outcomes, such as:

- **Securing investment for growth** - JAZRO Technology Robotics Sdn Bhd (JAZRO) programmes attracted significant investment from venture capital firm Gobi Partners Sdn Bhd through Malaysia sovereign wealth fund Khazanah Nasional Berhad-backed Gobi Dana Impak Ventures (GDIV) fund, enabling further expansion.
- **Developing cutting-edge solutions** - Tigasfera Sdn Bhd, a material conversion technology and service provider, successfully built and deployed a waste-to-energy machine, while V Cred Sdn Bhd (V-Cred) (now known as Rosary Labs), a team of data enthusiasts, engineers, and innovators and AIngineer Sdn Bhd (AIngineer) launched artificial intelligence-powered solutions that have gained traction through multiple Proof of Concepts both internally and externally.
- **Creating social impact** - JAZRO's robotics programmes have reached about 70,000 students, including autistic children, fostering inclusive education through technology.
- **Achieving industry recognition** - V-Cred and AIngineer emerged among seven winners of the Cradle MyHackathon programme by Cradle Fund Sdn Bhd, competing against over 500 groups nationwide. AIngineer went on to reach the finals of the International Talent Entrepreneurship SEA 2024 competition.

Fostering a Just Transition

Advancing Sustainability Capabilities

PETRONAS offers a range of internal and external programmes that empower our employees and other stakeholders to become sustainability champions. This approach equips them with the knowledge and tools to incorporate sustainability practices into their daily work routine, which will support the Group in achieving its business goals.

Sustainability Capability Programmes

PETRONAS has rolled out a series of learning programmes tailored to different leadership and operational levels in sustainability. These include the Sustainability Excellence Programme for general managers, the Sustainability Masterclass for executives to senior managers, and Sustainability Explained sessions for non-executives. These programmes aim to raise awareness of PETRONAS' Net Zero Carbon Emissions by 2050 Pathway, PETRONAS Position on Nature and Biodiversity, and PETRONAS Human Rights Policy, while equipping participants with knowledge and skills to incorporate sustainability considerations into their roles and decision-making. The Sustainability Excellence Programme has also been extended to external participants through the Sustainability Excellence Programme for Professionals. In addition to the above, it features real-world case studies, which contributes to the nation's path towards environmental and socio-economic balance. It also fosters unique cross-sector collaboration by bringing together leaders from both government and industry to enhance synergy in developing and executing initiatives aligned with Malaysia's National Energy Transition Roadmap. In 2024, a total of 721 individuals, including PETRONAS employees, government representatives and supplier representatives, participated in these programmes.

To strengthen technical capabilities in emissions reduction, PETRONAS rolled out a Decarbonisation Programme for designated roles in the organisation. The programme provided practical knowledge on key emissions reduction levers, greenhouse gas accounting and forecasting, carbon pricing and project economics to support the development of asset-level emissions reduction plans. A total of 87 participants completed the programme across five cohorts.

Sustainability in Higher Education

As part of our ongoing efforts to strengthen sustainability competencies, PETRONAS collaborates with Universiti Teknologi PETRONAS to deliver structured learning through the Centre for Advanced and Professional Education. Designed for PETRONAS employees, these programmes integrate sustainability into talent development pathways, ranging from undergraduate specialisation courses in Environmental and Sustainable Engineering, Renewable Energy and Sustainability, to postgraduate programmes such as the Master of Science in Industrial Environmental Engineering and the Master of Business Administration in Energy Management programmes. The university also offers 57 professional short courses that build capabilities in sustainability-related areas.

Sustainability in Leadership

As part of PETRONAS' commitment to developing sustainability-focused leaders, two top talents strengthened their capabilities in leadership styles, communication and decision-making through the World Business Council for Sustainable Development Leadership Programme, conducted in collaboration with Yale University and the Institute for Management Development, Switzerland.

In addition, another top talent took part in the World Business Council for Sustainable Development LEAP Programme, developed with Yale University and ESADE, which supports women in progressing to senior leadership roles while embedding sustainability into corporate strategy.

To build internal expertise, PETRONAS supported 109 employees in completing executive education programmes on sustainability from leading institutions including the Yale School of Management, the Cambridge Institute for Sustainability Leadership and the Massachusetts Institute of Technology. In addition, two employees participated in specialised training programmes, including the Prince of Wales Business & Sustainability Programme by the Cambridge Institute for Sustainability Leadership and the Sustainability and Climate Risk Certificate by the Global Association of Risk Professionals.

PETRONAS has also embedded sustainability content into its Foundational Leadership programme to cultivate awareness among executives. A total of 350 participants completed the enhanced programme across six cohorts, supporting early-stage leadership development with a focus on sustainability business practices.

Sustainability Engagement and Advocacy

To strengthen internal advocacy, PETRONAS has appointed around 200 Sustainability Network Change Agents across the organisation. In 2024, six engagement sessions were conducted, including a sustainability townhall, sustainability workshops, knowledge sharing by international renowned leaders, and sharing of best practices from various businesses.

As part of our efforts to raise sustainability awareness among future talents, PETRONAS conducted two sessions for 95 Universiti Teknologi PETRONAS students to build understanding of climate change, environmental degradation and inequality, and to explore actions they can take to foster positive impact.

Vice President and Group Chief Sustainability Officer, Charlotte Wolff-Bye engaging with employees on sustainability.

PETRONAS Powering Knowledge

We believe education unlocks individual potential and drives national progress. PETRONAS champions accessible, high-quality education through sustained investments in Science, Technology, Engineering and Mathematics (STEM) and Technical and Vocational Education and Training (TVET). These efforts aim to empower individuals and build a future-ready workforce.

One flagship initiative trained 411 teachers in Cohort 4 as *Duta Guru* or Teacher Ambassadors, equipping them with the skills to cultivate deeper STEM appreciation among secondary school students. This support was extended with the launch of three STEM hubs and the announcement of *Duta Guru* funding.

Our efforts in STEM education continue through the provision of leadership capacity building for 57 officers from District Education Offices to drive change in STEM education, and the empowerment of 40 teachers across 20 primary schools in Kulim in Kedah and Taiping in Perak to ignite early interest in science and technology.

We also support TVET institutions through the Vocational Institution Sponsorship and Training Assistance (VISTA) programme by providing training resources, enhancing syllabus and developing skills to produce industry-ready technical talents. Since its inception in 1992, the programme has positively impacted 14,674 students, including 854 in 2024 alone.

In addition, PETRONAS upskilled 496 undergraduates across five cohorts through a focused two-week programme centered on digital literacy, design thinking, career fundamentals and digital entrepreneurship. Since its launch in 2022, this programme has facilitated 276 job matches through over 90 hiring partners.

Education Sponsorships

RM345.56 million sponsorship investment allocated for **984** students, including **RM319.4 million** for **596** top *2023 Sijil Pelajaran Malaysia** students to pursue studies at Universiti Teknologi PETRONAS and other leading local and international institutions

Note:
** Malaysia High School Certificate.*

92 per cent of scholars from lower-income households

Fields of Study

55 per cent pursuing engineering disciplines

18 per cent in digital fields

27 per cent in business studies

Fostering a Just Transition

Expanding STEM Learning through Petrosains

PETRONAS supports learning reinforcement and enrichment through Petrosains, The Discovery Centre, and Petrosains PlaySmart™, providing physical and digital platforms where students and the public can strengthen their STEM knowledge, explore PETRONAS' sustainability journey and better understand the transition to a lower-carbon energy future.

In 2024, Petrosains transformed and enhanced its gallery space into an interactive learning hub, featuring immersive STEM exhibitions and creative spaces such as Maker Studio, which offers engaging experiences in coding, prototyping and robotics.

Petrosains also organised a science drama competition, engaging 1,047 participants from primary and secondary schools across Malaysia to spark interest in STEM and raise sustainability awareness, while promoting the 4Cs of critical thinking, creativity, communication and collaboration. In addition, Petrosains introduced a programme to empower Indigenous students with vital skills in robotics, coding and programming. In 2024, the programme benefitted 376 students through workshops conducted across nine states in Malaysia, culminating in a major achievement when students from Pekan, Pahang won the 26th International Robot Olympiad in Busan, Korea.

605,219 visitors welcomed at the Discovery Centre

14,548 individuals benefitted from the programmes

128.14 million people reached through digital platform, enhanced brand visibility

645,751 visitors engaged at Petrosains PlaySmart™ centres

Empowering a Skilled Workforce for a Sustainable Energy Future

As the energy landscape evolves, investing in the future of workforce remains essential to ensure resilience, foster innovation, and drive sustainable growth.

PETRONAS supports this through its state-of-the-art training institution, Institut Teknologi Petroleum PETRONAS (INSTEP). INSTEP pioneers initiatives such as the Technical Energy Enrichment Programme, which integrates on-the-job training at PETRONAS' Floating LNG facilities to enhance practical learning and competencies.

Expanding its commitment to inclusive education, INSTEP partnered with Yayasan Pendidikan MAIDAM (MAIDAM Education Foundation) for the 2024-2025 Oil and Gas Wakalah TVET Programme*, providing underprivileged individuals in Terengganu with industry-relevant skills to boost their employability in the oil and gas sector.

Note:
** The programme utilises wakalah fund received from zakat center.*

RM30.3 million invested in training for **273** students

36 students trained in collaboration with Hibiscus Petroleum and Sarawak Shell

75 *asnaf*** students from Terengganu provided with three-month industry training

Note:
*** Recipients who are eligible for Islamic tithe (zakat).*

HW Health and Well-being

Why This Is Important to Us

PETRONAS recognises workforce health and well-being as essential to sustaining a resilient, high-performing organisation. We strive to provide an environment where every employee can thrive both professionally and personally. A healthy workforce is not only more productive, engaged and innovative, but also critical to achieving long-term, sustainable business success.

Occupational health plays a key role in protecting and supporting our workforce. Its main functions include preventing work-related illnesses, managing health risks in the workplace and ensuring that job roles align with employee's physical and psychological capabilities. As the nature of work evolves, occupational health has also expanded to encompass mental, emotional and social well-being. By integrating health promotion into occupational safety and health (OSH) management systems, we continue to strengthen preventive practices that safeguard our people and contribute to long-term organisational resilience.

Our Approach

PETRONAS adopts a comprehensive and proactive approach to employee well-being, anchored in fostering a safe, healthy and inclusive workplace culture.

Our commitment to diversity and inclusion ensures equitable access to opportunities and resources for all employees, regardless of gender, background, age or ability. This is supported by targeted programmes and guided by the Wellness Steering Committee, which drives our strategic health and well-being agenda across the organisation.

Guided by PETRONAS' Shared Values and the PETRONAS Cultural Beliefs, we are committed to inculcating an empowered workforce.

Industrial Hygiene

We strive to uphold workers' rights to a safe working environment by strengthening the management of hazardous chemicals, improving ventilation and gas testing practices in confined spaces, reducing noise risks through engineering controls and utilising digital systems for industrial hygiene risk assessments.

In 2024, through our in-house hazardous chemical management system, we achieved 100 per cent compliance in chemical registers and chemical labelling, and improved the availability of Safety Data Sheets in both local and English languages. We also recorded successful noise reduction ranging from 3-34 A-weighted decibels (dB(A)), achieved from preventive and corrective maintenance of high noise equipment and implementation of corresponding engineering controls.

Providing Support through Employee Assistance Programme 2.0

PETRONAS strengthened mental health support through the Employee Assistance Programme 2.0 delivered via myFriends, a confidential platform offering counselling and wellness services to employees and their family members, subject to evaluation and recommendation. In 2024, 464 employees received support through 1,577 sessions, totaling 1,740 hours of counselling. Comparatively, in 2023, 338 employees received support, amounting to around 1,036 hours of counselling. To further raise awareness, five wellness webinars were held throughout the year, engaging 6,209 participants across virtual and in-person formats.

Fostering a Just Transition

Driving a Culture of Inclusion

PETRONAS is committed to fostering a workplace where employees feel safe, respected and valued. Guided by our Shared Values and Cultural Beliefs, we promote open communication through regular check-ins, team-building activities and employee surveys to understand workplace sentiment and performance. We also prioritise Diversity and Inclusion by creating an accessible and supportive environments for all employees.

PETRONAS Cultural Beliefs

Customer Focused	Innovate Now	Be Enterprising	Speak Up	Courage to Act
I deliver solutions from the customer lens	I challenge norms and push boundaries	I seek opportunities and make them happen	I express my views openly	I take action to progress with pace

PETRONAS Organisational Culture Survey

PETRONAS conducts an annual Groupwide survey to monitor employee engagement, sentiment and emerging trends, as part of ongoing efforts to stay connected with the workforce. The PETRONAS Organisational Culture Survey provides valuable insights for management to identify areas for improvement, strengthen retention and promote a supportive and engaging work environment that supports mental, emotional and physical well-being.

As part of the Group's 50th anniversary in 2024, employees were invited to share their vision for PETRONAS' future. This initiative generated more than 100,000 suggestions on how to improve operations and drive progress for the next 50 years. The survey achieved a 96 per cent response rate, significantly above the global top 25 per cent benchmark of 75 per cent, reflecting strong engagement across the organisation.

MESTIFit4Health

PETRONAS' flagship health and wellness programme strives to reduce personal health risks and promote healthy behaviour and lifestyle. The aim of this programme is to ultimately ensure optimal health for employees, where they are fit to work, free from work-related illnesses, resilient and committed to maintaining a healthy lifestyle.

Move Right

Encouraging an active lifestyle and overall physical well-being

PETRONAS' Walking Challenge promoted an active lifestyle among employees globally through digital engagement, supporting the Move Right element as a preventive approach to non-communicable diseases. The Walk4Trees 2.0 Challenge (June 2023-June 2024) engaged 13,060 employees and recorded 15.5 billion steps, with the pledge to plant one tree for every 500,000 steps. As a result, Yayasan PETRONAS will plant a total of 31,046 trees, surpassing the number of trees planted from the previous year's challenge. The tree planting will be carried out in phases, beginning at the Kungkular Forest Reserve in Sabah, Malaysia in 2024, and continuing at other identified locations in 2025. To mark PETRONAS' 50th anniversary, the 'P50 Years Homecoming Steps Challenge' recorded 7.9 billion steps, with an average of 1.04 million steps per participant.

Eat Right

Ensuring food and water safety through stringent hygiene standards

The Eat Right programme helped manage the risk of foodborne illnesses during multiple festive events across PETRONAS locations. In collaboration with the Ministry of Health Malaysia, Kuala Lumpur Convention Centre Urusharta and Koperasi Kakitangan PETRONAS (Employees' Cooperative), food safety audits were conducted on hundreds of approved external caterers to ensure compliance with hygiene standards. An internal directive also reinforced preventive measures, including mandatory use of approved caterers, prohibition of potluck-style food contributions, accountability of event organisers and limitations on food menu selections. The effectiveness of these proactive measures was reflected in the zero reported cases of food poisoning during the 2024 *Hari Raya Aidilfitri* (Eid al-Fitr) celebrations.

Sleep Right

Strengthening and expanding our Fatigue Management System to reduce fatigue-related incidents

The Sleep Right programme strengthens fatigue management to prevent workplace incidents. This is supported by revised technical standards that include enhanced requirements on Project Hours of Service Limit, stringent fatigue deviation process and the inclusion of additional high-risk groups such as plant maintenance, and Health, Safety and Environment personnel during critical operations.

Think Right

Supporting employees' mental well-being through a holistic wellness model that addresses psychosocial risk factors

The Think Right programme fosters a psychologically safe workplace through leadership interventions, mental health first aid, resilience-building and mental health literacy. In 2024, 148 senior management leaders were upskilled, and 292 new MIND-A-CARE Ambassadors were trained, bringing the total number of ambassadors to 806. This moves us closer to our 2027 targets of 1,000 ambassadors, equivalent to one ambassador for every 50 employees. A total of 442 employees completed resilience training, with 65 per cent showing improved scores. Mental health advocacy efforts, including the Leaders Reach Out Programme, mental health awareness sessions, onboarding and ongoing promotion via the Health and Well-being one-stop centre, helped stabilise new mental illness cases at 0.76 per cent, below the 0.91 per cent threshold. These efforts also contributed to a 27 per cent reduction in medical boarding out cases, with eight recorded in 2024 compared to 11 in 2023. A major milestone was achieved when the MIND-A-CARE Ambassadors programme, developed in collaboration with INSTEP, won the Gold Medal at the 2024 Brandon Hall Excellence Awards for Best Certification Training Programme.

Individual Right

Empowering employees to make informed health decisions and prevent substance misuse

In 2024, Preventive Health Screening utilisation rose from 7.5 per cent in the first quarter to 46 per cent by year-end, driven by intensive promotion and on-site mobile clinics. Substance misuse prevention was strengthened through integrated awareness in wellness programmes, compliance-driven random testing, centralised reporting for real-time data analysis, certified auxiliary police drug testers and firm actions against non-compliance. PETRONAS also collaborated with Malaysia's National Anti-Drug Agency to support advocacy efforts. These measures resulted in zero substance-related incidents, contributing to a safer and healthier workplace.

Fostering a Just Transition

Progressing to build an inclusive and productive workplace.

PETRONAS is making progress to foster an inclusive and more productive workplace that prioritises employee health and well-being. We have actively implemented strategies that acknowledge diverse needs and promote open communication, provide flexible work arrangements and encourage mental health awareness, among others.

Sustainability Key Performance Data

PETRONAS has set 2019 as the base year for tracking our progress towards achieving the targets of our Net Zero Carbon Emissions by 2050 Pathway. PETRONAS' greenhouse gas (GHG) emissions quantification covers both Operational Control and Equity Share approach for Scope 1 and Scope 2. As 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 14064-3:2019.

Greenhouse Gas (GHG) Emissions – Operational Control

PETRONAS Groupwide GHG Emissions Breakdown by Business, Operational Control

(Includes Corporate and Others)

	Unit	2020	2021	2022	2023	2024
Total GHG Emissions (Scope 1 and 2)[1]						
PETRONAS	**million tonnes CO_2e**	**55.11**	**51.58**	**54.10**	**54.24**	**55.71**
By Business						
Upstream	million tonnes CO_2e	16.36	13.89	13.62	12.88	**13.91**
Gas and Maritime	million tonnes CO_2e	26.03	26.15	28.01	28.03	**27.80**
Downstream[2]	million tonnes CO_2e	12.48	11.28	12.19	13.04	**13.69**
Corporate and Others[3]	million tonnes CO_2e	0.24	0.26	0.28	0.29	**0.31**

GHG emissions data are calculated based on the American Petroleum Institute (API) Compendium (2009) and the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report as quantification references. PETRONAS aims to enhance its quantification methods to better align with national reporting requirements, taking into account the significant emissions within the region.

Notes:

1. *Covers both Malaysia and international operations.*
2. *PETRONAS acquired BRB International B.V. and Perstorp Holding AB in 2022. Their GHG accounting systems are currently undergoing an alignment process with PETRONAS' GHG accounting and reporting requirements. The figures above do not include emissions from BRB and Perstorp, which was 0.39 million tonnes CO_2e for 2024.*
3. *Corporate and Others include KLCC Group of Companies.*

Sustainability Key Performance Data

PETRONAS Core Business GHG Emissions Detailed Breakdown, Operational Control

(Excludes Maritime, Corporate and Others)

PETRONAS Core Business refers to Upstream, Gas and Downstream, excluding Maritime and Corporate & Others (KLCC Group of Companies).

In 2024, PETRONAS Core Business operations reported 51.55 million tonnes of carbon dioxide equivalent (CO_2e), which is a 4 per cent increase compared to 2023. This growth is primarily attributed to strengthened GHG accounting and monitoring accuracy at downstream petrochemical plants. These enhancements have allowed PETRONAS to better track and manage emissions.

Upstream, Gas and Downstream businesses have shown an increasing trend in production and energy generation due to the higher demand in each business. Scope 1 GHG emissions from PETRONAS Core Business recorded 51.04 million tonnes CO_2e which is higher by 4 per cent compared to 2023, mainly as a result of stationary combustion, fugitive emissions and flaring. There were some changes in Scope 2 emissions for both Malaysia and international Core Business operations in which, international operations recorded a reduction of 95 per cent in Scope 2 emissions in 2024 compared to 2023, due to the divestment of Engen. Engen is an South Africa-based energy group focused on the marketing of petroleum, lubricants and functional fluids, chemicals and retail convenience services. It was a subsidiary of PETRONAS acquired in 1998 and eventually divested in 2024.

	Unit	2020	2021	2022	2023	2024
Total GHG Emissions (Scope 1 and 2)						
PETRONAS Core Business	**million tonnes CO_2e**	**50.67**	**47.13**	**49.57**	**49.78**	**51.55**
By Region						
Malaysia	million tonnes CO_2e	48.15	44.63	46.09	45.38	**46.55**
International	million tonnes CO_2e	2.51	2.50	3.48	4.40	**5.00**
By Scope						
Scope 1	million tonnes CO_2e	49.76	46.42	48.88	49.09	**51.04**
Scope 2	million tonnes CO_2e	0.91	0.71	0.69	0.69	**0.51**
Scope 1						
Scope 1	**million tonnes CO_2e**	**49.76**	**46.42**	**48.88**	**49.09**	**51.04**
By Region						
Malaysia	million tonnes CO_2e	47.64	44.16	45.60	44.89	**46.04**
International	million tonnes CO_2e	2.11	2.26	3.28	4.20	**5.00**
By GHG Type						
Carbon Dioxide	million tonnes CO_2	40.34	40.29	43.33	43.76	**46.59**
Methane	thousand tonnes CH_4	369.36	238.42	214.86	204.51	**169.45**
Nitrous Oxide	thousand tonnes N_2O	0.64	0.62	0.69	0.73	**0.72**

PETRONAS Core Business GHG Emissions Detailed Breakdown, Operational Control
(Excludes Maritime, Corporate and Others) (continued)

	Unit	2020	2021	2022	2023	2024
Scope 1						
By Sources						
Combustion	million tonnes CO_2e	32.10	32.05	33.97	29.17	**31.52**
Carbon Dioxide	million tonnes CO_2	31.91	31.86	33.76	28.86	**31.19**
Methane	thousand tonnes CH_4	2.03	2.36	2.26	6.24	**7.15**
Nitrous Oxide	thousand tonnes N_2O	0.46	0.46	0.50	0.50	**0.51**
Flaring	million tonnes CO_2e	6.65	7.11	7.87	8.49	**9.31**
Carbon Dioxide	million tonnes CO_2	6.02	6.49	7.18	7.73	**8.54**
Methane	thousand tonnes CH_4	24.15	23.82	27.20	28.91	**28.80**
Nitrous Oxide	thousand tonnes N_2O	0.11	0.12	0.13	0.15	**0.15**
Venting	million tonnes CO_2e	8.19	4.98	3.86	2.49	**1.60**
Carbon Dioxide	million tonnes CO_2	1.51	1.31	1.07	0.89	**0.79**
Methane	thousand tonnes CH_4	267.23	147.04	111.68	64.05	**32.27**
Nitrous Oxide	thousand tonnes N_2O	-	-	-	-	**-**
Fugitive Emissions	million tonnes CO_2e	1.84	1.63	1.81	2.39	**2.35**
Carbon Dioxide	million tonnes CO_2	0.02	0.02	0.02	0.02	**0.02**
Methane	thousand tonnes CH_4	72.88	64.14	71.55	94.62	**93.39**
Nitrous Oxide	thousand tonnes N_2O	-	-	-	-	**-**
Others[1]	million tonnes CO_2e	0.98	0.65	1.37	6.55	**6.26**
Carbon Dioxide	million tonnes CO_2	0.88	0.61	1.30	6.26	**6.05**
Methane	thousand tonnes CH_4	3.07	1.06	2.17	10.69	**7.84**
Nitrous Oxide	thousand tonnes N_2O	0.07	0.05	0.07	0.08	**0.06**
Scope 2						
Scope 2	**million tonnes CO_2e**	**0.91**	**0.71**	**0.69**	**0.69**	**0.51**
By Region						
Malaysia	million tonnes CO_2e	0.51	0.47	0.49	0.49	**0.50**
International	million tonnes CO_2e	0.40	0.24	0.20	0.20	**0.01**

Note:
1. Other GHG sources include emissions from activities such as acid gas removal, glycol dehydrator, mobile and transportation, refrigerant and others.
Scope 1: Direct emissions from company-owned or controlled facilities and operations.
Scope 2: Indirect emissions from energy we purchase.
Detailed breakdown may not add up to total due to rounding.

Sustainability Key Performance Data

PETRONAS Core Business GHG Emissions Intensity, Operational Control

	Unit	2020	2021	2022	2023	2024
GHG Intensity by Business[1]						
Upstream	tonnes CO_2e per kboe	51.51	44.71	36.11	33.80	**34.91**
Malaysia assets	tonnes CO_2e per kboe	61.04	50.14	42.77	37.27	**38.62**
International assets	tonnes CO_2e per kboe	20.06	28.23	24.11	28.31	**29.79**
Gas and Maritime						
LNG (PLC and PFLNG)	tonnes CO_2e per tonnes	0.68	0.65	0.64	0.75	**0.64**
Downstream[2]						
Refineries	tonnes CO_2e per barrel	0.018	0.018	0.021	0.019	**0.020**
Petrochemicals	tonnes CO_2e per tonnes	0.62	0.60	0.57	0.62	**0.66**

Notes:
1. Numerator for GHG intensity is a summation of Scope 1 and Scope 2 GHG emissions under the operational control approach. All GHG intensity figures include carbon dioxide, methane and nitrous oxide emissions expressed in total tonnes CO_2e.
2. Boundary for Downstream GHG Intensity is Malaysia operations only.

A barrel of oil equivalent (BOE) is a unit of energy measurement used to standardise and compare the energy content of different energy sources, such as oil, natural gas and coal, by equating them to the energy contained in one barrel of crude oil.

In 2024, PETRONAS recorded a greenhouse gas (GHG) intensity of 34.91 tonnes CO_2e per kboe for our Upstream operations, which is an increase of 3 per cent compared to 2023, primarily contributed by a ramp up of production in Canada, Iraq, and Kasawari field in Malaysia.

PETRONAS Core Business Methane Emissions Breakdown by Source, Operational Control

(Excludes Maritime, Corporate and Others)

	Unit	2020	2021	2022	2023	2024
Methane Emissions						
PETRONAS Core Business	**thousand tonnes CH_4**	**369.36**	**238.42**	**214.86**	**204.51**	**169.45**
Combustion	thousand tonnes CH_4	2.03	2.36	2.26	6.24	**7.15**
Flare	thousand tonnes CH_4	24.14	23.82	27.20	28.91	**28.80**
Vent	thousand tonnes CH_4	267.23	147.04	111.68	64.05	**32.27**
Fugitive Emissions	thousand tonnes CH_4	72.88	64.14	71.55	94.62	**93.39**
Others	thousand tonnes CH_4	3.07	1.06	2.17	10.69	**7.84**

Methane emissions from PETRONAS Core Business reduced by 17 per cent compared to 2023. This improvement was achieved mainly through flaring and venting reduction, as well as vent-to-flare conversion efforts in Upstream operations.

Greenhouse Gas (GHG) Emissions – Equity Share

PETRONAS Groupwide GHG Emissions Breakdown by Business, Equity Share

(Includes Corporate and Others)

	Unit	2020	2021	2022	2023	2024
Total GHG Emissions (Scope 1 and 2)						
PETRONAS	**million tonnes CO_2e**	**47.52**	**44.05**	**46.78**	**46.41**	**48.32**
By Business						
Upstream	million tonnes CO_2e	17.96	15.09	15.55	13.77	**15.61**
Gas and Maritime	million tonnes CO_2e	19.30	19.68	21.03	21.66	**21.42**
Downstream	million tonnes CO_2e	10.04	9.04	9.93	10.70	**11.01**
Corporate and Others	million tonnes CO_2e	0.21	0.24	0.27	0.28	**0.28**

Note:
PETRONAS Groupwide GHG emissions based on Equity Share approach Scope 1 and Scope 2 for 2019 (baseline year) was readjusted post external verification from 54.25 million tonnes CO_2e to 52.67 million tonnes CO_2e.

Total GHG emissions from Scope 1 and 2 for PETRONAS Groupwide operations based on Equity Share approach recorded 48.32 million tonnes CO_2e, which is 4 per cent higher compared to 2023, with Gas and Maritime being the highest contributor with 44 per cent, followed by Upstream with 32 per cent and Downstream contributed 23 per cent.

PETRONAS Core Business GHG Emissions Detailed Breakdown, Equity Share

(Excludes Maritime, Corporate and Others)

	Unit	2020	2021	2022	2023	2024
Total GHG Emissions (Scope 1 and 2)						
PETRONAS Core Business	**million tonnes CO_2e**	**45.19**	**41.68**	**44.35**	**44.01**	**46.09**
By Region						
Malaysia	million tonnes CO_2e	40.56	37.11	39.76	39.63	**42.09**
International	million tonnes CO_2e	4.63	4.58	4.59	4.38	**3.99**
By Scope						
Scope 1	million tonnes CO_2e	44.22	40.90	43.57	43.20	**45.42**
Scope 2	million tonnes CO_2e	0.97	0.78	0.78	0.81	**0.67**
Scope 1						
By Region						
Malaysia	million tonnes CO_2e	40.05	36.67	39.29	39.13	**41.65**
International	million tonnes CO_2e	4.16	4.23	4.28	4.08	**3.77**
Scope 2						
By Region						
Malaysia	million tonnes CO_2e	0.50	0.43	0.47	0.51	**0.45**
International	million tonnes CO_2e	0.46	0.35	0.31	0.30	**0.22**

PETRONAS Core Business makes up 95 per cent of total Groupwide GHG emissions Scope 1 and 2 based on Equity Share approach, where Malaysia operations contribute to 91 per cent and International operations contribute to 9 per cent of the emissions.

Note:
PETRONAS Groupwide GHG emissions, for Equity Share approach Scope 1 and Scope 2 for 2019 (baseline year), was readjusted post external verification from 54.25 million tonnes CO_2e to 52.67 million tonnes CO_2e.

Sustainability Key Performance Data

Energy - Operational Control

PETRONAS Groupwide Energy Consumption Breakdown by Business, Operational Control
(Includes Corporate and Others)

	Unit	2020	2021	2022	2023	2024
Total Energy Consumption[1]						
PETRONAS	**petajoules**	**545.88**	**531.34**	**575.55**	**579.93**	**595.00**
By Business						
Upstream	petajoules	72.49	73.53	75.97	74.60	**80.01**
Gas and Maritime	petajoules	264.01	269.21	289.28	284.60	**286.85**
Downstream[2]	petajoules	204.87	183.96	205.21	215.46	**222.52**
Corporate & Others[3]	petajoules	4.51	4.65	5.09	5.28	**5.61**

Notes:
1. *Covers both Malaysia and international operations.*
2. *PETRONAS acquired BRB and Perstorp in 2022. Their energy accounting systems are currently undergoing an alignment process with PETRONAS' energy accounting and reporting requirements. The figures above exclude energy consumption from BRB and Perstorp.*
3. *Corporate and Others include KLCC Group of Companies. The energy consumption for KLCC Group of Companies does not account for inter-company transfers of chilled water.*

PETRONAS Core Business Energy Intensity, Operational Control

	Unit	2020	2021	2022	2023	2024
Energy Intensity[1] by Business						
Upstream						
Total	**gigajoules per kilobarrel of oil equivalent**	**223.35**	**218.66**	**197.73**	**191.14**	**193.81**
Malaysia Assets	gigajoules per kilobarrel of oil equivalent	251.84	249.85	234.11	220.33	**227.05**
Intenational Assets	gigajoules per kilobarrel of oil equivalent	151.73	151.51	130.95	142.76	**145.12**
Gas and Maritime						
LNG and Gas Processing	gigajoules per tonne of production	4.80	4.75	4.68	4.68	**4.56**
Downstream[2]						
Refineries	gigajoules per barrel of oil	0.30	0.28	0.33	0.32	**0.33**
Petrochemicals	gigajoules per tonne of production	10.28	9.83	10.09	9.65	**9.33**

Notes:
1. *Energy Intensity is calculated as total energy consumption over total production or throughput.*
2. *Boundary for Downstream Energy Intensity is Malaysia operations only.*

PETRONAS Groupwide Scope 3 GHG Emissions for Category 11 (2020 – 2024) and Category 1 (2022 – 2024)

	Unit	2020	2021	2022	2023	2024
Scope 3[1]						
Operational Control						
Category 1: Purchased Goods and Services[1,2]	million tonnes CO_2e	-	-	30.27	31.06	**23.88**
Category 11: Use of Sold Products[3]	million tonnes CO_2e	282.36	277.04	292.09	312.12	**298.16**
Equity Share						
Category 11: Use of Sold Products[3,4]	million tonnes CO_2e	277.63	272.54	285.66	297.92	**292.00**

Notes:

1. *PETRONAS' Scope 3 materiality assessment is guided by GHG Protocol, Ipieca and benchmarking with peers. Based on the assessment, Category 11 and Category 1 are the material Scope 3 categories for PETRONAS.*
2. *Quantification for Category 1 emissions began in 2023 using data from 2022 onwards.*
3. *Category 11 only includes emissions associated with fuel products sold to third parties. All fuel products sold are assumed to be fully combusted.*
4. *Scope 3 (Category 11: Use of Sold products) emissions for 2019-2023 have been restated following external GHG verification conducted by LRQA Inspection Malaysia Sdn Bhd.*

Category 1 emissions, based on Operational Control approach, decreased by 23 per cent in 2024 compared to 2023, primarily due to reduced purchasing activities by the Downstream business. Category 11 emissions decreased by 5 per cent based on Operational Control approach and decreased by 2 per cent based on Equity Share approach in 2024 compared to 2023. Both reductions were driven by lower sales volume by the Downstream business.

Sustainability Key Performance Data

Environment

	Unit	2020	2021	2022	2023	2024
Freshwater Withdrawal						
PETRONAS[1]	**million cubic metres**	**60.5**	**68.3**	**77.9**	**79.2**	**82.6**
By Business						
Upstream	million cubic metres	0.9	1.3	1.3	1.3	**1.4**
Gas and Maritime	million cubic metres	10.9	10.8	11.2	11.3	**11.4**
Downstream	million cubic metres	47.4	55.3	63.3	63.4	**66.5**
Corporate and Others	million cubic metres	1.3	0.9	2.2	3.3	**3.2**
By Region						
Malaysia	million cubic metres	57.2	67.3	76.8	78.1	**81.4**
International	million cubic metres	3.3	1.0	1.1	1.1	**1.2**
Effluents						
Discharges to Water	tonnes of hydrocarbon	532	452	487	327	**393**
Air Emissions						
Total Sulphur Oxides Emissions	tonnes	84,225	47,954	60,116	60,212	**59,400**
Total Nitrogen Oxides Emissions[2]	tonnes	138,035	133,962	62,790	101,695	**92,017**
Spillage						
Number of Hydrocarbons Spills into the Environment over One Barrel[3]	number of cases	5	2	2	5	**10**
Waste						
Total Hazardous Waste Generated[4]	**tonnes**	**92,019**	**124,884**	**144,620**	**152,037**	**187,294**
By Region						
Malaysia	tonnes	67,078	59,882	82,051	66,444	**80,116**
International	tonnes	24,941	65,002	62,569	85,593	**107,178**
Total Hazardous Waste Sent for Reuse, Recycling and Recovery (3R)	**tonnes**	**65,170**	**49,561**	**73,643**	**57,424**	**58,583**
By Region						
Malaysia	tonnes	49,022	41,364	63,133	52,147	**55,707**
International	tonnes	16,148	8,197	10,510	5,277	**2,876**
Total Hazardous Waste Disposed	**tonnes**	**33,349**	**59,228**	**76,485**	**96,310**	**121,809**
By Region						
Malaysia	tonnes	14,914	21,542	24,449	20,023	**17,562**
International	tonnes	18,435	37,686	52,036	76,287	**104,247**

Notes:

1. *The increase in freshwater withdrawal by 4 per cent from 79.2 to 82.6 mil m^3 is due to an increase in industrial activity by the Pengerang Integrated Complex.*
2. *Nitrogen oxide emissions decreased to 92,017 tonnes in 2024 from 101,695 tonnes in 2023 mainly due to lower fuel gas consumption from our maritime operations.*
3. *The increase in number of hydrocarbon spills over one barrel is due to factors involving operational handling, connection issues and breaches in secondary containment.*
4. *The increase in waste disposal is attributed to the host country's requirements and the limited 3R facilities in the selected international operations.*

Safety

	Unit	2020	2021	2022	2023	2024
Number of Fatalities	**number**	**4**	**3**	**4**	**2**	**2**
Employees	number	1	1	0	1	**2**
Contractors	number	3	2	4	1	**0**
Number of hours worked	**million hours**	**273**	**268**	**295**	**292**	**279**
Employees	million hours	120	120	127	131	**139**
Contractors	million hours	153	148	168	161	**140**
Fatal Accident Rate (FAR)	number per 100 million hours worked	1.47	1.12	1.36	0.69	**0.72**
Employees	number per 100 million hours worked	0.84	0.84	0	0.76	**1.44**
Contractors	number per 100 million hours worked	1.96	1.35	2.38	0.62	**0**
Lost Time Injury Frequency (LTIF)	number per million hours worked	0.1	0.14	0.13	0.11	**0.10**
Employees	number per million hours worked	0.09	0.1	0.11	0.08	**0.09**
Contractors	number per million hours worked	0.11	0.17	0.14	0.12	**0.10**
Total Recordable Case Frequency (TRCF)	number per million hours worked	0.29	0.41	0.34	0.31	**0.30**
Employees	number per million hours worked	0.27	0.28	0.26	0.19	**0.16**
Contractors	number per million hours worked	0.31	0.52	0.40	0.40	**0.45**
Total Recordable Occupational Illness Frequency (TROIF) for Employees	number per million hours worked	0.39	0.24	0.32	0.66	**0.22**
Tier 1 Process Safety Events	number of cases	9	10	7	9	**7**

Sustainability Key Performance Data

Employment

	Unit	2020	2021	2022	2023	2024
Total Number of Employees[1]	number	48,679	46,884	49,771	54,105	**52,157**
By Nationality						
Malaysian	%	80	80	80	79	**83**
Other Nationalities	%	20	20	20	21	**17**
By Region						
Africa	%	6.7	6.4	5.7	5.1	**0.1**
Asia	%	84.6	84.7	83.3	84.5	**88.7**
Australia and New Zealand	%	0.1	0.1	0.1	0.1	**0.2**
Commonwealth of Independent States	%	1.4	1.2	1.2	1.2	**1.2**
Europe	%	2.7	2.9	4.9	4.5	**5.0**
Middle East	%	2.4	2.3	2.0	1.8	**1.9**
North and South America	%	2.1	2.4	2.8	2.8	**2.9**
By Employment Type						
Permanent	%	86	87	88	87	**88**
Contract	%	14	13	12	13	**12**
By Age Group						
Above 35	%	53	59	60	58	**61**
Below 35	%	47	41	40	42	**39**
Total Number of Trade Union Members	number	8,476	8,353	8,360	8,266	**8,728**

Note:
1. Employees for 2024 reduced by 3.6 per cent mainly contributed by ENGEN divestment.

	Unit	2020	2021	2022	2023	2024
Gender Diversity						
Employees by Gender						
Women	%	28	28	29	29	**30**
Men	%	72	72	71	71	**70**
Employees in Technical Positions by Gender						
Women	%	14	14	14	15	**16**
Men	%	86	86	86	85	**84**
Senior Management by Gender						
Women	%	19	26	22	21	**20**
Men	%	81	74	78	79	**80**
Management Committee Members by Gender						
Women	%	22	22	22	22	**18**
Men	%	78	78	78	78	**82**
PETRONAS Board Directors by Gender						
Women	%	25	30	18	25	**29**
Men	%	75	70	82	75	**71**

	Unit	2020	2021	2022	2023	2024
Benefits						
Employees Who are Entitled to Parental Leave						
Women	number	-	-	-	9,863	**9,280**
Men	number	-	-	-	27,458	**27,354**
Employees Who Took Parental Leave						
Women	number	-	-	-	679	**620**
Men	number	-	-	-	2,072	**2,221**
Employees Who Took Parental Leave and Returned to Work						
Women	number	-	-	-	662	**575**
Men	number	-	-	-	2,024	**1,977**
Employees Who Returned to Work After Parental Leave Ended and Still Employed 12 Months After Their Return to Work						
Women	number	-	-	-	652	**568**
Men	number	-	-	-	1,997	**1,973**

Note:
Parental leave refers specifically to maternity and paternity leave, and is subject to eligibility criteria in accordance with local labour laws.

	Unit	2020	2021	2022	2023	2024
New Hires						
Total Number of New Hires[1]	**number**	**2,160**	**2,172**	**5,210**	**7,386**	**4,079**
Malaysian	number	2,003	1,982	4,358	5,796	**3,229**
Non-Malaysian	number	157	190	852	1,490	**461**
Undeclared[2]	number				100	**389**
By Nationality						
Malaysian	%	-	86	84	80	**88**
Non-Malaysian	%	-	14	16	20	**12**
By Age Group						
Above 35	%	-	31	25	25	**34**
Below 35	%	-	69	75	75	**66**
By Job Level						
Non-Executive	%	-	26	37	38	**23**
Executive	%	-	59	54	52	**65**
Middle Manager	%	-	14	8	9	**11**
Senior Management	%	-	1	1	1	**1**

Notes:
1. *Overall new hires decreased compared to 2023, in alignment with management's direction to prioritise internal talent and optimise existing resources.*
2. *The 'Undeclared' category refers to new hires from companies that are unable to disclose gender information due to the Personal Data Protection Regulation.*

Sustainability Key Performance Data

	Unit	2020	2021	2022	2023	2024
Employee Attrition						
Total	**%**	**4.9**	**8.4**	**6.6**	**6.4**	**12.3**
By Gender						
Women	%	1.3	2.8	1.9	1.8	**3.7**
Men	%	3.6	5.7	4.7	4.6	**8.6**
By Nationality						
Malaysian	%	-	86	70	68	**45**
Non-Malaysian	%	-	14	30	32	**55**
By Age Group						
Above 35	%	-	72	57	55	**64**
Below 35	%	-	28	43	45	**36**
By Job Level						
Non-Executive	%	-	41	34	39	**46**
Executive	%	-	33	48	43	**39**
Middle Manager	%	-	22	14	15	**13**
Senior Management	%	-	4	4	3	**2**

	Unit	2020	2021	2022	2023	2024
Talent and Future Pipeline						
Training Days per Employee	days	5	4	4.9	7.3	**7.1**
Average Training Investment per Employee	RM	3,588	2,386	5,433	6,771	**6,645**
Average Total Hours of Training per Employee	hours	36	30	39.1	58.2	**56.9**
Average Total Hours of Training per Employee by Gender						
Women	hours	-	36.3	42.0	57.3	**58.7**
Men	hours	-	27.1	42.7	63.6	**61.8**
Average Total Hours of Training per Employee by Job Level						
Non-Executive	hours	-	20.5	41.1	63.7	**61.2**
Executive	hours	-	35.6	46.6	62.9	**65.1**
Middle Manager	hours	-	35.1	37.9	53.8	**56.0**
Senior Management	hours	-	21.7	27.5	49.3	**42.0**
Groupwide Technical Expertise						
Technical Authorities	number	501	601	618	786	**838**
Technical Professionals	number	1,173	1,281	1,384	1,380	**1,455**
Technical Trade Specialists	number	259	262	266	255	**260**
PETRONAS Scholars Recruited	number	219	220	281	256	**328**
Recruited by PETRONAS	%	61	66	90	91	**89**
Recruited by Others	%	39	34	10	9	**8**
Pending Placement	%					**3**
Sponsorships Awarded to Malaysians[1]	number	370	302	587	615	**967**
International Universities	%	25	34	34	35	**22**
Malaysian Universities	%	75	66	66	65	**78**
Number of Sponsorships Awarded to Non-Malaysians at Universiti Teknologi PETRONAS	number	42	41	41	32	**14**
Human Rights						
Security Personnel Trained in Human Rights Policies and Procedures	number	913	1,415	617	115	**1,827**
Number of Operations and Suppliers at Significant Risk for Incidents of Forced or Compulsory Labor	number	0	0	0	0	**0**
Number of Community Grievance Mechanisms	number	23	14	2	32	**38**

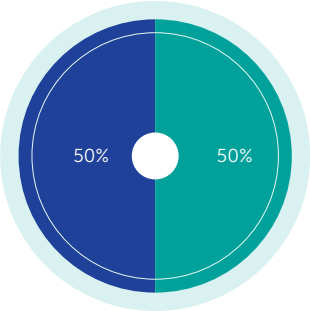
Note:
1. Sponsorship awarded excludes postgraduate sponsorship.

Board Composition

Gender

3

3

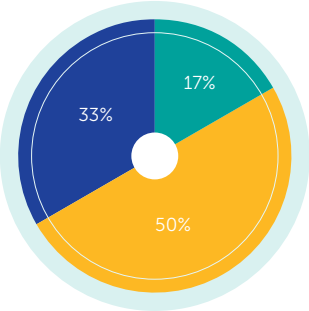


Composition

1 Non-Independent Non-Executive Director

3 Independent Non-Executive Directors

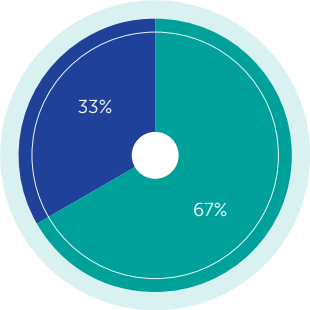
2 Executive Directors



Tenure

2 0-3 years

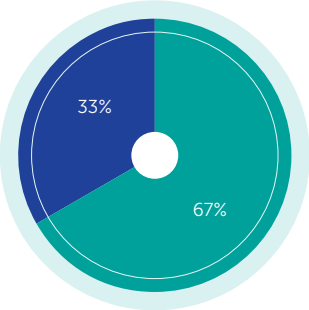
4 >3 years to 6 years



Age

4 Age 50-59

2 Age 70-79



Board Skills and Expertise

Profile of Board of Directors

As at 28 February 2025

Tan Sri Dato' Seri Mohd Bakke Salleh

Independent Non-Executive Director/Chairman

Age and Gender
70 Years/Male

Nationality
Malaysian

Date of Appointment
18 June 2019

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 & 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 & Peninsular Berhad
- Pro Chancellor of Universiti Putra Malaysia
- Honorary Council Member, Malaysian Palm Oil Association (MPOA)

Other Current Appointments:

- Chairman, Yayasan PETRONAS

Tan Sri Tengku Muhammad Taufik

Executive Director, President and Group Chief Executive Officer

Age and Gender
51 Years/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
- More than 24 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
- Key positions previously held:
  - Executive Vice President and Group Chief Financial Officer, PETRONAS
  - Partner at PricewaterhouseCoopers (PwC) Malaysia
  - Chief Financial Officer in listed entities

Other Current Appointments:

- Chairman, Gentari Sdn Bhd
- Chairman, KLCC (Holdings) Sdn Bhd
- Chairman, PETRONAS Carigali Sdn Bhd
- Chairman, PETRONAS Carigali International Ventures Sdn Bhd
- Chairman, PETRONAS International Corporation Ltd
- Chairman, Malaysia-United Arab Emirates Business Council (MUBC)
- Chairman, National Trust Fund
- Co-Chair, the WEF Oil and Gas Governors Community
- Co-Chair, the WEF ASEAN Leaders for Just Energy Transition Community
- Council Member, Northern Corridor Implementation Authority (NCIA)
- Board Member, Malaysia-Thailand Joint Authority (MTJA)
- Member, Board of Trustees of the Merdeka Award Trust
- Pro-Chancellor of Universiti Teknologi PETRONAS (UTP)

Profile of Board of Directors

As at 28 February 2025

Datuk Dr Shahrazat Haji Ahmad

Non-Independent Non-Executive Director

Age and Gender
56 Years/Female

Nationality
Malaysian

Date of Appointment
13 January 2025

AC NRC RC

Academic/Professional Qualifications:

- PhD in Social Sciences (International Development in Economics), The University of Kitakyushu, Japan
- Masters in Social Sciences (International Development in Economics), International University of Japan
- Advanced Diploma in Accounting, MARA Institute of Technology

Past Appointments/Experiences:

- With three decades of distinguished service in the Malaysian civil sector
- With extensive experience of 30 years in areas that include policy development, economics, and accountancy in the public and private sectors
- Held various key positions including:
  - Deputy Secretary General of Treasury (Investment) of the Ministry of Finance (MOF)
  - Deputy Secretary General (Development) of the Ministry of Defence (MINDEF)
  - Deputy Director General (Development), Implementation Coordination Unit (ICU), Prime Minister Department (PMD)
  - Director (Outcome Evaluation Division), ICU of PMD
  - Director (Social Division), ICU of PMD
  - Director (Economic Division), ICU of PMD
  - Deputy Director (Infrastructure Division), ICU of PMD
  - Principal Assistant Secretary, MOF
  - Assistant Secretary, MOF

Other Current Appointments:

- Member, Audit Committee, PETRONAS
- Member, Risk Committee, PETRONAS
- Member, Nomination and Remuneration Committee, PETRONAS
- Non-Independent Non-Executive Director, Telekom Malaysia
- Non-Executive Director, Lumut Naval Shipyard Sdn Bhd
- Non-Executive Director, Northern Gateway Sdn Bhd
- Non-Independent Non-Executive, Rakan KKM Sdn Bhd
- Vice President of Kumpulan Wang Amanah Negara (KWAN)
- Member of Board, Suruhanjaya Tenaga
- Member of Board, Suruhanjaya Sekuriti
- Member of Board, Chairman of Integrity Committee, Member of Audit Committee, Lembaga Tabung Angkatan Tentera (LTAT)

Tan Sri Zaharah Ibrahim

Independent Non-Executive Director

Age and Gender
72 Years/Female

Nationality
Malaysian

Date of Appointment
17 August 2020

AC NRC RC

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, Nomination and Remuneration Committee, PETRONAS
- Member, Audit Committee, PETRONAS
- Member, Risk Committee, PETRONAS
- Pro-Chancellor of Universiti Teknologi PETRONAS (UTP)

Board Committee:

- Chairman
- Members

AC Audit Committee

NRC Nomination and Remuneration Committee

RC Risk Committee

Azizan Zakaria

Independent Non-Executive Director

Age and Gender
54 Years/Male

Nationality
Malaysian

Date of Appointment
15 November 2023

AC NRC RC

Academic/Professional Qualifications:

- Fellow of the Chartered Association of Certified Accountants (FCCA)
- Member, 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 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, Audit and Risk Committee of SilTerra Sdn Bhd
- Member, ACCA Malaysia Advisory Committee
- Member, the Malaysian Accounting Standards Board (MASB)'s working Group on improvement projects

Other Current Appointments:

- Chairman, Audit Committee, PETRONAS
- Chairman, Risk Committee, PETRONAS
- Member, Nomination and Remuneration Committee, PETRONAS
- Director, FGV Holdings Berhad
- Director, TNB Power Generation Sdn Bhd
- Director, IIUM Holdings Sdn Bhd
- Chairman, IIUM Schools Sdn Bhd

Liza Mustapha

Executive Director, Executive Vice President and Group Chief Financial Officer

Age and Gender
54 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, United States of America
- Member, Malaysian Institute of Accountants (MIA)
- Bachelor of Science Degree in Economics, majoring in Accounting and Finance, 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 Carigali International Ventures Sdn Bhd
- Treasurer, Malaysian Petroleum Club

Profile of Company Secretaries

As at 28 February 2025

Azizi Md Ali

Company Secretary

Age and Gender
56 Years/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 30 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, PETRONAS
- General Counsel, LNG Business, PETRONAS
- Senior General Counsel, Legal Upstream, PETRONAS
- Chief Compliance Officer, Legal Compliance and Finance, PETRONAS

Other Current Appointments:

- Head, Group Secretarial and Board Governance, PETRONAS
- Director, Malaysia Jet Services Sdn Bhd

Norwankiss Mohd Ridhuan Kau

Company Secretary

Age and Gender
39 Years/Female

Nationality
Malaysian

Date of Appointment
28 January 2025

Academic/Professional Qualifications:

- Bachelor of Laws (Honours), International Islamic University Malaysia
- Licensed Company Secretary

Past Appointments/Experiences:

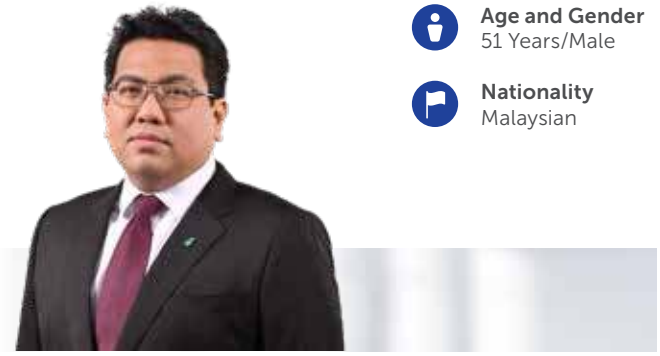
- Joined PETRONAS in 2010 and has 15 years of experience in corporate secretarial services and advisory roles
- Previously served as Head of Corporate Secretarial – Non-Listed Companies and Corporate Secretarial – International
- Previously served as Company Secretary for Gentari Sdn Bhd, PETRONAS International Corporation Ltd, PETRONAS Carigali Sdn Bhd, and various other domestic and international entities within the PETRONAS Group

Other Current Appointments:

- General Manager, Secretarial and Governance, Group Secretarial and Board Governance, PETRONAS
- Secretary, PETRONAS Executive Leadership Team
- Skill Group Advisor for Group Secretarial and Board Governance

Profile of Executive Leadership Team

As at 28 February 2025



Age and Gender
51 Years/Male

Nationality
Malaysian

Tan Sri Tengku Muhammad Taufik

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
- More than 24 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
- Key positions previously held:
  - Executive Vice President and Group Chief Financial Officer, PETRONAS
  - Partner at PricewaterhouseCoopers (PwC) Malaysia
  - Chief Financial Officer in listed entities

Other Current Appointments:

- Chairman, Gentari Sdn Bhd
- Chairman, KLCC (Holdings) Sdn Bhd
- Chairman, PETRONAS Carigali Sdn Bhd
- Chairman, PETRONAS Carigali International Ventures Sdn Bhd
- Chairman, PETRONAS International Corporation Ltd
- Chairman, Malaysia-United Arab Emirates Business Council (MUBC)
- Chairman, National Trust Fund
- Co-Chair, the WEF Oil and Gas Governors Community
- Co-Chair, the WEF ASEAN Leaders for Just Energy Transition Community
- Council Member, Northern Corridor Implementation Authority (NCIA)
- Board Member, Malaysia-Thailand Joint Authority (MTJA)
- Member, Board of Trustees of the Merdeka Award Trust
- Pro-Chancellor of Universiti Teknologi PETRONAS (UTP)

Age and Gender
54 Years/Female

Nationality
Malaysian

Liza Mustapha

Executive Vice President and Group Chief Financial Officer

Academic/Professional Qualifications:

- Fellow of the Association of Chartered Certified Accountants (FCCA)
- Advance Management Program at Harvard Business School, United States of America
- Member, Malaysian Institute of Accountants (MIA)
- Bachelor of Science Degree in Economics, majoring in Accounting and Finance, 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 Carigali International Ventures Sdn Bhd
- Treasurer, Malaysian Petroleum Club

Profile of Executive Leadership Team

As at 28 February 2025

Age and Gender
57 Years/Male

Nationality
Malaysian

Date of Appointment
1 July 2024

Mohd Jukris Abdul Wahab

Executive Vice President and Chief Executive Officer, Upstream

Academic/Professional Qualifications:

- BSc. in Petroleum Engineering, Texas Tech University
- Advanced Management Program (AMP), The Wharton School, University of Pennsylvania
- Management Development Program, INSEAD

Past Appointments/Experiences:

- Joined PETRONAS in 1990
- Has more than 33 years of experience in the oil and gas industry in the fields of petroleum engineering, strategic planning, resource development, and assets operations and management
- Other key positions previously held within the Group:
  - Independent Director, PETRONAS Carigali Sdn Bhd and PETRONAS (E&P) Overseas Ventures
  - Vice President, International Assets
  - Vice President, Malaysia Assets
  - Chairman, PETRONAS Sudan
  - Senior General Manager, Petroleum Resource Development (PRD) at PETRONAS Petroleum Management Unit (PMU)
  - Executive Assistant to the President

Other Current Appointments:

- Chairman, PETRONAS Energy Canada Ltd (PECL)
- Chairman, PETRONAS CCS Ventures Sdn Bhd
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS Carigali International Ventures Sdn Bhd
- Trustee, Abandonment Cess Fund

Age and Gender
58 Years/Male

Nationality
Malaysian

Date of Appointment
1 January 2022

Datuk Sazali Hamzah

Executive Vice President and Chief Executive Officer, Downstream

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 35 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:
  - Director, PETRONAS International Corporation Ltd
  - Senior Vice President and Managing Director/Chief Executive Officer, PETRONAS Chemicals Group Berhad
  - Managing Director/Chief Executive Officer, Malaysia Refining Company Sdn Bhd
  - Managing Director/Chief Executive Officer, PETRONAS Technical Sdn Bhd
  - Head, Group Project Management and Delivery, PETRONAS
  - Head, PETRONAS Group Technical Services
  - Various senior management positions in the refinery and petrochemical business within PETRONAS

Other Current Appointments:

- Director, Pengerang Refining Company Sdn Bhd
- Director, Pengerang Petrochemical Company Sdn Bhd
- Chairman, PETRONAS Marketing International Sdn Bhd
- Director, PETRONAS Dagangan Berhad
- Chairman, PETRONAS Chemicals Group Berhad
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS Carigali International Ventures Sdn Bhd

Age and Gender
54 Years/Male

Nationality
Malaysian

Date of Appointment
1 July 2024

Datuk Adif Zulkifli

Executive Vice President and Chief Executive Officer, Gas and Maritime Business

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 33 years of experience in the oil and gas industry in the fields of petroleum engineering, operations, natural gas, LNG, strategic planning, corporate transformation, petroleum economics, mergers and acquisitions and business development
- Other key positions previously held within the Group:
  - Executive Vice President and Chief Executive Officer, Upstream
  - Executive Vice President and Chief Executive Officer, Gas and New Energy
  - Senior Vice President, Development and Production, Upstream
  - Senior Vice President, Corporate Strategy
  - Vice President, Malaysia Petroleum Management
  - Chairman, PETRONAS Research Fund
  - Chairman, PETRONAS Energy Canada Ltd
  - Director, PETRONAS (E&P) Overseas Ventures Sdn Bhd (PEPOV)
  - Head, Strategy and New Ventures Division in Exploration and Production Business

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, PETRONAS LNG 9 Sdn Bhd
- Chairman, PETRONAS LNG Sdn Bhd
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS Carigali International Ventures Sdn Bhd
- Director, PETRONAS Canada LNG Limited (PCLL)
- Director, MISC Berhad
- Chairman, Society of Petroleum Engineers, Asia Pacific Advisory Council

Age and Gender
60 Years/Male

Nationality
Malaysian

Date of Appointment
1 February 2024

Datuk Ir. Bacho Pilong @ Pelu

Senior Vice President, Malaysia Petroleum Management

Academic/Professional Qualifications:

- Bachelor of Chemical Engineering, Cockrell School of Engineering, University of Texas, Austin, United States of America
- Senior Management Development Program, INSEAD, Singapore
- Advanced Management Program, AMP 65, The Wharton School, University of Pennsylvania

Past Appointments/Experiences:

- Joined PETRONAS in 1992
- Possesses more than 33 years of experience in the oil and gas industry
- Other key positions previously held within the Group:
  - Vice President, Malaysia Assets, Upstream
  - Vice President, International Assets, Upstream
  - Senior General Manager, 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

Profile of Executive Leadership Team

As at 28 February 2025

Age and Gender
52 Years/Female

Nationality
Malaysian

Date of Appointment
1 January 2024

Marina Md Taib

Senior Vice President, Corporate Strategy

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 26 years of experience in the PETRONAS in the fields of Finance and Treasury, Upstream and Corporate Planning
- Other key positions previously held within the Group:
  - Vice President, Treasury
  - Senior General Manager, Corporate Strategic Planning
  - Head, Strategic Planning, Petroleum Management Unit
  - Country Manager, Brunei

Other Current Appointments:

- Chairperson, PTV International Ventures Ltd (PIVL)
- Chairperson, International Conference and Exhibition Professionals (iCEP)
- Chairperson, Board of Trustees, Petroleum Research Fund (PRF)
- Director, PETRONAS Gas Berhad (PGB)
- Director, PETRONAS Refinery and Petrochemical Sdn Bhd
- Director, PETRONAS Carigali International Ventures Sdn Bhd (PCIV)
- Director, PETRONAS Carigali Sdn Bhd (PCSB)
- Director, PETRONAS International Corporation Ltd (PICL)
- Director, PETRONAS Digital Sdn Bhd (PDSB)
- Director, PETRONAS CCS Ventures Sdn Bhd (PCCVSB)
- Director, PETRONAS Management Training Sdn Bhd (PMTSB)
- Director, Malaysian Industry – Government Group for High Technology (MIGHT)
- Director, Institute of Technology PETRONAS Sdn Bhd (ITPSB)
- Board of Trustees, Decarbonisation Fund

Age and Gender
59 Years/Male

Nationality
Malaysian

Date of Appointment
1 January 2024

Ir. Mohd Yusri Mohamed Yusof

Senior Vice President, Project Delivery and Technology

Academic/Professional Qualifications:

- Bachelor of Science in Chemical Engineering, Oklahoma State University, United States of America
- Advanced Management Programme, The Wharton School, University of Pennsylvania, United States of America
- Registered Professional Engineer (PE), Board of Engineers Malaysia
- Fellow of Institution of Chemical Engineers (IChemE)
- Fellow of the Energy Institute (FEI)

Past Appointments/Experiences:

- Joined PETRONAS in 1989
- Has 35 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
  - Head, Manufacturing, PCG
  - Chief Executive Officer, PETRONAS Chemicals Olefins, Glycols, and Derivatives (PC OGD)
  - Director, ENGEN Limited

Other Current Appointments:

- Chairman, PETRONAS Digital Sdn Bhd
- Chairman, PETRONAS Research Sdn Bhd (PRSB)
- Chairman, PETRONAS Technical Services Sdn Bhd
- 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 CCS Ventures Sdn Bhd
- Director, Institute of Technology PETRONAS Sdn Bhd

Age and Gender
51 Years/Male

Nationality
Malaysian

Date of Appointment
1 July 2021

Razman Hashim

Senior Vice President, Group Legal and Group General Counsel

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 26 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, PETRONAS Carigali Sdn Bhd and PETRONAS International Corporation Ltd
  - Directors of various entities within Upstream business
  - Member, Joint Management Committee of Garraf Operations, Iraq

Other Current Appointments:

- Industry Mentor @ Ahmad Ibrahim Kulliyyah of Laws, International Islamic University Malaysia
- Director, KLCC (Holdings) Sdn Bhd
- Director, PETRONAS International Corporation Ltd

Age and Gender
49 Years/Male

Nationality
Malaysian

Date of Appointment
1 April 2024

Ruslan Islahudin

Vice President and Group Chief Human Resources Officer

Academic/Professional Qualifications:

Education

- Bachelor of Engineering, Imperial College London, United Kingdom
- Master of Economics, Universiti Malaya, Malaysia
- Executive Master in Future Energy, ESCP Business School, France
- Advanced Management Program, Harvard Business School, United States of America

Certifications and Professional Membership

- Associate, City and Guilds Institute, United Kingdom
- Chartered Fellow of the Chartered Institute of Personnel and Development (CIPD)

Past Appointments/Experiences:

- Joined PETRONAS in 1997
- Has more than 27 years of experience in various leadership roles in areas such as marketing and trading, risk management, corporate strategy, corporate communication, merger and acquisition, and human resource management
- Other key positions previously held within the Group:
  - Chief Executive Officer, PETRONAS Leadership Centre
  - Senior General Manager, Human Capital Development, Group Human Resources Management
  - Senior General Manager, Human Capital Strategy, Group Human Resources Management
  - Regional Managing Director, Asia Pacific, PETRONAS Lubricants International Sdn Bhd (PLISB)
  - General Manager, Corporate Strategy and Communications, ENGEN Petroleum Limited, Cape Town, South Africa
  - Executive Assistant to the President and Group Chief Executive Officer
  - General Manager and Head, Office of the Chief Operating Officer and Executive Vice President of Downstream Business
  - General Manager, Risk Management Department, PETRONAS Trading Corporation (PETCO)

Other Current Appointments:

- Chairman, PETRONAS Technical Training Sdn Bhd (Institut Teknologi Petroleum (INSTEP)
- Chairman, PETRONAS Management Training Sdn Bhd (PETRONAS Leadership Centre (PLC))
- Chairman, PING23 Sdn Bhd (PING)
- Chairman, Dana Asy-Syakirin
- Director, Institute of Technology PETRONAS Sdn Bhd (IPTSB)
- Director, PETRONAS Lubricants International Sdn Bhd (PLISB)
- Director, Malaysian Maritime Academy Sdn Bhd (ALAM)
- Member, World Business Council for Sustainable Development (WBCSD)
- Commissioner, Business Commission to Tackle Inequality (BCTI)

Corporate Governance at PETRONAS

Board Governance and Structure

"At PETRONAS, we remain dedicated to applying the best standards of 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 long-term 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 sound decision-making and 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 diverse interests of the Group, its workforce and the wider communities it serves. 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. It also aims to promote strategic alignment across the Group whilst facilitating efficient decision-making at all levels. This integrated approach strengthens PETRONAS' ability to address immediate priorities while maintaining a forward-looking focus.

Governance Structure

Our governance structure illustrates the oversight role of the Board and the interconnected components of governance which facilitate the interaction and information flow between the Board and the Executive Leadership Team. The table below describes the Group's governance structure, and an overview of the key committees of the Board and the Executive Leadership Team.

Board of Directors (Board)

Non-Executive Chairman

- Leads the Board and ensures it operates effectively.
- Encourages active participation and a culture of open discussion.

Independent Non-Executive Directors

- Provide independent judgment, external perspective and objectivity to the Board's deliberation.
- Contribute to deliberations and discussions with a broad range of experience and expertise.

President and Group Chief Executive Officer

- Provides overall direction as well as setting the strategic goals for the Company.
- Responsible for management of the business, delivering and implementing policies, strategies and decisions approved by the Board.

AC
Audit Committee

Responsible for oversight functions in relation to the Company's internal controls and financial reporting to safeguard PETRONAS' assets. The AC provides the Board with quality and reliability assurance of the financial information reported by the Company. The AC also institutes regular reporting and public disclosures on climate-related matters while promoting efficiency and good governance practices.

For more information about the AC, please refer to page 197.

NRC
Nomination and Remuneration Committee

Responsible for assessing the performance of the Board, the NRC provides support on the implementation of a succession plan for the Board, President and Group CEO, Chief Operating Officer and the Executive Leadership Team (Highest Management) as well as their appointments and renewals. The NRC recommends to the Board the remuneration policy for the Non-Executive Directors and Executive Leadership Team.

The NRC also reviews the annual President and Group CEO's Performance Scorecard for the year which includes climate-related measures.

For more information about the NRC, please refer to page 198.

RC
Risk Committee

Responsible for reviewing principal risks and overseeing the adequacy and effectiveness of the risk management system for the PETRONAS Group, including climate-related risks and mitigations. The RC also reviews and recommends to the Board the appropriate corporate governance policies and procedures in accordance with good governance standards and best practices.

For more information about the RC, please refer to page 198.

President and Group Chief Executive Officer (CEO)

Executive Leadership Team

The Executive Leadership Team was established to assist the President and Group CEO in managing the business affairs of the Company and is responsible in providing a holistic approach to all business strategies as well as high impact and high value investments, including mergers and acquisitions, and Health, Safety, Security and Environment (HSSE) matters. The Executive Leadership Team discusses specific matters which include Sustainability, Innovation and Technology, and People Development at its focused meetings.

Board Leadership

The Board provides effective stewardship and is responsible for the Group's strategic direction and control of the Company. This is achieved through a structured governance framework, effective delegation of authority, risk management and a comprehensive system of assurances covering financial reporting and internal controls. The Board is accountable to its shareholders while recognising its responsibilities towards a wider range of stakeholders including employees, suppliers, communities and the authorities.

Each Director is bound by duty to act in good faith and in the best interest of the Company with reasonable care, skills and diligence. The Board's roles and responsibilities are guided by the Board Charter, a document that defines the authority, responsibilities and operations of the Board.

The distinct roles of the Chairman and the President and Group CEO are clearly delineated within the Board Charter. The Chairman of the Board is not a member of any of the Board Committees, ensuring independent leadership and oversight.

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 impede its ability to discharge its core responsibilities. 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 the Management, the Board fosters a culture of good corporate governance within the Company, characterised by ethical leadership, professional conduct and prudent decision-making in all aspects of its activities.

How the Board Functions

The Board meets regularly, with additional meetings scheduled as necessary to address emerging circumstances. Each meeting is conducted in accordance with a formal and structured agenda and Board papers are circulated timely to ensure that Directors are well-informed, and that discussions and decisions are constructive and robust.

Board members access meeting materials online through a collaborative digital platform, enhancing the efficiency of the Board process. This digital approach enables Directors to review, read and confer electronically with each other and the Company Secretaries, ensuring seamless access to information. Board Papers and presentations by the Management to the Board are prepared and delivered in a manner to support clarity and provide sufficient understanding of the subject matter.

In 2024, the Board met on 17 occasions, with the majority of meetings conducted physically. While Board decisions require a majority vote, they are customarily reached through consensus to foster unity and collective accountability.

Each Director has unrestricted access to the Company Secretaries, who provide expert guidance on corporate governance, ethical business practices, compliance with 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 signed by all directors 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.

Updates from key committees—including the Audit Committee, Nomination and Remuneration Committee, and Risk Committee—are regularly provided to the Board by their respective Chairperson, ensuring alignment and oversight.

All Board meeting proceedings 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 where any Directors 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.

Corporate Governance at PETRONAS

The Board's 2024 Key Focus Areas and Priorities

Strategy

Key Focus Areas	Description
The Group's Strategic Initiatives and Plans	The Board deliberated on long-term strategic options and provided the relevant feedback and steer.
The Group's Business Plan and Budget	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
The Group's Performance	The Board was updated on the performance against the business targets on a monthly basis. Performance is measured and tracked against approved key indicators.
Dividends	The Board considered and approved the proposal on the declaration of dividends.

Risk and Internal Controls

Key Focus Areas	Description
Enterprise Risks	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. 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. 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.

Corporate Governance and Compliance

Key Focus Areas	Description
Implementation and Monitoring of Succession Planning	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 appointments and reappointments of directors. This includes character, integrity, experience, competence and commitment to contribute.

Sustainability

Key Focus Areas	Description
Net Zero Carbon Emissions by 2050 (NZCE 2050) Pathway Delivery	Consideration of PETRONAS Net Zero Carbon Emissions by 2050 (NZCE 2050) Pathway is embedded in the deliberation of company strategic direction, plans, budget and risks management. Oversight on the achievement of the NZCE 2050 Pathway short-, medium- and long-term targets.
Sustainability Approach	Reviewed and endorsed the refreshed PETRONAS' Sustainability approach. This is to align the approach with the Company's strategic intent, embrace entrepreneurial sustainability and enhance its narrative to motivate stakeholder's action.

Board Roles and Attendance

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 Chief Executive Officer	• 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 comprehensive industry acumen and strategic insights from PETRONAS' perspective. • Responsible for steering and managing the Company's strategic direction and operational management, ensuring alignment with Board directives, the implementation of Board-mandated policies, and the oversight of daily business operations and controls.
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 Highest Management and monitor 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.

Corporate Governance at PETRONAS

Attendance at Meetings

The Directors' commitment to carry out their duties and responsibilities is affirmed by their attendance at the Board meetings as set out below. A total of 17 Board meetings were held during the year under review.

The number of meetings of the Board and Board Committees during the year ended 31 December 2024, together with a record of the attendance is provided in the table below:

Directors as at 28 February 2025	Board	AC	NRC	RC
Tan Sri Dato' Seri Mohd Bakke Salleh *Chairman/ Independent Non-Executive Director*	17/17	–	–	–
Tan Sri Tengku Muhammad Taufik *Executive Director/ President and Group Chief Executive Officer*	17/17	–	–	–
Tan Sri Zaharah Ibrahim *Independent Non-Executive Director*	17/17	7/7	4/4	2/2
Liza Mustapha *Executive Director/ Group Chief Financial Officer*	17/17	–	–	–
Datuk Dr Shahrazat Haji Ahmad *Non-Independent Non-Executive Director* *(Appointed w.e.f. 13.01.2025)*	–	–	–	–
Azizan Zakaria *Independent Non-Executive Director*	17/17	7/7	4/4	8/8
Directors who retired				
Dato Haji Ibrahim Haji Baki *Non-Independent Non-Executive Director* *(Resigned w.e.f. 16.10.2024)*	11/13	–	–	6/6
Datuk Johan Mahmood Merican *Non-Independent Non-Executive Director* *(Resigned w.e.f. 13.01.2025)*	10/17	1/7	–	5/8
Datuk KY Mustafa *Non-Independent Non-Executive Director* *(Resigned w.e.f. 19.01.2025)*	15/17	7/7	4/4	–

Board Balance and Effectiveness

Board Balance and Composition

As of the date of this report, the Board comprises six members; the Non-Executive Chairman, two Executive Directors and three Non-Executive Directors (NEDs), out of which two are Independent Non-Executive Directors (INEDs).

+ *The profiles of the Directors are available on pages 176 to 179.*

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 Dato Hj. Ibrahim Hj. Baki (resigned on 16 October 2024), Datuk Johan Mahmood Merican (resigned on 13 January 2025) and Datuk KY Mustafa (resigned on 19 January 2025), for their contributions and commitments during their tenure on the Board.

The Board also welcomed Datuk Dr Shahrazat Haji Ahmad as a NINED to the PETRONAS Board, effective 13 January 2025.

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 and to be high-performing.

Fit and Proper Policy

The Fit and Proper Policy was established to strengthen the PETRONAS Board Selection Criteria ensuring that all appointed or re-elected Directors within the PETRONAS Group demonstrate the requisite character, integrity, experience, competence and commitment to discharge their responsibilities effectively.

As part of this process, the Board through its NRC, conducts Fit and Proper assessment for individuals identified to be appointed as Directors or to continue holding the position as Directors. This evaluation is undertaken prior to the appointment or reappointment, ensuring that each candidate meets the high standards expected for the role and contributes effectively to the governance and the Group's strategy.

Diversity

The Board recognises the importance of diversity and the value it brings to the Group. Diversity promotes the inclusion of different perspectives, raising the standards of good practice in Board leadership and enhancing valuable insights in business judgment. It also ensures the Company remains relevant, resilient and sustainable in the rapidly transforming and evolving business environment.

While it is important to promote diversity, the primary criteria for the selection of Directors remain focused on an effective blend of competencies, skills, experiences and knowledge in areas identified by the Board to carry out its functions and duties effectively. 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 conducts an annual assessment of the independence of its Non-Executive Directors (NEDs). The independence assessment considers 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 also be undertaken in the following circumstances:

1 Prior to the Appointment of Non-Executive Directors	2 Annual Review	3 Notice of Change of Circumstances
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.	The Board determines the independence of each NED annually, based on the recommendations from the NRC per the PETRONAS Independent Directors Guidelines.	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 Independent Non-Executive Directors (INEDs) are 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 there is no conflict of interest, and such appointments do 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, no INED has exceeded this tenure limit.

Conflict of Interest

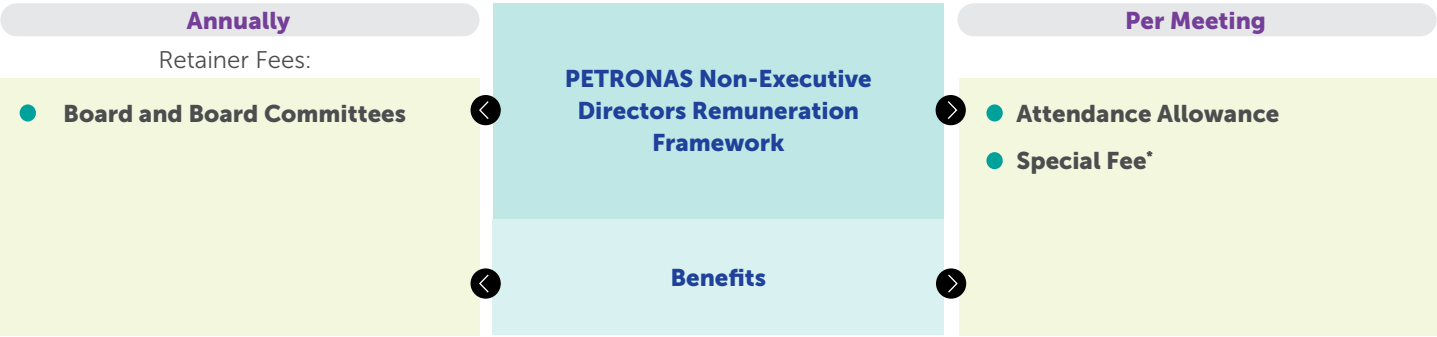
To ensure transparency and integrity of the decision-making process and to prevent conflict of interest, a declaration of interest by Directors is a fixed agenda item at the commencement of every Board meeting. Directors with a direct or indirect interest in a transaction shall recuse themselves when required and abstain from deliberations and voting. This approach is to ensure impartial discussions and unbiased decision-making. The nature and extent of the Directors' interest as well as their abstention from proceedings are duly 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).

In addition, Directors are required to declare their interests annually, in compliance with the disclosure requirements outlined in the Company's Audited Financial Statements. This reinforces PETRONAS' commitment to upholding governance standards and ensuring accountability at all levels.

Board Remuneration Policy

In recognition of the highly competitive market, PETRONAS designed a robust fee structure to attract, retain and appropriately compensate the diverse and internationally experienced NEDs. The details of this framework are outlined below:



* *Only for eligible Non-Executive Directors*

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.

Beyond the induction phase, PETRONAS ensures its Directors continue to develop their skills and expertise through ongoing access to professional development programmes and targeted events that address key areas relevant to the Group's operations and governance responsibilities.

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.*

Corporate Governance at PETRONAS

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 Board Excellence programme is developed to enhance Directors' awareness and knowledge involving their roles and responsibilities.

Recognising the growing importance of sustainability, PETRONAS is expanding its approach to develop sustainability-related competencies within the Board. Directors currently benefit from two key upskilling initiatives:

1. **Quarterly Board Conversation Series** –a platform for dialogue on emerging sustainability topics. The planned sessions for 2024 include:

   - Human Rights and the Role of Business
   - Carbon Markets
   - COP28 Reflection
   - Just Transition

2. **Sustainability 101** – a course designed to create awareness of sustainability and Directors' responsibilities under environmental, social and governance (ESG) requirements.

In line with the Securities Commission Malaysia's Corporate Governance Strategic Priorities 2021-2023 and the Mandatory Accreditation Programme Part II: Leading for Impact (LIP), PETRONAS is enhancing the PETRONAS Board Excellence programme to include more curated sustainability content, focusing on knowledge development and strengthening strategic insights.

To further align its governance with sustainability priorities, PETRONAS is incorporating sustainability-related competencies into the Board's skills matrix. Directors' expertise will be assessed based on criteria such as academic qualifications, training and professional experience.

Board Conversation

As part of our commitment to fostering a high-performing Board, a series of Board Conversations were convened, which included topics on strategies, sustainability and the energy transition. These sessions were conducted in-house or by external subject matter experts and provided valuable insights into sustainability and market outlook while facilitating in-depth discussions on the Group's strategic and growth plans.

These initiatives are designed to enhance Directors' knowledge, ensuring they remain well-informed of the latest trends and developments, and are equipped to contribute effectively to the Group's long-term success.

Qualified and Competent Company Secretaries

The Company Secretaries of PETRONAS are qualified to act as company secretary by virtue of Section 235 of the Companies Act 2016. Both Company Secretaries are legally qualified. They serve as advisors to the Board, particularly regarding 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 keep themselves abreast of the evolving regulatory changes and developments in corporate governance through continuous training.

Board Evaluation

The Board, through the NRC, undertakes 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.

This is 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 process of the Board Effectiveness Evaluation involved a set of questionnaires consisting of evaluations by the Board, Board Committees 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.

The NRC reviewed the outcome of the Board Effectiveness Evaluation that the Board is committed to the highest standards of good governance and affirmed the effectiveness of the Board in carrying out its responsibilities.

Directors' Indemnity

PETRONAS continued to provide and maintain indemnification for its Directors throughout the financial year as allowed under the Companies Act 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.

Additionally, all Directors have the option 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.

Corporate Governance at PETRONAS

Succession Planning

The Board had adopted the Board Succession Planning Framework to ensure a structured and timely identification and selection of new Non-Executive Directors in the event of an opening on the Board. This framework facilitates the seamless management of Board vacancies, whether arising from anticipated retirement, Board expansion, or other circumstances.

The Board, through the NRC, has the responsibility of ensuring appropriate succession planning of Directors and by regularly reviewing the Board's required mix of skills and experience, as well as assessing the tenure of INEDs on the Board.

In addition to the succession planning for the Directors, the NRC also reviewed the succession plan for key management positions in the Company. The NRC continued to focus on conducting all relevant reviews and assessments of the key management positions.

Board and Management Commitment to Sustainability

The Board recognises that the well-being of employees, customers, suppliers, stakeholders, the environment and society as a whole is crucial to sustaining the Company's long-term performance and ongoing relevance. The careful consideration of the needs of a broader stakeholder base ultimately fosters value creation for shareholders.

Given the increasing materiality of sustainability to the business, the Board consistently integrates such considerations, including associated risks and opportunities, into its strategic discussions. Sustainability risk is a key component within PETRONAS' Corporate Risk Profile, which is reviewed by the Risk Committee (RC) and approved by the Board on an annual basis. In addition, the RC regularly recommends updates to the Corporate Risk Profile and Risk Appetite, ensuring alignment with the Group's business objectives, strategies and current exposure management.

Since 2022, 20 per cent of the long-term incentive plan has been linked to sustainability outcomes, including net carbon intensity (NCI) and diversity and inclusion (D&I).

At the management level, the President and Group CEO oversees sustainability-related risks and opportunities, supported by the Sustainability Executive Leadership Team (S-ELT). In 2024, the S-ELT convened a total of eight meetings and discussed a wide range of sustainability topics relating to climate change, nature, just transition, human rights, disclosure requirements, data management and supply chain.

PETRONAS has established three sustainability-related policy-level documents which are: PETRONAS Commitment to Net Zero Carbon Emissions by 2050, PETRONAS Position on Nature and Biodiversity and the PETRONAS Human Rights Policy, to provide consistent direction Groupwide.

The Sustainability Committee monitors progress towards PETRONAS' sustainability targets, while the Risk Management Committee reviews the PETRONAS Corporate Risk Profile including climate-related risk and mitigation strategies.

Board Committees

AC Audit Committee

Azizan Zakaria *Chairman*

Datuk Dr Shahrazat Haji Ahmad	Tan Sri Zaharah Ibrahim	Datuk KY Mustafa	Datuk Johan Mahmood Merican
(Appointed w.e.f. 13 January 2025)		*(Resigned w.e.f. 19 January 2025)*	*Chairman* *(Resigned w.e.f. 13 January 2025)*

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 seven times in 2024.

+ *For more information about the AC's attendance, please refer to page 190.*

Key Matters in 2024

Financial

During the year under review, the AC reviewed the quarterly financial results and the financial performance of business segments, the PETRONAS Group, and its report for the financial year ended 31 December 2024, to ensure 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 2022, 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 opportunities and areas for enhancement are identified and proposed for adoption which include: additional reporting dimensions for the Group and business segments performance, revision on Quarterly Report presentation flow and sustainability-related disclosure to demonstrate PETRONAS' commitment to Net Zero Carbon Emissions 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 findings' 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:
- Operational excellence and HSE covering PETRONAS Lubricants International, PETRONAS Floating LNG, as well as Wells Plug and Abandonment at Upstream.
- Post Implementation of Project DELIMA at Downstream business.

b) Non-Technical areas covering:
- Integrated report on GHG emissions covering Corporate (CSO and GHSE) and Upstream, Gas and Downstream Business.
- Integrated Report for LNG and Gas Value Chain.
- Contractor Performance Management at selected Holding Company Units/Business Divisions/OPUs.
- Trading and Marketing Activities covering PETCO Group and LNG Marketing and Trading (LMT).
- Commercial activities at PETRONAS Lubricants International (PLI) Group, PLI China and PETRONAS Refinery and Petrochemical Corporation at Downstream business.
- Audit on Material Management at PETRONAS Floating LNG.

c) Digital and Technology areas covering:
- Cyber Security Management and Operations at selected international assets. PETRONAS Carigali Indonesia Operation and Turkmenistan.
- Value realisation from digital investment covering Audit on Cloud Services and Marketplace, Audit on Enterprise Data Hub, Audit on PETRONAS Digital Sdn Bhd, Audit on Project and Asset Excellence (NervCentre).

d) Shareholders audits covering operations, HSE, commercial and procurement at selected joint venture (JV) entities covering Shareholders Audit on Trans Thai-Malaysia 2024, Shareholders Audit on IPPL Management Activities

The AC also reviewed and endorsed the following matters:

a) Comprehensiveness of the Annual Audit Plan developed based on the enterprise/business strategies, enterprise/business risks, audit/assurance history results and stakeholder feedback.
b) 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.
c) Quarterly status on agreed recommendations arising from internal audit assignments.
d) 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 reviews fees for PETRONAS and selected subsidiaries.

Corporate Governance at PETRONAS

NRC Nomination and Remuneration Committee

Tan Sri Zaharah Ibrahim *Chairperson*

Datuk Dr Shahrazat Haji Ahmad
(Appointed w.e.f. 20 January 2025)

Azizan Zakaria

Datuk KY Mustafa
(Resigned w.e.f. 19 January 2025)

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' Highest 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 2024.

+ *For more information about the NRC's attendance, please refer to page 190.*

Key Matters in 2024

- 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 as a result of the annual review of independence of the NEDs.
- The NRC reviewed PETRONAS' Highest 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 2024 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.

RC Risk Committee

Azizan Zakaria *Chairman*

Datuk Dr Shahrazat Haji Ahmad
(Appointed w.e.f. 13 January 2025)

Tan Sri Zaharah Ibrahim
(Appointed w.e.f. 17 October 2024)

Dato Hj. Ibrahim Hj. Baki
Chairman
(Resigned w.e.f. 16 October 2024)

Datuk Johan Mahmood Merican
(Resigned w.e.f. 13 January 2025)

The RC supports the Board in reviewing principal risks and oversees the adequacy and effectiveness of the risk management system for the PETRONAS Group. The Committee also deliberates on risk mitigation strategies and measures, reviews investment proposals that are significant from a risk perspective as well as monitors the activities on integrity-related initiatives for the PETRONAS Group.

The RC discharged its responsibilities through its scheduled meetings during the year following a fixed agenda, which covers the matters under the purview of the RC. The RC met eight times in 2024.

+ *For more information about the RC's attendance, please refer to page 190.*

Key Matters in 2024

- 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 and Parent Company Guarantee issued by PETRONAS 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

At PETRONAS, a strong culture of compliance is driven by a tone-from-the-top approach, underscored by continuous advocacy from the Board of Directors and the Executive Leadership Team (ELT). Through their leadership, the principles of PETRONAS Shared Values and PETRONAS Cultural Beliefs are consistently being reinforced.

This messaging is further disseminated by senior management and directors across the Group of companies to ensure that all business activities are conducted responsibly and ethically. By cascading expectations from the leadership throughout the organisation, this approach is designed to shape the behaviour and attitudes of PETRONAS employees at all levels, embedding a culture of integrity and accountability across the Group's operations.

Compliance Focus Areas

Given the Group's portfolio of businesses—including Upstream, Gas and Maritime, Downstream, Renewable Energy, and Project Delivery and Technology—its operations are inherently exposed to legal and regulatory risks. PETRONAS is committed to adhering to all applicable laws across its business portfolio. While PETRONAS ensures compliance with all relevant laws and regulations, particular emphasis is placed on Critical Legal Areas (CLA) to mitigate risks and uphold the highest standards of legal and regulatory adherence.

CLAs encompass laws with extra-territorial effect that may pose significant enterprise risks to PETRONAS as the holding company. Breaches of these laws could lead to substantial financial penalties, legal actions and severe reputational damage.

To manage legal and regulatory risks effectively, PETRONAS has implemented a Legal Compliance Framework, which serves as an overarching governance framework. This is supported by the Legal Compliance Standards, which outline detailed requirements and standards for ensuring compliance across the Group.

The following list encapsulates the areas of laws under CLA as categorised by PETRONAS:

Critical Legal Areas	
1. Ethics and Integrity	4. Export Control
2. Data Privacy	5. Competition
3. Sanctions	

Key Compliance Areas

The Legal Compliance Controls, a key element of the Legal Compliance Framework, are designed to address legal and regulatory requirements and manage associated risks across the Group. Implemented by PETRONAS entities and corporate divisions, these controls are organised into five Key Compliance Areas (5 KCAs) to facilitate classification and monitoring.

5 Key Compliance Areas

Legal Compliance Framework's 5 Key Compliance Areas

1. **Governance and Risk Assessment**
2. **Training and Awareness**
3. **Due Diligence and Contractual Obligations**
4. **Business Practice**
5. **Monitoring and Assurance**

Corporate Governance at PETRONAS

1 Governance and Risk Assessment

PETRONAS has developed a suite of governance documents, including policies, frameworks, standards, guidelines and manuals, to establish the foundations for implementing internal controls and interpreting the principles underlying applicable laws and regulations.

Governance Documents for Critical Legal Areas

Ethics and Integrity	Data Privacy	Sanctions and Export Control	Competition
• PETRONAS Code of Conduct and Business Ethics (CoBE) and Country Supplements • PETRONAS Anti-Bribery and Corruption Manual (ABC Manual) • PETRONAS Whistleblowing (WB) Policy	• PETRONAS Corporate Privacy Policy • PETRONAS Master Guidelines to the PETRONAS Corporate Privacy Policy (MGPCPP)	• PETRONAS Sanctions and Export Control Guidelines • PETRONAS Maritime and Shipping Guidance	• PETRONAS Competition Law Guidelines • PETRONAS Competition Law Compliance Protocols: - Meetings and Information Sharing - Merger and Acquisition Transactions

To support PETRONAS employees in understanding the principles underlying legal and regulatory requirements, certain governance documents have been translated into several languages, localised to align with jurisdictional requirements, and tailored to specific business segments.

Given the inherent hazards and risk factors associated with its business activities, PETRONAS has implemented robust risk assessment processes i.e., Corruption Risk Assessment, Social Risk Assessment and Risk Assessment in Decision Making to identify potential threats that could significantly impact its operations. These assessments enable the establishment of relevant controls, which are then applied across the Group to mitigate identified legal and regulatory risks and prevent potential non-compliance.

2 Training and Awareness

PETRONAS has continued to deliver comprehensive groupwide training and awareness programmes through digital platforms, such as e-Learning modules on the Company's internal web application myLearningX, and customised engagements led by compliance officers. These initiatives play a crucial role in building awareness and reinforcing adherence to legal and regulatory requirements among PETRONAS employees and directors.

In 2024, approximately 44,000 employees across the Group completed mandatory compliance e-Learning modules on Anti-Bribery and Corruption Manual, Third Party Risk Management, Export Control and Personal Data Protection and Privacy. Additionally, around 37,000 employees completed the revised modules on Sanctions and Competition. Additional to these e-Learning modules, 305 focused training and engagement sessions were conducted, benefitting over 18,000 participants across the Group.

Digital learning remained the primary mode of engagement in 2024, with 48 per cent of sessions delivered virtually, 42 per cent held physically, and 10 per cent conducted in a hybrid format.

3 Due Diligence and Contractual Obligations

PETRONAS Third Party Risk Management

Given the Group's extensive dealings with third parties—including partners, contractors, vendors, suppliers, distributors and agents—Third Party Risk Management (TPRM) has been established as a key programme to manage associated risks. TPRM serves as a robust due diligence process, safeguarding PETRONAS against exposure to breaches of CLA, particularly risks linked to corporate liability arising from third-party misconduct.

The TPRM framework enables PETRONAS to identify potential threats both prior to formal engagement and throughout the course of business relationships with third parties. This proactive approach allows for timely risk mitigation or the incorporation of contractual safeguards to prevent legal, financial and reputational harm to the organisation.

PETRONAS TPRM's tools consists of:

KYC Declaration Questionnaire	Online Screening System	Compliance Clauses
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.	An externally managed screening system covering key themes in relation to the five CLAs with a capacity for enhanced due diligence.	Embedment of compliance clauses relating to the five CLAs in all contracts. Base clauses provided could be negotiated and customised in accordance with business needs.

4 Business Practice

PETRONAS regularly reviews its business practices and activities to ensure they remain current and aligned with legal and regulatory requirements. These reviews are conducted with a focus on maintaining the highest standards of compliance and integrity.

To further strengthen this commitment, PETRONAS has introduced pre-emptive measures that all PETRONAS entities are required to embed and implement. These measures ensure that the Group adopts best practices and continues to set a benchmark as an exemplary model within the global oil and gas industry.

5 Monitoring and Assurance

The PETRONAS Board and Executive Leadership Team (ELT) maintain rigorous oversight of the Group's activities and its compliance with critical laws through robust monitoring processes. Compliance activities and updates on control implementation are escalated to relevant senior management and governing bodies. This escalation process ensures that the ELT and directors remain informed of the Group's compliance status and any gaps in control implementation, enabling them to provide guidance to address such gaps in a practical and effective manner. This clear line of sight reinforces alignment with PETRONAS' strategic position while meeting business expectations.

The oversight and monitoring of compliance is conducted annually through a structured self-assessment process, i.e., First Line Assurance for Critical Legal Areas (FLA-CLA) supported by myCompliance, PETRONAS' integrated compliance system. This system enhances the efficiency and effectiveness of monitoring legal and regulatory compliance across the Group.

Corporate Governance at PETRONAS

Digitalising Compliance

With a workforce of over 50,000 employees, PETRONAS requires a robust digital solution to efficiently monitor legal and regulatory compliance and manage associated risks across its operations. In response, the myCompliance system, an integrated compliance solution, was introduced in 2022.

This system leverages automation, data-driven tracking and real-time reporting through a centralised compliance dashboard, providing a streamlined approach to compliance management across the Group. By consolidating compliance activities into a single platform, myCompliance enables more effective oversight and decision-making.

The implementation of myCompliance has strengthened the capabilities of the Legal Compliance team within Group Legal, reducing exposure to risks such as financial and non-financial penalties, loss of business opportunities, and reputational harm. This integrated system ensures a proactive approach to safeguarding PETRONAS against potential threats while supporting its commitment to regulatory excellence.

Operationalising Compliance from the Ground

Highlights on Critical Legal Areas

The Group recognises the importance of keeping abreast and compliant with the five CLAs namely Ethics and Integrity, Data Privacy, Sanctions, Export Control, as well as Competition. In line with this objective, various initiatives were undertaken.

Five CLAs

On 21 August 2024, the Legal Compliance team of Group Legal hosted the Global Compliance Watch Outlook Conference 2024 at the Kuala Lumpur Convention Centre. The conference focused on key developments and enforcement trends surrounding all five CLAs. It served as a platform for sharing insights, and foster networking among compliance practitioners from PETRONAS and other industries.

Ethics and Integrity

We are committed to building trusted relationships with our stakeholders while creating a positive impact on society and the environment. We believe that how we deliver is as important as what we deliver, which is why we remain dedicated to growing our business responsibly and upholding the highest standards of ethics and integrity across all our operations.

This commitment to good corporate governance is embodied in PETRONAS' Code of Conduct and Business Ethics (CoBE), a key pillar of the Group's overall business strategy. First introduced in 2012 and updated in 2022, the CoBE is anchored on PETRONAS Shared Values — Professionalism, Loyalty, Integrity and Cohesiveness. These values are fundamental to the success and sustainability of the Group. Benchmarked to international standards, the CoBE outlines the expected standards of behaviour and ethical conduct for all employees, directors and third parties performing work or services on behalf of the Group. The CoBE expressly prohibits improper solicitation, facilitation payments, bribery and other corrupt practices.

Recognising the global nature of PETRONAS' operations, the CoBE is applied uniformly across all countries where we operate. Where necessary, certain provisions are adapted to meet the specific requirements of local jurisdictions. In such cases, the CoBE is supplemented with Country Supplements that address applicable local legislation and cultural practices. To date, the CoBE and its supplements have been translated into multiple languages, ensuring that our standards for integrity and ethical business conduct are clearly communicated and understood.

The CoBE also clearly outlines the consequences of non-compliance. Subject to applicable laws, disciplinary action will be taken against any employee found to be in breach of its provisions.

The CoBE is publicly accessible on PETRONAS' global website at Governance and Ethics | PETRONAS Global, underscoring our commitment to transparency and ethical business practices across all aspects of the organisation.

Data Privacy

The PETRONAS Corporate Privacy Policy and the Master Guidelines to the PETRONAS Corporate Privacy Policy (MGPCPP), which has been benchmarked against global privacy programmes, embeds the common and internationally recognised core privacy and personal data protection principles. In upholding PETRONAS' commitment to safeguard personal data, significant progress has been made in developing country-specific supplements to the MGPCPP, including Brazil, Argentina and Thailand. Driven by the Group's global footprint, these efforts reflect its commitment to complying with local legal frameworks and adapting to the ever-evolving global data protection landscape.

In inculcating a strong commitment to Data Privacy, the annual International Data Privacy Day event was held on 20 February 2024 for Group Legal and key stakeholders within PETRONAS, to strengthen their awareness of emerging issues and developments in Data Privacy while reinforcing a culture of compliance across the organisation.

Recognising the inherent risks associated with specific activities such as human resource management, internal audit and complaints management, comprehensive and targeted Data Privacy training and upskilling initiatives were conducted to minimise compliance risks and empower personnel to navigate Data Privacy challenges effectively, underscoring PETRONAS' dedication to cultivating a culture of accountability and excellence in Data Privacy compliance.

Meanwhile, following the key changes introduced by the Personal Data Protection (Amendment) Act 2024, PETRONAS has undertaken significant efforts to prepare for the regulatory changes. These include targeted training sessions, groupwide communications and active engagements with the Malaysia Personal Data Protection Regulator Commissioner Office (JPDP).

Sanctions and Export Control

The Sanctions and Export Control landscape in 2024 proved to be challenging with increasing use of trade control measures by many countries. Recognising this and building on the existing framework of controls, further improvements have been made to PETRONAS' Sanctions and Export Control measures to ensure compliance and avoid breaches.

In particular, 2024 saw the focus of sanction authorities on sanctions evasions and the shipping industry. In addressing these issues, steps have been taken to strengthen the TPRM with respect to activities relating to the shipping industry. A new guideline for the shipping and maritime industry was rolled out, laying out the sanctions and export control risks and the steps to be taken to address these risks.

Additionally, further efforts were taken to strengthen the controls relating to specific activities, mainly involving financial and human resources. These efforts were made in cognisant of the diversity of issues and considerations, and hence specific processes and procedures are being devised to address the risks relating to these activities. Several specific processes and controls were rolled out to address the risks relating to finance/banking related transactions. Moreover, several training sessions were held with relevant employees performing these functions in collaboration with the PETRONAS Finance Academy to ensure its implementation.

Competition

On the Competition front, three PETRONAS entities in Indonesia demonstrated its commitments to ensure compliance with Competition laws in the jurisdictions where PETRONAS operates in by participating in the Competition Compliance Programme introduced by the Indonesian Competition Commission (or better known as KPPU).This programme was introduced as part of the KPPU's efforts to combat the risks of competition law infringements by businesses, in line with best practices adopted by various other competition authorities globally.

In addition, a new and targeted initiative has been successfully rolled out to combat bid rigging within the Group's procurement processes. This initiative focused on enhancing transparency, ensuring fairness, and promoting ethical conduct throughout the procurement cycle. By implementing stricter monitoring and adopting analytical measures, the Group aims to detect and prevent collusive behaviours among vendors and suppliers. The initiative also included comprehensive training for procurement teams with speakers from the Malaysia Competition Commission and the KPPU. This proactive approach not only safeguards the integrity of the procurement process but also fosters a competitive environment, ultimately leading to better value for the organisation and its stakeholders.

Corporate Governance at PETRONAS

PETRONAS Commitment to Integrity

PETRONAS maintains a zero-tolerance approach to all forms of bribery and corruption. This commitment is reinforced through the PETRONAS Code of Conduct and Business Ethics (CoBE), the PETRONAS Anti-Bribery and Corruption Manual (ABC Manual), and the PETRONAS Whistleblowing Policy, which provide clear guidance for employees, directors and third parties in managing potential or actual instances of bribery, corruption, or improper conduct in their daily business activities. These governance documents serve as essential references to uphold ethical behaviour and integrity across the Group.

In a significant demonstration of our commitment to combating corruption, the PETRONAS Board of Directors completed the Corruption-Free Pledge, setting a clear tone from the top. This initiative was further reinforced by PETRONAS leaders at the General Manager level and above, who also took the pledge, underscoring our collective determination to uphold integrity and transparency throughout the organisation.

To address corruption risks systematically, we continuously review our Corruption Risk Assessment (CRA) in line with adequate procedures. Prioritised mitigation measures are elevated and monitored as part of the PETRONAS Integrity Plan. One such measure included a roundtable discussion with integrity units in Government departments, to strengthen defences against corruption risks and foster collaborative solutions, particularly in implementing PETRONAS No-Gift policy.

We have also enhanced PETRONAS Integrity Management System (PIMS) guided by Anti-Bribery Management System (ABMS), to ensure its relevance in standardising integrity practices across our operations.

To further empower individuals to speak up, we launched an enhanced whistleblowing platform, WhistleNOW, which provides secure and accessible reporting mechanisms. This initiative reflects our commitment to providing a secure and efficient system for employees and stakeholders to report suspected misconduct or corruption.

The PETRONAS Integrity Governance Unit (IGU), also referred to as Group Integrity, provides relevant reporting to the PETRONAS Board Risk Committee and Agency Integrity Management Division of the Malaysian Anti-Corruption Commission (MACC) on a semi-annual basis which complies to the Prime Minister's Directive 2018. This is also with the support of the Integrity Focal Person (IFP) established at respective businesses.

Continuous internal and external assessments, including audits of the ISO 37001:2016 Anti-Bribery Management System (ABMS), are conducted to verify the adequacy and effectiveness of our integrity framework.

In 2024, we carried out 806 integrity engagements and training sessions to strengthen integrity awareness among internal and external stakeholders. Targeted employees were further trained in the latest enforcement actions in the anti-bribery and corruption sphere to equip them with the necessary knowledge and tools to mitigate the risks of dealing with third parties. This was further complemented by 311 campaigns, including leadership messages on integrity, as part of our ongoing efforts to maximise outreach and reinforce ethical behaviour.

To enhance integrity management capabilities, we established and implemented the Integrity Focal Person Competency Module, which focuses on practical skills and understanding of IGU's core functions—complaint management, detection and verification, governance and integrity strengthening. Additionally, in collaboration with SIRIM, we delivered ISO37001:2016 ABMS training, creating a pool of certified internal auditors to further reinforce compliance and governance practices.

Anti-Bribery and Corruption Compliance Programme

The PETRONAS Anti-Bribery and Corruption Manual (ABC Manual), first introduced in 2013, addresses key areas such as dealing with public officials, facilitation payments, managing third-party relationships, the handling of gifts, entertainment, corporate hospitality, sponsorship and donations.

Since its implementation, the regulatory landscape surrounding anti-bribery and corruption legislation has evolved significantly, both in Malaysia and globally. Notable developments include the introduction of the corporate liability provision under Section 17A of the Malaysian Anti-Corruption Commission Act (Amendment) 2018, which also provides a defence of adequate procedures for commercial organisations.

After more than a decade, the ABC Manual underwent a review and was updated in 2023. The revised ABC Manual was subsequently approved for global implementation and came into effect on 6 December 2023. To ensure seamless implementation of the revised ABC Manual, a series of groupwide communications, train-the-trainer sessions and employee training programmes were implemented throughout 2024. These sessions targeted employees, directors and leadership teams, equipping them with important insights into the updated provisions. The sessions also served as refresher training, addressing frequently asked questions on key topics, including conflicts of interest, corporate hospitality, entertainment and PETRONAS' No Gift Policy.

The ABC Manual is publicly accessible on PETRONAS' global website at Governance and Ethics | PETRONAS Global.

The PETRONAS Integrity Awareness Committee (PIAC) convened quarterly meetings throughout the year to ensure the effective implementation of the programmes under the PETRONAS Integrity Compliance Framework. These meetings are essential in steering, driving and monitoring that integrity programmes are implemented in an effective, integrated and structured manner. PIAC members comprise representatives from various corporate and business divisions within PETRONAS, ensuring alignment across the organisation. Additionally, PIAC is also responsible for reporting and escalating matters on ethics and integrity to the Executive Leadership Team, when necessary, for their further guidance.

PETRONAS Whistleblowing Policy and Procedures

The PETRONAS Whistleblowing Policy was first introduced in 2012 to provide a formal avenue for PETRONAS' employees and members of the public to report improper conduct, including misconduct, criminal offences, or malpractice, in accordance with the procedures outlined in the policy.

In response to developments in the legal and regulatory landscape, the policy was revised in 2020 to reflect key changes, such as the Guidelines on Adequate Procedures issued by the Prime Minister's Office in 2018 to support Section 17A of the Malaysian Anti-Corruption Commission Act (Amendment) 2018. Additionally, the introduction of the European Union (EU) Directive on Whistleblower Protection in 2019, which established robust safeguards for whistleblowers across EU jurisdictions, further informed the revision. As part of the enhancements, the policy now includes provisions for anonymous reporting, offering whistleblowers an added level of confidentiality.

Whistleblowers submitting disclosures via PETRONAS' whistleblowing channels are accorded protection of their identity, to the extent reasonably practicable. Furthermore, employees who report improper conduct internally in good faith are safeguarded against adverse or detrimental actions, even if subsequent investigations reveal that the disclosure was based on a misunderstanding of facts, rules or procedures.

The PETRONAS Whistleblowing Policy is publicly accessible on the PETRONAS global website at 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 2024	2023
Continuing operations		
Revenue	**305,131**	305,755
Cost of revenue	**(187,892)**	(182,465)
Gross profit	**117,239**	123,290
Selling and distribution expenses	**(9,950)**	(8,943)
Administration expenses	**(17,993)**	(15,245)
Net impairment losses/write-off[1]	**(4,882)**	(6,096)
Other expenses	**(3,000)**	(3,359)
Other income	**6,016**	8,479
Operating profit	**87,430**	98,126
Financing costs	**(5,878)**	(5,500)
Share of profit after tax and non-controlling interests of equity accounted associates and joint ventures	**581**	872
Profit before taxation from continuing operations	**82,133**	93,498
Tax expense	**(26,348)**	(14,559)
Profit for the year from continuing operations	**55,785**	78,939
Discontinued operations[2]		
(Loss)/Profit for the period/year from discontinued operations, net of tax	**(693)**	1,775
PROFIT FOR THE YEAR	**55,092**	80,714
Profit/(Loss) attributable to:		
Shareholders of the Company		
From continuing operations	**49,996**	72,840
From discontinued operations	**(892)**	1,521
	49,104	74,361
Non-controlling interest		
From continuing operations	**5,789**	6,099
From discontinued operations	**199**	254
	5,988	6,353
PROFIT FOR THE YEAR	**55,092**	80,714

Revenue (RM million)

Note 1: Excludes well costs and includes loss on remeasurement/derecognition of financial assets measured at amortised cost.
Note 2: Discontinued operations relate to disposal of Engen Group.

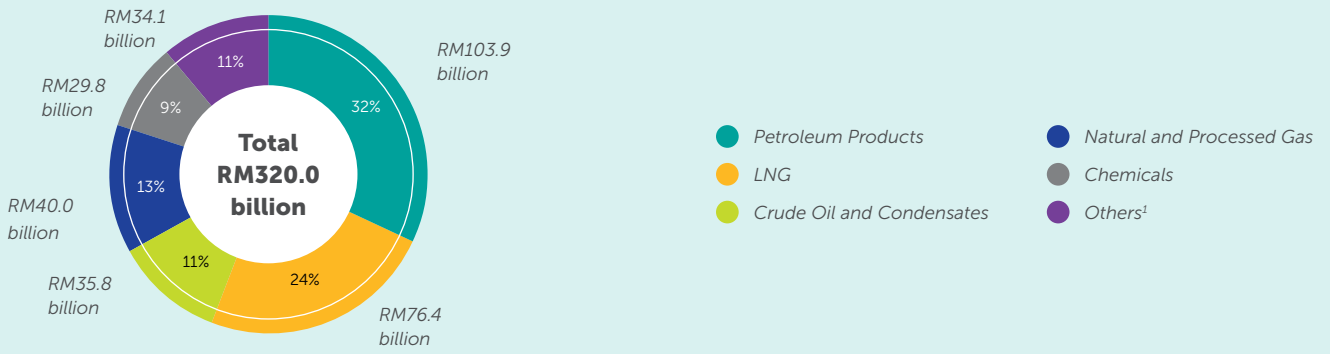
Consolidated Statement of Other Comprehensive Income

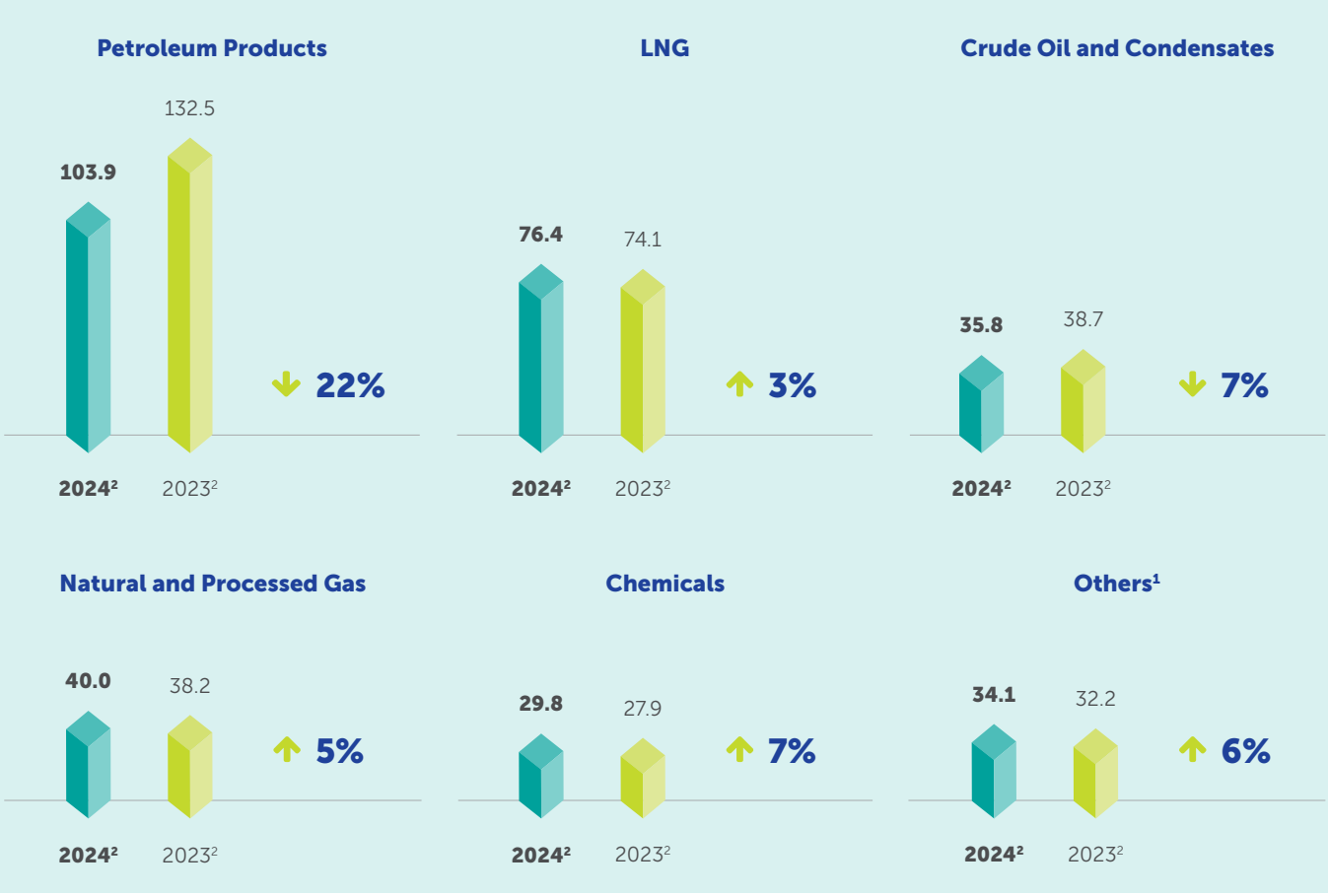
In RM Million	Financial Year ended 31 December 2024	2023
PROFIT FOR THE YEAR	**55,092**	80,714
Other comprehensive (loss)/income		
Items that will not be reclassified subsequently to profit or loss		
Net changes in fair value of equity investments at fair value through other comprehensive income (OCI)	**(136)**	(128)
Items that may be reclassified subsequently to profit or loss		
Net movements from exchange differences	**(10,663)**	10,279
Cash flow hedge	**(1,120)**	(873)
Others	**437**	11
Total other comprehensive (loss)/income for the year from continuing operations, net of tax	**(11,482)**	9,289
Discontinued operations		
Total other comprehensive loss for the year from discontinued operations, net of tax	**-**	(199)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	**43,610**	89,804
Total comprehensive income attributable to:		
Shareholders of the Company		
From continuing operations	**39,929**	80,063
From discontinued operations	**(892)**	1,374
	39,037	81,437
Non-controlling interests		
From continuing operations	**4,374**	8,165
From discontinued operations	**199**	202
	4,573	8,367
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	**43,610**	89,804

Group Financial Results and Position

Revenue by Products

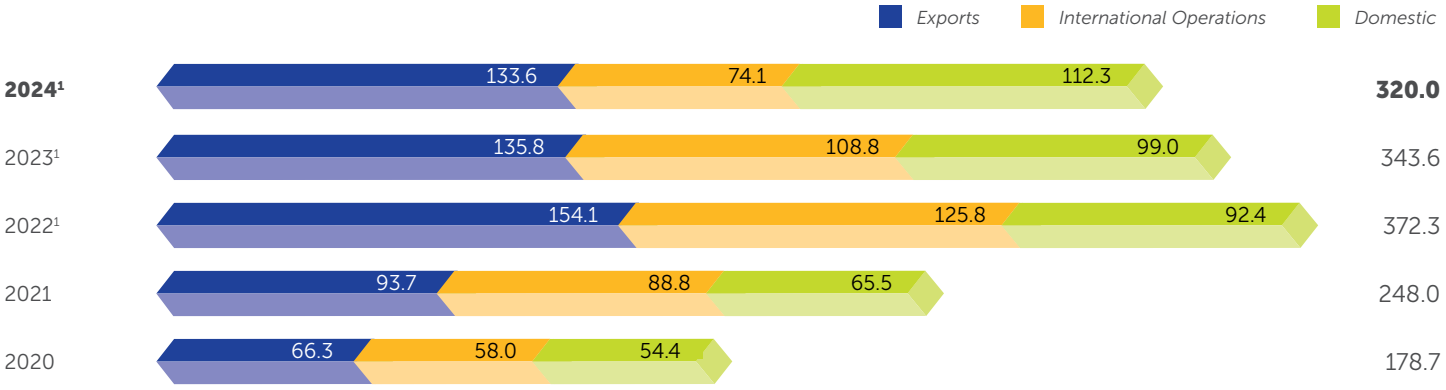
The Group's total revenue was RM320 billion, primarily contributed by petroleum products and LNG which accounted for 32 per cent and 24 per cent of revenue, respectively.





Note 1: Others comprise of shipping services, net trading gain, rental of properties, rendering of services, etc.
Note 2: All financial and operational results comprise continuing and discontinued operations.

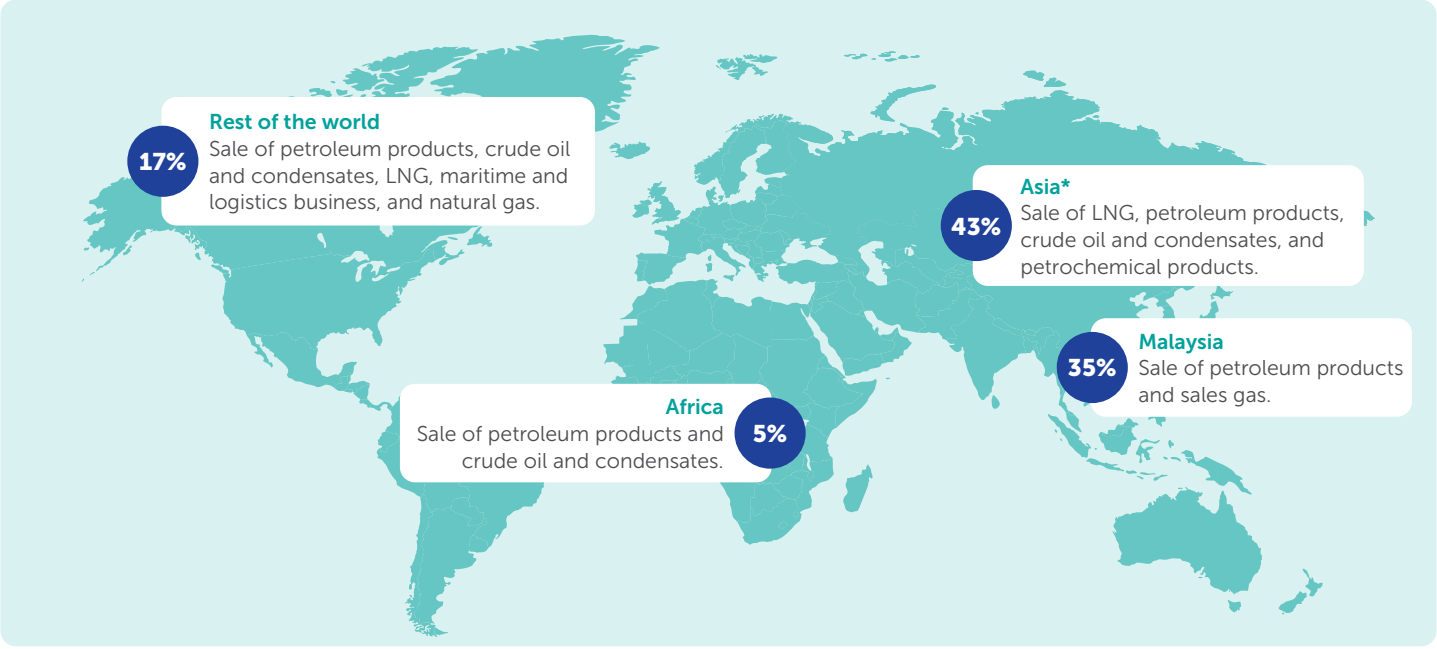
Revenue by Geographical Trade (RM billion)



- Export sales accounted for 42 per cent of the Group's total revenue in FY2024 and remained the leading contributor to PETRONAS Group's revenue.
- Revenue from international operations which contributed 23 per cent of the Group's total revenue was lower compared to previous year mainly due to disposal of Engen Group and withdrawal from South Sudan.
- Meanwhile, higher domestic sales were primarily contributed by higher processed gas offtake in line with higher demand from power and non-power sectors.

Revenue by Geography²

Revenue from outside Malaysia, which included export and international sales, accounted for 65 per cent of the Group's revenue, demonstrating PETRONAS' strong global presence.



* *Exclude Malaysia*

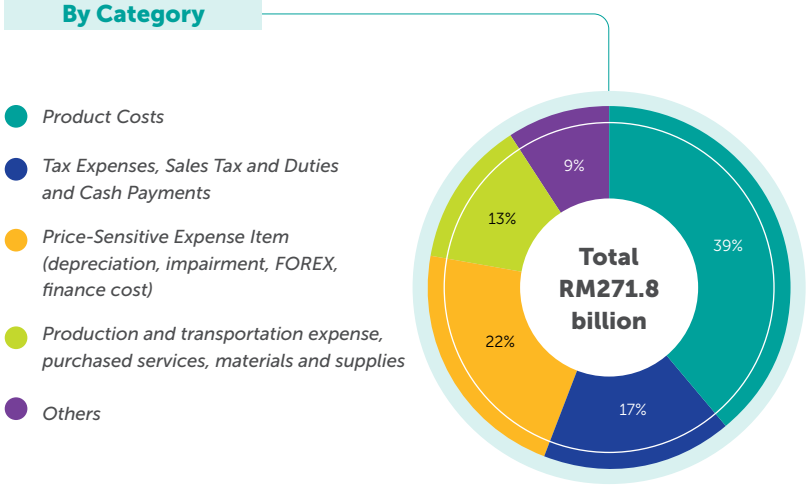
Note 1: All financial and operational results comprise continuing and discontinued operations.
Note 2: Revenue by geography are populated according to the customers' location.

Group Financial Results and Position

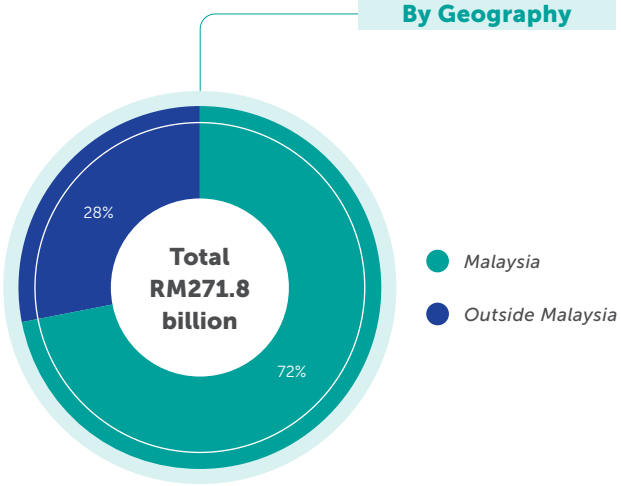
Group Cost

- Group cost stood at RM271.8 billion comparable with prior year of RM271.0 billion.
- Domestic operations accounts for 72 per cent of the Group's total costs to support Oil and Gas Services and Equipment (OGSE) activities in Malaysia.

By Category



By Geography



Note 1: Group costs above relate to costs charged to Income Statement only.

Earnings by Business

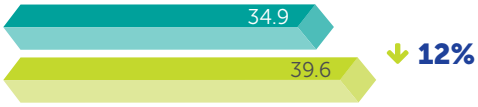
Businesses across the value chain displayed operational excellence amid market volatility, ensuring resilient financial performance for the year ended 2024.

- The Group operated three core businesses in FY2024: Upstream, Gas and Maritime, and Downstream.
- Corporate and Others which complement our core businesses, comprise primarily the renewables, hydrogen and green mobility businesses as well as property business.

Upstream

Revenue (RM billion)

PAT (RM billion)



PAT Margin

- Upstream recorded highest ever total daily average production in FY2024 at 2,451 thousand barrels of oil equivalent (boe) per day, mainly due to higher natural gas production from Malaysia and International.
- Upstream recorded slightly lower revenue in line with lower average realised prices, partially offset by higher natural gas sales volume.
- Lower PAT of RM34.9 billion compared to RM39.6 billion in FY2023 is due to lower revenue and higher product cost.

+ *Please refer to Upstream's operational performance in 2024 on page 66.*

Gas and Maritime[1]

Revenue (RM billion)

PAT (RM billion)

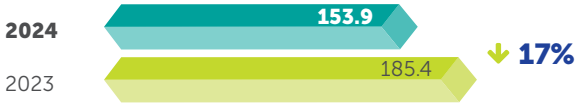
PAT Margin

- Following the Group reorganisation, the MISC Berhad Group, previously reported under the Corporate and Others business, is now being managed and reported under the Gas and Maritime business (formerly known as the Gas business).
- Revenue slightly increased to RM131.1 billion from RM127.4 billion in FY2023 mainly due to higher LNG and processed gas sales volume, partially offset by lower average realised prices.
- Despite higher revenue, Gas and Maritime business recorded a lower PAT of RM19.9 billion against RM31.9 billion in FY2023, primarily driven by net impairment losses on assets and lower net product margin. Excluding net impairment losses on assets, PAT is lower by RM9.1 billion.
- Malaysia's average sales gas volume during the year was 3,050 million standard cubic feet per day (MMscfd), increased from 2,878 MMscfd in FY2023 mainly due to higher offtake from power and non-power sectors in Peninsular Malaysia.

+ *Please refer to Gas and Maritime's operational performance in 2024 on page 67.*

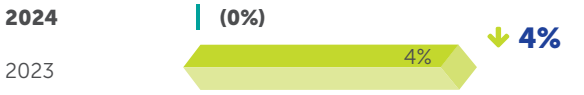
Downstream

Revenue (RM billion)



PAT/(LAT) (RM billion)

PAT/(LAT) Margin



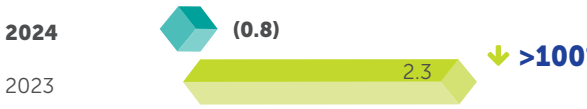
- Downstream revenue of RM153.9 billion was lower than FY2023 primarily due to discontinued operations impact and lower average realised prices from major products.
- The business also recorded LAT of RM0.7 billion against PAT of RM7.1 billion in FY2023 following lower taxation in the prior and impact of de-consolidation of Engen Group. Excluding impact of de-consolidation, PAT for the year is RM1.7 billion.
- During the year, Downstream business recorded 91.2 per cent in Overall Equipment Effectiveness, higher than 87.2 per cent recorded in FY2023.
- Petroleum products sales volume was 247.8 million barrels, lower compared to FY2023's 296.1 million barrels primarily due to discontinued operation impact.
- Chemical products sales volume was 10.1 million metric tonnes, higher by 0.7 million metric tonnes against FY2023, in line with higher production.

+ *Please refer to Downstream's operational performance in 2024 on page 67.*

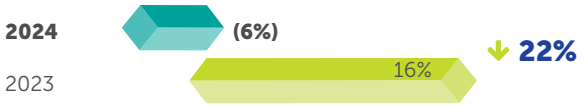
Corporate and Others[1]

Revenue (RM billion)

PAT/(LAT) (RM billion)



PAT/(LAT) Margin



- Corporate and Others recorded revenue of RM14.0 billion, comparable with FY2023 of RM14.3 billion.
- The business also recorded LAT of RM0.8 billion as compared to PAT of RM2.3 billion last year primarily driven by net impairment losses on receivables and impact on foreign exchange on net assets.
- KLCCP Stapled Group, the major contributor to this segment, achieved a record revenue of RM1.7 billion, the highest since its listing in 2013, underscoring its strong market performance and strategic focus.

For more information on KLCCP, please refer to KLCCP Integrated Report 2024.

Note 1: Certain prior year information has been restated to conform with current year presentation.

Group Financial Results and Position

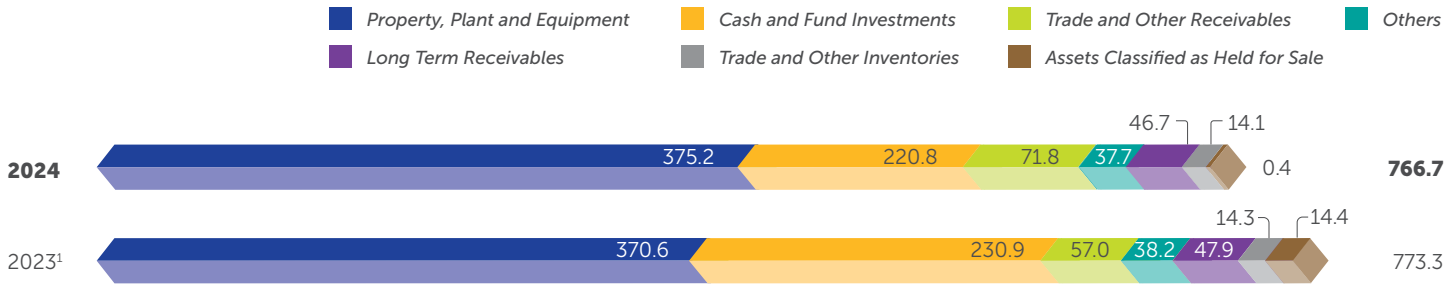
Analysis of Financial Position

Consolidated Statement of Financial Position

In RM Million	2024	As at 31 December 2023
ASSETS		
Property, plant and equipment	**327,356**	326,398
Investment properties and land held for development	**16,716**	12,275
Investments in associates and joint ventures	**12,219**	10,368
Intangible assets	**31,175**	31,902
Long-term receivables	**46,690**	47,939
Fund and other investments	**16,633**	10,778
Deferred tax assets	**25,459**	27,853
TOTAL NON-CURRENT ASSETS	**476,248**	467,513
Trade and other inventories	**14,096**	14,307
Trade and other receivables	**71,748**	57,028
Fund and other investments	**15,698**	11,620
Cash and cash equivalents	**188,476**	208,492
	290,018	291,447
Assets classified as held for sale	**407**	14,341
TOTAL CURRENT ASSETS	**290,425**	305,788
TOTAL ASSETS	**766,673**	773,301
EQUITY		
Share capital	**100**	100
Reserves	**451,115**	443,369
Total equity attributable to shareholders of the Company	**451,215**	443,469
Non-controlling interests	**55,395**	59,396
TOTAL EQUITY	**506,610**	502,865
LIABILITIES		
Borrowings	**90,837**	98,754
Deferred tax liabilities	**13,029**	13,297
Other long-term liabilities and provisions	**64,766**	64,434
TOTAL NON-CURRENT LIABILITIES	**168,632**	176,485
Trade and other payables	**67,156**	68,076
Borrowings	**20,060**	12,867
Taxation	**4,064**	3,931
	91,280	84,874
Liabilities classified as held for sale	**151**	9,077
TOTAL CURRENT LIABILITIES	**91,431**	93,951
TOTAL LIABILITIES	**260,063**	270,436
TOTAL EQUITY AND LIABILITIES	**766,673**	773,301

Total Assets (RM billion)

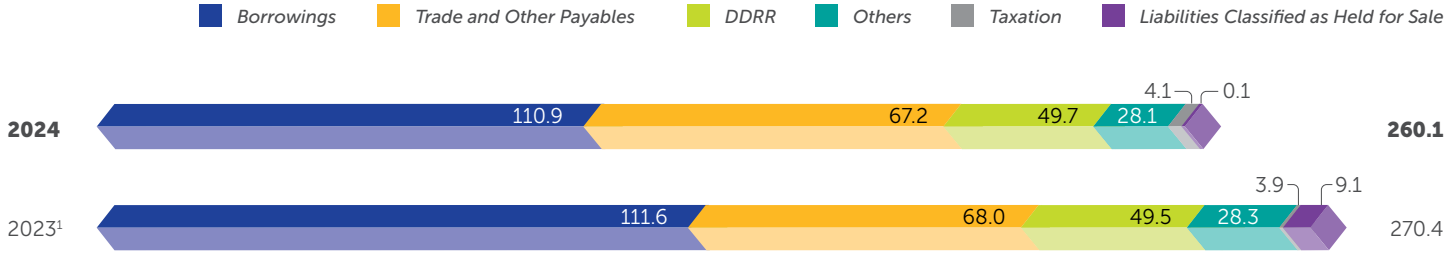
Total assets slightly declined to RM766.7 billion as at 31 December 2024 against RM773.3 billion as at 31 December 2023 mainly due to impact of disposal of Engen Group and lower Cash and Fund Investments following cash paid for capital investment and dividend to shareholders.



Note: Property, Plant and Equipment also includes intangible assets, investment properties and land held for development.

Total Liabilities (RM billion)

Total liabilities decreased to RM260.1 billion as at 31 December 2024 as compared to RM270.4 billion as at 31 December 2023 mainly due to impact of disposal of Engen Group.



Note 1: Certain prior year information has been restated to conform with current year presentation.

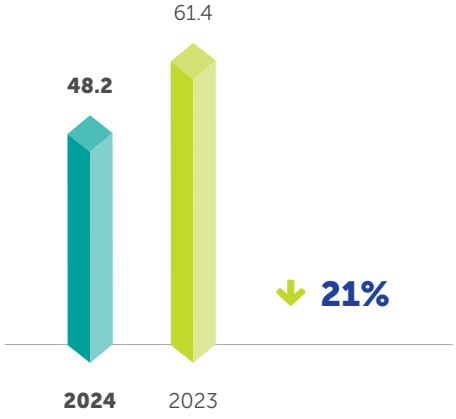
Group Financial Results and Position

Analysis of Cash Flow

Consolidated Statement of Cash Flows

In RM Million	2024	As at 31 December 2023[1]
Cash flows from operating activities		
Profit before taxation	**82,133**	93,498
Adjustments for non-cash items	**35,879**	36,859
Net changes in working capital	**(754)**	1,368
Cash generated from continuing operations	**117,258**	131,725
Interest income received	**12,682**	11,514
Interest expenses paid	**(4,750)**	(3,234)
Taxation paid, net of refund	**(24,323)**	(28,218)
Net cash generated from continuing operations	**100,867**	111,787
Net cash generated from discontinued operations	**1,593**	2,371
Net cash generated from operating activities	**102,460**	114,158
Net cash used in investing activities	**(71,010)**	(59,296)
Net cash used in financing activities	**(46,365)**	(53,098)
Net (decrease)/increase in cash and cash equivalents	**(14,915)**	1,764
Increase in cash and cash equivalents restricted	**(179)**	(1,096)
Net foreign exchange differences	**(5,718)**	5,957
Cash and cash equivalents at beginning of the year	**207,009**	200,384
Cash and cash equivalents at end of the year	**186,197**	207,009
Cash and cash equivalents		
Cash, bank balances and deposits	**188,476**	208,492
Bank overdrafts	**(10)**	-
Classified as held for sale	**45**	652
Less: Cash and cash equivalents - restricted	**(2,314)**	(2,135)
	186,197	207,009

Free Cash Flow Analysis[2] (RM billion)

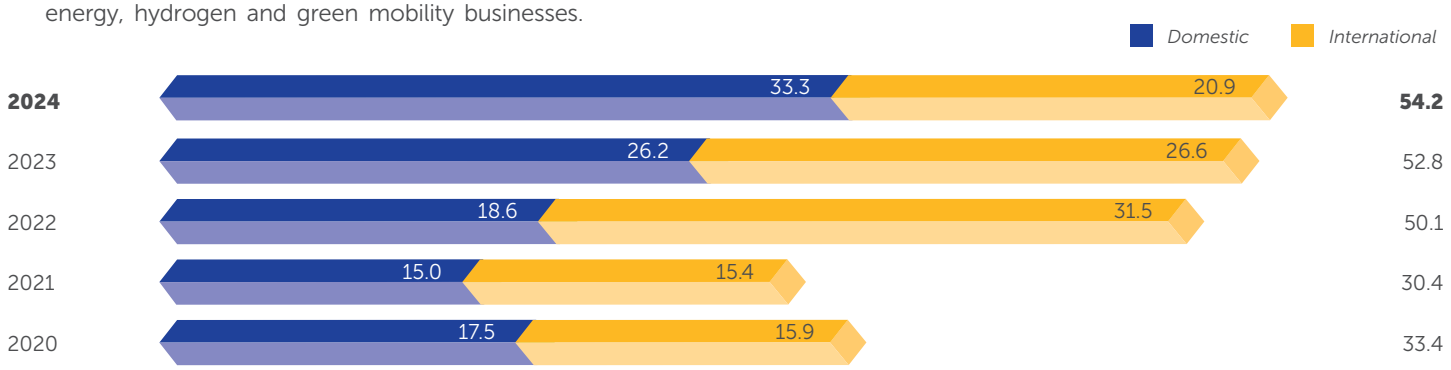


The Group generated free cash flow of RM48.2 billion during the year, decreased by RM13.2 billion or 21 per cent as compared to RM61.4 billion in FY2023 mainly due to reduced cash generated from operations in line with lower operating profit coupled with higher capital investments spent.

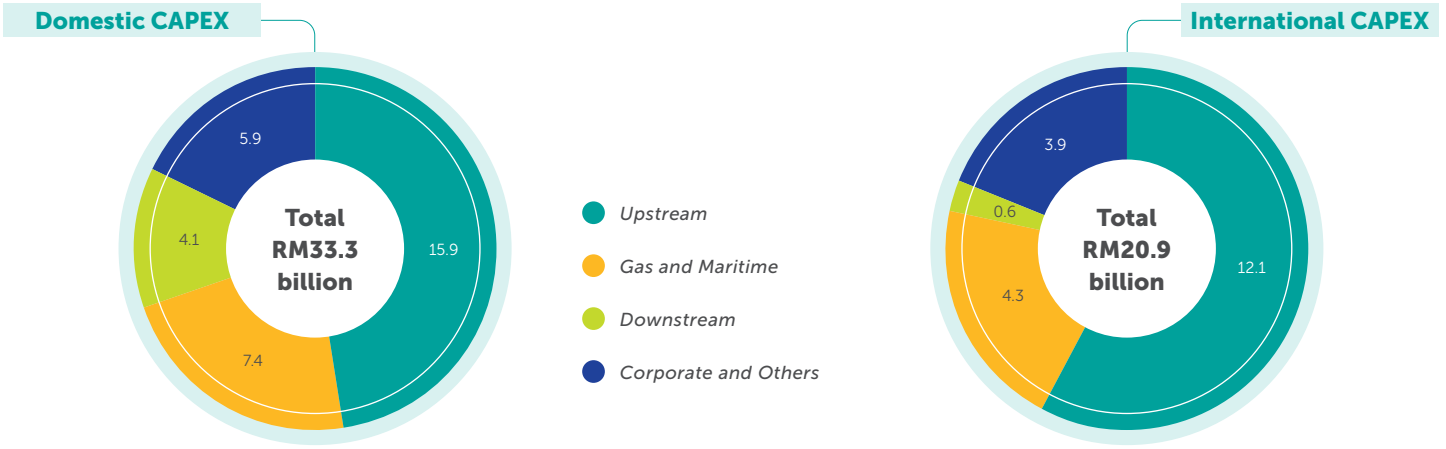
Note 1: Certain prior year information has been restated to conform with current year presentation.
Note 2: Free Cash Flow was derived from net cash generated from operating activities less cash CAPEX.

Capital Investments (RM billion)

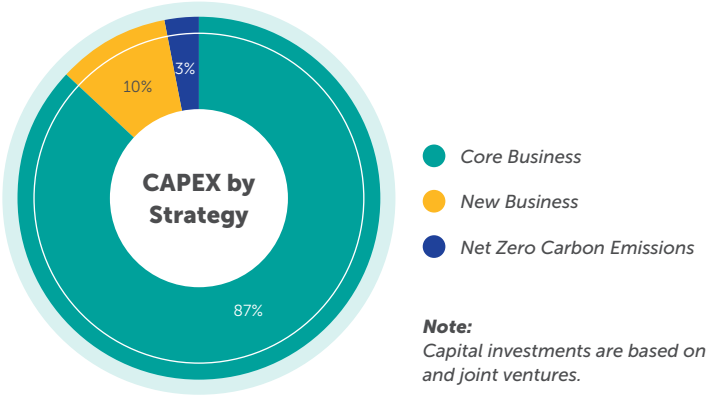
- Total CAPEX spent during the year of RM54.2 billion was higher by RM1.4 billion compared with RM52.8 billion in FY2023.
- More than 60 per cent of the CAPEX was spent in Malaysia amounting to RM33.3 billion, increased by 27 per cent compared to FY2023, contributing to the growth of the Malaysian economy.
- Included in the Corporate and Others business is CAPEX incurred for Gentari Sdn Bhd (Gentari), which includes renewable energy, hydrogen and green mobility businesses.



Capital Investments by Business and Geographical Segments in FY2024 (RM billion)



Capital Investments by Energy Transition Strategy in FY2024



Note:
Capital investments are based on cash, inclusive of costs of acquisition of subsidiaries and investments in associates and joint ventures.

Group Financial Results and Position

Capital Investment by Business

- Aligned with our PETRONAS Energy Transition Strategy, we continue to strengthen our Core Business, pursue growth in capturing opportunities for New Business, and at the same time responsibly manage carbon emissions.

- 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, while reducing greenhouse gas emissions. However, this comes with increasing challenges given the restricted access to capital market for energy players.

- In FY2024, PETRONAS' overall CAPEX stood at RM54.2 billion, higher compared to RM52.8 billion last year. This includes over RM7 billion on emissions reduction projects and cleaner energy solutions, specifically on renewable energy, hydrogen and CCS related projects.

Upstream

- CAPEX for Upstream business accounted for 52 per cent of the Group's total CAPEX with a total spending of RM28 billion, an increase of RM0.9 billion as compared to FY2023. Upstream's CAPEX for FY2024 was predominantly spent on exploration, development and production activities aimed at sustaining and growing production in Malaysia and international operations.
- About RM15.9 billion or 57 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 Integrated Bekok Oil.
- Meanwhile, a total of RM12.1 billion was allocated towards international portfolio investments, which include key countries such as Angola, Indonesia and Brazil.

Gas and Maritime[1]

- Gas and Maritime business accounted for 21 per cent of the Group's total CAPEX and recorded a total spending of RM11.7 billion in FY2024 comparable to the restated figure for last year of RM11.9 billion.
- CAPEX for FY2024 were predominantly spent domestically amounting to RM7.4 billion or 63 per cent mainly on the Sabah shore-based LNG facility, aimed at monetising gas resources in an optimised and more environmentally conscious manner. Internationally, the key investment was on the LNG project in Canada.

Downstream

- Downstream business' CAPEX of RM4.7 billion during the year accounted for 9 per cent of the Group's overall CAPEX allocation, decreased by RM1.1 billion as compared to prior year.
- 87 per cent of the CAPEX spending made during the year was mainly allocated towards domestic operational projects as well as turnaround activities.

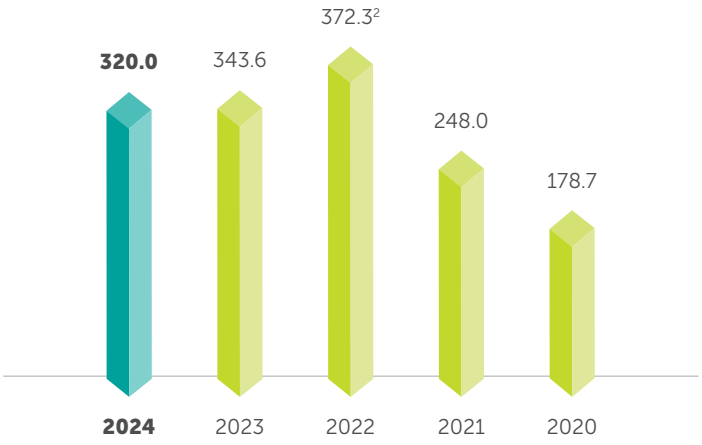
Corporate and Others[1]

- CAPEX spent by businesses under Corporate and Others during the year amounted to RM9.8 billion with Gentari accounting for 41 per cent of the total spending.
- Gentari's significant investments on the forefront of renewables were mainly on green ammonia projects across various locations in India.

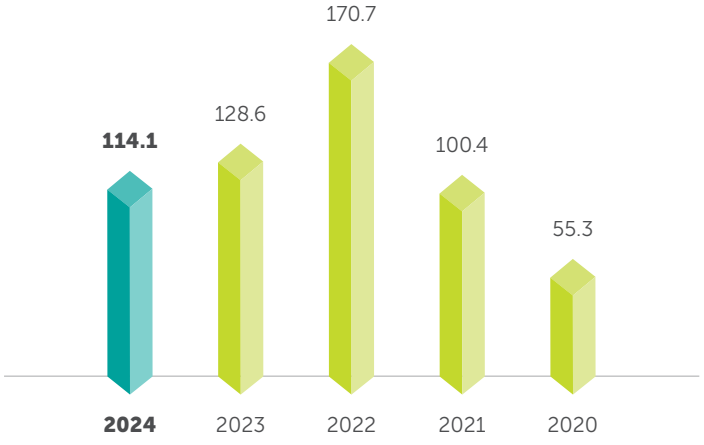
Note 1: Certain prior year information has been restated to conform with current year presentation.

Five-Year Key Financial Indicators

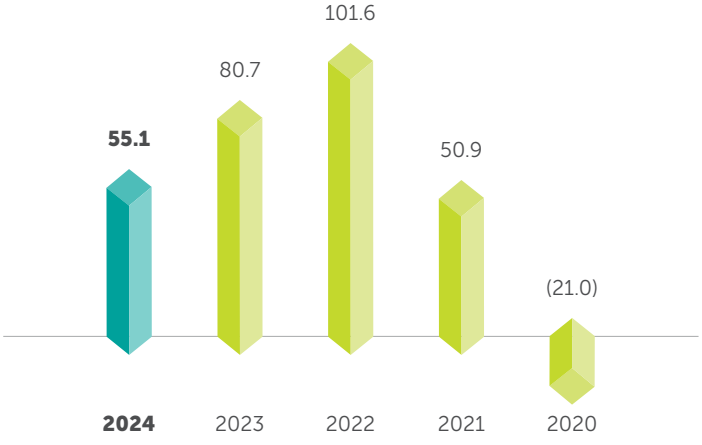
Revenue (RM billion)



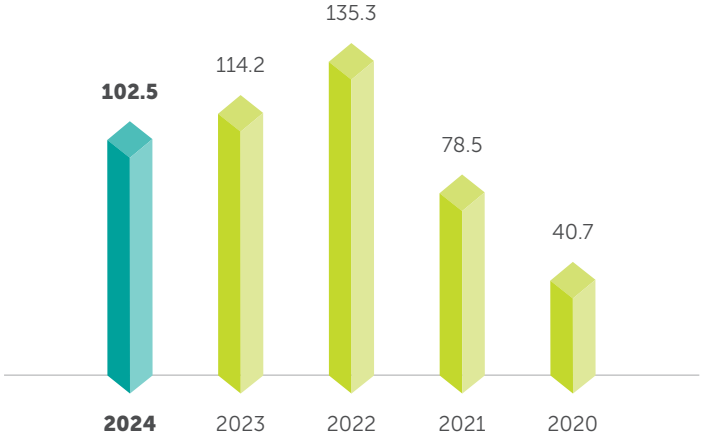
EBITDA (RM billion)



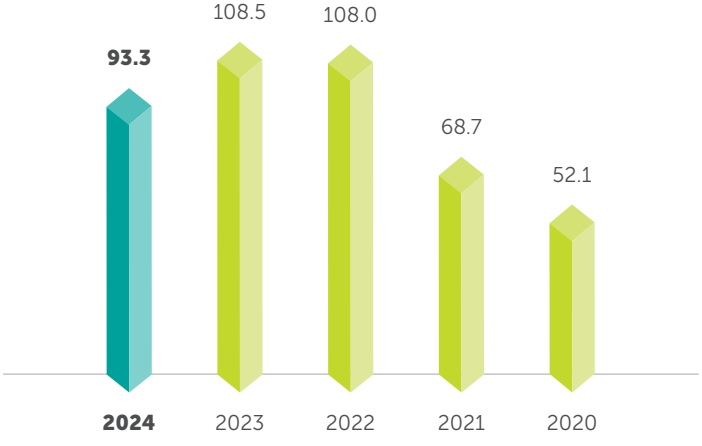
Profit/(Loss) After Tax (RM billion)



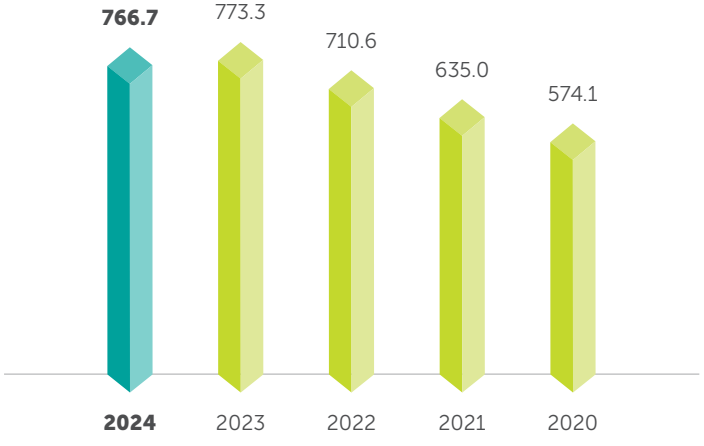
Cash Flows from Operations (RM billion)



Net Cash Position (RM billion)

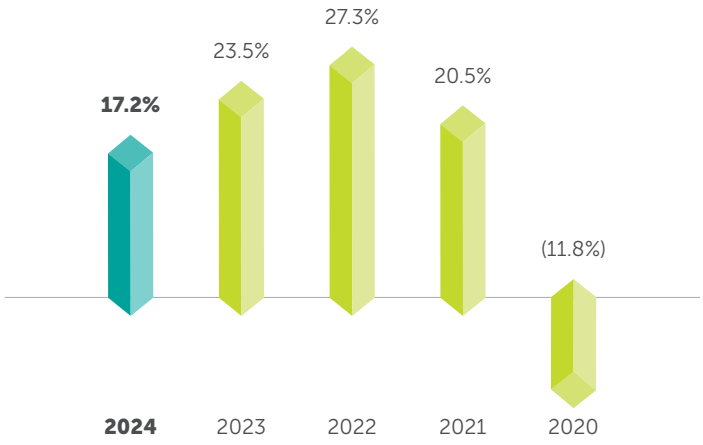


Total Assets (RM billion)

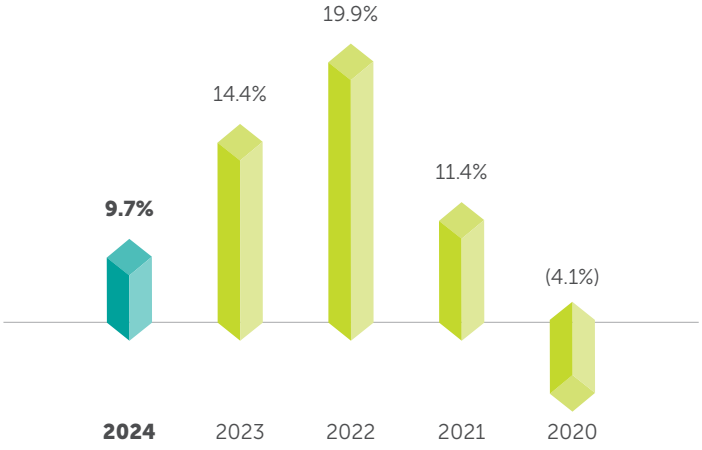


Group Financial Results and Position

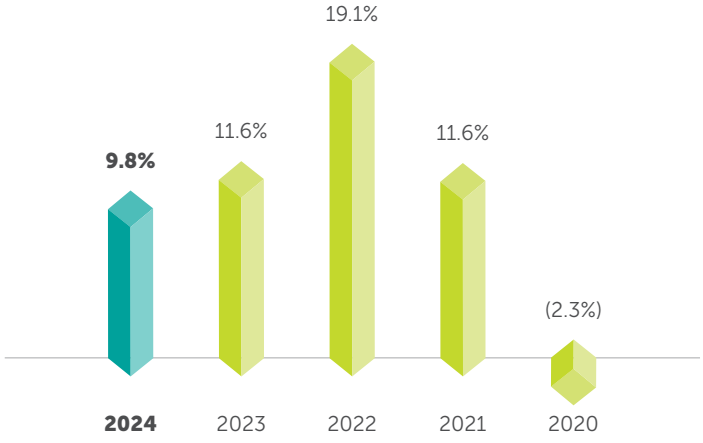
PAT Margin (%)



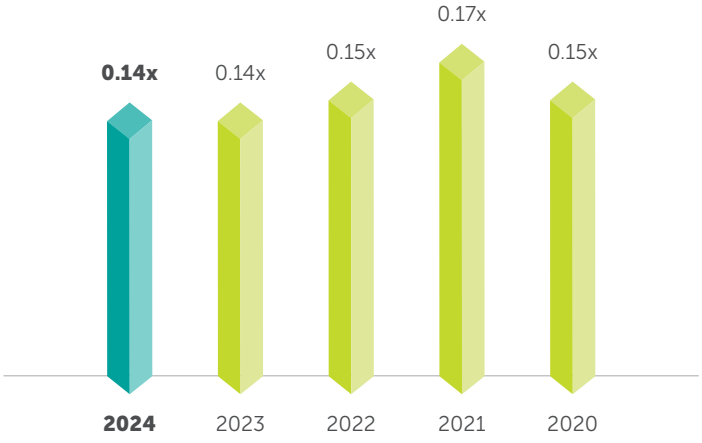
Return on Average Capital Employed (ROACE) (%)



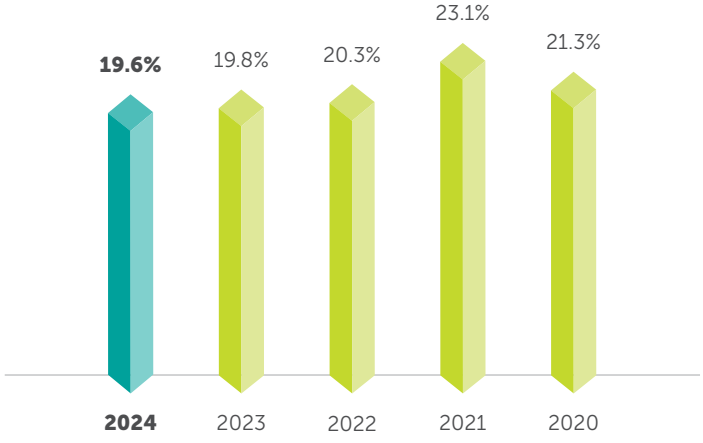
Return on Total Assets (ROTA) (%)



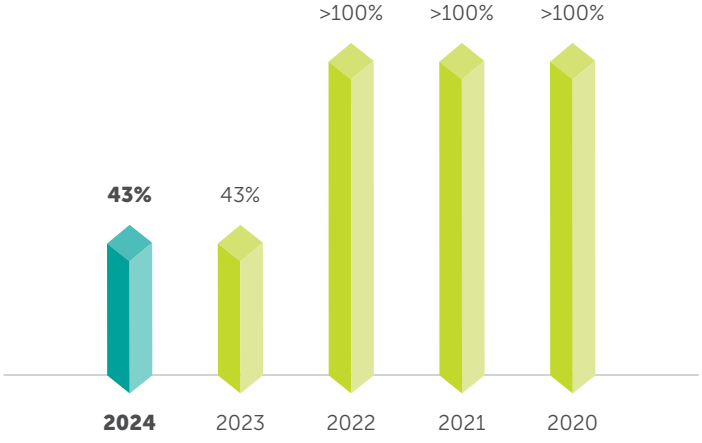
Debt/Assets Ratio (x)



Gearing Ratio[3] (%)



Dividend Payout Ratio (%)



Note 1: All financial and operational results comprise continuing and discontinued operations. Discontinued operations relate to disposal of ENGEN Group.
Note 2: Prior year revenue and group cost 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.

Index

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	Commitment to Governance, pages 176-205
	GOV-2: Management systems	Creating Sustainable Value through Responsible Governance, pages 85-86, 89-91 Delivering Net Zero, pages 96-98, 103-106 Thriving with Nature, pages 120-123, 129 Fostering a Just Transition, pages 134, 137, 143, 159 Corporate Governance at PETRONAS, pages 176-205
Business ethics and transparency	GOV-3: Preventing corruption	Commitment to Governance, pages 202-205
	GOV-4: Transparency of payments to host governments	Executive Vice President and Group Chief Financial Officer's Letter, page 24
Climate Change and Energy		
Climate strategy and risk	CCE-1: Climate governance and strategy	Delivering Net Zero, page 95
	CCE-2: Climate risk and opportunities	Risks Linked to Creating Value, page 41 Delivering Net Zero, pages 95-98
Technology	CCE-3: Lower carbon technology	PETRONAS Energy Transition Strategy, page 29 New Business, pages 70-77 Net Zero Carbon Emissions, pages 78-81
Emissions	CCE-4: Greenhouse gas (GHG) emissions	Delivering Net Zero, pages 92-111 Sustainability Key Performance Data, pages 163-169
	CCE-5: Methane emissions	Delivering Net Zero, pages 100-101, 107-110 Sustainability Key Performance Data, pages 164-165
Energy use	CCE-6: Energy use	Delivering Net Zero, pages 103-105 Sustainability Key Performance Data, pages 168
Flaring	CCE-7: Flared gas	Delivering Net Zero, pages 102-103, 107-109 Sustainability Key Performance Data, pages 165-166

Index

Ipieca Disclosures		Reference Page
Environment		
Water	ENV-1: Freshwater	Thriving with Nature, pages 120-121 Sustainability Key Performance Data, page 170
	ENV-2: Discharges to water	Sustainability Key Performance Data, page 170
Biodiversity	ENV-3: Biodiversity policy and strategy	Thriving with Nature, pages 113-117
	ENV-4: Protected and priority areas for biodiversity conservation	Thriving with Nature, pages 113-114
Air emissions	ENV-5: Emissions to air	Thriving with Nature, pages 119-120 Sustainability Key Performance Data, page 170
Spills	ENV-6: Spills to the environment	Thriving with Nature, page 122 Sustainability Key Performance Data, page 170
Materials management	ENV-7: Materials management	Thriving with Nature, pages 118-119, 124-129 Sustainability Key Performance Data, page 170
Decommissioning	ENV-8: Decommissioning	Thriving with Nature, pages 128-129
Safety, Health and Security		
Workforce protection	SHS-1: Safety, health and security engagement	Risks Linked to Creating Value, page 42 Creating Sustainable Value through Responsible Governance, pages 85-89 Fostering a Just Transition, pages 159-162
	SHS-2: Workforce and community health	Risks Linked to Creating Value, page 42 Creating Sustainable Value through Responsible Governance, pages 85-89 Fostering a Just Transition, pages 138, 159-162
	SHS-3: Occupational injury and illness incidents	Creating Sustainable Value through Responsible Governance, pages 85-89 Sustainability Key Performance Data, page 171
Product health, safety and environmental risk	SHS-5: Product stewardship	Thriving with Nature, page 123
Process safety	SHS-6: Process safety	Creating Sustainable Value through Responsible Governance, pages 85-89 Sustainability Key Performance Data, page 171
Security	SHS-7: Security risk management	Risks Linked to Creating Value, page 42 Creating Sustainable Value through Responsible Governance, pages 90-91 Fostering a Just Transition, pages 134, 137

Ipieca Disclosures		Reference Page
Social		
Human rights management	SOC-1: Human rights due diligence	Fostering a Just Transition, pages 132-138
	SOC-2: Suppliers and human rights	Fostering a Just Transition, pages 132-143, 145-146 Sustainability Key Performance Data, page 175
	SOC-3: Security and human rights	Fostering a Just Transition, pages 134-137, 143 Sustainability Key Performance Data, page 175
Labour practices	SOC-4: Site-based labour practices and worker accommodation	Fostering a Just Transition, pages 134-135, 139-141, 147-148 Sustainability Key Performance Data, pages 173, 175
	SOC-5: Workforce diversity and inclusion	Fostering a Just Transition, pages 150-152, 160 Sustainability Key Performance Data, page 172 Corporate Governance at PETRONAS, page 191
	SOC-6: Workforce engagement	Engaging with Stakeholders, page 57 Fostering a Just Transition, pages 152, 160
	SOC-7: Workforce training and development	Fostering a Just Transition, pages 131, 142-143, 146-147, 150-158 Sustainability Key Performance Data, page 175
	SOC-8: Workforce non-retaliation and grievance mechanisms	Fostering a Just Transition, pages 139-140
Community engagement	SOC-9: Local community impacts and engagement	Engaging with Stakeholders, page 59 Fostering a Just Transition, pages 135-137
	SOC-10: Indigenous peoples	Fostering a Just Transition, page 137
	SOC-11: Land acquisition and involuntary resettlement	Fostering a Just Transition, page 138
	SOC-12: Community grievance mechanisms	Fostering a Just Transition, pages 139-141
	SOC-13: Social investment	Chairman's Letter, pages 14-17 Executive Vice President and Group Chief Financial Officer's Letter, page 24 Vice President and Group Chief Sustainability Officer's Letter, page 28 Engaging with Stakeholders, page 59 Thriving with Nature, pages 117, 127 Fostering a Just Transition, pages 144, 157-158 Sustainability Key Performance Data, page 175
Local content	SOC-14: Local procurement and supplier development	Engaging with Stakeholders, page 58 Fostering a Just Transition, pages 145-146
	SOC-15: Local hiring practices	Fostering a Just Transition, pages 150-152, 160 Sustainability Key Performance Data, page 172

Index

Global Reporting Initiative (GRI) Standards

PETRONAS has reported the information cited in this GRI content index for the period covering the full calendar year from 1 January to 31 December 2024 with reference to the GRI Standards.

GRI Standard		Reference Page
GRI 2: General Disclosures	2-1 Organisational details	Basis of This Report, pages 4-5 We Are Passionate About Progress, pages 6-7
	2-2 Entities included in the organisation's sustainability reporting	Basis of This Report, pages 4-5
	2-3 Reporting period, frequency and contact point	Basis of This Report, pages 4-5
	2-4 Restatements of information	Delivering Net Zero: Independent GHG Emissions Data Verification, page 167 Sustainability Key Performance Data, pages 163-175
	2-5 External assurance	Basis of This Report, pages 4-5
	2-6 Activities, value chain and other business relationships	We Are Passionate About Progress, pages 6-9
	2-7 Employees	Sustainability Key Performance Data, pages 172-174
	2-8 Workers who are not employees	Sustainability Key Performance Data, pages 172-174
	2-9 Governance structure and composition	Commitment to Governance, pages 176-186
	2-10 Nomination and selection of the highest governance body	Commitment to Governance, pages 186-196
	2-11 Chair of the highest governance body	Commitment to Governance, page 177
	2-12 Role of the highest governance body in overseeing the management of impacts	Commitment to Governance, pages 186-196
	2-13 Delegation of responsibility for managing impacts	Commitment to Governance, pages 186-196
	2-14 Role of the highest governance body in sustainability reporting	Basis of This Report, pages 4-5
	2-15 Conflicts of interest	Commitment to Governance, page 192
	2-17 Collective knowledge of the highest governance body	Commitment to Governance, page 193
	2-19 Remuneration policies	Commitment to Governance, pages 186-196
	2-20 Process to determine remuneration	Commitment to Governance, pages 186-196

GRI Standard		Reference Page
GRI 2: General Disclosures (cont'd.)	2-22 Statement on sustainable development strategy	Chairman's Letter, pages 14-17
		President and Group Chief Executive Officer's Letter, pages 18-21
	2-23 Policy commitments	Fostering a Just Transition, pages 132-133
		Commitment to Governance, page 204
	2-24 Embedding policy commitments	Fostering a Just Transition, pages 132-143
	2-25 Processes to remediate negative impacts	Fostering a Just Transition, pages 139-141
	2-26 Mechanisms for seeking advice and raising concerns	Fostering a Just Transition, pages 139-141
	2-28 Membership associations	Refer to PETRONAS Global website: Memberships & Association | PETRONAS Global
	2-29 Approach to stakeholder engagement	Engaging with Stakeholders, pages 54-59
	2-30 Collective bargaining agreements	Fostering a Just Transition, pages 140, 149 -150
GRI 3: Material Topics 2021	3-1 Process to determine material topics	How We Create Value: Material Topics, pages 50-53
	3-2 List of material topics	How We Create Value: Material Topics, pages 50-53
	3-3 Management of material topics	How We Create Value: Material Topics, pages 50-53
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Executive Vice President and Group Chief Financial Officer's Letter, pages 22-25
		How We Create Value, pages 30-31
		Fostering a Just Transition, pages 144, 148-149, 157
		Group Financial Results and Position, pages 206-218
		Audited Financial Statements, pages 6-19 (access the Statements via QR code on page 5 of this Report)
	201-2 Financial implications and other risks and opportunities due to climate change	Delivering Net Zero, pages 95-98
	201-3 Defined benefit plan obligations and other retirement plans	Audited Financial Statements, pages 100-103 (access the Statements via QR code on page 5 of this Report)
GRI 202: Market Presence 2016	202-1 Ratios of standard entry-level wage by gender compared to local minimum wage	Fostering a Just Transition, page 148
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Thriving with Nature, pages 117, 127
		Fostering a Just Transition, pages 157-158
	203-2 Significant indirect economic impacts	Engaging with Stakeholders, pages 54-59
		Thriving with Nature, pages 117 and 127
		Fostering a Just Transition, pages 157-158

Index

GRI Standard		Reference Page
GRI 205: Anti-corruption	205-2 Communication and training about anti-corruption policies and procedures	Corporate Governance at PETRONAS, pages 193, 200 and 204-205
GRI 301: Materials 2016	301-2 Recycled input materials used	Thriving with Nature, pages 124-129
GRI 302: Energy 2016	302-1 Energy consumption within the organisation	Delivering Net Zero, pages 104-105 Sustainability Key Performance Data, page 168
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Thriving with Nature, page 120
	303-3 Water withdrawal	Thriving with Nature, page 121 Sustainability Key Performance Data, page 170
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	Thriving with Nature, pages 113-115
	304-2 Significant impacts of activities, products and services on biodiversity	Thriving with Nature, pages 113-115
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Sustainability Key Performance Data, pages 163-165 and 167
	305-2 Energy indirect (Scope 2) GHG emissions	Sustainability Key Performance Data, pages 163-165 and 167
	305-3 Other indirect (Scope 3) GHG emissions	Delivering Net Zero, page 111 Sustainability Key Performance Data, page 169
	305-4 GHG emissions intensity	Sustainability Key Performance Data, page 166
	305-5 Reduction of GHG emissions	Delivering Net Zero, pages 99-102
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Thriving with Nature, pages 119-120 Sustainability Key Performance Data, page 170
GRI 306: Waste 2020	306-2 Management of significant waste-related impacts	Thriving with Nature, pages 118-119, 124-129
	306-3 Waste generated	Thriving with Nature, page 119 Sustainability Key Performance Data, page 170
	306-4 Waste diverted from disposal	Thriving with Nature, page 119 Sustainability Key Performance Data, page 170
	306-5 Waste directed to disposal	Thriving with Nature, page 119 Sustainability Key Performance Data, page 170

GRI Standard		Reference Page
GRI 308: Supplier Environmental Assessment 2016	308-1 New suppliers that were screened using environmental criteria	Fostering a Just Transition, pages 145-146
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Sustainability Key Performance Data, pages 173-174
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Sustainability Key Performance Data, pages 148-149
	401-3 Parental leave	Sustainability Key Performance Data, page 173
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Creating Sustainable Value through Responsible Governance, pages 85-89
	403-2 Hazard identification, risk assessment, and incident investigation	Creating Sustainable Value through Responsible Governance, pages 85-89
	403-3 Occupational health services	Fostering a Just Transition, pages 159-161
	403-4 Worker participation, consultation, and communication on occupational health and safety	Creating Sustainable Value through Responsible Governance, pages 86-89 Fostering a Just Transition, pages 159-161
	403-5 Worker training on occupational health and safety	Creating Sustainable Value through Responsible Governance, pages 85-89
	403-6 Promotion of worker health	Fostering a Just Transition, pages 159-161
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Risks Linked to Creating Value, page 42
	403-9 Work-related injuries	Creating Sustainable Value through Responsible Governance, page 85 Sustainability Key Performance Data, page 171
	403-10 Work-related ill health	Creating Sustainable Value through Responsible Governance, page 85 Sustainability Key Performance Data, page 171
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Sustainability Key Performance Data, page 175
	404-2 Programmes for upgrading employee skills and transition assistance programmes	Fostering a Just Transition, pages 153-158
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	Sustainability Key Performance Data, page 172 Commitment to Governance, page 176

Index

GRI Standard		Reference Page
GRI 406: Non-discrimination	406-1 Incidents of discrimination and corrective actions taken	Fostering a Just Transition, pages 132-141
GRI 408: Child Labour 2016	408-1 Operations and suppliers at significant risk for incidents of child labour	Sustainability Key Performance Data, page 175
GRI 409: Forced or Compulsory Labour 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labour	Sustainability Key Performance Data, page 175
GRI 410: Security Practices 2016	410-1 Security personnel trained in human rights policies or procedures	Fostering a Just Transition, page 143 Sustainability Key Performance Data, page 175
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	Fostering a Just Transition, page 137
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programmes	Engaging with Stakeholders, pages 54-59 Thriving with Nature, pages 117, 127 Fostering a Just Transition, pages 132-144, 157-158
GRI 414: Supplier Social Assessment 2016	414-1 New suppliers that were screened using social criteria	Fostering a Just Transition, pages 145-146
GRI 416: Customer Health and Safety 2016	416-1 Assessment of the health and safety impacts of product and service categories	Thriving with Nature, page 123

World Economic Forum's (WEF) Stakeholder Capitalism Metrics		
WEF Disclosures		**Reference Page**
Principles of Governance: Core metrics and disclosures		
Governing purpose	Setting purpose	Basis of This Report, pages 4-5 We Are Passionate About Progress, pages 6-7
Quality of governing body	Governance body composition	Commitment to Governance, pages 176, 177-179, 181-185
Stakeholder engagement	Material issues impacting stakeholders	How We Create Value, pages 48-59
Ethical behaviour	Anti-corruption	Commitment to Governance, pages 204-205
	Protected ethics advice and reporting mechanisms	Commitment to Governance, pages 204-205 Fostering a Just Transition, pages 139-141
Risk and opportunity oversight	Integrating risk and opportunity into business process	How We Create Value, pages 38-47 Delivering Net Zero, pages 96-98
Planet: Core metrics and disclosures		
Climate Change	Greenhouse gas (GHG) emissions	Delivering Net Zero, pages 101-111 Sustainability Key Performance Data, pages 163-169
	TCFD implementation	Delivering Net Zero, pages 95-99
Nature loss	Land use and ecological sensitivity	Thriving with Nature, pages 113-116
Freshwater availability	Water consumption and withdrawal in water-stressed areas	Thriving with Nature, pages 120-121 Sustainability Key Performance Data, page 170
People: Core metrics and disclosures		
Dignity and equality	Diversity and inclusion	Sustainability Key Performance Data, page 172
	Risk for incidents of child, forced or compulsory labour	Fostering a Just Transition, pages 134-138
Health and wellbeing	Health and safety	Sustainability Key Performance Data, page 171
Skills for the future	Training provided	Value Creation Model, pages 30-31 Sustainability Key Performance Data, page 175

Index

WEF Disclosures		Reference Page
Prosperity: Core metrics and disclosures		
Employment and wealth generation	Absolute number and rate of employment	Sustainability Key Performance Data, pages 173-174
	Economic contribution	1. Revenue: 2024 Key Highlights, page 10 2. Payments to government: i. Chairman's Letter, pages 14-17 ii. Executive Vice President and Group Chief Financial Officer's Letter, pages 22-25 3. Community investment: Value Creation Model, page 30 4. Employee wages and benefits: Audited Financial Statements, page 102 (access the Statements via QR code on page 5 of this Report) 5. Payment to providers of capital i. Financing costs: Audited Financial Statements, page 103 (access the Statements via QR code on page 5 of this Report)
	Financial investment contribution	Chairman's Letter, pages 14-17 Executive Vice President and Group Chief Financial Officer's Letter, pages 22-25
Innovation of better products and services	Total R&D expenses	Value Creation Model, pages 30-31 Strategic Review, page 80
Community and social vitality	Total tax paid	Audited Financial Statements, pages 13-14 (access the Statements via QR code on page 5 of this Report)

International Financial Reporting Standards (IFRS) S2: Climate-related Disclosures		
IFRS S2 No.	**Disclosure Requirement**	**Reference Page**
Governance		
The governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities		
6 (a)	The governance body(s) (which can include a board, committee or equivalent body charged with governance) or individual(s) responsible for oversight of climate-related risks and opportunities.	Risks Linked to Creating Value, page 34 Delivering Net Zero, page 95 Corporate Governance at PETRONAS, pages 186-205
6 (b)	The management's role in the governance processes, controls and procedures used to monitor, manage and oversee climate-related risks and opportunities.	Risks Linked to Creating Value, page 34 Corporate Governance at PETRONAS, page 196
Strategy		
Strategy for managing climate-related risks and opportunities		
9 (a)	The climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects.	PETRONAS Energy Transition Strategy, page 29 Delivering Net Zero, page 95
9 (b)	The current and anticipated effects of those climate-related risks and opportunities on the entity's business model and value chain.	Delivering Net Zero, pages 95-98
9 (c)	The effects of those climate-related risks and opportunities on the entity's strategy and decision-making, including information about its climate-related transition plan.	Delivering Net Zero, pages 95-98
9 (d)	The effects of those climate-related risks and opportunities on the entity's financial position, financial performance and cash flows for the reporting period, and their anticipated effects on the entity's financial position, financial performance and cash flows over the short, medium and long term, taking into consideration how those climate-related risks and opportunities have been factored into the entity's financial planning.	Delivering Net Zero, pages 95-98
9 (e)	The climate resilience of the entity's strategy and its business model to climate-related changes, developments and uncertainties, taking into consideration the entity's identified climate-related risks and opportunities.	Delivering Net Zero, page 95

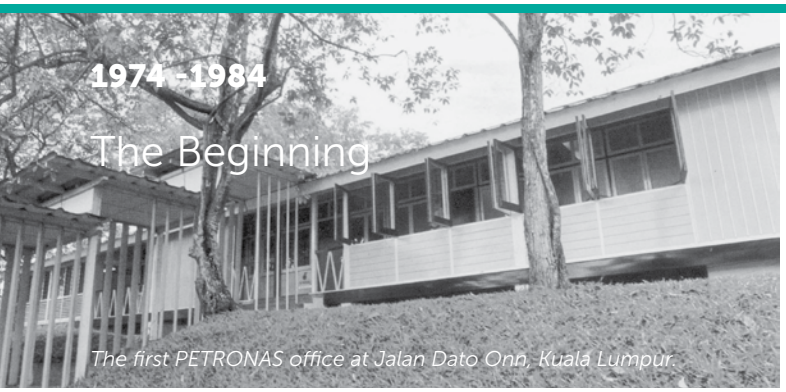
Index

IFRS S2 No.	Disclosure Requirement	Reference Page
Risk Management		
Processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process		
25 (a)	The processes and related policies the entity uses to identify, assess, prioritise and monitor climate-related risks.	Delivering Net Zero, pages 95-98 Risks Linked to Creating Value, pages 35-47
25 (b)	The processes the entity uses to identify, assess, prioritise and monitor climate-related opportunities, including information about whether and how the entity uses climate-related scenario analysis to inform its identification of climate-related opportunities.	Risks Linked to Creating Value, pages 35-37 Delivering Net Zero, pages 95-98
25 (c)	The extent to which, and how, the processes for identifying, assessing, prioritising and monitoring climate-related risks and opportunities are integrated into and inform the entity's overall risk management process.	Risks Linked to Creating Value, pages 35-37 Delivering Net Zero, pages 95-98
Metrics and Target		
Performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation		
29 (a)	Information relevant to the cross-industry metric categories.	Delivering Net Zero, pages 98-104 Sustainability Key Performance Data, pages 163-169
29 (b)	Industry-based metrics that are associated with particular business models, activities or other common features that characterise participation in an industry.	Delivering Net Zero, pages 98-104 Sustainability Key Performance Data, pages 163-169
29 (c)	Targets set by the entity, and any targets it is required to meet by law or regulation, to mitigate or adapt to climate-related risks or take advantage of climate-related opportunities, including metrics used by the governance body or management to measure progress towards these targets.	Delivering Net Zero, page 93 Sustainability Key Performance Data, pages 163-169

Glossary of Terms

Acronym/Term	Definition
2C	Contingent Resources
2P	Petroleum Reserves
3Rs	Reduce, Reuse, Recycle
AC	Audit Committee
ASEAN	Association of Southeast Asian Nations
Bboe	Billion barrels of oil equivalent
Board	Board of Directors
boe	Barrels of oil equivalent
CAPEX	Capital Expenditure
CCS	Carbon Capture and Storage
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CoBE	Code of Conduct and Business Ethics
COP	Conference of the Parties
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
GHG	Greenhouse Gas
GRI	Global Reporting Initiative
HSE	Health, Safety and Environment
HSSE	Health, Safety, Security and Environment
IFRS	International Financial Reporting Standards
INED	Independent Non-Executive Director
INSTEP	Institut Teknologi Petroleum PETRONAS
IPCC	Intergovernmental Panel on Climate Change
IR	Integrated Reporting
ISO	International Organization for Standardization
kboe	Kilo barrels of oil equivalent
LNG	Liquefied Natural Gas
LOPC	Loss of Primary Containment
MARA	Majlis Amanah Rakyat
MBR	Malaysia Bid Round

Acronym/Term	Definition
MMscfd	Million standard cubic feet per day
MTBE	Methyl tert-butyl ether
NED	Non-Executive Director
NGO	Non-Governmental Organisation
NINED	Non-Independent Non-Executive Director
NRC	Nomination and Remuneration Committee
OEE	Overall Equipment Effectiveness
OGMP	Oil and Gas Methane Partnership
OGSE	Oil and Gas Services and Equipment
PCG	PETRONAS Chemicals Group Berhad
PETRONAS Group	Petroliam Nasional Berhad and its subsidiaries
PFLNG	PETRONAS Floating Liquefied Natural Gas
PLC	PETRONAS Leadership Centre
PSC	Production Sharing Contract
RC	Risk Committee
RM	Ringgit Malaysia
RMC	Risk Management Committee
SDG	Sustainable Development Goals
SEEd.Lab	Social Enterprise Education Lab
STEM	Science, Technology, Engineering and Mathematics
TCFD	Task Force on Climate-related Financial Disclosures
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
WEF	World Economic Forum



1974 - 1984

The Beginning

The first PETRONAS office at Jalan Dato Onn, Kuala Lumpur.

1974

PETRONAS was incorporated on 17 August as Malaysia's national oil and gas company to manage the country's hydrocarbon resources.

1978

Incorporated PETRONAS Carigali to undertake exploration and production activities.

Embarked on Malaysia Liquefied Natural Gas (MLNG) project to develop the country's gas resources.

1980

Expanded into petrochemicals with Asean Bintulu Fertilizer.

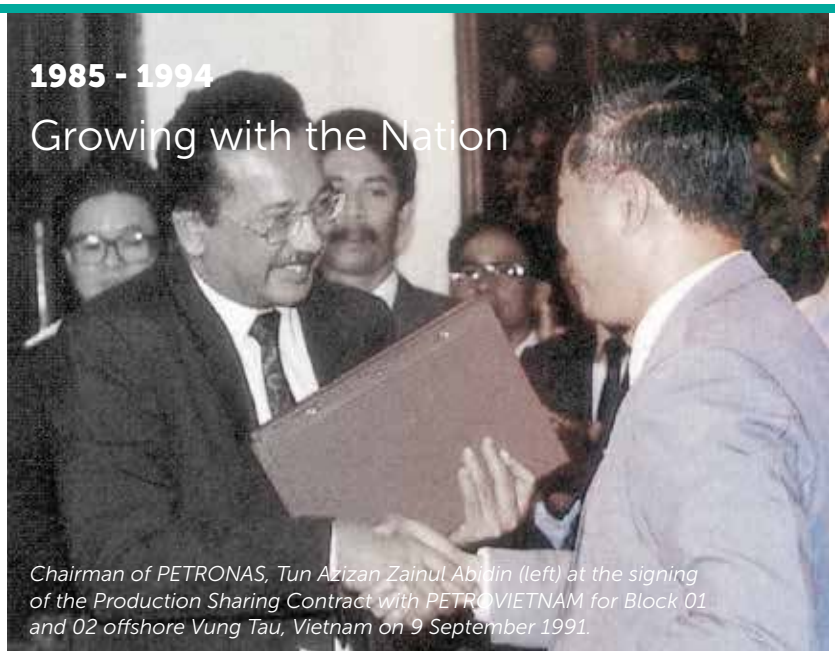
1981

Made first oil discovery at Dulang and opened first petrol station.

Tenaga Satu delivered the first LNG shipment from Malaysia to Japan in 1983.

1983

Made history with maiden liquefied natural gas shipment to Japan following the completion of MLNG Satu.



1985 - 1994

Growing with the Nation

Chairman of PETRONAS, Tun Azizan Zainul Abidin (left) at the signing of the Production Sharing Contract with PETROVIETNAM for Block 01 and 02 offshore Vung Tau, Vietnam on 9 September 1991.

1989

Established the PETRONAS Leadership Centre, previously known as PERMATA.

PETRONAS petrol station at Taman Tun Dr Ismail in the 1990s.

1991

Entered Vietnam's upstream sector, marking our first successful international venture.

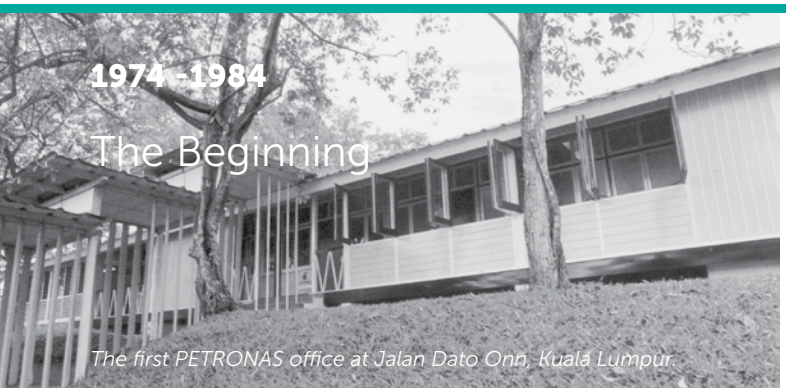
1993

Completed the 2,623km Peninsular Gas Utilisation network to transport gas across Malaysia, ensuring stable energy supply.

1994

Malaysian Refining Company Sdn Bhd began operations.

Continuing a legacy together for our future



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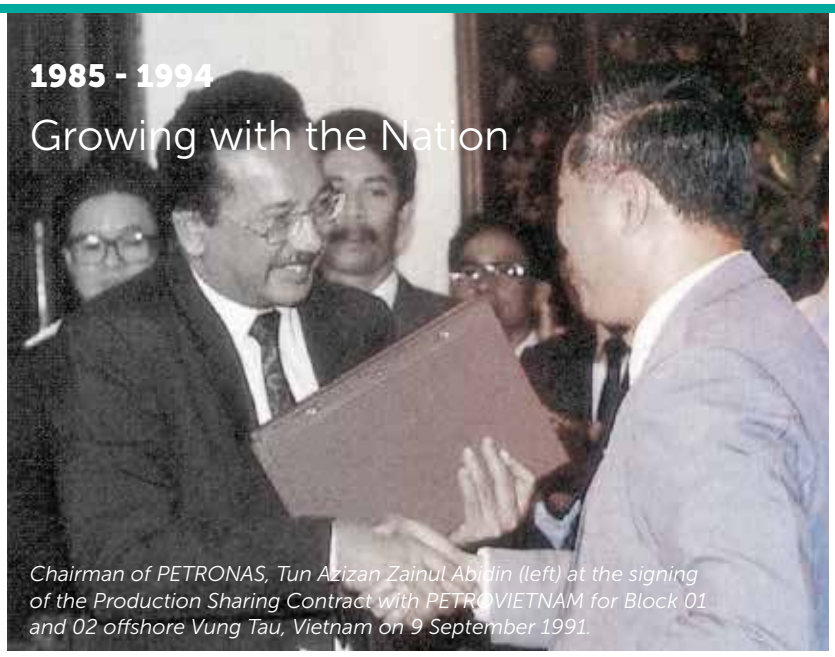

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1995 - 2004

Energy Receive, Energy Return

PETRONAS' Sudan Office was officially opened by Prime Minister Tun Dr Mahathir Mohamad (left) on 15 May 1998.

The old UTP (previously known as PETRONAS Institute of Technology) campus which was initially shared with Universiti Sains Malaysia.

1996

PETRONAS ventured into Africa, strengthening our global presence in South Africa by acquiring Engen, and entering Sudan's upstream sector the following year.

PETRONAS entered into the Fortune Global 500 list inspired by world-class excellence and growth.

1997

Established Universiti Teknologi PETRONAS to focus on engineering and technology education.

2002

Officially opened the PETRONAS Petroleum Industry Complex in Kertih, Terengganu, Malaysia.

2003

Completed MLNG Tiga, PETRONAS' third liquefied natural gas plant in Bintulu, Sarawak, Malaysia.

2005 - 2014

Reimagining Energy

Garraf Oil Field in Iraq.

2004

Baram 8, the first rig deployed in the Rigs-to-Reef project, an initiative using retired oil rigs to create thriving marine ecosystems.

2008

PETRONAS Lubricants International, the technical resource behind PETRONAS' partnership with the Mercedes-AMG PETRONAS Formula One Team, was established.

2010

Since 2010, PETRONAS has committed RM83 million towards the conservation of Imbak Canyon in Sabah, Malaysia, to protect its rich biodiversity.

2012

Acquired Progress Energy in Canada, marking a major investment in North America's LNG sector.

Built Malaysia's first LNG regasification terminal located in Sungai Udang, Melaka to ensure long term security of domestic gas supply.

2013

Successfully delivered first oil production from PETRONAS' operated Garraf oil field in Iraq.

2015 - 2024

Passionate about Progress

The PETRONAS 50 Homecoming: Twin Torches Meet was held on 17 August 2024.

2016

PFLNG SATU, the world's first floating liquefied natural gas facility, achieved its first gas production from the Kanowit gas field, offshore Sarawak.

2019

Completed the Pengerang Integrated Complex, a world-class facility that boasts a refining capacity of 300,000 barrels per day and an annual production capacity of over 3 million tonnes of petrochemical products.

Ventured into specialty chemicals through acquisition of Da Vinci Group B.V. (BRB).

Acquired a 100 per cent interest in Amplus Energy Solutions Pte Ltd, marking our first international entry into the renewable energy sector.

2020

Announced our aspiration to achieve net zero carbon emissions by 2050.

2022

Gentari Sdn Bhd was officially launched to accelerate the adoption and commercialisation of clean energy.

2024

Celebrated our golden jubilee by honouring all stakeholders, sharing our journey of growth and aspirations for a progressive future.

PETRONAS

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