

# Sustainability at PETRONAS

## Safeguard the Environment

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

Aligned to:



# Climate Change and Greenhouse Gas Emissions

## Why It Is Important

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

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

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

## Our Approach

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

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

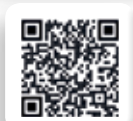


*We are guided by international principles, frameworks and standards. Scan the QR code for more information.*

### Guided by international principles, frameworks and standards

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

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



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



## Safeguard the Environment

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

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

#### Governance

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



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

Reviewed the PETRONAS Corporate Risk Profile on a quarterly basis.

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

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

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

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



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



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

## Strategy

### Climate-related Risks and Opportunities

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

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

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

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



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

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

### Transition Risks

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

#### a) Climate-related Market Risk

##### What It Means

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

##### Potential Material Impacts

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



## Safeguard the Environment

### b) Climate-related Compliance Risk

#### What It Means

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

#### Potential Material Impacts

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

### c) Climate-related Reputation Risk

#### What It Means

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

#### Potential Material Impacts

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

#### Resilience to Transition Risk

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

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

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

#### Physical Risk

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

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

### Potential Material Impacts

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

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

### Resilience to Physical Risk

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

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

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

### Risks and Opportunities Quantification on Financial Performance

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

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



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

### Climate-related Risk Management

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

### Risk Assessment Process

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

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



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### Risk Management Process

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

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

### Embedding Sustainability at the Executive Level

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

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

### Carbon Footprint Assessment for Projects

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

### Integration into the Overall Risk Management

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

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

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

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

### Risks and Opportunities Quantification on Financial Performance

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

► **2023 GHG Performance**

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

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

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

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

2024 & 2025	2030	2050
<p><b>49.5</b> Million tCO<sub>2</sub>e</p> <p>Cap emissions at 49.5 million tonnes of carbon dioxide equivalent (Million tCO<sub>2</sub>e) from PETRONAS' Malaysia operations by 2024.</p>	<p><b>25%</b> Reduction</p> <p>in PETRONAS Groupwide emissions, including:</p> <ul style="list-style-type: none"> <li>→ <b>70% Reduction</b> in methane emissions from PETRONAS Groupwide natural gas value chain.</li> <li>→ <b>50% Reduction</b> in methane emissions from Malaysia's natural gas value chain.</li> </ul>	<p><b>NET ZERO</b> 2050</p> <p>Net zero carbon emissions.</p>

**2023 GHG Emissions Management**

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

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

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



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

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

### GHG Measurement and Quantification

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

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

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

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

- <sup>1</sup> *Estimating petroleum industry value chain (Scope 3) greenhouse gas emissions* <https://www.ipieca.org/resources/estimating-petroleum-industry-value-chain-scope-3-greenhouse-gas-emissions-overview-of-methodologies> (Ipieca,2016).
- <sup>2</sup> *Categories here refer to Category 1 (purchased goods and services), Category 2 (capital goods), Category 3 (fuel- and energy-related activities), Category 4 (upstream transportation and distribution), Category 5 (waste generated in operations) and Category 6 (business travel) as described in Corporate Value Chain (Scope 3) Accounting and Reporting Standard* <https://ghgprotocol.org/corporate-value-chain-scope-3-standard> (GHG Protocol, 2011).
- <sup>3</sup> *Spend-based method estimates emissions by collecting data on amount spent (e.g., bills, invoices) and multiplying it by relevant secondary (e.g., industry average) emission factors* [https://ghgprotocol.org/sites/default/files/2023-03/Scope3\\_Calculation\\_Guidance\\_0%5B1%5D.pdf](https://ghgprotocol.org/sites/default/files/2023-03/Scope3_Calculation_Guidance_0%5B1%5D.pdf) (GHG Protocol, 2013).
- <sup>4</sup> *Average-data method estimates emissions by collecting data on the mass (e.g., kilograms or pounds), or other relevant units and multiplying by the relevant secondary (e.g., industry average) emission factors* [https://ghgprotocol.org/sites/default/files/2023-03/Scope3\\_Calculation\\_Guidance\\_0%5B1%5D.pdf](https://ghgprotocol.org/sites/default/files/2023-03/Scope3_Calculation_Guidance_0%5B1%5D.pdf) (GHG Protocol, 2013).



### Accelerating Methane Emissions Management

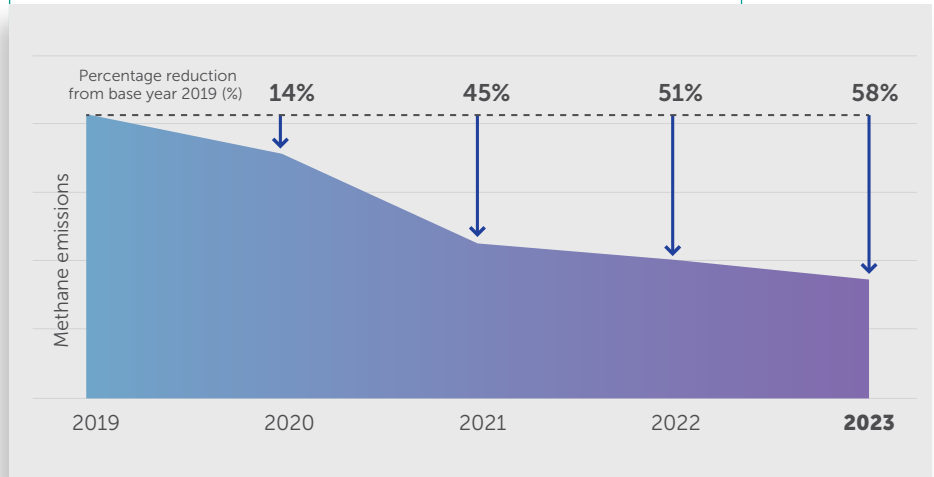
As a potent greenhouse gas, methane contributes significantly to climate change if not actively reduced. With our global commitments, our efforts have progressed under the World Bank's Zero Routine Flaring Initiative by 2030, which has significantly contributed to methane emissions reductions from our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

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

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

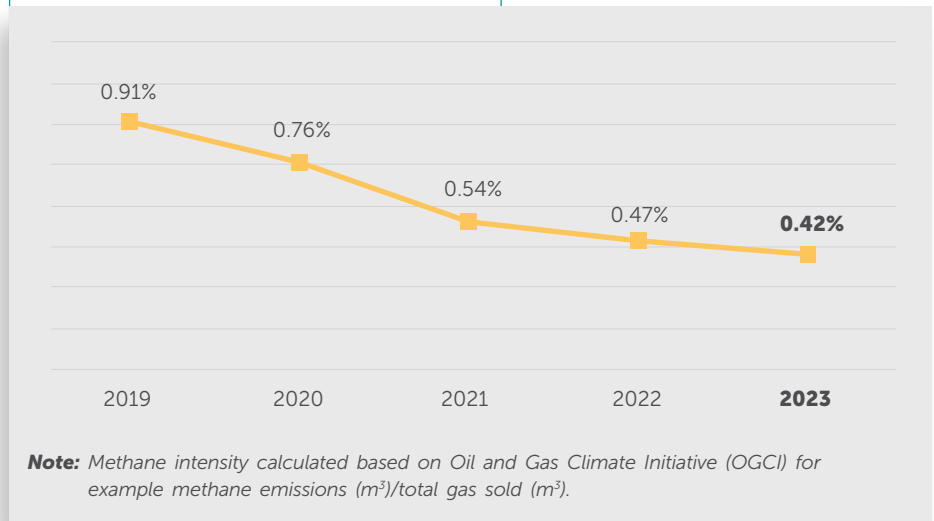
While gas flares and vents remain the most material sources of methane emissions across PETRONAS operations, we completed three vent and one flare reduction projects in Upstream business and three flare reduction projects in Gas business in Malaysia, amounting to 0.73 million tonnes CO<sub>2</sub>e per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

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



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

#### PETRONAS Methane Intensity Outlook



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



## Safeguard the Environment

### Accelerating Methane Actions through Strategic Collaborations

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

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

#### ASEAN Energy Sector Methane Leadership Programme

##### Collaborators:

ASEAN energy operators, government agencies, international organisations

##### Initiative

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

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

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

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

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

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

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

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

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

### Measurement Tools

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

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

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



## Safeguard the Environment

### Continuous Efforts to Reduce GHG Emissions

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

#### Flaring or Venting Reduction

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

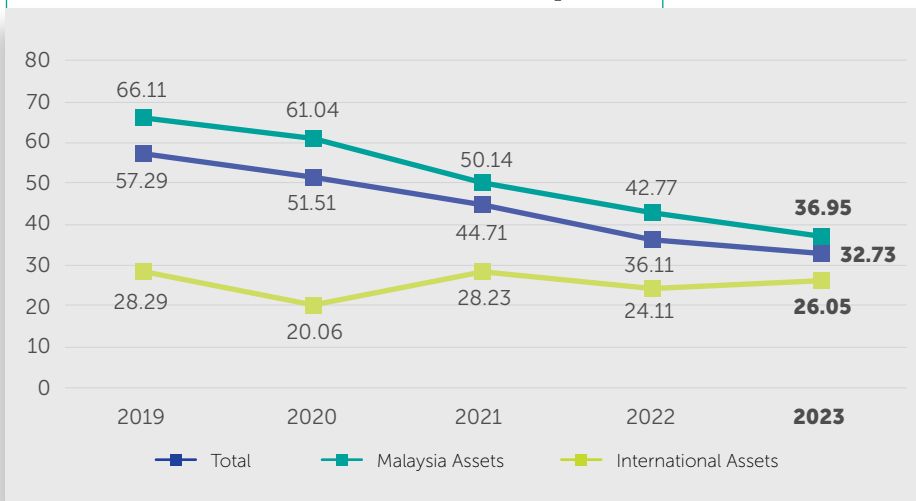
#### Energy Efficiency

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

#### Electrification

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

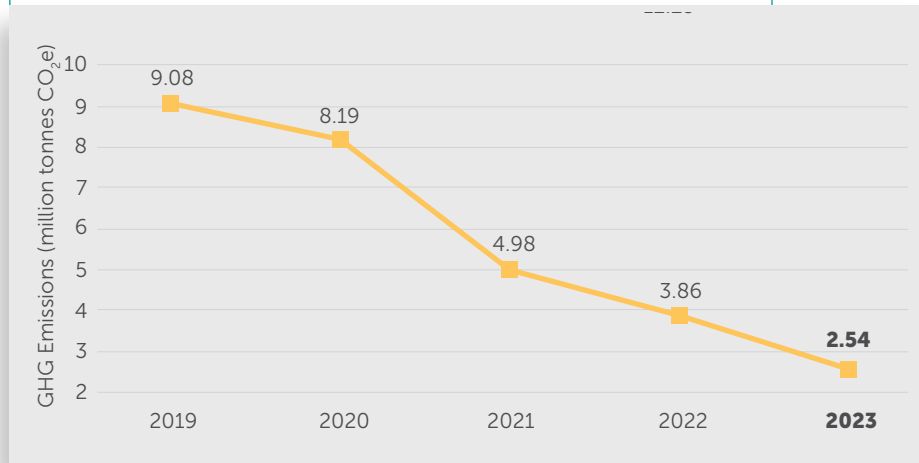
### Upstream GHG Emissions Intensity under Operational Control Approach (tonnes CO<sub>2</sub>e/kboe)



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

### Towards Achieving Zero Continuous Venting

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



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

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

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

- Carbon Capture and Storage** → For more details, refer to pages 9, 36, 72-79, 93-94 and 97.
- Sustainable Aviation Fuel** → For more details, refer to page 26, 87 and 93.
- Advanced Sustainable Fuel in Formula One** → For more details, refer to page 89.
- Used Cooking Oil** → For more details, refer to page 87.
- Electric Vehicle Charging Expansions** → For more details, refer to page 89.
- Product Line Enhancement** → For more details, refer to page 89.
- Race2Decarbonise** → For more details, refer to page 94.

#### GHG Emissions Data External Verification Exercise

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

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

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

## Safeguard the Environment

### Waste and Environmental Management

#### Why It Is Important

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

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

#### Our Approach

##### Collaborative Strategy and Standards

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

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

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

#### ▶ Responsible Waste Management

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

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

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

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

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

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



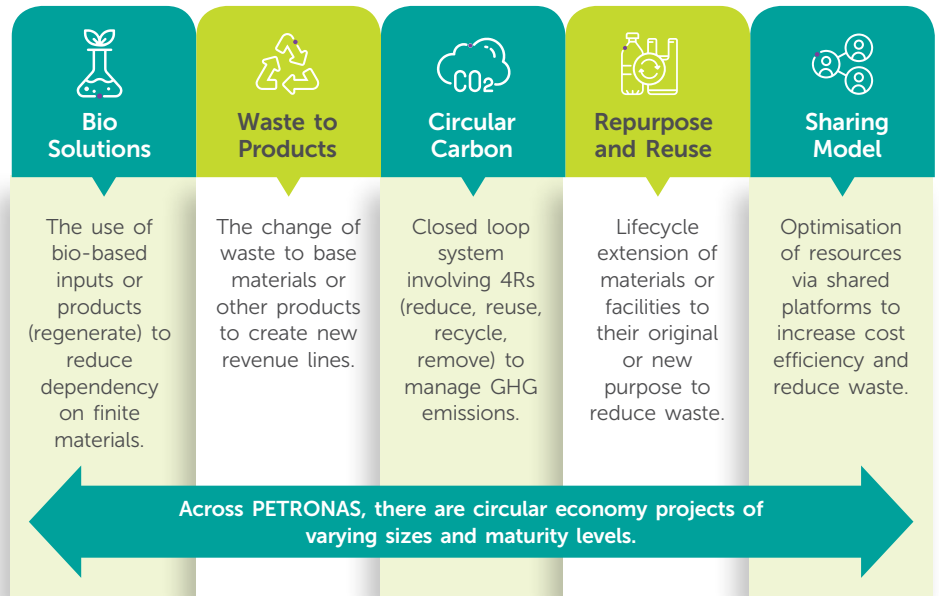
## Circular Economy

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

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

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

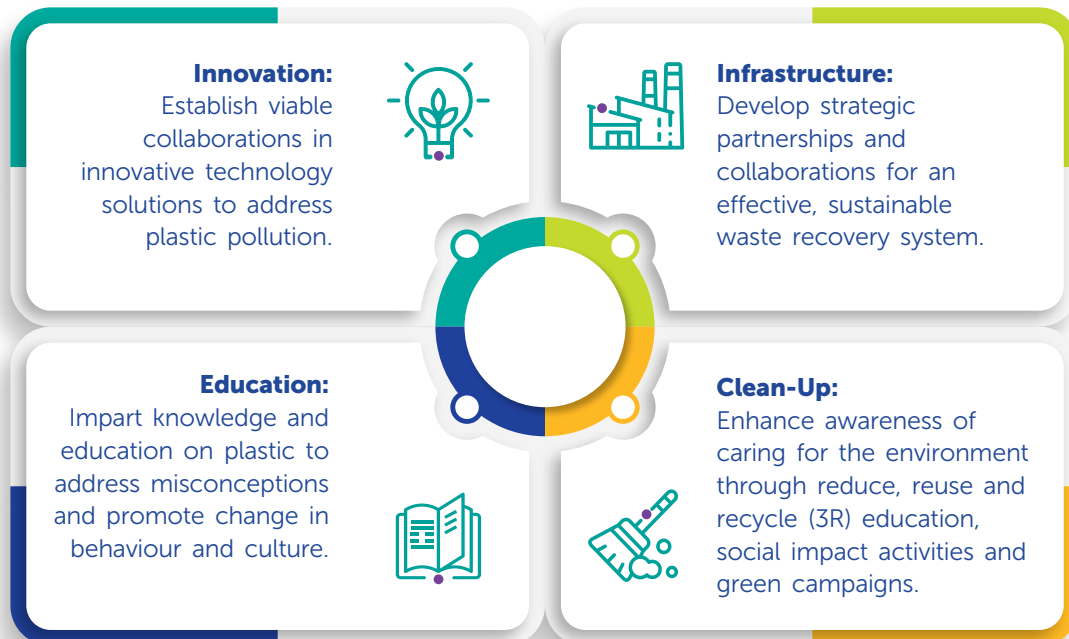
### Five Approaches to Adopt Circular Economy in PETRONAS



## New Plastics Economy

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

### PETRONAS' Four New Plastics Economy Workstreams



## Safeguard the Environment



### Value Created in 2023

#### Responsible Waste Management

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

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

#### Single-Use Plastic Phase Out

##### What We Did

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

##### What We Achieved

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

#### Operation Clean Sweep®

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

## ▶ PETRONAS' Environmental Focus Areas

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

### Air Emissions

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

#### Performance in 2023

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

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

### Leveraging Predictive System to Monitor Air Emissions

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

## Water Management

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

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

#### Performance in 2023

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

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




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



## Safeguard the Environment

### Oil Spill Prevention

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

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

### Performance in 2023

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

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

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

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

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

## Decommissioning

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

### Value Created in 2023

#### Collaboration with the Department of Fisheries

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

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

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

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



### Decommissioning Completed

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

### Regional and International Industry Collaborations

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

## Safeguard the Environment

### Nature and Biodiversity

#### Why It Is Important

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

Nature and biodiversity are crucial for sustaining life on Earth and in many of PETRONAS' operations. They underpin vital services from carbon sequestration in forests, wetlands and soil to supporting diverse habitats and community livelihoods where PETRONAS is concerned. At the same time, climate change and pollution caused by human activities also threaten nature and biodiversity. The intertwined nature of these two major planetary crises calls for an integrated approach to address nature and biodiversity loss, degradation and climate change.

Our commitment to reversing biodiversity loss involves the establishment and operationalisation of the PETRONAS Centre of Excellence (CoE) on Nature and Biodiversity. The CoE is an important element towards implementing the five areas of actions listed in PETRONAS Position on Nature and Biodiversity and meeting our aspirations of a visible leadership role in the conservation of nature and biodiversity.

#### Our Approach

Governed by the PETRONAS Position on Nature and Biodiversity and in support of our overall Net Zero Carbon Emissions by 2050 Pathway, we strive to demonstrate visible leadership on nature and biodiversity at home in Malaysia, and in the countries where we operate.

Assessing and managing our impact and dependency on nature and biodiversity in or near Protected Areas (PAs) and Key Biodiversity Areas (KBAs) as set out by our internal systems and guidelines.

We apply a risk-based approach in the implementation of the position. In 2023, we commenced Biodiversity and Ecosystem (BES) risk profiling for all our operational sites, supported by the Integrated Biodiversity Assessment Tool (IBAT) and PETRONAS risk assessment matrix. This activity aims to identify assets with a risk categorisation of "Very High" and "High". Based on the assessment results, we will conduct site visits to validate the risk profiling, which will serve as a basis for developing Biodiversity Action Plans for relevant locations.

#### PETRONAS Position on Nature and Biodiversity

Upon the establishment of the PETRONAS Position on Nature and Biodiversity to establish plans and ensure internal alignment on nature and biodiversity matters, 2023 saw the shaping of the necessary work processes, systems and establishment of a central database to ensure smooth implementation of this position. With that, the five areas of action are determined to demonstrate leadership in biodiversity conservation which would include applying the right expertise and resources.

- **Area 1:** Establishing voluntary exclusion zones
- **Area 2:** Managing nature and biodiversity risks
- **Area 3:** Promoting nature and biodiversity through partnerships and collaborations
- **Area 4:** Supporting public policy to protect nature and biodiversity
- **Area 5:** Promoting high quality nature-based climate solutions

## Value Created in 2023

### Contributions from PETRONAS' Position on Nature and Biodiversity

Area of Action	Value Created
<b>Area of Action 1: Establishing voluntary exclusion zones</b>	<ul style="list-style-type: none"> <li>PETRONAS contributes to the protection and preservation of cultural and natural heritage within the voluntary exclusion zones, with internal efforts undertaken to align relevant governance documents and business processes with the Position.</li> </ul>
<b>Area of Action 2: Managing nature and biodiversity risks</b>	<ul style="list-style-type: none"> <li>PETRONAS aims to conserve nature and biodiversity by managing risks to ensure no or minimal impact is caused by our operations. In 2023, PETRONAS initiated a multi-year project leveraging external expertise and are focusing on four areas: Biodiversity and Ecosystem Services (BES) Risk Profiling and Assessment for international operations; Biodiversity Action Plan development; biodiversity survey; capacity building and internal upskilling.</li> </ul>
<b>Area of Action 3: Promoting nature and biodiversity through partnerships and collaborations</b>	<ul style="list-style-type: none"> <li>PETRONAS is active in engaging with our industry peers and international organisations in promoting knowledge sharing and learning of best practices such as through Ipieca-IOGP Biodiversity and Ecosystem Services (BES) Peer-to-peer Workshop, and knowledge sharing programme with Tenaga Nasional Berhad and PTT Exploration and Production Public Company Limited.</li> <li>PETRONAS also continued to support biodiversity conservation through projects such as Yayasan PETRONAS Walk4Trees Planting Programme and ecoCare Environmental Education Centre at Kertih, Terengganu. These programmes are aimed at supporting the restoration of habitats and educating communities on the importance of ecosystem protection and conservation.</li> </ul>
<b>Area of Action 4: Supporting public policy to protect nature and biodiversity</b>	<ul style="list-style-type: none"> <li>PETRONAS plays an active role in supporting global policies on nature and biodiversity. In demonstrating leadership from the private sector on nature and biodiversity, PETRONAS is part of the Malaysia Platform for Business and Biodiversity and National Biodiversity Advisory Group that supports Malaysia's ambition to implement the Kunming-Montreal Global Biodiversity Framework.</li> </ul>
<b>Area of Action 5: Promoting high quality nature-based climate solutions</b>	<ul style="list-style-type: none"> <li>PETRONAS signed a Memorandum of Understanding with the Malaysia Forest Fund, to strengthen its agenda on exploring, developing and investing in high-quality nature-based solutions projects in Malaysia. This initiative aligns with efforts to realise its Net Zero Carbon Emissions by 2050 Pathway.</li> </ul>





# Positive Social Impact

PETRONAS collaborates with our employees, suppliers and communities making a concerted effort to embed sustainability and promote responsible growth in our practices.

Aligned to:



## Health and Safety

### Why It Is Important

Operating in the energy industry where there is considerable risk of exposure to hazardous conditions, we aim to create a safe working environment through a strong generative health, safety and environment (HSE) culture, ensuring everyone goes home safely.

At PETRONAS, we prioritise the physical and mental well-being of our employees and contractors. Our comprehensive well-being programmes and proactive interventions support physical, mental and emotional health, fostering a high-performing workplace where employees are empowered to thrive both professionally and personally.

### Our Approach

PETRONAS is committed to HSE excellence in all our activities, wherever we operate. We align our HSE Management System and HSE Mandatory Control Framework with the International Organisation of Standardisation's (ISO) 14001:2015 and ISO 45000:2018 to support our HSE policy. This management system and control framework applies to operations where PETRONAS has operational control at all phases of work activities.

PETRONAS' HSE culture has evolved significantly, particularly in response to the COVID-19 pandemic. Our focus is on three key areas:

- **Culture:** We strengthen the implementation of the Generative HSE Culture (GC) programme at all levels through the Accountability and Behaviour Reinforcement Programme across our operations to reinforce HSE leadership and instil personal accountability.
- **Compliance:** We drive compliance and operating discipline to manage risks and safeguard our license to operate. We also leverage self-regulation to reinforce HSE compliance.
- **Competency:** We intensify human, asset and systems capabilities and HSE competency in delivering sustainable HSE performance.

Our HSE performance is evaluated regularly through periodic monitoring of key performance indicators. We also leverage digital solutions for improved monitoring and reporting of HSE performance.

### Performance in 2023

In 2023, we achieved a 18 per cent reduction in Lost Time Injury (LTI) cases and a 10 per cent reduction in Total Recordable Cases (TRC). We also observed a 33 per cent decrease in major and minor fires.

Despite our best efforts, we regrettably recorded two fatalities in our operations.

In all cases, thorough investigations were conducted with relevant authorities to determine the root causes and actions to prevent recurrence. HSE Accountability and Behaviour Reinforcement is continually applied to ensure that we take a fair and consistent approach to encouraging and rewarding desired HSE behaviours and addressing undesired HSE behaviours.

PETRONAS has taken proactive measures to prevent recurrence of incidents. We established the Organisational Learning From Incidents portal, a comprehensive resource that serves as a one-stop centre to improve accessibility and availability of materials from past lessons learned and incident management governance documents.

We also observed an increase in employee Total Recordable Occupational Illness Frequency (TROIF) during the year compared to 2022. As part of our intervention to avoid recurrences, we adopted strict actions, which included inspecting caterers and upskilling competency of our key personnel.

## Positive Social Impact

### Culture

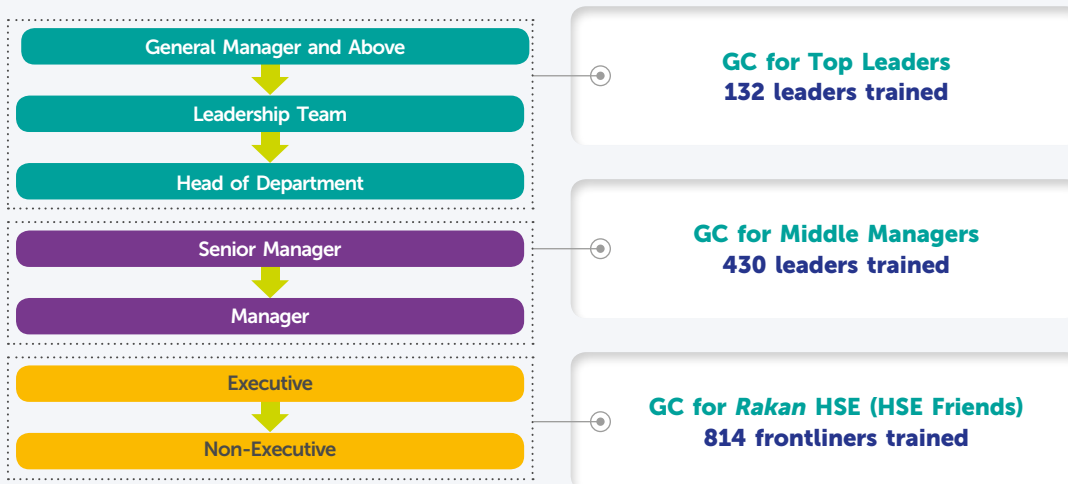
PETRONAS maintains a robust health, safety and environment (HSE) culture to protect our people, enhance productivity and reinforce our reputation in the industry. In 2023, we implemented various key initiatives to strengthen our HSE culture:

#### ➔ Culture Maturity Survey

- The organisation-wide HSE survey measures the progress of our HSE culture performance and identifies areas for improvement. It also determines the level of HSE culture maturity in our businesses and operating assets, providing an understanding of our strengths and improvement areas while realigning our HSE strategies and interventions.
- As a proactive organisation, HSE is deeply ingrained as a core value, strongly emphasising the health and well-being of our employees, contractors and visitors. Our goal is to advance to a 'Generative' level, characterised by supportive leadership and empowered employees who proactively address HSE issues, reflecting high self-sufficiency and commitment to HSE.
- Since its introduction in 2017, PETRONAS' HSE culture has demonstrated significant progress, evolving from a 'Calculative' to a 'Proactive' level in 2021. In 2023, we once again engaged 40,000 PETRONAS employees and targeted contractors across our business and operations, maintaining a Proactive score of 4.03 on the culture maturity ladder scale with an 88 per cent response rate, indicating a consistent trend in HSE culture maturity since its first introduction.

#### ➔ GC Leadership Programme

- The Generative HSE Culture Leadership Programmes (GCLP) focus on instilling a Generative Culture in HSE practices among leaders at all levels. This programme is for a wide range of leaders from those at the frontlines to top management, fostering a leadership environment where health and safety are core values and the well-being of employees and contractors takes priority.
- In 2023, we delivered the training programme to a significant portion of our leadership team:

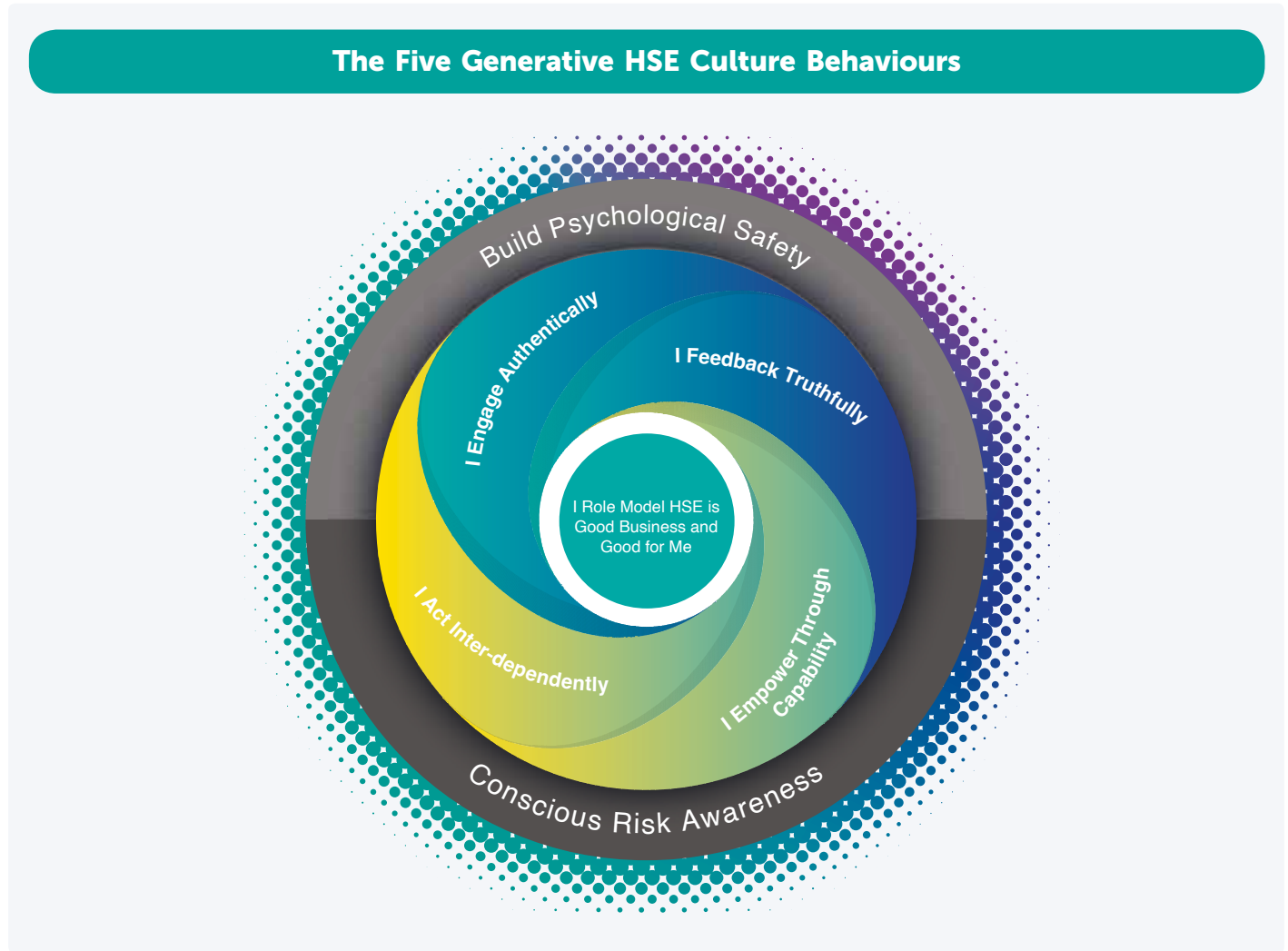


#### ➔ Rakan HSE Engagement

- The Rakan HSE (HSE Friends) engagement initiative focuses on reinforcing the five Generative HSE Culture Behaviours and further enhancing Generative Culture knowledge through the sharing of best practices. It also provides a platform to address workplace challenges.
- In 2023, 88 participants from 16 operations attended our Rakan HSE engagements, comprising Rakan HSE graduates, leaders and contractors across three regions, achieving an overall rating of 4.72.

**GC Network of Excellence**

GC Network of Excellence (GC NeXt) is designed to foster open and psychologically safe conversations, and promote the exchange of real experiences between leaders and frontline supervisors across our business and operations. We facilitated five sessions on the five Generative HSE Culture Behaviours, bridging the gap between leaders and frontline supervisors.



**HSE Accountability and Behaviour Reinforcement**

In 2023, we rolled out the revised Standardised HSE Accountability and Behaviour Reinforcement Guideline, incorporating the Constructive Reinforcement for Contractor Company guardrail. We introduced this programme in 2021 to elevate the HSE culture towards the Generative level.



## Positive Social Impact

### MESTIFit4Health

Our MESTIFit4Health programme incorporates diverse risk assessments and health data analyses to ensure the holistic well-being of our employees. The programme has been implemented at PETRONAS since 2018 and has fostered a culture of healthy living as a fundamental pillar for the organisation’s success.

MESTIFit4Health continued to deliver positive results in its five key areas of focus:

	Objectives	Initiatives and Achievements
(M) Move Right	Encouraging an active lifestyle and overall physical well-being.	<ul style="list-style-type: none"> <li>• <b>Walk4Trees Challenge:</b> Embedding PETRONAS’ commitment to the environment and its corporate social responsibility, the programme surpassed the target of four billion steps, where our collective steps led to the planting of 20,000 trees.</li> </ul>
(E) Eat Right	Ensuring workplace safe practices through stringent food and water hygiene standards.	<ul style="list-style-type: none"> <li>• <b>Caterer Inspections:</b> Verified and inspected 317 of our food suppliers to ensure continuous compliance with our Food and Water Safety standards.</li> <li>• <b>Upskilling:</b> Enhanced competency of our key personnel in managing food suppliers and implementation of best food and water hygiene standards.</li> </ul>
(S) Sleep Right	Strengthening and expanding our Fatigue Management System to reduce fatigue-related incidents.	<ul style="list-style-type: none"> <li>• <b>Fatigue Management System:</b> Launched and successfully rolled out the new Fatigue Management System mobile app across various sectors with zero interruptions to operations.</li> </ul>
(T) Think Right	Supporting employees’ mental well-being through a holistic wellness model that addresses psychosocial risk factors.	<ul style="list-style-type: none"> <li>• <b>MIND-A-CARE Ambassadors:</b> Successfully developed 290 mental health first aiders who detect signals of mental distress and guide the affected employees in reaching out for early psychological support.</li> <li>• <b>Leadership Upskilling:</b> Trained 142 leaders in psychological safety in collaboration with PETRONAS Leadership Centre.</li> <li>• <b>Resilience Coaching:</b> Implemented the Individualised Coaching for Resilience Enhancement (i-C4RE), curated to strengthen mental resilience. The programme benefitted 417 employees in 2023.</li> </ul>
(I) Individual Right	Empowering staff to make informed health decisions and prevent substance misuse.	<ul style="list-style-type: none"> <li>• <b>Awareness and Enforcement:</b> Intensified awareness on the management of substance misuse and included new responsibilities for PETRONAS Auxiliary Police as enforcers.</li> <li>• <b>Digitalisation:</b> Developed a digital platform to monitor the real-time data for substance misuse initiatives for our workforce and contractors.</li> </ul>

### Strategic Collaborations for Health and Well-being

PETRONAS is committed to improving standards of health and well-being through strategic partnerships with governmental agencies and other external stakeholders.

Strategic Partnership	Impact and Achievements
<b>Ministry of Health, Malaysia</b>	<ul style="list-style-type: none"> <li>• <b>Support for Sustainable Health Goals:</b> Continuously engage the Minister of Health, Malaysia as part of our commitment in achieving Sustainable Development Goal 13: Good Health and Well-being.</li> <li>• <b>Knowledge Exchange and Potential Collaboration:</b> Aligned our wellness and mental well-being interventions with the national agenda for mental health by the Ministry of Health, Malaysia.</li> <li>• <b>Industry Best Practices and Innovation:</b> Created a platform to showcase the current occupational health best practices to increase awareness of the efforts and innovations in employee health and wellness among those involved in the industry.</li> <li>• <b>Memorandum of Understanding:</b> Implemented a drug-free workplace programme <i>Tempat Kerja Bebas Dadah</i> (TEKAD) with collaboration on training, awareness, enforcement and rehabilitation assistance.</li> </ul>
<b>National Centre of Excellence for Mental Health, Ministry of Health, Malaysia</b>	
<b>1<sup>st</sup> Oil and Gas Health and Well-being Conference 2023</b>	
<b>National Anti-Drug Agency (AADK)</b>	



## Positive Social Impact

### Compliance

To embed safety precautions throughout our businesses and operations, we have scaled up our efforts to improve safety performance by proactively implementing various best practices which include industrial hygiene, process safety, safety management, self-regulation, crisis and incident management, and HSE capability.

### Industrial Hygiene

One of our topmost priorities will continuously be protecting the health of our employees and contractors, both at the workplace and at home, through sustainable governance, robust intervention and capability development.

We align with the Sustainable Development Goals (SDG) namely in preventing ill health due to workplace health hazards (SDG 3.9) and protecting employee’s rights for a healthy work environment (SDG 8.8). We safeguard employees’ health beyond regulatory compliance and aim to implement best practices for a sustainable outcome in maintaining a passionate, productive, high-performing workforce. This encompasses continuous efforts to address all possible workplace health hazards and their associated risks such as chemical, physical (noise, radiation, thermal, vibration and pressure), biological, ergonomic and psychosocial health hazards.

#### Key Initiatives in 2023:

Initiative	Impact and Value Created
<b>Hazardous Chemical Management System: eCHEMS</b>	<ul style="list-style-type: none"> <li>Approximately 40 per cent time reduction in the overall chemical management process with our centralised digital eCHEMS covering chemical screening, chemical receiving and verification of documents. Efforts include:                             <ul style="list-style-type: none"> <li>The adoption of artificial intelligence to automate the verification of safety data sheets (SDS) and labels.</li> <li>Data upload of 554 chemical registers covering 12,436 chemicals.</li> <li>Full utilisation of eCHEMS in managing chemical request up to chemical receiving for a total of 80 chemicals.</li> </ul> </li> </ul>
<b>Ventilation in Confined Space</b>	<ul style="list-style-type: none"> <li>Enhanced governance on ventilation in confined spaces by revising Company standards related to the ventilation plan, and incorporating revised standards into the module in the e-Permit To Work (e-PTW) system.</li> </ul>
<b>Noise Risk Reduction Programme</b>	<ul style="list-style-type: none"> <li>Mitigation of noise-related risk with noise engineering control initiatives with the potential to reduce sound pressure levels up to 90 to 99 per cent for identified facilities with high-noise sources.</li> <li>Enhance governance of the Hearing Conservation Programme by reviewing and revising company standards.</li> </ul>
<b>HSE Integrated Risk Assessment</b>	<ul style="list-style-type: none"> <li>Rolled out a digital tool to conduct health risk assessments and facilitate its operationalisation to meet regulatory and company standards. HSE Integrated Risk Assessment was actively utilised with a total of 29 risk assessments registered in 2023.</li> </ul>
<b>Ergonomics Management System: e-RGO</b>	<ul style="list-style-type: none"> <li>Enhanced office ergonomic tool for self-assessment on posture at office workstation covering self-assessment for a work from home setup, protecting workers’ health.                             <ul style="list-style-type: none"> <li>A total of 12,637 office occupants completed the self-assessment out of which 13 per cent identified and corrected improper posture.</li> <li>Initiated 39 ergonomic-related case management triggered by office occupants.</li> </ul> </li> </ul>

Initiatives under the Industrial Hygiene scope achieved notable improvement towards compliance with regulatory and company standards towards safety and well-being of workers, including:

- ➔ Carried out health risk assessment initiatives that led to substantial cost savings of up to **RM24.1 million**.
- ➔ Achieved **97 per cent** compliance in First Line Assurance in the areas of chemical management, hearing conservation and radiation management with significant improvement in several key requirements such as respiratory protection, chemical screening, chemical register and safety data sheet, hearing protection zone warning signs, functionality and availability of radioactive survey meter and maintenance of engineering control (local exhaust ventilation).

- ➔ Maintained good collaboration with regulators, associations and industries through our participation in trainings and conferences to build industrial hygiene capability for the nation.
- ➔ Industrial Hygiene Community of Practice (CoP) received the **Best CoP award** out of **78 candidates**.

### Process Safety

Our management review of process safety performance has shown tangible improvements in our Process Safety culture across our operations. Moving forward, a more focused effort will be made towards a Generative Culture level.

Our efforts to substantially reduce Process Safety Events (PSE) affirmed our steadfast dedication to safety within our operations.

### Key Initiatives in 2023:

Focus Area	What We Did
<b>Governance</b>	<ul style="list-style-type: none"> <li>Implemented Fire Prevention and Mitigation Framework (FPMF) and Process Safety and Loss of Primary Containment (LOPC) Reduction Initiative, focusing on detailed analysis, direct intervention and peer reviews.</li> <li>Enhanced standards and guidelines with lessons learned from past incidents, including upskilling sessions for our operations.</li> <li>Established a task force for aligning governance requirements and integrating safety review processes for start-ups and operations.</li> </ul>
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Rolled out Digital Flange Integrity Tools (Digi-FIT) across our operations to prevent joint leaks and ensure process compliance.</li> <li>Improved process efficiency and management of process safety risk via enhanced HSE Integrated Risk Assessment, monitoring for Safety Review of Management of Change in Integrated Process Safety Solution and frequent assessment of control barriers via deployment of Enterprise Barrier Management.</li> <li>Developed digital training modules for process safety onboarding and safety review.</li> </ul>
<b>Competencies</b>	<ul style="list-style-type: none"> <li>Conducted site engagements to enhance staff understanding and adoption of process safety behaviours.</li> <li>Collaborated with the Centre for Chemical Process Safety (CCPS) and Japan Society of Safety Engineering (JSSE) as thought leaders in process safety.</li> <li>Promoted Integrated Process Safety Management for better collaboration in steering process safety requirements.</li> </ul>





## Positive Social Impact

### Safety Management

Safety management at PETRONAS in 2023 focused on enhancing human performance and improving frontline supervision, supported by digital efforts to drive safety improvements.

#### Key Initiatives for 2023:

Initiative	What We Did
<b>Work Leader Competency Development</b>	<ul style="list-style-type: none"> <li>Assessed active site work leaders with 1,200 personnel covered. 18 per cent received coaching or job reassignment based on competency gaps identified to ensure only competent work leaders supervise work at the site.</li> <li>Standardised work leader capabilities requirements and made them part of the HSE requirements in tender documents and our technical standards.</li> <li>Implemented Groupwide work leader training materials for consistent proficiency.</li> </ul>
<b>Contractors HSE Frontliners Programme</b>	<ul style="list-style-type: none"> <li>Engaged 220 participants across 27 sites focusing on a merit-demerit system.</li> <li>Enhanced site inspection quality through upskilling on myLearningX.</li> </ul>
<b>Digital Unsafe Act, Unsafe Condition Systems</b>	<ul style="list-style-type: none"> <li>Observed improvements in safety culture and site discipline in our operations and increased Unsafe Act, Unsafe Condition observations by 30 per cent to 622,078.</li> <li>Enhanced Stop Work Authority (SWA) usage by 222 per cent to 6,617 for a better demonstration of psychological safety to stop unsafe works and practices immediately at the site.</li> </ul>
<b>ePTW+ 2.0</b>	<ul style="list-style-type: none"> <li>Successfully deployed digital ePTW+ 2.0 at 18 sites to streamline permit-to-work (PTW) processes for Groupwide implementation. The system received positive feedback from users.</li> <li>Improved process compliance with permissive features that would enhance site compliance.</li> <li>Achieved 40 per cent time-saving and improved document retention at sites compared to manual permit-to-work process.</li> </ul>

	2022	2023	
<b>Lost Time Injury (LTI)</b>	38	31	<ul style="list-style-type: none"> <li>Emphasised the importance of selecting competent contractors with reliable equipment for a safe working environment.</li> </ul>
<b>Total Recordable Cases (TRC)</b>	100	90	<ul style="list-style-type: none"> <li>Incorporated human factor analysis in all incident investigations in 2023 to understand and address violations and mistakes.</li> <li>Ensured safety by continuously enhancing site compliance and effective supervision.</li> </ul>
<b>Fire incidents</b>	89	60	<ul style="list-style-type: none"> <li>Implemented a fair process in HSE Accountability and Behavioural Reinforcement for violations-related incidents.</li> </ul>

## Self-Regulation

In 2023, PETRONAS focused on Self-Regulation Programme implementation to ensure the readiness of our operations for self-regulation certification through compliance with Special Scheme of Inspection regulations and conformance to plant management system requirements. This approach ensures a higher level of compliance with legal and safety standards and facilitates the implementation of effective measures to manage occupational hazards and reduce incidents.

### Key Initiatives for 2023:

Focus Area	Initiative and Value Created
<b>Regulatory and Governance</b>	<ul style="list-style-type: none"> <li>Established supplementary regulatory requirements for the Special Scheme of Inspection Regulations (SSI Scheme B) by developing the Industry Code of Practice for Plant Management System, as well as requirements and criteria for Self-Regulation Qualified Third Party Auditor.</li> <li>Aligned our internal governance and initiatives with self-regulation requirements by mapping Group HSE initiatives and PETRONAS Technical Standards with Special Scheme of Inspection and plant management system requirements, enhancing safety and integrity.</li> </ul>
<b>Structured Assurance</b>	<ul style="list-style-type: none"> <li>Geared up our operations readiness for self-regulation certification by conducting Document Review Audits and Adequacy Audits to validate readiness of occupiers for Self-Regulation Certification.</li> </ul>
<b>Culture</b>	<ul style="list-style-type: none"> <li>Fostered Generative Culture in safety and regulation compliance across PETRONAS by Integrating Self-Regulation Culture Leading Indicators with Generative Culture Effectiveness Metrics for Groupwide implementation.</li> </ul>
<b>Capability and Competency</b>	<ul style="list-style-type: none"> <li>Collaborated with the Department of Occupational Safety and Health and Institut Teknologi Petroleum PETRONAS (INSTEP) to develop Plant Management System Qualified Person (PMSQP) certification programmes, as well as partnered with Project Delivery and Technology division for Risk-based Inspection (RBI) competency development and certification of key personnel.</li> <li>Conducted engagements and workshops on Plant Management System (PMS) and Special Scheme of Inspection Regulations with all Self-Regulation Occupiers and relevant stakeholders.</li> </ul>
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Digitalised self-regulation work processes through PETRONAS Self-Regulation System and integrated it with relevant systems for seamless data and information accessibility by occupiers and relevant stakeholders.</li> <li>Developed a digitalisation roadmap for PETRONAS Self-Regulation System enhancement to support self-regulation programme sustainability.</li> </ul>

- ➔ **100 per cent** completion of structured assurance (Document Review Audit and Adequacy Audit) planned in 2023, with a significant increase of **eight** completed in 2023 compared to four in 2022.
- ➔ **75 per cent** readiness for Self-Regulated Certification achieved for **two Pengerang Integrated Complex** occupiers and **four pilot** PETRONAS operating units.
- ➔ Certified a cumulative total of **38** Plant Management System Qualified Person (PMSQP) for asset integrity, occupational safety and health and process safety.
- ➔ Completion of Industry Code of Practice for Plant Management System (ICOP PMS) in collaboration with the Department of Occupational Safety and Health as supplemental document for SSI Scheme B.

## Positive Social Impact

### Crisis and Incident Management

In 2023, PETRONAS focused on enhancing its crisis and incident management capabilities, employing digital solutions and collaborative efforts to ensure robust and efficient response mechanisms.

#### Key Initiatives for 2023

Focus Area	Initiatives and Achievements
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Enhanced end-to-end process in managing HSE incidents via HSSE Incident Management System (HSSE IMS) for mobile accessibility, centralised repository and prescriptive governance.</li> <li>Enhanced Crisis Management Information System (CMIS) for managing emergencies and crises, with a target of groupwide mandatory utilisation by 2024.</li> </ul>
<b>Fire and HAZMAT Response Management</b>	<ul style="list-style-type: none"> <li>Collaborated with Fire Rescue Department Malaysia (FRDM) for confined space rescue training and proactive engagements.</li> <li>Strengthened PETRONAS Fire Response Services and On-Scene Commanders leadership skills on Emergency Response (ER) preparedness.</li> <li>Initiate a phased withdrawal of Poly and Per-Fluoro Alkyl Sunstances (PFAS) Firefighting foams through site-specific risk management and cost-effective approach.</li> <li>Oversight of technical integrity of firefighting and emergency response equipment through asset life study of aged fire trucks, attestation of Inspection, Testing and Preventive Maintenance performance standards and emergency response capability review.</li> </ul>
<b>Emergency and Crisis Management</b>	<ul style="list-style-type: none"> <li>Strengthened emergency and crisis preparedness through workshops with local authorities and government agencies.</li> <li>Held Disaster Management Collaborative Workshops and Natural Disaster Management Committee Collaborative Workshops.</li> <li>Adopted digital solutions to enhance the experience and support crisis management.</li> </ul>
<b>Oil Spill Management</b>	<ul style="list-style-type: none"> <li>Strengthened Oil Spill Response preparedness for PETRONAS' international operations. Enhanced awareness and adoption of Oiled Wildlife Response for Malaysia operations.</li> </ul>
<b>Incident Learning</b>	<ul style="list-style-type: none"> <li>Developed a multi-pronged approach for HSE incident learning and intensified governance via periodic site verification and attestation programmes.</li> </ul>

### HSE Talent Capability

We intensified our HSE capability building, going beyond dedicated professionals and operation frontliners to our partners and targeted contractor personnel to deliver sustainable HSE performance. In 2023, we significantly advanced our HSE capability efforts through collaboration, digitalisation and comprehensive management strategies.

#### Key Initiatives for 2023

Focus Area	Value Created
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>Enhanced collaboration with Universiti Teknologi PETRONAS (UTP), enriching innovation and knowledge exchange.</li> <li>Engaged subject matter experts in academic activities, including module development and delivery at the Centre for Advanced and Professional Education (CAPE).</li> </ul>
<b>Industry Partnerships</b>	<ul style="list-style-type: none"> <li>Partnered with the National Institute of Occupational Safety and Health (NIOSH) to integrate HSE culture elements into the Oil and Gas Safety Passport learning module, contributing to industry-wide HSE capability development.</li> </ul>
<b>Digitalisation Efforts</b>	<ul style="list-style-type: none"> <li>Developed an action-based HSE Mixed Reality learning for the Working at Height module at the minimum viable product stage, focusing on the actions of scaffolding work.</li> <li>Offered over 40 e-learning modules curated by subject matter experts, for comprehensive HSE learning.</li> </ul>
<b>Contractors Management</b>	<ul style="list-style-type: none"> <li>Aimed to elevate HSE competency among contractors by enabling access to key e-learning modules under the Contractors HSE Frontliners Programme. We rolled out four HSE related e-learning modules to the selected contractors.</li> </ul>
<b>HSE Capabilities and Competencies</b>	<ul style="list-style-type: none"> <li>Developed a five-year HSE capability roadmap, offering capability building programmes for HSE professionals.</li> <li>Managed HSE competent person training programmes, training matrix and enterprise compliance e-learning, extending six enterprise compliance modules to all staff for enhanced HSE awareness.</li> </ul>

#### myHSSE Systems



**Making Prescriptive Possible Because we care.**

The myHSSE digital platform is our one-stop knowledge centre for all PETRONAS health, safety, security and environment (HSSE) matters.

We adopted a single information platform that houses all 15 systems of our HSSE digital solutions. Each system addresses different business pain points, and facilitates users' easier access and fit-for-purpose usage.

We are also enabling users to harness the power of HSSE data to derive insights on HSSE performance, trends, emerging risks and other essential elements needed to make proactive interventions. Group HSE aims to continue bolstering these efforts in moving towards our goal of realising predictive and prescriptive HSSE analytics.



## Positive Social Impact

### Security

#### Why It Is Important

Enterprise security is synonymous with lasting growth and stability, making it a fundamental aspect of sustainability. Robust security controls and practices safeguard against physical and cyber threats for continued resilience. It propels uninterrupted business competitiveness and activities within an increasingly volatile and unpredictable operating landscape.

Complex geopolitical tensions, conflicts, economic uncertainties, insider threats, misinformation and disinformation, and societal fragmentation alongside rapid technological developments underpin existential future realities. Security is ever so critical now as industries navigate and withstand consequences as well as challenges ensuing from shrinking boundaries between physical and digital business dimensions.

A holistic security framework enables progress amid coexistence with exposures ranging from protests to scams and cyber crimes, among others. It ultimately fosters stakeholder trust to secure license to operate. Our dynamic security stand reinforces our commitment towards our people, operations, property and information across our widespread operations, globally, to deliver lasting value creation.

#### Our Approach

PETRONAS adopts a layered depth security philosophy, focusing on prevention as a main mechanism by integrating operational and strategic security acumens for a secured workplace to optimise business efficiencies. The underlying aim is to pursue proactive strategies, measures and mitigations for future-fit security relevant to demands of an energy sector enroute to a decarbonisation pathway.

This includes deploying a suite of physical and technical security solutions catered for the needs of our onshore and offshore operational facilities across various countries, with a priority to prevent untoward occurrences and where necessary, backed by swift response capability. Core to this is continuous investment into our people, streamlined governance practices, tightened physical security controls, technological infrastructure, industry-wide collaborations and fortified in-house security culture.

#### Value Created in 2023

##### Proactive Risk Management

The effectiveness of our security measures and practices is crucial to our business operations. Our proactive initiatives to strengthen our risk management systems include the following:

Initiatives	Our Impact
<b>Ongoing security framework enhancements</b>	<ul style="list-style-type: none"> <li>Streamlined security frameworks, standards and practices for all operational facilities, while deploying advanced monitoring systems for securing high-risk and unmanned assets and pursuing risk-based resource allocation alongside tailored training programmes.</li> <li>Fortified management of security frontliners and response capabilities across the seven domestic regions.</li> <li>Readiness against emerging risks facing national strategic sector.</li> <li>Integrated security exercises and drills across domestic and international operations by identifying vulnerabilities, improving response capabilities, fostering collaboration and ensuring proactive readiness for various security threats.</li> </ul>
<b>Established role of inspectors in the domestic regions Malaysia</b>	
<b>Established drone jammer guidelines for operations in Malaysia</b>	
<b>Implemented security exercises and drills</b>	

## Capable Security Personnel

Our focus on nurturing a skilled workforce is crucial for the sustained success of our business activities and operations. This commitment ensures adept management of security initiatives and strategically positions us to respond effectively amid a fluid and evolving security environment.

### What We Did

- Trained identified security representatives from across the Group at the Security Academy in Malaysia.
- Expanded skills of frontliners in three areas namely Assistant Investigation Officer, Crime Scene Investigator and Certified Drug Screening Tester.
- Attained Technology Specialist certification for identified Group Security Personnel under the Malaysia Board of Technologists, with 90 personnel registered as Ts or Tc.
- Established a dedicated Security Lab at Universiti Teknologi PETRONAS (UTP) in Malaysia.
- Enhanced the capabilities of personnel through external certification programmes such as with Malaysia's National Anti Drugs Agency and Civil Defence Emergency Response Team, respectively.

## Strategic Growth Partnership

We solidified our security response capabilities and preparedness through continuous efforts to build and solidify close ties with various domestic and international stakeholders such as enforcement and security agencies, peers and associations. In doing so, we leveraged mutually beneficial partnerships and business working relationships to elevate security good practices across various domains, capitalising on joint strength and capabilities to advance the security function of the global energy sector.

These partnerships are pivotal in ensuring the sustainable security of our operations.

- Collaborated with the Royal Malaysian Police to combat marine diesel fuel pilferage.
- Provided security insights and decision-making support in contributing towards evacuation of Malaysians from Sudan in April 2023.
- Enhanced strategic partnerships through a Memorandum of Understanding with Malaysian Maritime Enforcement Agency in strengthening collaboration in maritime security, and *Agensi Antidadah Kebangsaan* (National Anti-Drugs Agency) in addressing and mitigating substance misuse matters.
- Led the Security Forum for international and domestic stakeholders featuring a suite of industry experts on subjects cutting across physical and digital security.
- Co-organised the Responsible Security Taskforce Meeting in Kuala Lumpur, Malaysia alongside Ipieca and PETRONAS Group Health, Safety and Environment.
- Organised an awareness session on Voluntary Principal Security Human Rights for Business representatives.

## Positive Social Impact

### Future Driven by Technology

Security is at the forefront wherever we operate. We work around the clock to safeguard our business interests across the globe. We integrate technology with human capabilities to balance our abilities in providing better physical security support and services to our internal stakeholders.

Initiatives	Our Impact
<b>Piloted robot surveillance at the PETRONAS Twin Towers</b>	<ul style="list-style-type: none"> <li>Enhanced monitoring with artificial intelligence and improved surveillance efficiency ensuring 24-hour monitoring.</li> </ul>
<b>Utilised drone technology for security surveillance at PETRONAS East Coast Operations and Pengerang Integrated Complex</b>	<ul style="list-style-type: none"> <li>Replaced diesel vehicles with drones for 30 per cent of patrolling efforts as a sustainable alternative.</li> </ul>
<b>Introduced the Integrated Security Control Center</b>	<ul style="list-style-type: none"> <li>Centralised control and monitoring of security operations, resulting in RM2 million savings through resource consolidation.</li> </ul>
<b>Developed the Mobile Command Centre Vehicle</b>	<ul style="list-style-type: none"> <li>Promoted operational flexibility and fostered sustainability in crisis management by improving security operations through mobile operations.</li> </ul>

### Resilient Security Culture

We proactively pursued initiatives to accelerate better understanding of security across the Group and targeted external stakeholders such as third-party service providers. This included undertaking conventional and unconventional endeavours to inculcate proactive security awareness to actively accelerate and improve security mindfulness across all levels.

What We Did	What Did We Achieve
<b>Jointly implemented the Go To Safety Point Programme at selected PETRONAS Service Stations in Malaysia</b>	<ul style="list-style-type: none"> <li>Equipped personnel with the ability to provide early emergency assistance at more than 1,000 PETRONAS service stations nationwide.</li> </ul>
<b>Launched security-focused campaigns for staff</b>	<ul style="list-style-type: none"> <li>Disseminated awareness posters via the Just One Thing series Groupwide on timely security issues of interest such as scams and tailgating.</li> <li>Organised seven webinars on topics such as Unlocking the Power of Real Time Security Monitoring and The Green Zone.</li> </ul>
<b>Participated in various activities to create security awareness during events that involved dealers and third-party service providers</b>	<ul style="list-style-type: none"> <li>Engaged and raised awareness among contractors on basic security acumen.</li> </ul>
<b>Organised an inaugural two-day Security Exhibition</b>	<ul style="list-style-type: none"> <li>Over 12 exhibitors, and turnout of 385 persons, with 89 per cent quoting a positive learning experience.</li> <li>Showcased security practices and solutions to internal and external stakeholders, enhancing their understanding of security.</li> <li>Launched basic set of security rules to streamline good behaviours, namely, Be Security Smart.</li> </ul>
<b>Championed SecureKidz and SecureRide</b>	<ul style="list-style-type: none"> <li>Inaugural event which rallied security among children through fun and interactive activities.</li> <li>First endeavour deploying sports to raise security as top of mind following a solidarity bicycle ride, coinciding with the National Sports Day.</li> </ul>

## ► Cyber Security

### Why It Is Important

The energy sector has changed significantly, driven by sustainability concerns, geopolitical tensions and technological advancements. There has been a rapid increase in digitalisation, automation and reliance on interconnected information and operational technology systems. This convergence of technologies has made cyber security a significant concern due to the expanding possibility of cyber attacks and made digitalised power systems attractive targets for various threat actors.

Internally, the pressure to innovate rapidly can lead to a tendency to overlook security while implementing new technologies. The interconnected technology supply chain increases the risk of breaches across the oil and gas value chain. This scenario has prompted a surge in interest, innovation and investment in addressing cyber threats facing critical energy infrastructures.

Increased collaborations in the energy industry and globally across organisations such as the World Economic Forum and the United Nations underscores the urgency for a holistic approach to cyber security. The approach must emphasise education, organisational review and collaboration across the industry to ensure readiness and resilience against cyber threats.

### Our Approach

PETRONAS has prioritised building solid capabilities to identify, detect and protect against cyber threats as the foundation of its response and recovery from cyber attacks.

The cyber security strategic programme establishes visibility and context across assets and networks. The programme also implements governance and incident response protocols Groupwide. This approach enforces a risk-based perspective, where risks are identified, assessed and prioritised based on their significance and potential impact. Regular exercises are conducted to simulate potential attack scenarios and filter individual responsibilities during cyber attacks.

The emphasis on education at all levels is paramount, with dedicated efforts to instil secure behaviours and training for technology practitioners in information and operational technology. This comprehensive approach spans multiple functions and layers within the organisation.

### Cyber Security Strategic Direction

Given PETRONAS' evolving business, the industry's volatility and threat landscape, establishing cyber resilience is critical. These challenging scenarios drive PETRONAS' cyber security initiatives to enable cyber resilience to support the business and technology landscape through the following components:

- **Complete Core** – A comprehensive reflection of the current state of business and technology to drive cyber resilience. Fundamental to this work is the consistency of application of this core across the Group.
- **Secure by Design** – Enabling secure practices across procurement, evaluation, design, development, deployment and maintenance of technology across the Group. It identifies and applies the appropriate security controls early and consistently throughout the life cycle of a PETRONAS asset.
- **Zero Trust** – A way of operating where all traffic is assumed to be untrusted, thus needing to be continuously verified and monitored to prevent data breaches and limit internal threats and incidents.

### Value Created in 2023

#### Enabling a Risk-Based Approach in Practice

PETRONAS uses a risk-based approach in cyber security that allows identification of our critical systems more effectively and protect hotspots while ensuring safeguards are in place. In 2023, no major security breaches were observed. We continue to strengthen core cyber security capability to support the evolving business and technology as listed below:

- Achieved ISO/IEC 27001 certification, an international Information Security Management System standard, for PETRONAS Digital Sdn Bhd. Conformity with ISO 27001 means PETRONAS has put in place a system to manage risks related to information security that meets this standard.
- Conducted tabletop exercises for major cyber threat scenarios with the PETRONAS leadership team to establish senior-level awareness and enhance the organisation's readiness to respond to threats.
- Successfully deployed the Identity and Governance Administration system, onboarded 100 applications and centralised access control, streamlining identity life cycle management, enhancing efficiency and significantly reducing security risks.



## Positive Social Impact

### Enabling Capable Personnel

Nurturing a skilled workforce is paramount for our business success. It ensures the effective management of security initiatives and allows us to respond adeptly to a dynamic security landscape.

- Our staff consistently engages in cyber security topics through various channels, including virtual events and boot camps.
- In 2023, structured learning opportunities were enhanced by the introduction of video-based learning to accompany written articles and quizzes. Monthly phishing tests were also conducted to ensure employees remained vigilant.
- We enhanced the capabilities of our cyber security personnel through access to trainings and certifications.

### Supporting the Cyber Security Talent Pipeline

Collaboration with partners is vital. We partner with universities, other businesses within the oil and gas community and government agencies and engaging the wider community to combat cyber threats.

- Throughout October, we organised the Global Cyber Security Month event to enhance cyber security awareness and practices for internal and external audiences. This initiative extended to PETRONAS Lubricants International Italy and PETRONAS Carigali Indonesia, emphasising a global approach to cyber security education.
- We participated in PETRONAS Digital Day events held in Kuala Lumpur and other regions in Malaysia, highlighting the critical role of cyber security.
- To promote cyber security as a viable career choice, we collaborated with universities such as Universiti Teknologi MARA, Kuala Pilah and Universiti Malaya to raise cyber awareness and introduce students to careers in cyber security.
- We continue to work with partners in the cyber security community, such as the National Cyber Security Agency, the World Economic Forum and our technology partners, to explore frameworks and initiatives that can enhance the cyber security pipeline locally and globally.

### Driving Strategic Growth Partnership

We enhanced our security response capabilities and readiness by establishing and strengthening close relationships with various stakeholders in Malaysia and beyond, including enforcement and security agencies, associations and business partners.

- We actively participated in cyber security forums, such as the Cyber Security for Energy And Utilities Forum in Dammam, Saudi Arabia and the Asian Downstream Summit in Singapore, to share insights and collaborate on safeguarding critical infrastructure.
- As a Critical National Information Infrastructures Sector Lead, we collaborated with the National Cyber Security Agency, Malaysia to address cyber threats. We are also members of the National Cyber Security Crisis workgroup, which coordinates activities during crises.
- Engaged Digital Malaysia Petroleum Management (MPM) Line Department to enforce cyber security requirements on their Petroleum Arrangement Contractors. Relevant trainings have been conducted and subsequent risk assessment activities are ongoing.
- Continuous engagement with PETRONAS Groupwide businesses and procurement (Group Procurement and Local Procurement) to enforce cyber security requirements at the early stages of contracting with external parties.
- Completed the enhancement of the third-party cyber security requirements for Petroleum Arrangement Contractors and third-parties. The enhancement includes adding new requirements based on the latest threats and developing customised requirements based on the criticality of system assets. We have completed various third-party risk assessments to ensure appropriate gaps are remediated accordingly throughout PETRONAS Group's supply chain.

# Human Rights

## Why It Is Important

Embedding human rights into all PETRONAS operations is a fundamental responsible practice. We manage human rights risks and impacts across our systems as any human rights breaches can adversely affect the well-being of workers and society, compromise health, safety and environment (HSE), and affect our social license to operate.

## Our Approach

Embedding human rights across our business activities means effectively implementing the United Nations Guiding Principles on Business and Human Rights and upholding our values and standards. Respect for human rights begins with our organisational culture and commitment to ensuring our employees enjoy a safe and healthy workplace. Everyone feels valued and respected, and understands their responsibility to promote human rights through their work. Furthermore we extend our commitment to respecting human rights beyond employees to those we interact with through our operations. Our salient human rights issues are labour and working conditions, community well-being, supply chain and communities.

Labour and Working Conditions	Community Well-being	Supply Chain	Responsible Security
<ul style="list-style-type: none"> <li>Forced and trafficked labour</li> <li>Child labour</li> <li>Condition of employment and work</li> <li>Discrimination in hiring and contractual terms</li> <li>Freedom of association and collective bargaining</li> <li>Workers' health and safety</li> <li>Workers' camp conditions</li> </ul>	<ul style="list-style-type: none"> <li>Community health and safety</li> <li>Access to natural resources for health, cultural needs and livelihood</li> <li>Land acquisition and involuntary resettlement with or without economic displacement</li> <li>Indigenous Peoples</li> <li>In-migration</li> </ul>	<ul style="list-style-type: none"> <li>Contractor or supplier performance related to labour and working conditions, community well-being and security</li> </ul>	<ul style="list-style-type: none"> <li>Use of force and conduct of third-party security</li> <li>Provision of human rights training for staff and third-party security</li> </ul>

Our leaders' approach to human rights starts with clear governance processes for implementation and accountability, led by the PETRONAS Board and Executive Leadership Team.

## Our Policies, Certifications and Frameworks

PETRONAS recognises human rights as a material business risk and is committed to aligning fully with international standards in all areas affecting human lives.

Recently, we strengthened our human rights practices through an updated Human Rights Policy, approved in 2023 and effective in implementation as of 1 April 2024. It is grounded in five key principles:

- 1 Respect and acknowledgement of internationally recognised human rights.
- 2 Adoption of a risk-based approach to human rights due diligence.
- 3 Access to effective grievance mechanisms and remedies.
- 4 Appropriate governance for human rights policy and its processes groupwide.
- 5 Commitment to maintaining disclosure and reporting groupwide.

This policy enhancement allows us to systematically elevate our activities according to international standards.

Amid the energy transition, we have amplified our focus on human rights. Our social performance framework guides environmental, health, safety, socio-economic and cultural impact management. Aligned with the PETRONAS Human Rights Policy, we integrate controls across key systems and processes. For more information on our standards, policies and guidelines on human rights, please visit the PETRONAS website.

## Positive Social Impact

### Due Diligence

We have established standards and due diligence guidelines for Indigenous Peoples, cultural heritage, land acquisitions and settlements. Led by our Social Performance practitioners, we systematically identify, mitigate and monitor human rights issues, extending this diligence to mergers and acquisitions. Transitioning to a lower carbon future, we consistently update processes and tools to assess the impact of new energy infrastructure on human rights. We also collaborate with supply chain partners and share best practices to ensure effective implementation of human rights due diligence.

### Enhancing Implementation of Labour Practices

In our commitment to fostering a fair and supportive workplace environment, we prioritise the well-being and rights of our workforce across all aspects of employment within the organisation. Our policies and practices are crafted to ensure that every individual is treated with dignity and respect, regardless of their background.

With a steadfast dedication to upholding human rights, PETRONAS remains resolute in providing equitable opportunities for employment. We prioritise equality by strictly prohibiting discrimination during our hiring processes, reflecting our dedication to providing equal opportunities for all. As part of this commitment, the organisation has established hiring standards that guarantee fair and inclusive recruitment practices.

Furthermore, PETRONAS firmly upholds the fundamental rights of freedom of association and collective bargaining, recognising the crucial role of empowering workers to voice their concerns and advocate for their interests. PETRONAS acknowledges the requirements for collective bargaining provided by the respective laws of the land in countries where we operate. In 2023, Malaysian-based employees represent 81 per cent of our total workforce, which includes 19 per cent of non-executive employees covered by collective bargaining agreements. Non-unionised non-executive employees have their working conditions and employment terms standardised in line with collective bargaining terms, ensuring consistency across our workforce operations.

Central to our operations is an unwavering focus on workers' health and safety, with comprehensive measures in place to mitigate risks and promote well-being.

### Implementation of Minimum Notice Periods

Employees are given reasonable notice through formal communication when operational changes are implemented. This involves either a one or three-month notice for an employee's exit, depending on their category. If it is not possible to give ample notice, salary payment will be given in lieu of the termination notice period. A voluntary separation offer following a restructuring or transformation exercise would give the affected employees seven to 14 days to accept the offer. This would include a waiver of the contractual termination notice.

For organisations with collective bargaining agreements, PETRONAS has a term of three years, where either party may serve the other three months written notice prior to expiry to negotiate a new agreement. During the term of the collective bargaining agreement, both parties may seek to vary, alter, modify, annul or add to any of the provisions by jointly depositing an agreement to the Industrial Court.

### Upskilling Employee and Transition Assistance Programmes

We provide our current employees the opportunity to upgrade their skills with a variety of development programmes. For employees who are either affected by a termination or are approaching retirement, we offer advisory sessions and training that will assist them in their next phase after their employment at PETRONAS.

PETRONAS has taken proactive measures to manage employment transitions for affected employees. By utilising the services of a third-party provider, PETRONAS ensures the seamless execution of severance procedures that are in alignment with ethical and legal standards.

The engagement encompasses a comprehensive range of services, addressing pre-separation planning and post-Voluntary Separation Programme phases. During the pre-separation phase, the third-party provider offers advisory support and training to stakeholders, facilitating informed decision-making and preparing employees for transition.

In the post-voluntary separation programme phase, the provider offers personalised assistance to separated employees, aiding them in navigating their career transitions and securing re-employment opportunities outside the organisation. These efforts underscore the Company's commitment to responsible human resource management, fostering positive outcomes for both departing employees and the wider community.

### Effectiveness of Implementation and the Outcomes of Policies and Procedures

PETRONAS assesses actual and potential social risks arising from business activities through Social Risk Assessment. The scope of Social Risk Assessment covers four human rights elements, including labour and working conditions, responsible security, community well-being and supply chain management. In 2023, we completed 15 out of 16 planned Social Risk Assessments across PETRONAS with the remaining rescheduled to 2024.

### Access to Remedy

Our grievance mechanisms facilitate open dialogue, prompt solutions and fair resolutions for workers and rights holders. PETRONAS requires contractors to establish similar mechanisms.

For PETRONAS employees, we provide a grievance management platform and whistleblowing channel for any employee with dissatisfaction or complaint concerning their work to freely raise employment grievances or complaints without any fear, prejudice or adverse impact arising from the employment grievance.

Grievance management and whistleblowing processes are designed to be conducted in a fair and transparent manner whereby the employee will be treated with dignity and be free of fear of reprisal.

In 2023, we handled and resolved 25 labour and working conditions grievance reports. During the same period, we also received and successfully resolved 32 community well-being grievance reports.

### Community Engagement

#### Local Community Impacts and Engagement

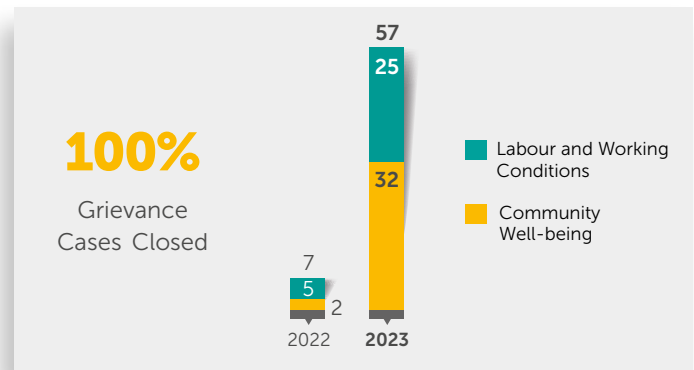
When conducting a Social Risk Assessment, we organise site visits and engagements with rights holders where relevant to gather insights on the project or operations' human rights performance. Among topics discussed during the engagements include land management, cultural heritage, Indigenous Peoples and community health and safety.

#### Indigenous Peoples

We conduct PETRONAS Indigenous Peoples Assessments for new capital projects and ongoing operations to baselines; modification or expansion of existing facilities which may impose an impact on Indigenous Peoples; decommissioning or abandonment of current facilities; and new acquisitions of businesses, facilities or equity in assets.

Free, Prior and Informed Consent practices are required, referring to the rights of Indigenous Peoples to participate in decision-making on issues affecting them. These issues may range from economic development and natural resource management to social development.

To further enhance our knowledge and competency to manage heightened risks related to Indigenous Peoples in



some of our operations, like Malaysia and Canada, we will organise Free, Prior and Informed Consent training in February 2024.

#### Land Acquisition and Involuntary Resettlement

Land acquisition can have a positive or adverse impact on PETRONAS. Acquiring land for projects and operations might lead to either voluntary or involuntary resettlement of communities or economic losses.

PETRONAS manages the human rights aspect of land acquisition and involuntary resettlement through a dedicated team that is responsible for overseeing the process which includes consultation with affected parties prior to the land purchase. We compensate inhabitants in cases of voluntary resettlement as required by the law, covering both physical and economic aspects. We respect the local or Indigenous Peoples' land, passage and usage rights on company-controlled land and conduct comprehensive engagement with local communities and Indigenous Peoples to understand their traditional practices and cultural heritage.

## Value Created in 2023

### Strategic Competence and Skill Development

In 2023, we focused on enhancing our capabilities, specifically in the context of human rights regulations. As a result, we deployed several strategic competence and skill development programmes.

Programme	Achievement	Outcome
<b>Training modules in the HSE Skill Group</b>	<ul style="list-style-type: none"> <li>Established two new human rights training modules on Social Risk Assessment and Grievance Mechanism with <i>Institut Teknologi Petroleum</i> PETRONAS (INSTEP).</li> </ul>	<ul style="list-style-type: none"> <li>Standardised Social Performance training as part of INSTEP's programmes.</li> </ul>
<b>Upskilling sessions for Petroleum Agreement Contractors</b>	<ul style="list-style-type: none"> <li>Upskilled 21 Petroleum Agreement Contractors members on Social Risk Assessment.</li> </ul>	<ul style="list-style-type: none"> <li>Social Risk Assessments conducted by Petroleum Agreement Contractors either internally or via appointed consultants.</li> </ul>



## Positive Social Impact

Programme	Achievement	Outcome
<b>Training modules in Human Resource</b>	<ul style="list-style-type: none"> <li>Developed a training module on Human Rights Management for human resource practitioners.</li> </ul>	<ul style="list-style-type: none"> <li>44 per cent increase in the number of human resource practitioners, skilled with knowledge of human rights management.</li> </ul>
<b>Gap closure of process controls at Corporate Divisions</b>	<ul style="list-style-type: none"> <li>Established line-of-sight responsibilities for human rights management and reporting with Group Health, Safety and Environment overseeing community well-being, Group Human Resource Management overseeing labour, Group Security overseeing responsible security and Group Procurement overseeing supply chain.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent closure of process controls gaps.</li> </ul>
<b>Ipieca's Social Responsibility and Responsible Security Meeting</b>	<ul style="list-style-type: none"> <li>Hosted a three-day Ipieca Social Responsibility and Responsible Security Meeting from 11-13 October 2023. The meeting provided a platform to discuss current and emerging issues and challenges and share lessons learned on policies, implementation and capability development, human rights legislation, and approaches in the Asia Pacific region. Additionally, the meeting included dialogue on just transition.</li> </ul>	<ul style="list-style-type: none"> <li>The meeting gathered ten energy industry players who are Ipieca members to discuss imminent social issues from the lens of human rights and security.</li> </ul>

### Contractors Code of Conduct on Human Rights

We prioritise contractors who align with our values of integrity, anti-bribery and anti-corruption practices. The Contractors Code of Conduct on Human Rights (CoCHR), encompassing principles such as freedom of association and collective bargaining, is compulsory for all PETRONAS contractors. This year, we achieved zero incidents of non-compliance with human rights regulations through the following engagements:

Programme	Achievements	Outcome
<b>Coaching of Group Procurement personnel</b>	<ul style="list-style-type: none"> <li>Provided guidance and training on the CoCHR.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent of Group Procurement Sustainable Supply Chain team personnel upskilled on CoCHR.</li> </ul>
<b>Assessment of Human Rights Due Diligence tools</b>	<ul style="list-style-type: none"> <li>Received external verification on CoCHR Compliance.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent verification completed.</li> </ul>
<b>Assessment of Forced or Child Labour</b>	<ul style="list-style-type: none"> <li>Issued Corrective Action Plans (CAPs) on indicatives of Forced Labour practices such as passport retention, which were closed by December 2023.</li> </ul>	<ul style="list-style-type: none"> <li>No presence of child labour found but minor indications of forced labour practices.</li> </ul>
<b>CoCHR Compliance</b>	<ul style="list-style-type: none"> <li>Completed contractor assessment on CoCHR for cycle 2023.</li> </ul>	<ul style="list-style-type: none"> <li>100 per cent CoCHR assessment completed.</li> </ul>

### Indigenous Rights Due Diligence

In 2023, there were no reported violations involving Indigenous Peoples' rights, and activities related to land acquisition or involuntary resettlement.

### Zero Workplace Discrimination

Adhering to our non-discrimination policy, we conducted regular reviews, strengthened policies and upheld employees' rights to equality without receiving any complaints of discrimination in 2023. We have provisions on unlawful discrimination and workplace bullying and harassment which are provided in the PETRONAS Code of Conduct and Business Ethics and its relevant trainings, conducted for all our employees.

## Supply Chain Management



### Why It Is Important

PETRONAS' supply chain is crucial to its business operations, which extends beyond procurement and logistics. It involves working alongside a vast global network of suppliers offering a diverse range of products and services. We consider ethical and sustainable supply chains, which include respecting human rights, as critical to our operations, and are committed to collaborating with our vendors and suppliers to implement sustainable practices across the value chain.

In 2023, the Malaysian Government launched the National Energy Transition Roadmap (NETR) to accelerate the country's transition from a traditional fossil fuels-based economy to a high-value green economy.

As the custodian of Malaysia's hydrocarbon resources, we are committed to delivering a responsible and sustainable energy transition. We are actively engaging and supporting our suppliers, particularly in the Malaysian Oil and Gas Services and Equipment (OGSE) sector, to ensure sustainable practices and capability building that aligns with our Net Zero Carbon Emissions by 2050 Pathway. Pursuing an inclusive energy transition will create opportunities to build a resilient and sustainable ecosystem that stimulates economic growth and capability development for the future.

### Our Approach

Our approach to supply chain management is to enhance supply chain resilience, a key part of which involves supporting and empowering suppliers, including small and medium enterprises (SMEs). This support not only stimulates the economy but also fosters the development and growth of these suppliers.

Concurrently, our commitment to ethical practices is unwavering, especially in upholding human rights principles across our value chain. By implementing our Contractor Code of Conduct on Human Rights (CoCHR), we ensure that fundamental labour and working condition principles are strictly adhered to. These principles encompass the freedom of labour, the prevention of child labour, fair wages and benefits, reasonable working hours, effective grievance mechanisms, non-discrimination, freedom of association, and the humane treatment of foreign and migrant workers.

Our approach underscores PETRONAS' dedication to maintaining high standards within our operations and also ensuring that our partners and suppliers align with our commitment to sustainability, safety and ethical practices.

## Positive Social Impact

### Value Created in 2023

#### Elevating Sustainability in the Supply Chain

In 2023, we made significant strides in enhancing sustainability awareness within our supply chain, particularly among small and medium enterprises (SMEs).

Initiative	Details and Impact
<b>SME Sustainability Series</b>	<ul style="list-style-type: none"> <li>Collaborated with SME Corp to organise two events in 2023 resulted in the coordination of two events in 2023: "Charting the Pathway for SMEs" in Kuala Lumpur, attended by 281 participants, and a forum "Empower SMEs for Sustainable Growth" during the OGSE Partners Day 2023 in Sarawak, which attracted over 300 participants. These events were aimed at promoting sustainability adoption among SMEs.</li> </ul>
<b>Green Financing</b>	<ul style="list-style-type: none"> <li>Facilitated engagements with Bank Negara Malaysia for a sharing on Green Transition Financing and with Maybank, Bank Muamalat and UOB for a session on the Green Financing Scheme. These efforts alongside vendor involvement, accelerated the understanding of sustainable financing requirements. With insights and resources shared, vendors became empowered to promote environmental sustainability in their operations, boosting their participation in green initiatives.</li> </ul>
<b>Vendor Success Story</b>	<ul style="list-style-type: none"> <li>The SME Sustainability Series and OGSE Partners Day provided a platform for vendors to share their success stories of adopting sustainability practices, encouraging industry players to explore green technology. Among the stories shared included an initiative by a vendor to reduce fuel consumption and promote a healthier working environment by installing solar panels on their Fast Crew Boat. Another vendor emphasised the importance of incorporating sustainability elements into business strategies and provided examples for others to apply.</li> </ul>
<b>Knowledge Sharing</b>	<ul style="list-style-type: none"> <li>A session was conducted during OGSE Partners Day in Kuala Lumpur to discuss the products and services of the Malaysian Green Technology and Climate Change Corporation (MGTC), emphasising MGTC's contribution to supporting the National Climate Change Agenda and Low Carbon Operating System (LCOS) as a tool to expedite progress.</li> <li>Additionally, the session highlighted the significance of SIRIM IQNet SR10 accreditation, which provides companies with a competitive advantage and inspires greater confidence.</li> </ul>

#### Enhancing Supplier Growth and Development

We continue to support our suppliers' growth through various programmes and initiatives, ensuring their development and contribution to the economy.

Programme	Impact and Value Created
<b>Vendor Financing Programme</b>	<ul style="list-style-type: none"> <li>In collaboration with nine financial institutions, this programme facilitates access to financing for vendors and enhances supply chain resilience. The programme has recorded RM1.8 billion in approved applications since 2018.</li> </ul>
<b>Special OGSE (SOS) Financing Programme</b>	<ul style="list-style-type: none"> <li>This alternative financing is available for vendors with less than five years of experience. Over RM41.4 million has been approved since 2022.</li> </ul>
<b>Road to Bursa (R2B)</b>	<ul style="list-style-type: none"> <li>This programme was established to facilitate local vendors' adoption of corporate governance standards that qualify for listing on the Malaysian stock exchange – Bursa Malaysia. Two vendors have successfully listed on Bursa, while another 34 vendors have been coached since 2020.</li> </ul>
<b>Vendor Development Programme (VDP)</b>	<ul style="list-style-type: none"> <li>The programme focuses on nurturing Bumiputera vendors' technical skills, commercial attractiveness, and homegrown technologies development, fostering growth and global expansion, with the ultimate aim of potential listing on the Bursa Malaysia. Since its inception in 1993, it has benefitted 170 vendors, with over 10 vendors entering international markets and some listed on Bursa Malaysia, bolstering resilient Bumiputera SMEs in the Malaysian OGSE.</li> </ul>

## Strengthening Industry Relationships

Our collaboration with industry players and government bodies in 2023 has been pivotal in enhancing our supply chain network and contributing to local economies.

Platforms	Value created
<b>National OGSE Blueprint (NOB) Roadshow by Malaysia Petroleum Resources Corporation (MPRC)</b>	<ul style="list-style-type: none"> <li>Supporting the national agenda to create value for the industry via information sharing platform i.e., National OGSE Blueprint (NOB) Roadshow by MPRC at Johor, Kuantan and Kuala Lumpur.</li> </ul>
<b>OGSE Partners Day 2023 (Kuala Lumpur)</b>	<ul style="list-style-type: none"> <li>Successfully gathered over 1,000 industry players to foster a sustainable and healthy ecosystem through impactful collaboration and engagement with vendors.</li> <li>Held a focus group in collaboration with petroleum arrangement contractors, MPRC and contractor associations to review and discuss the current challenges faced by the industry.</li> </ul>
<b>Commemoration of Sabah Vendors WeCare Sabah</b>	<ul style="list-style-type: none"> <li>Commemorated 25 Sabahan vendors that were awarded major contracts.</li> <li>Engaged with over 300 vendors, providing insights on Sabah outlook and capacity-building opportunities to spur business growth.</li> </ul>
<b>Commemoration of Sarawak Vendors</b>	<ul style="list-style-type: none"> <li>Commemorated 49 Sarawakian vendors that were awarded major contracts.</li> </ul>
<b>OGSE Partners Day 2023 (Sarawak)</b>	<ul style="list-style-type: none"> <li>Engaged with over 500 participants, providing updates on the OGSE programmes and networking sessions to encourage collaborations and partnerships that could enhance their business growth.</li> </ul>

## Fostering Technology and Innovation Through TITAN

Our Technology and Innovation Adoption (TITAN) programmes serve as catalysts to accelerate the adoption of technologies and innovation. These programmes connect vendors with funding facilities, technology accelerators and technology marketplace to commercialise their technology.

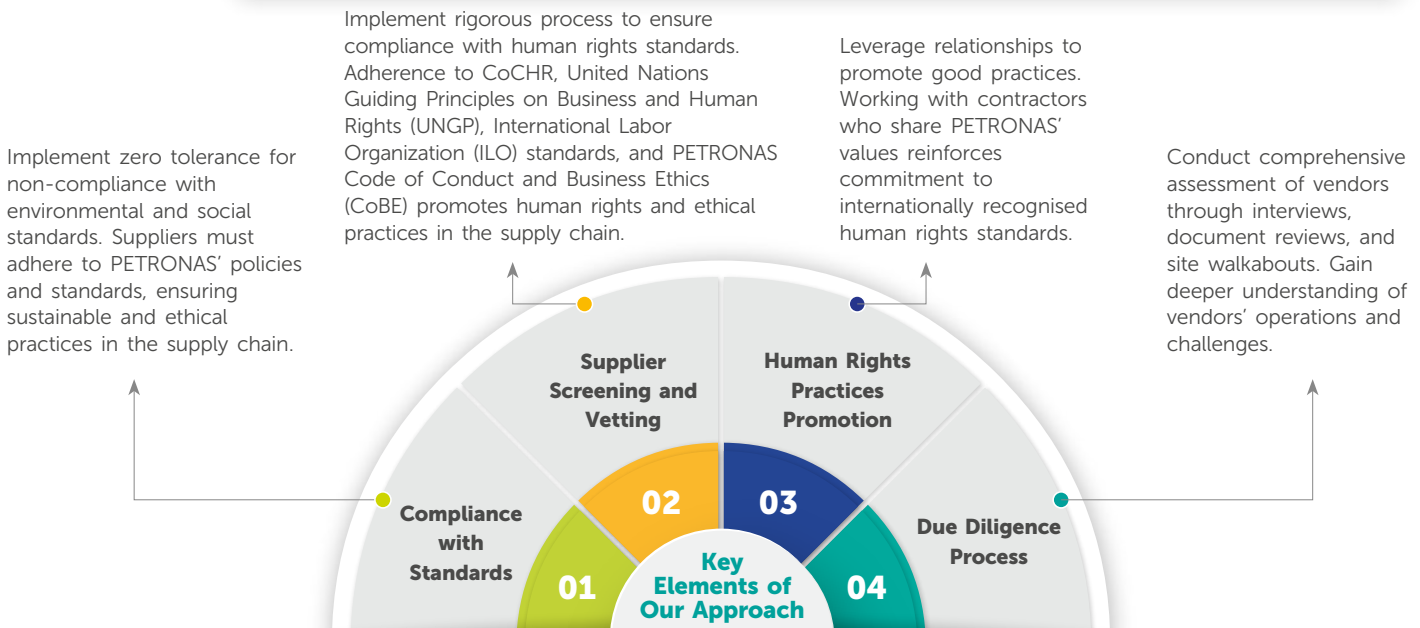
Innovative Initiative	Value Created
<b>Sandbox Offerings</b>	<ul style="list-style-type: none"> <li>Enabled vendors to test and commercialise their technologies by establishing connections and raising awareness of available facilities and scope through collaboration with sandbox providers, such as SIRIM and National Technology Innovation Sandbox (NTIS).</li> </ul>
<b>Collaboration with MPRC for Development Grant Promotion</b>	<ul style="list-style-type: none"> <li>Enhanced support for OGSE vendors in technology, development and export by partnering with MPRC on the MPRC OGSE Development Grant.</li> </ul>
<b>Technology Marketplace Promotion</b>	<ul style="list-style-type: none"> <li>Promoted Innovation Gateway at PETRONAS (IG@P), a technology platform for collaborating with external parties. This initiative enables vendors to offer fast-paced, innovative solutions.</li> <li>Funnelled communication to vendors on PETRONAS' technology agenda and technologies that are currently in demand, such as hydrogen, carbon capture and storage (CCS), advance materials and digital robotics.</li> </ul>

# Positive Social Impact

## Upholding Human Rights and Ethical Practices

In 2023, PETRONAS significantly strengthened its commitment to human rights and ethical practices, which included enhancements to its Contractor Code of Conduct on Human Rights (CoCHR). Recognising the critical importance of these values in our operations, we implemented a comprehensive programme of due diligence and mitigation for contractors.

	Actions Taken in 2023	Value Created
<b>Contractor Response and Risk Identification</b>	Surveyed 1,008 contractors for human rights exposure, identifying high-risk cases for targeted intervention.	Identified 63 high-risk contractors, enabling targeted interventions and improvements in human rights practices.
<b>Participation Rate and Vendor Inclusion</b>	Expanded the CoCHR assessment to include 98 per cent more vendors, with a total of 1,008 participants, compared to 510 in 2022. This represents a 21 per cent increase in participation rate.	Broadened engagement in human rights compliance, reflecting deeper organisational commitment and wider contractor involvement.
<b>Increase in CoCHR Compliance Assessments</b>	Increased CoCHR Compliance Assessments significantly by 173 per cent, totalling 60 assessments compared to 22 in 2022.	Demonstrated a heightened commitment to human rights, with broader compliance and adherence to ethical standards.
<b>Enhanced Due Diligence and Mitigation</b>	Introduced a programme to address high-risk human rights breaches, including corrective action plans for companies with proven violations, focusing on areas such as foreign and migrant workers, document retention, salary deduction, and accommodation standards.	Effective management and resolution of human rights issues in critical areas, ensuring ethical practices.
<b>Awareness of Governance Documents</b>	Sustained and improved awareness for PETRONAS governance documents related to human rights among contractors.	Achieved over 85 per cent awareness among contractors for three consecutive years and narrowed the Code of Conduct and Business Ethics (CoBE) awareness gap to less than 5 per cent from 2021 to 2023.





## Product Stewardship

### Why It Is Important

Ensuring that our products meet regulatory compliance, customer needs, sustainability considerations and stakeholders' expectations is paramount to the PETRONAS brand. We adhere to responsible business practices to ensure that our existing products and upcoming innovative solutions under development align with the highest standards. This includes continuously identifying, assessing and communicating health, safety and environment (HSE) risks throughout a product's entire life cycle. The integrity of product data disclosed would also be further enhanced through product safety and regulatory compliance.

We strive to ensure our products meet stakeholders' expectations by continuously improving regulatory compliance through routine monitoring and reporting practices.

### Our Approach

Our commitment spans a spectrum of disciplines, including product safety and regulatory compliance, toxicology, ecotoxicology and environmental health.

We aim to ensure that PETRONAS products are compliant with all applicable chemical regulations in regions or countries where they are manufactured or traded ranging from product safety, transportation and application sector-specific regulations. This is key in ensuring our products are handled and used in a safe and responsible manner as well as meeting stakeholder expectations while ensuring PETRONAS' license to operate in this important area.

To establish consistency in how Product Safety and Regulatory risks are managed Groupwide, structured processes and expert working groups have been formed within PETRONAS to manage emerging issues such as new reporting requirements under European Sustainability Reporting Standards (ESRS), new hazard classes under the Globally Harmonised System of Classification and Labelling of Chemicals (GHS), emerging the European Union Registration, Evaluation, Authorisation and Restriction of Chemicals (EU REACH) like regulations and many more.

We continue to partner and collaborate with key stakeholders within the industry and along our product supply chain to ensure that our risk mitigation measures continue to be relevant and fit-for-purpose. This is illustrated by our continued commitment to extend programmes such as Raw Material Information Request (RAWMIR) to our international operations. This extension enables us to better profile the oil field chemicals used based on their environmental performance. This aligns with our efforts that go beyond compliance to shape and address material topics such as the environmental impact of producing our products, even from their early stages.

In terms of product sustainability, we have expanded our life cycle assessment efforts to various sectors across PETRONAS' value chain since 2019. This enabled us to assess environmental impacts of our businesses including Upstream, Gas and Downstream, in more than ten categories, including carbon footprint, global warming potential, eutrophication potential and resource depletion to enhance decision-making.

We have actively supported life cycle assessments upskilling across PETRONAS through various platforms, including collaboration with UTP via Centre for Advanced and Professional Education (CAPE). Our approach to life cycle thinking integrates these elements into our operations, encompassing Research and Development (R&D), raw material sourcing, manufacturing, distribution, product application, consumer use and disposal.

The toxicology discipline stands as the cornerstone of our commitment to safeguarding human health and the environment. Recently, we strengthened our product sustainability commitment by establishing an in-house toxicity testing facility to facilitate integrated product safety assessment at the early stages of R&D. The testing strategy is based on Safe and Sustainable by Design (SSbD) approach to identify and minimise the possible health and environmental risks of products, to prevent late-stage drop-out and to manufacture safer and more sustainable products. The currently established test methods, as well as those in the pipeline, are all non-animal approaches and are based on the Organisation for Economic Co-operation and Development (OECD) Guidelines for the Testing of Chemicals.

We continuously assess the ecological risk of our operations towards life below water. The produced water risk-based assessment (PWRBA) was conducted at our selected onshore terminals to address the ecological risk of discharged produced water on sensitive receptors in coastal and marine ecosystems.

Additionally, our teams are guided by international principles, frameworks and standards, including:

- ➔ United Nation's Globally Harmonised System of Classification and Labelling of Chemicals
- ➔ Organisation for Economic Co-operation and Development (OECD) Guideline for the Testing of Chemicals
- ➔ ISO 14040/44 Environmental Management – Life Cycle Assessment
- ➔ ISO 14067 – Greenhouse gases – Carbon footprint of products

## Positive Social Impact

### Value Created in 2023

#### Progressive Life Cycle Assessments

In 2023, we have completed life cycle assessments for 48 products. These efforts have supported PETRONAS Chemicals Group Berhad in completing life cycle assessments for all its domestic products under its Life Cycle Assessment Roadmap. These assessments have created value by:

- 1 Addressing customer requests and supporting low carbon economy
- 2 Augmenting marketable opportunities
- 3 Aligning with PETRONAS Energy Transition Strategy

The team actively contributes in life cycle assessments-related certification, such as International Sustainability and Carbon Certification (ISCC), which emphasises sustainability with an impending rise in carbon footprint evaluations.

The internal methodology in conducting product carbon footprint is specified under the PETRONAS Technical Standard on Life Cycle Assessment for Products. Our methodology is verified by BUREAU VERITAS in accordance with international standards on life cycle assessment and carbon footprint of products in accordance to ISO 14040/44 and ISO 14067. The methodology details mandatory criteria such as data collection and calculation requirements as well as the impact assessments methods. We have also completed life cycle assessments verification for low-density polyethylene and its derivatives and urea.

As part of the continued efforts in integrating life cycle thinking across PETRONAS, the team organised the very first internal Life Cycle Assessment Forum which was attended by more than 100 delegates. The event brought together HSE Leaders, life cycle assessments practitioners and stakeholders across various PETRONAS businesses to share key learnings and achievements throughout the journey in applying life cycle assessments in PETRONAS.

#### Standard and Capability Development of Environmental Health

We are committed to safeguard the health of communities in areas where we operate by proactively conducting Human Health Risk Assessment (HHRA) to evaluate community exposures to chemicals in the ambient environment. We have established a technical standard with the goal to govern the risk management of potential chemical exposures from PETRONAS' operations to the community. By adopting international standards and guidelines on public health, the technical standards aim to strengthen environmental health risk management throughout the facility life cycle such as, from project, operations, merger and acquisition, divestment to decommissioning. With the establishment of the technical standard, a series of communication sessions and workshops across businesses were conducted in 2023 to create awareness and assess readiness to operationalise.

In 2023, we networked with strategic partners in academia, government agencies, and with Environmental Health (EH) experts to collaborate in areas of capability development. As a result, we have identified competence areas that are needed to operationalise EH, and established a groupwide environmental health training matrix and training modules with the goal to upskill resources in meeting PETRONAS' capability needs in environmental health.

In addition, the networking resulted in PETRONAS' participation in the 9<sup>th</sup> National Environmental Health Action Plan (NEHAP) Malaysia Conference as a plenary speaker and technical sharing from the Ministry of Health, Environmental Health Research Centre and the Centre of Toxicology & Health Risk Studies of the Universiti Kebangsaan Malaysia at PETRONAS' event to celebrate World Environmental Health Day.

## Raw Material Compliance Impact

The Raw Material Information Request (RAWMIR) played a pivotal role in securing key product stewardship information on raw materials in 2023. Piloted in 2019, RAWMIR data enabled the identification of Substance of Very High Concern (SVHC) and conflict minerals. The data collected served as a baseline for strategising SVHC management.

What We Did	Our Impact	Our Results
<p><b>Completed RAWMIR for key Upstream international assets (Indonesia, Iraq, Turkmenistan, and Canada).</b></p>	<ul style="list-style-type: none"> <li>Established hazard profile and conflict minerals due diligence of Oil Field Chemicals (OFCs).</li> <li>Served as a baseline for our business to strategise for the reduction in SVHCs used, in support of our biodiversity position and commitment to Kunming-Montreal Global Biodiversity Framework targets to reduce the risk of highly hazardous chemicals by half by 2030.</li> </ul>	<p>No conflict minerals were used in OFCs to date.</p>
<p><b>Enhanced Produced Water Risk-Based Assessment (PWRBA) approach to take into account possible presence of SVHC based on RAWMIR data on Oil Field Chemicals.</b></p>	<ul style="list-style-type: none"> <li>Incorporated selective extension of PWRBA going beyond geogenic substances to also include production chemicals for a more holistic approach in understanding overall risk from produced water from our upstream operations.</li> </ul>	<p>Preliminary analysis on pilot studies indicated minimal risk of SVHC from produced water to the environment.</p>
<p><b>Established the digitalisation of the RAWMIR process for chemical procurement in eCHEMS.</b></p>	<ul style="list-style-type: none"> <li>Streamlined the overall RAWMIR process during chemical procurement across PETRONAS entities.</li> </ul>	<p>Operationalised RAWMIR as business as usual throughout the entire organisation.</p>

## International Best Practice in Product Toxicity Testing

The establishment of PETRONAS Toxicology Laboratory (PeTL) in 2022 reflects the enterprise's commitment and passion for driving the sustainability agenda. PeTL continued its success in 2023, during which the OECD QSAR Toolbox, an in silico method of predictive toxicology, and several non-animal toxicity testing methods have been established for R&D product safety assessment.

Developments in 2023	What We Did
<p><b>Implementation of non-animal testing methods at PeTL</b></p>	<ul style="list-style-type: none"> <li>Successfully established the OECD QSAR Toolbox in silico screening service and non-animal methods for assessing mutagenicity (OECD TG 471 – Bacterial Reverse Mutation Assay), skin sensitisation (OECD TG 442C – Direct Peptide Reactivity Assay), and algae growth inhibition (OECD TG 201 – Freshwater Alga and Cyanobacteria, Growth Inhibition Test) of R&amp;D products.</li> </ul>
<p><b>Staff upskilling</b></p>	<ul style="list-style-type: none"> <li>Conducted targeted training programmes to enhance staff proficiency in the established testing methods.</li> </ul>

## Positive Social Impact

### Sharing Knowledge and Fostering collaboration through Product Stewardship and Toxicology Community of Practice

Through the establishment of a Community of Practice (CoP), the Product Stewardship programmes and best practices were successfully disseminated within PETRONAS' business and operation. It has created a significant value impact through strong collaboration with businesses and relevant stakeholders. During the annual forum, knowledge sharing, networking and replication of best practices were achieved via workshops, forums, interactive booths, technical talk webinars, technical publications and capability building modules which significantly contributed to the company's business growth and sustainability goals. For that success and value impact, Product Stewardship and Toxicology CoP had been recognised as the top performing CoP within PETRONAS.



# Talent Development

## Why It Is Important

In an era of rapid energy transition and technological advancement, we recognise the immense value of a skilled and diverse workforce. Our employees are the driving force behind our strategic vision, particularly in delivering the PETRONAS Energy Transition Strategy and our commitment to achieving net zero carbon emissions by 2050. As the energy sector evolves, new job roles emerge and traditional ones transform, underscoring the importance of continuous talent development.

Investing in talent development is crucial for adapting to these changes. This involves equipping our current and future talents with essential skills and knowledge, aligning them with the demands of a shifting global energy landscape to remain agile, innovative and competitive. By fostering a workforce equipped with advanced skills and diverse experiences, we not only enhance their career growth but also drive our business forward. Our dedication to developing future-ready talent is key to our sustainable growth, positioning us as a top employer and a contributor to economic progress in a low-carbon future.

This was strengthened when PETRONAS was recognised at the HR Excellence Awards 2023 where we were awarded bronze for Excellence in In-House Talent Pipeline Strategy category.

## Our Approach

Our approach to the development of our current talents is twofold: attracting and retaining skilled individuals, and providing opportunities for growth. With a commitment of RM330 million to employee training and development in 2023, we aim to uphold a high-performance culture, ensuring our employees are equipped with the necessary skills, mindset and conduct for business sustainability. Our efforts towards enabling a just transition for our workforce include identifying gaps, understanding workforce needs, providing access to upskilling and reskilling opportunities and collaborating with stakeholders on initiatives that address the needs of the workforce as we progress through the energy transition.

To develop future talents, we offer sponsorship opportunities for undergraduates, postgraduates studies and vocational training through PETRONAS Powering Knowledge, aligning with our energy transition needs and strategic objectives.

Our talent development strategies are anchored on our five key priorities for capability development.



Through our various initiatives, we have achieved results that are at par with, if not higher than, the industry benchmarks. We believe that these outcomes are a testament to our team's hard work and dedication, and we look forward to continuing to improve and exceed expectations in the future.



## Positive Social Impact

### Value Created in 2023

#### Strengthening Our Capability Development Priorities

In 2023, PETRONAS focused on five key Capability Priorities, supported by our in-house and external learning institutions and strong leadership, driving career progression and talent growth.

#### Priority 1: Sustainability

PETRONAS proactively focuses on a combination of awareness programmes and technical in-depth initiatives, empowering our employees to become champions of sustainability, fostering a comprehensive understanding of sustainability principles and equipping them with the necessary skills to develop and implement innovative solutions.

#### Specialty Curated Internal Sustainability Programmes

Programmes	Details
<b>PETRONAS Board Excellence on Sustainability</b>	<ul style="list-style-type: none"> <li>To bolster understanding of sustainability among PETRONAS Group of Directors, equip them to tackle sustainability challenges in a dynamic business environment, and enhance their efficacy at board level.</li> <li>Attended by 25 members of PETRONAS' Board of Directors groupwide.</li> </ul>
<b>Sustainability Excellence</b>	<ul style="list-style-type: none"> <li>This programme is specifically curated for PETRONAS' top leaders to inculcate Sustainability Leadership, where our leaders champion and collaborate across the value chain towards achieving PETRONAS' Sustainability Agenda.</li> <li>141 top leaders who attended were engaged to explore how to integrate sustainability into their business strategies, turn risks into opportunities and adopt a stakeholder-oriented mindset.</li> </ul>
<b>Sustainability Explained</b>	<ul style="list-style-type: none"> <li>To provide clarity on PETRONAS' Net Zero Carbon Emissions by 2050 Pathway and relatability to their roles.</li> <li>79 non-executive technical employees participated.</li> </ul>
<b>Sustainability Masterclass</b>	<ul style="list-style-type: none"> <li>To explain PETRONAS' Net Zero Carbon Emissions by 2050 Pathway, including its positions on nature and biodiversity, and human rights. It also identifies practical decarbonisation actions and key biodiversity areas to drive the organisation towards our net zero carbon emissions goals.</li> <li>Conducted 21 masterclasses attended by 851 employees of all levels.</li> </ul>
<b>Sustainability Network Change Agents</b>	<ul style="list-style-type: none"> <li>The learning programme topics ranged from understanding the United Nations COP 27 and COP 15, climate science and how business need to take action on nature and inequality.</li> <li>150 Sustainability Change Agents were appointed with six learning programmes conducted.</li> </ul>

#### External Programmes

Programmes	Details
<b>Executive Education</b>	<ul style="list-style-type: none"> <li>199 employees completed executive education on sustainability offered by seven credible institutions and programmes: Yale School of Management; International Institute for Management Development; London School of Economics and Political Science, Massachusetts Institute of Technology School of Management, Accounting4Sustainability Academy, The Cambridge Institute for Sustainability Leadership, and The Prince of Wales's Business and Sustainability Programme.</li> </ul>
<b>World Business Council for Sustainable Development (WBCSD) Leadership</b>	<ul style="list-style-type: none"> <li>Two Top Talents attended WBCSD leadership programme to develop the skills needed to be a sustainable development leader and learn about different leadership styles, communication, decision-making and strategies.</li> <li>Two Top Talents attended WBCSD LEAP programme, focusing on women and sustainability, in partnership with Yale University and ESADE Business School. The programme is designed to help women reach senior positions in their companies and ensure that sustainability is both embedded in their leadership and included in their company strategy.</li> </ul>

### Awareness Programmes

Programmes	Details
<b>Enterprise Compliance Awareness of Sustainability e-Learning</b>	<ul style="list-style-type: none"> <li>35,414 employees completed the module.</li> </ul>
<b>PETRONAS Net Zero Carbon Emissions by 2050 Pathway</b>	<ul style="list-style-type: none"> <li>6,142 employees' awareness on the subject was improved through sustainability masterclasses and cascaded via leaders' engagement activities across PETRONAS with the support of PETRONAS Sustainability Network Change Agents.</li> </ul>

### Priority 2: Continuous Improvement, Agile and Innovation

As we aim to progress our growth as a company, we continue to equip our people with updated knowledge, methodologies, skills and the right mindset. We empower our employees with structured continuous improvement methodologies to drive innovation, maximise operational cash flow, and enhance efficiency as part of our commitment to fostering Agile Innovation and Continuous Improvement (CI). This is achieved through three areas:

#### Continuous Improvement

As we rally our employees to develop curiosity and passion in improving our ways of working to realise our business results, we embrace innovation to move towards process excellence with pace via these two engines:

#### Business Process Management

Process integration is key to ensuring sustainable business agility and good governance practices. Fundamentally, Business Process Management (BPM) focuses on process digitalisation efforts, which increased 33 per cent in 2023.

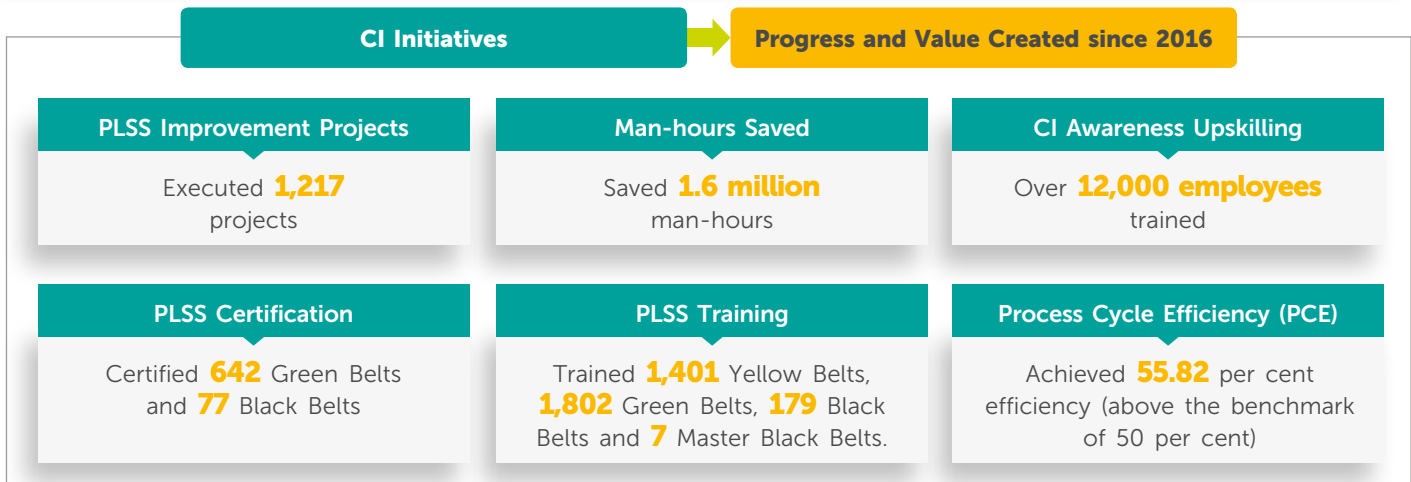
Value Created in 2023	What We Did	Details
<b>Certified employees as Process Managers by American Productivity and Quality Centre (APQC) International</b>	<ul style="list-style-type: none"> <li>Certified 20 process modellers and three BPM Specialists.</li> </ul>	<ul style="list-style-type: none"> <li>These PETRONAS employees were the first batch in PETRONAS and Malaysia to be certified with the prestigious Process Manager certification programme.</li> </ul>
<b>Introduced a new digital capability used for PETRONAS BPM</b>	<ul style="list-style-type: none"> <li>Implemented Process Mining, a tool from Architecture of Integrated Systems (ARIS).</li> </ul>	<ul style="list-style-type: none"> <li>Process Mining provides process performance measurements in terms of efficiency and conformance rates, process transparency and the ability to identify potential improvement or happy path in real-time.</li> </ul>
<b>Established an ecosystem that aligned the operating model to provide clarity and enable seamless integration of human resource processes</b>	<ul style="list-style-type: none"> <li>Developed a Group Human Resource Management Supersystem Map.</li> </ul>	<ul style="list-style-type: none"> <li>The supersystem map is a comprehensive understanding of Group Human Resource Management's process ecosystem and integration towards enabling effective process improvement efforts, strategic alignment and informed decision-making.</li> </ul>

## Positive Social Impact

### PETRONAS Lean Six Sigma

PETRONAS Lean Six Sigma (PLSS) was introduced in 2016 with the intention to shape and upskill PETRONAS employees with continuous improvement capability using proven process improvement methodologies and tools to create simpler, better and meaningful ways of working. PLSS is an internationally accredited programme by the International Association for Six Sigma Certification (IASSC) and The Council for Six Sigma Certification (CSSC).

Value Created in 2023	Details
<b>Enabled PLSS awareness for new hires and career transition</b>	<ul style="list-style-type: none"> <li>Collaborated with PETRONAS Leadership Center (PLC) to enable awareness of CI through Hello Hires Onboarding for new hires and NextSTEP, a career transition programme.</li> </ul>
<b>Established CI programmes for external vendors and partners</b>	<ul style="list-style-type: none"> <li>Offered CI programmes for external vendors and partners through a Master Training Agreement with Centre for Advanced and Professional Education, Universiti Teknologi PETRONAS (CAPE UTP).</li> </ul>
<b>Certified and trained employees with PLSS</b>	<ul style="list-style-type: none"> <li>Upskilled 209 employees in Yellow Belt, 498 employees in Green Belt, and 39 employees in Black Belt.</li> </ul>
<b>Extended training modules to students and graduates</b>	<ul style="list-style-type: none"> <li>131 students and graduates under our industrial training programmes and Graduate Employability Enhancement Scheme (GEES) completed the CI Awareness self-learning module and Yellow Belt training.</li> </ul>



Other platforms such as Community of Practitioners on Process Excellence and Recognition (COPPER) and the Making Impossible Possible Awards and Convention (MIPAC) are important as they offer avenues to unleash talents, ignite passion and sustain momentum across PETRONAS. This progressive effort demonstrated undivided collaboration at all levels in PETRONAS in driving CI in line with our Statement of Purpose.

Value Created in 2023	Details
<b>Community of Practitioners on Process Excellence and Recognition (COPPER)</b>	<ul style="list-style-type: none"> <li>COPPER is held annually as a community of practice that focuses on internal and external leaders' points of views on Process Excellence matters as well as celebrate successful PLSS and BPM practitioners on their achievements.</li> </ul>
<b>Making Impossible Possible Awards and Convention (MIPAC)</b>	<ul style="list-style-type: none"> <li>A platform to steer continuous improvement, innovation and value-focused mindset among employees to push the boundaries towards Operational Excellence.</li> <li>From 292 teams (with 2,043 staff), PETRONAS exhibited CI in action through Operational Excellence League, then from there, 52 finalists competed in the annual MIPAC, a platform that encourages and sustains the momentum of CI and Innovation.</li> </ul>

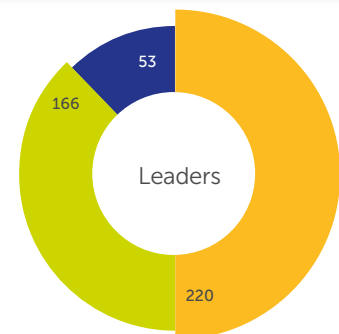
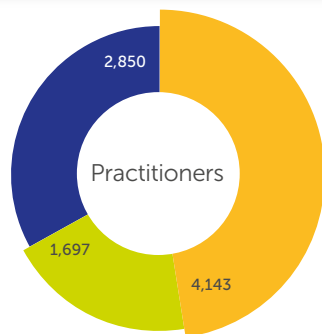
## Agile

Embracing agility is a key component of our talent development strategy. Our ongoing efforts focus on promoting and embedding business agility across the organisation through the adoption of Agile practices, which are categorised into two key areas:

### Agile Capability

Our focus on Agile Capability involves equipping leaders, coaches/experts, and practitioners with the skills and knowledge to effectively implement Agile practices. Together with PETRONAS Leadership Centre (PLC), Agile Enterprise has continuously assessed and designed learning experiences to spur business agility based on good practices across businesses as well as outside-in perspectives.

Key Progress and Achievements	Details
<b>Agile Capability Framework</b>	<ul style="list-style-type: none"> <li>Established to support new ways of working, focusing on developing capabilities in key organisational roles.</li> </ul>
<b>Continuous Upskilling of Employees</b>	<ul style="list-style-type: none"> <li>Upskilled over 10,000 employees through our Agile Capabilities programmes since its launch in 2018.</li> </ul>
<b>Agile Coaching Enablement (ACE)</b>	<ul style="list-style-type: none"> <li>Collaborated with PLC to develop 41 Agile coaches, up from 32 in 2022, fostering a widespread coaching culture. Total of 80 Agile Coaches since 2021.</li> </ul>



**Note:** Data from 2021 to 2023.

- Introduction to Agile
- Professional Scrum Master (PSM I and II)
- Certified Agile Leadership (CAL)
- Beginner's Guide to Agile
- Professional Scrum Product Owner (PSPO I and II)
- 8 Trends of Progressive Organisations
- Others
- Professional Scrum User Experience
- Masterclass "Understanding and Designing Progressive Organisational Structures"
- Agile Coaching Enablement (ACE)

### Agile Awareness

Our initiatives in Agile Awareness are designed to broaden the understanding of Agile principles across the organisation, ensuring that employees at all levels are aligned with the Agile way of working. The focus on Agile Awareness aims to foster a culture that values adaptability and continuous improvement.

Key Progress and Achievements	Details
<b>Continuous communication efforts</b>	<ul style="list-style-type: none"> <li>Reached a total of 36,000 viewers through our 'Be Agile' channel, significantly increasing awareness of Agile ways of working.</li> </ul>
<b>'Rally for Agility' video series</b>	<ul style="list-style-type: none"> <li>Featured key top leaders in this series to rally the workforce towards driving agility, mindset shift, and highlighting initiatives conducted by each business unit.</li> </ul>
<b>Agile Adventures Comic and New Ways of Working (NWOW) Handbook Series</b>	<ul style="list-style-type: none"> <li>Produced seven comic series and three handbook series, offering external perspectives from progressive organisations in driving agility.</li> </ul>

## Positive Social Impact

### Innovation

PETRONAS equips its workforce with structured methodologies such as Lean Six Sigma and Operational Performance Improvement (OPI), fostering a culture of continuous improvement to enhance operational efficiency and maximise cash flow.

The PETRONAS Working Backwards (PWB) Methodology and innovation framework have since expanded to business divisions with the Innovation Masterclass (IM) established as a permanent offering at PLC. In 2023, 17 personnel in Innovation Academy have become in-action coaches ready to lead PWB through IM.

PETRONAS also embarked on implementing key shifts in the innovation ecosystem covering Strategy, Portfolio Management, Execution Discipline and Capability and Culture towards driving more purposeful and effective innovation across the organisation.

Additionally, our training initiatives emphasise innovation and agility, empowering employees to ideate, incubate and scale new ideas swiftly to deliver customer-centric solutions.

Innovation Initiatives	Impact
<b>Innovation masterclasses</b>	<ul style="list-style-type: none"> <li>Over 1,300 employees upskilled in new business and innovation initiatives.</li> <li>This includes two masterclasses in Brazil and Italy customised for PETRONAS Lubricants International (PLI) and two customised IM hackathons involving KLCC (Holdings) Sdn Bhd (KLCCH), PETRONAS Digital Sdn Bhd (PDSB), and Upstream International Asset.</li> </ul>
<b>Practitioners in action</b>	<ul style="list-style-type: none"> <li>More than 200 practitioners via four additional cohorts comprising “sharks”, coaches, programme managers and incubators.</li> </ul>
<b>Awareness training</b>	<ul style="list-style-type: none"> <li>5,184 self-learning modules on PWB, our in-house innovation methodology, were completed via myLearningX.</li> </ul>
<b>Idea registration</b>	<ul style="list-style-type: none"> <li>Over 200 ideas were registered from Enterprise Innovation, of which 138 ideas were registered from IM, with 30 receiving “Compelling” feedback during Shark Tank and 15 high potential ideas progressing to incubation stage. Overall, more than 70 high potential opportunities have progressed into Incubation and Venture Build stages since the inception of PWB in 2021.</li> </ul>
<b>Commercialisation success</b>	<ul style="list-style-type: none"> <li>Two projects progressed to scale, including EV-Charge-Go, for which Gentari secured partnership with BMW for first-in-Malaysia deployment.</li> </ul>

### PING23 Sdn Bhd

PING23 Sdn Bhd, or PING, is a subsidiary of PETRONAS Leadership Centre (PLC) which was incorporated in July 2023 to explore the space of entrepreneurship. It began upon recognising that there are natural entrepreneurs among PETRONAS employees who are passionate about creating something on their own and making an impact beyond their day job.

PING is PETRONAS’ commitment to support its internal entrepreneurs by providing a safe space to identify, incubate, and launch innovation opportunities into deployable solutions and investible ventures, to create value for PETRONAS and beyond.

It offers an entrepreneurship path within conventional employment, by providing them with funding, upskilling, mentoring, and access to testing facilities, coupled with entrepreneur-friendly policies that allow them to devote themselves to their ventures. With PING, PETRONAS hopes to unlock a new stream of innovations, capitalising on the strength and entrepreneurial drive of our own people.

The PING programme runs for four months at the Accelerate stage, where the venture teams that pitched their ideas successfully at PING Open Mic may continue to validate, incubate and accelerate the progress of their project while developing themselves as entrepreneurs. At the end of the four months, the teams pitch their solutions at PING Demo Day where the winning venture teams will further build their ventures for 12 months in the Launch phase before running independently as a start-up.

To date, PING programme has attracted a total of 120 video submissions from across the organisation and has built entrepreneurial capabilities of 46 PETRONAS talents.

We successfully onboarded Cohort 1 to the Launch phase where nine members from the four venture teams signed on with PING23 Sdn Bhd, making them the first PING employees until they spin off their companies. The four ventures were: Tigasfera, an integrated, containerised waste-to-energy solution that supports circular economy; V-Cred, an AI-powered document reviewer and analyser for enterprise; FarmDirect, an agritech venture focusing on a B2B digital integrated marketplace; Jazro, an edutech company providing robototherapy educational programmes for autistic children.





We also successfully onboarded ten venture teams for Cohort 2 to the Accelerate phase in November 2023 with various solutions ranging from personalised AI-assistance for engineers, remote operation of offshore platforms, and a solution to overcome valve passing to reduce flaring and improve safety of facilities.

**Priority 3: Digital**

With digitalisation reshaping the global landscape, PETRONAS has embraced this change by focusing on equipping our employees with advanced digital skills. From AI-enhanced productivity to data analytics for competitive edge, our commitment to digital upskilling is evident in our continued digital literacy programmes through modules available in myLearningX, to accelerate widespread adoption of digital solutions.

PETRONAS was recognised at the HR Excellence Awards 2023 where we were awarded gold for Excellence in Digital Transformation category.

**Leveraging Digital Tools for Growth through Robust Talent Ecosystem**

PETRONAS and our talents have effectively utilised the organisation’s talent ecosystem for growth and advancement in PETRONAS.

Innovation Initiatives	Impact
<b>myLearningX</b>	<ul style="list-style-type: none"> <li>• 241 learning communities on myLearningX.</li> <li>• 32,476 employees who are members.</li> <li>• 34,575 learning objects available for training via curriculum, events, online courses, videos, and external content.</li> </ul>
<b>Effective succession planning for a sustainable pool of leaders via myTalentX</b>	<ul style="list-style-type: none"> <li>• Focused rich talent discussions and data-driven decision-making facilitated by enhanced AI models (Personality and competency archetype via Superior Managed Assessment (SMA) and external assessment data), providing accurate and non-biased snapshots of talents with ranking of the most suitable candidates for critical positions, whilst unearthing hidden talents for Succession Planning (SP) deliberations.</li> <li>• Enabled PETRONAS Talent Council to conduct focused and effective SP based on criticality and business priority.</li> <li>• Achieved the highest ratio of successors to positions for the Succession Planning of Top Management positions, by completing the most Succession Plans in the past five years.</li> <li>• Enriched conversation on SP, talent review and development supported by enhanced myTalentX AI models, detailed experience, and Career Pathing Model.</li> <li>• Achieved 272 myTalentX users consisting of PETRONAS leaders, Global HR Partners, Centres of Excellence and leadership focals as of Q4 of 2023.</li> </ul>

## Positive Social Impact

### Priority 4: Technical and Functional

As PETRONAS ventures into renewable energy, carbon capture and storage (CCS) and remote autonomous operation (RAO), we continue to deliver our Core Business by strengthening the technical and functional competencies required of our talent to succeed in their role and evolve at pace with the business. Through our Skill Group Development Programme (SGDP), we are committed to progressively improve the technical and functional competencies requirement of our talents at all levels to achieve 75 per cent competence by 2025 and ensure relevancy and future-proof our business. The SGDP efforts include establishing new and refining current competency ruler, designing and deploying development programmes for niche and new capabilities, increasing qualified technical and business professional pool, and partnering with industry experts, universities, and providers for knowledge and skill transfer.

Moreover, our diverse upskilling programmes include formal learning and On-the-Job Learning (OJL), enhancing our workforce’s skills to align with future energy transition needs and strategic objectives.

### Fulfilling Future Capability Needs for PETRONAS and Industry

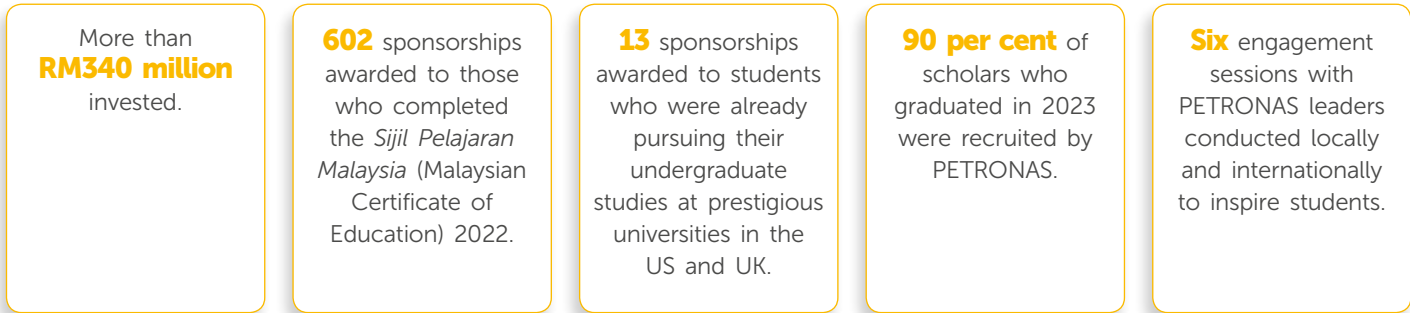
Through **PETRONAS Powering Knowledge**, we offer equitable access to quality education, especially for underprivileged students through sponsorships for undergraduates and postgraduates. Our diverse upskilling programmes, including formal learning, graduate and industrial trainings enhance our workforce’s skills and empower them towards progress, ultimately leaving a positive impact on the world.

In 2019, we set a target to achieve 24,100 beneficiaries from PETRONAS’ Educational Programmes by 2024. In 2023, we exceeded the target with 76,356 beneficiaries.

### Education Sponsorship for Undergraduates

Since 1975, the PETRONAS education sponsorship has enriched the lives of more than 38,000 students from diverse ethnic and economic backgrounds. During their undergraduate years, PETRONAS scholars undergo PETRONAS Readiness for Employment Programme (PREP), a structured development programme to ensure they are continuously nurtured until graduation. Scholars are also given the opportunity to interact with PETRONAS leaders, aiming to inspire and motivate them to reach their full potential.

### IMPACT CREATED IN 2023



Other education sponsorship initiatives by PETRONAS that started in 2023 included the option to pursue studies in marketing in South Korea.

### Education Sponsorship for Postgraduates

This programme, which has been an extension of PETRONAS' education sponsorship for postgraduates since 2018, aims to strengthen students' knowledge and capability in specific key areas through advanced research. This empowers scholars and fosters groundbreaking innovations that align with PETRONAS' growth strategies. To date, 131 scholars have benefitted from the sponsorship enhancing their expertise in areas such as Drilling, Fluid Technology Solutions, Autonomous System (Robotics), Renewable Energy and Carbon Capture. In 2023, we invested over RM11.55 million, benefitting 35 recipients.

### Vocational Institution Sponsorship and Training Assistance

Since 1992, our Vocational Institution Sponsorship and Training Assistance (VISTA) programme has benefitted 35 institutions nationwide where more than RM90 million invested to produce up to 12,000 graduates.



Through this programme, assistance channelled to the selected institutions in terms of infrastructure, training materials, trainers and curriculum readiness is aimed at ensuring that the identified technical training courses can be conducted according to industry standards and produce a competent workforce.

## IMPACT CREATED IN 2023

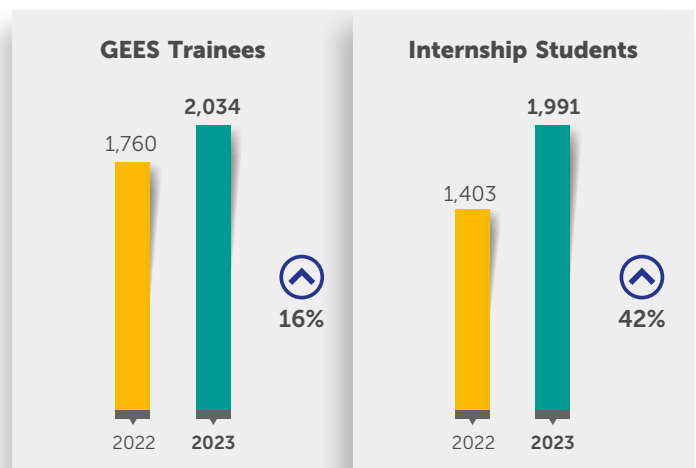
- RM2.8 million** invested.
- Over **600** competent technical graduates.
- 21** Technical and Vocational Education and Training (TVET) institutions selected for VISTA implementation in 2023-2026.
- Provided provision to ensure industry-driven delivery of TVET courses** for trades related to oil and gas including 6G Welding, Chargeman, Scaffolder, Pipe Fitter and oil and gas related diploma courses, such as Petrochemical and Process or Instrumentation.

### Graduate Employability Enhancement Scheme

In support of the Malaysian government's Protégé Ready-to-Work initiative, this 12-month on-the-job training provides new graduates with work experience in enhancing their employability towards securing long-term employment. Since 2011, this programme has since benefitted 6,717 new graduates. In 2023, PETRONAS invested over RM58.48 million to train 2,034 new graduates under the Graduate Employability Enhancement Scheme (GEES) programme.

### Internship Opportunity

Internship opportunities are offered to provide industry experience and learning for undergraduates to gain knowledge outside of their academic setting. In 2023, 1,991 students from local and international universities participated in our internship programme.



## Positive Social Impact

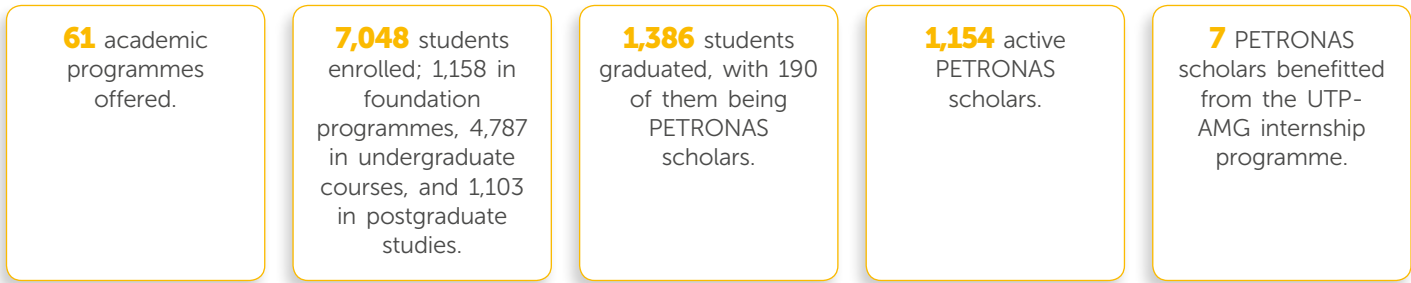
### Building Capabilities through Learning Institutions

As part of PETRONAS' commitment to accelerating holistic people development to foster a future-relevant workforce, we leverage our learning institutions and platforms to provide opportunities for our talents to be upskilled in various areas across the energy industry.

#### Universiti Teknologi PETRONAS

Established in 1997, Universiti Teknologi PETRONAS (UTP) offers courses and programmes at undergraduate, postgraduate and professional levels designed to cater to the needs of the oil, gas and energy industry. In 2023, UTP was ranked 63<sup>rd</sup> in the Times Higher Education Asia University Rankings and 79<sup>th</sup> in the Times Higher Education Young University Rankings. To date, it has produced 25,390 graduates from over 71 countries.

### IMPACT CREATED IN 2023



The UTP-AMG Internship Programme is a strategic collaboration with Mercedes AMG to provide sponsored students the technical knowledge and valuable experiences at the Mercedes AMG Operations Centre in Brackley, United Kingdom.



Scan this QR to access the Universiti Teknologi (UTP) PETRONAS website.

#### Centre for Advanced and Professional Education, Universiti Teknologi PETRONAS

Centre for Advanced and Professional Education, Universiti Teknologi PETRONAS (CAPE UTP) is dedicated to fostering a dynamic learning environment aimed at empowering individuals and teams to reach their full potential. The Centre's mission is to cultivate a culture of continuous learning, leveraging cutting-edge technology to accelerate the development of technical capabilities and drive tangible business outcomes. In 2023, more than 3,000 PETRONAS employees were upskilled through our diverse portfolio of open customised courses tailored to the unique needs of the energy industry.

#### Institut Teknologi Petroleum PETRONAS

Institut Teknologi Petroleum PETRONAS (INSTEP) has trained over 156,000 skilled workers for more than 30 refineries, petrochemical plants, and 100 platforms globally, with clients in more than 50 countries. INSTEP has also initiated a collaboration with Malaysia Petroleum Management on the Petroleum Arrangement Contractors (PACs) Talent Incubators Programme to understand the industry's talent requirement and cater to the increasing workforce demand in Malaysia energy industry.

### INSTEP Achievements in 2023

- 443 students were sponsored at INSTEP as part of the effort to create a sustainable talent pipeline.
- Over RM46 million was invested in the Technical Enrichment Programme, a learning framework focusing on competency and experiential learning.
- Almost 90 per cent of graduates from the 2023 intake have been recruited by PETRONAS.

INSTEP also offers structured development programmes such as Executive Technical Solutions (ETS) and Non-Executive Technical Solutions (NETS) Programmes for engineers and technicians, and Technical Certification Solutions (TCS), competency-based training programmes for employees at all levels. In 2023, more than 19,000 PETRONAS employees and 5,000 industry technical talents were upskilled via 1,234 courses.

INSTEP, PETRONAS' technical training arm, embodies its tagline of 'Experiencing is Enriching' by providing a comprehensive educational experience for our learners and practical exposure to sustainability projects implemented on campus grounds.

Sustainability Efforts at INSTEP	Details
<b>Food Composter House</b>	<ul style="list-style-type: none"> <li>The annual composting of approximately 15,000 kilograms of food waste contributes to the reduction of greenhouse gases that are equivalent to what 6,000 trees can absorb annually.</li> </ul>
<b>SEE CAPEXLESS Project</b>	<ul style="list-style-type: none"> <li>The installation of light emitting diode (LED) lighting and high mast lighting in Non-Process Areas contributes to energy consumption savings of approximately 407,880 kWh per year of energy consumption.</li> </ul>
<b>Rainwater Harvesting</b>	<ul style="list-style-type: none"> <li>The rainwater collected through the drainage system is utilised for maintenance and services and enables INSTEP to conserve both water and energy consumption.</li> </ul>
<b>Solar Photovoltaic (PV)</b>	<ul style="list-style-type: none"> <li>The installation of solar panels on rooftops and training facilities generates 1,927,240 Megawatt Hour (MWh) of clean energy per annum, which amounts close to 30 per cent of INSTEP's overall energy requirement, effectively reducing 1,285 tonnes of carbon dioxide (CO<sub>2</sub>) annually.</li> </ul>

### Akademi Laut Malaysia

PETRONAS continues to shape maritime leaders and professionals in its maritime training academy, *Akademi Laut Malaysia* (ALAM), located in Melaka, Malaysia.

Since ALAM's inception, 6,225 students have enrolled in its cadetship diploma programme, maritime studies programme, able seafarers programme, advanced post sea courses and short courses.

Programmes	Details
<b>Sponsored students at ALAM by MISC</b>	<ul style="list-style-type: none"> <li>829 cadets with a total investment of RM29.6 million, including 157 new cadets in 2023.</li> <li>ALAM provided graduates with employment opportunities by assisting 71 eligible able seafarers to work at multiple shipping companies.</li> </ul>
<b>Introduction of new programmes</b>	<ul style="list-style-type: none"> <li>Introduced 40 new programmes, including four diploma programmes approved by the Ministry of Higher Education to strengthen the academic curriculum.</li> </ul>
<b>Collaborations with learning institutions and industry partners</b>	<ul style="list-style-type: none"> <li>Formed partnerships with five local and five international universities and signed a Letter of Intent with nine industry partners.</li> <li>Expanded local and global academic network and enhanced maritime training, research and services.</li> </ul>



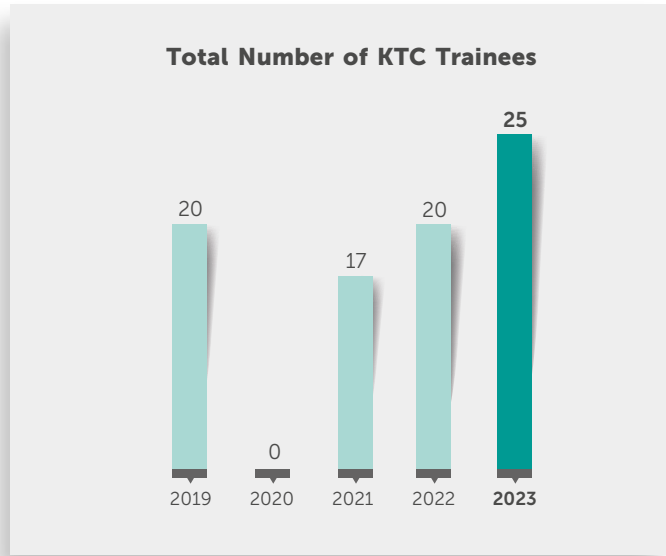
## Positive Social Impact

### Kimanis Petroleum Training Centre

Kimanis Petroleum Training Centre (KTC) is a learning institution established by PETRONAS in 2011 under the collaboration between PETRONAS and Sabah State Government to develop and equip the youths from underprivileged families in Sabah with the necessary skills for them to enrol in the oil and gas industry.

#### Kimanis Petroleum Training Centre

- ➔ Since the establishment of KTC in 2011, PETRONAS has invested more than RM38 million benefitting 256 talents and producing an average of 20 students annually.
- ➔ In 2023, PETRONAS invested around RM4.05 million for the yearly operational expenditure of the institution.
- ➔ KTC is the first Technical and Vocational Education and Training (TVET) institution in Sabah to provide a three-year full-time training in Industrial Instrumentation and Control (Malaysian Skills Diploma) and the first to be recognised as an Accredited Centre by the Department of Skills Development under the Ministry of Human Resources.



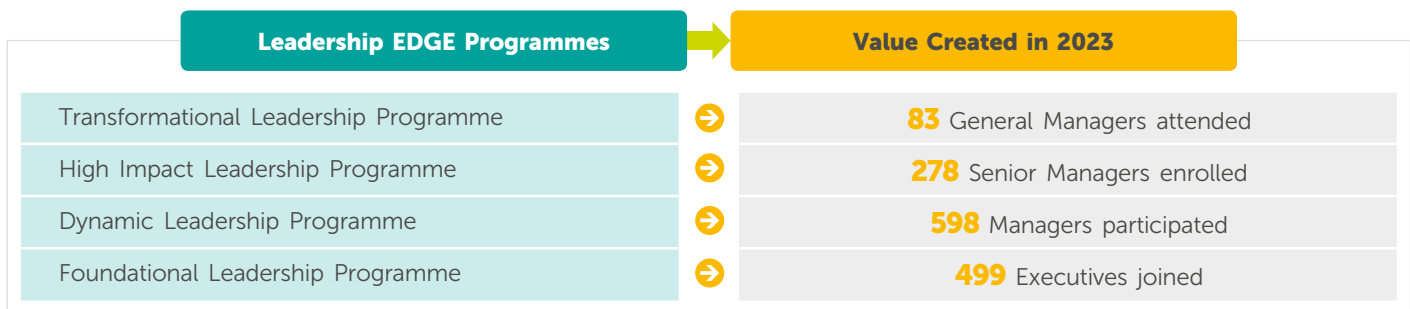
### Priority 5: Leadership

PETRONAS focuses on enhancing leadership capabilities through structured assessment and development programmes. These initiatives are designed to cultivate distinctive strengths in relevant leadership competencies ensuring that talents can deliver the desired results expected from their roles to drive organisational success.

PETRONAS was recognised at the HR Excellence Awards 2023 where PETRONAS Senior Vice President of Group Human Resource Management, Farehana Hanapiah was awarded silver for HR Leader of the Year category. Additionally, PETRONAS was also awarded bronze for Excellence in Leadership Development.

#### Leadership: Energise, Decide, Grow and Execute

We use Superior Managed Assessment (SMA) and external assessments to evaluate talents at their current roles and their readiness for advancement, as well as to identify top talents for key positions. The leadership assessment is done using Leadership: Energise, Decide, Grow and Execute (Leadership EDGE) as a leadership competencies element. Our aim is to achieve a leadership bench strength of 75 per cent by 2025 through the completion of SMA for all talents.

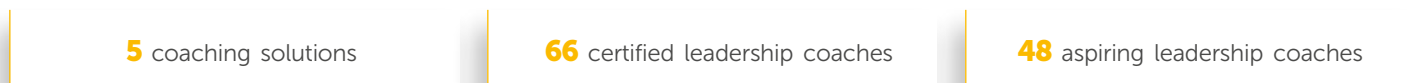


In 2023, a total of 1,458 employees comprising executives, managers, senior managers and general managers attended leadership programmes designed to strengthen and elevate their EDGE competencies.

### Unleashing Potential through Coaching

PETRONAS aims to foster a pervasive coaching culture to nurture employees, grow their capabilities and careers, and drive high performance for organisational success.

In 2023, a total of 1,909 coaches elevated their leadership skills through coaching solutions and services, to lead with clarity, instil psychological safety and excel in decision-making competencies.



Coaching Summit 2023 was held at PLC and served as the premier event for leaders and coaches to enhance their coaching skills, learn best practices, and connect with the coaching community. Themed ‘Building a Sustainable Coaching Culture’, the summit was organised by PLC’s Coaching Academy and registered 1,035 participants comprising PETRONAS leaders, coaches and middle managers. It also featured external speakers Dr Marshall Goldsmith and Dr Peter Chee.

### PETRONAS Leadership Centre

PETRONAS Leadership Centre (PLC) upholds PETRONAS’ commitment to leadership development, garnering significant recognition including four accolades from the esteemed 2023 Brandon Hall Group HCM Excellence Award for Leadership Development namely the Gold Award for Best Development Programme for Frontline Leaders, the Bronze Award for Best Hybrid Learning Programme, and Best Use of Games or Simulations for Learning.

Beyond leadership development, PLC continues to power innovation supported by PETRONAS Innovation Garage (PING), Social Enterprise Education Lab (SEEd.Lab), and FutureTech Accelerator, while also driving sustainability through its campus, programmes and engagements to shape progressive leaders that are poised to become catalysts for change and innovation.

The PLC campus is built to promote environmental consciousness through its green operations. Emphasising on ethical decision-making, collaboration and innovation, PLC aims to cultivate leaders committed to long-term sustainability advocacy and practices. This aligns with our goal to develop leaders who are capable of advancing the sustainability agenda and meeting the evolving needs of our business.

Programmes and Events in 2023	Details
<b>Future Energy Leaders at Energy Asia 2023</b>	<ul style="list-style-type: none"> <li>Launched in 2023 as a subset and prequel of Energy Asia 2023.</li> <li>The two-and-a-half-day programme is aimed at inspiring interest among the next generation of leaders in the energy transition and Asia’s Sustainability Agenda through the exchange of knowledge, insights, and innovations by industry leaders and sustainability experts.</li> <li>The programme successfully gathered 120 university students and young professionals along with 13 thought leaders as panelists to share their insights and passion towards sustainability and sustainable development.</li> </ul>

## Positive Social Impact

### Employee Well-being

#### Why It Is Important

In 2023, we strengthened our focus on ensuring the well-being of our employees by cultivating a psychologically safe environment, and building an inclusive culture for all employees to thrive.

These allow our talents to truly excel and bring their best selves to work, unlocking the full potential of our workforce, fuelling motivation, engagement, and ultimately, driving our business towards greater heights.

We believe that our talents need a nurturing and inclusive environment. This includes encouraging flexible work arrangements, providing access to wellness programmes and a range of other initiatives.

#### Our Approach

The foundations of our strong HR ecosystem ensures that employee well-being is taken care of. This includes channelling the necessary resources to truly understand the unique needs of our diverse workforce.

Anchored on the PETRONAS Shared Values and guided by the PETRONAS Cultural Beliefs, we actively foster a psychologically safe environment and build an intentionally inclusive culture through leadership, governance, communication, education, and cultural initiatives. Our remuneration policy is based on merit. We ensure fair and competitive remuneration for our employees, regardless of gender, age, nationality, ethnicity and religion. On average, wages for employee based in Malaysia is 27 per cent above the national minimum wage.

Our commitment to diversity and inclusion is steered by the PETRONAS Diversity and Inclusion (D&I) programmes, supported by our Wellness Steering Committee.

#### Value Created in 2023

##### Building A Psychologically Safe and Inclusive Culture

PETRONAS made significant strides in enhancing psychological safety and fostering an inclusive culture within the organisation. Our talent composition included 29 per cent women, representing an upward trend in gender diversity in our workforce.

Following this, our permanent employee base comprised 30 per cent women, while our contract employee segment showcased a notable 32 per cent women representation. These figures not only reflect our commitment to gender inclusivity but also serve as a testament to our ongoing efforts in creating a workplace where diversity is celebrated and valued. By prioritising the empowerment and advancement of women in our workforce, we reinforce our dedication to fostering an environment where everyone has equal opportunities for growth and success.

Additionally, our team is now more culturally diverse than ever, comprising over 100 nationalities with 42 per cent of our workforce being under 35 years of age. This diversity enriches our workplace with a multitude of perspectives, driving innovation and better outcomes. Throughout the year, we focused on the following areas to build D&I:

**Focus 1:  
Leadership and  
Governance**

**Focus 2:  
Communication**

**Focus 3:  
Education**

**Focus 4:  
Culture**

## Focus 1: Leadership and Governance

While leadership sets the tone for organisational culture, effective governance ensures that diversity and inclusion are not just concepts but practiced values. Across our global operations, the majority of our senior management positions are held by members of their respective local communities. At our primary operational hub in Malaysia, 94 per cent of senior management roles, encompassing General Manager and above, are held by Malaysians.

### Leadership

Overall results were encouraging in 2023, we continue to strive and drive immersion of D&I in PETRONAS which is reflected in the following:

Focus Area		Target (%)	2023 Dec 2023 (%)
<b>Gender</b>	Women in Senior Leadership	28	31
<b>Multinational</b>	Multinationals in Senior Leadership	11	9
<b>Age</b>	Young employees (35 years and below) involved in project leadership roles	25	43
<b>Culture</b>	Different perspectives respected and valued*	3 <sup>rd</sup> Quartile	3 <sup>rd</sup> Quartile

\*Measured using employee survey, PETRONAS Organisational Culture Survey (POCS) 2023.

### Appointment of Senior Management in National and International Governing Bodies

Governing Body	Appointment	Impact Created
<b>Ministry of Women, Family, and Community Development of Malaysia</b>	PETRONAS Senior Vice President of Group Human Resource Management, Farehana Hanapiah as a permanent member of the National Council for Women and Family for 2023-2025 Term.	<ul style="list-style-type: none"> <li>Worked with esteemed leaders from various industries on women empowerment and gender equality initiatives and efforts from May 2023.</li> <li>Inaugural council meeting took place on 29 August where members discussed the increased participation of women in the workforce.</li> </ul>

## Positive Social Impact

### Diversity and Inclusion

What We Did	Value We Created
<p><b>Reviewed the membership of the Diversity and Inclusion (D&amp;I) committee</b></p>	<ul style="list-style-type: none"> <li>Strengthened the line up of the D&amp;I committee with the aim to have diverse members to promote inclusive decision-making.</li> <li>Appointed Azrul Osman Rani, Vice President and Chief Executive Officer, PETRONAS Dagangan Berhad as the new PETRONAS D&amp;I Champion.</li> <li>Additionally, appointed other senior leaders into the committee, such as the Senior Vice President of Group Human Resource Management, the Vice President and Chief Sustainability Officer and representatives from PETRONAS' Group Legal Division.</li> </ul>
<p><b>Authorise key documents with the intent to provide strategic directive in immersing inclusion and fostering a psychologically safe working environment.</b></p>	<ul style="list-style-type: none"> <li>Endorsed the D&amp;I roadmap 2024 and 2025 outlining key PETRONAS activities in driving immersion and heightening awareness of D&amp;I.</li> </ul>

PETRONAS' involvement in the D&I workstream within CEO Action Network (CAN) solidified us as a reputable organisation that not only promotes D&I within the organisation, but in our external collaborations as well.

### Top Leaders Dialogue

Top Leaders Dialogue (TLD) plays a crucial role in shaping the behaviour and mindset of PETRONAS' leadership (Senior General Managers and above), influencing the organisational culture within PETRONAS by setting the tone from the top and establishing a role model culture.

In collaboration with PETRONAS Leadership Centre (PLC), and to continue fostering a positive and psychologically safe workplace, three TLD sessions were conducted in 2023 with well-known industry thought leaders. One of the sessions also included participants who were General Managers.





## Governance

### → PETRONAS Chemicals Group Berhad

- Listed as the Top 10 per cent Companies for Three Consecutive Years in the Dow Jones Sustainability Indices (DJSI) for World and Emerging Markets (Chemicals Industry).

### → PETRONAS Dagangan Berhad and PETRONAS Gas Berhad

- Recognised as constituents of the FTSE4Good Bursa Malaysia Index, which is designed to allow investors and stakeholders to measure the company's performance in ESG practices.

## Focus 2: Communication

Continuous communication and engagements across businesses reinforce an inclusive culture, ensuring diverse voices are heard and integrated.

### Internal Communication

Key Activities	Details
<b>Upstream D&amp;I Showcase 2023</b>	<ul style="list-style-type: none"> <li>• Received 150 in-person attendees and 137 virtual attendees.</li> </ul>
<b>Sharing Our Similarities, Celebrating Our Differences Sharing Session</b>	<ul style="list-style-type: none"> <li>• A collaboration between Holding Company Units (HCU) and PETRONITA, the panel session focused on the meaning of inclusion particularly gender, age and culture.</li> </ul>
<b>D&amp;I conversations and focused group discussions</b>	<ul style="list-style-type: none"> <li>• A collaboration between businesses across PETRONAS: Downstream, PD&amp;T, Gas and PETRONAS Leading Women Network (PLWN) via HR &amp; You.</li> <li>• Topics covered included female empowerment, neurodivergence and PETRONAS' efforts on D&amp;I as a whole.</li> <li>• A total of 2,200 PETRONAS employees attended the sessions.</li> </ul>
<b>Regional sharing sessions on D&amp;I</b>	<ul style="list-style-type: none"> <li>• Organised by Downstream business for employees at PETRONAS Refinery and Petrochemical Corporation Sdn Bhd in Pengerang, PETRONAS Chemicals Fertiliser Kedah Sdn Bhd in Gurun, PETRONAS Chemicals Group Berhad plants in the East Coast area, and Malaysian Refining Company Sdn Bhd, Melaka.</li> <li>• The series also reached PETRONAS international employees in South Africa, Thailand, Indonesia, China, Vietnam, and the Philippines via various virtual sharings and forums.</li> </ul>

## Positive Social Impact

### External Communication

PETRONAS continued to play a progressive and nurturing role internally by advancing the D&I agenda and externally through our participations in key programmes, leveraging Employee Resource Groups, particularly PETRONAS Leading Women Network (PLWN). These events provided a global space for PETRONAS to feature its journey, efforts and findings on D&I, alongside senior leaders from other companies.

Key Programmes	Details
<b>CERAWeek 2023 (Spotlight Dinner   Diversity in the Workforce: Creating Value)</b>	<ul style="list-style-type: none"> <li>The talk, for which PETRONAS Senior Vice President of Group Human Resource Management was a panellist, spoke on unlocking potential leveraging Diversity, Equity and Inclusion (DEI).</li> <li>It called upon organisations to look deeper at its processes and practices, and to have the fortitude to challenge the status quo to enable change, anchoring on data analytics.</li> </ul>
<b>PETRONAS Lunch Escape in collaboration with Malaysian Press Institute</b>	<ul style="list-style-type: none"> <li>The annual networking lunch with the Public Relations and Communications industry spotlighted a panel discussion themed “Elevating D&amp;I: Fuelling Innovation and Collective Success” towards creating more diverse, equitable and inclusive environments.</li> </ul>
<b>Women in Energy Conference, co-hosted by the United States Embassy and Malaysia Women in Energy (MyWie)</b>	<ul style="list-style-type: none"> <li>The panel session of “A Just Energy Transition: The Critical Role of Women” featured PETRONAS Senior Vice President of Group Human Resource Management.</li> <li>This is a platform where PETRONAS Leading Women Network co-organised with Shell Women’s Action Network or SWAN (Shell), Sarawak Energy Leading Women Network or SELWN (Sarawak Energy), and Malaysian Gas Association (MGA) together with the United States Embassy.</li> </ul>
<b>Women Global Leadership Conference (WGLC) 2023 in Houston, Texas, United States</b>	<ul style="list-style-type: none"> <li>Two members of the Senior Management from PETRONAS (Global Human Resource Partners Downstream and Project Director BIGST) were invited as keynote speakers concerning women empowerment in the energy space.</li> </ul>
<b>Business Commission to Tackle Inequality (BCTI) Asia Roundtable 2023</b>	<ul style="list-style-type: none"> <li>Hosted a one-day BCTI Roundtable Asia in June 2023 with a total of 16 roundtable delegates.</li> <li>The roundtable aimed to initiate discussions in infusing an Asian perspective to the topic of inequality in formulating the right action plans for Asia. The discussions were conducted based on the insights presented in the BCTI Flagship Report which provides a clear framework by outlining six categories of action.</li> </ul>
<b>World Business Council for Sustainable Development (WBCSD)</b>	<ul style="list-style-type: none"> <li>Selected employees across Group Human Resource Management were invited to attend the masterclass to empower teams with the right knowledge and tools needed to enhance our understanding for DEI.</li> </ul>
<b>Energy Asia 2023</b>	<ul style="list-style-type: none"> <li>PETRONAS Senior Vice President of Group Human Resource Management joined a panel of international speakers for a session on Creating Asia’s Energy Workforce of the Future to discuss the challenges and enablers in creating Asia’s future energy workforce, from collaboration, diversity and inclusion, transformational leadership, and change management.</li> </ul>

### Focus 3: Education

Continuous learning is key for employees to adapt to evolving workplace dynamics and fostering an inclusive environment. With that intent, we conducted six hybrid engagement sessions for all employees called the Brown Bag Series centred around PETRONAS' 2023 focus area on cultivating psychological safety in the organisation featuring various leaders and topics. The Brown Bag Series was launched in 2016 as a lunchtime engagement platform.

#### Infusing Diversity and Inclusion

In 2022, PETRONAS introduced the Conscious Inclusion (CI) programme to upskill leaders on Diversity and Inclusion (D&I). In 2023, we intensified the roll-out of CI to embed D&I practices in key talent-related conversations.

<b>Completion of Conscious Inclusion Programme</b>	→ 573 leaders across businesses were upskilled and 30 per cent (109) out of the total are members of PETRONAS' People Development Committee (PDC), encouraging the shifting of perspectives and mindset, and practicing inclusive skillsets and behaviour.
<b>Implementation of D&amp;I Awareness Module on Existing Platforms</b>	→ 1,856 leaders attended the one-hour awareness module which was incorporated in programmes such as iConnect (HCU), Upstream Middle Manager Connect, Transformation Leadership (PLC), Talent Profile Campaign (emb.arc, a human resource transformation project) and Commercial Upstream.

#### Programmes for Middle Managers

PETRONAS provides multiple programmes aimed at training and moulding middle managers into leaders who can role model positive behaviours. In doing so, we can cultivate a psychologically safe work environment and internalise the right culture to achieve business results. The programmes include i-Connect, where General Managers and above facilitated for middle managers, emphasising accountability and highlighting the role of leaders as culture shapers.

Initiatives/Programmes	Impact
<b>i-Connect</b> <b>Industrial Relations for Leaders</b> <b>Targeted Learnings for All Talents</b>	<ul style="list-style-type: none"> <li>Upskilled 2,721 middle managers</li> <li>56 per cent (3,900 employees) of the targeted group attended in 2023</li> <li>Generative HSSE Culture leadership programme</li> <li>Legal compliance awareness through e-learnings</li> </ul>

## Positive Social Impact

### Focus 4: Culture

PETRONAS will continue working systematically towards an inclusive culture through various initiatives and learning programmes as well as create a culture where every team member feels valued, heard and empowered to contribute their best.

We recognise that a psychologically safe workplace not only nurtures individual well-being but also fuels innovation, collaboration, and overall organisational success.

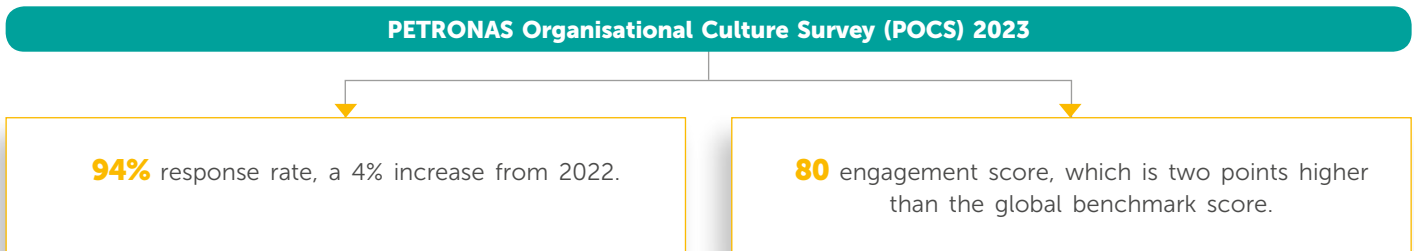
### Regular Conversations

Our dedication to holistic development of employees is fundamental to who we are as an organisation and is exemplified by 100 per cent of eligible men and women employees undergoing regular performance and career development reviews, comprising Performance Review (Goal Setting and Check-In) and Career Development Review (Competency Assessment and Career Conversation).

### PETRONAS Organisational Culture Survey

The PETRONAS Organisational Culture Survey (POCS) provides management with valuable insights from employees, aligning with our commitment to fostering talent and supporting career growth within a safe environment.

POCS measures six critical areas that have impact on employee engagement. They are Purpose, Clarity, Growth, Connection, Empowerment and Well-being. This employee survey is conducted annually to understand and monitor levels of employee sentiment and identify areas of improvement. Additionally, we conducted the inaugural POCS Pulse, allowing us to measure the effectiveness of our efforts at mid-point from POCS2022.



### Flexible Working Arrangement

In 2023, PETRONAS continued to make revisions to Flexible Working Arrangement (FlexiWork), keeping the office as the default location and turning it into a dynamic hub of collaboration, inclusivity, innovation and growth, where ideas are allowed to flow seamlessly.

PETRONAS was recognised at the HR Excellence Awards 2023 where we were awarded silver for Excellence in Hybrid Working category.

## Neurodiversity

In 2023, PETRONAS began a partnership with Ernst and Young Consulting Sdn Bhd (EY) to grow PETRONAS' talent pool to include neurodivergent talents, leveraging their diverse perspectives and innovative thinking that are critical in developing a workforce of the future whilst promoting its awareness across the organisation.

Initiative	Details
<b>Neurodivergent Hires at Project Delivery and Technology (PD&amp;T)</b>	<ul style="list-style-type: none"> <li>PETRONAS enhanced our digital talent pool by hiring neurodivergent individuals in 2023 through a four-step neuroinclusive candidate assessment process.</li> <li>This strategic inclusion has not only amplified productivity but also sparked innovation within our teams. For example, harnessing the pattern recognition skills inherent in one of our neurodivergent talents led to the automation of 4,800 incident tickets, saving 720 hours of work. Moreover, tapping into the neurodivergent strength of challenging the norms, two departments were able to improve their new joiners onboarding programmes. The testing team accelerated their learning speed by one month while the Monitoring and Security Operations Centre team had significantly enhanced the clarity of their instructional manuals, reducing the upskilling period for new hires by three months.</li> <li>In creating a neuroinclusive work environment, a support ecosystem was established comprising the Neurodiverse Centre of Excellence (NCoE) Manager, Line Managers and Buddies (peer appointed to assist the neurodivergent talents) and external Job Coach. Extensive upskilling and coaching sessions were conducted to ensure they are equipped with the right skills to cultivate a sense of belonging and oversee the integration of neurodivergent talents into the workforce.</li> </ul>

## Persons with Disabilities

PETRONAS strongly believes that individuals who are differently-abled should be given the opportunity to be part of mainstream economic activity.

Initiative	Details	Value Created
<b>Employment of Persons with Disabilities (PWD) in a pilot programme</b>	<ul style="list-style-type: none"> <li>Initiated by PETRONAS Dagangan Berhad (PDB) in collaboration with ENOKU, a social enterprise under SEEd.Lab, to provide employment opportunities for PWDs leveraging its network of retail station dealers.</li> </ul>	<ul style="list-style-type: none"> <li>PWD individuals were employed at petrol station outlets.</li> </ul>
<b>Establishment of inclusive ecosystem, mindset and culture</b>	<ul style="list-style-type: none"> <li>PDB ensures the development and empowerment of the right ecosystem, mindset and culture for D&amp;I implementation including its hiring strategy.</li> </ul>	<ul style="list-style-type: none"> <li>PWD talents were hired through PDB Management Trainee programme.</li> </ul>



## Positive Social Impact

### Integrity

At PETRONAS, we are deeply committed to upholding the highest level of integrity to create a safe space for everyone by safeguarding and protecting our employees from involvement in activities that could jeopardise duty of good faith, fidelity, diligence and integrity. Our adherence to PETRONAS’ Shared Values and the Code of Conduct and Business Ethics (CoBE) maintains the organisation’s integrity and reputation, and becomes part of the employee’s lived experience.

We continue to implement existing mitigations to manage corruption risk through targeted learnings, leaders engagement and campaigns on integrity, systematic review and monitoring through the Anti Bribery Management System (ABMS) ISO recertification, employee declarations and management oversight platforms such as the PETRONAS Integrity Awareness Committee.

What We Did	Value Created
<b>Revised Code of Conduct and Business Ethics (CoBE)</b>	<ul style="list-style-type: none"> <li>Enhanced ethical guidelines and Employee Declarations, aligning with the CoBE updates made effective in August 2022 and the Country Supplement (Malaysia) in January 2023.</li> </ul>
<b>Employee Declaration of Activities</b>	<ul style="list-style-type: none"> <li>Introduced the annual Nothing to Declare attestation to employees of PETRONAS Common T&amp;C* Group Malaysia alongside existing declarations of involvement in activities. This has strengthened our integrity commitment, nurturing honesty and accountability, and fostering trust within the organisation.</li> </ul>
<b>Employee Declaration of Assets</b>	<ul style="list-style-type: none"> <li>Implemented Declaration of Asset via myAsset platform with nearly 100 per cent compliance by PETRONAS Common T&amp;C* Group Malaysia employees, as part of our endeavour to enhance the organisation’s capacity to evaluate, mitigate, and monitor risks stemming from integrity issues.</li> </ul>

*\*The PETRONAS Common T&C refers to the companies that share similar terms and conditions in Malaysia operations.*

### Trade Unions

Collaborative relationships with trade unions are crucial for co-creating solutions that support business strategies such as the PETRONAS Sustainability Agenda and Trade Union Act 1959 amendments, and employee well-being such as Social Security Organisation (SOCSO), Employees Provident Fund (EPF), and Amanah Raya Berhad. In 2023, a total of 29 engagement sessions were conducted.

In 2023, **8,266** Malaysia-based employees (78 per cent of the overall non-executive pool) were categorised as Unionised Employees.

### Union Management



PETRONAS’ approach in Union Management includes effectively balancing formal and informal communication to ensure inclusivity and transparency.

Trade Union involvement in PETRONAS’ strategic initiatives aims to provide support, fostering a collaborative work environment that shapes the success of our shared goals.

Our engagement is extensive and representative, bringing together a variety of viewpoints and ideas necessary for our continued progress and innovation.

## Employee Assistance Programme

myFriends is an Employee Assistance Programme (EAP) that is part of PETRONAS' effort to care for the welfare of our employees by creating a psychologically safe space for all, where they are encouraged to speak up. It provides psychological support services designed to enhance individual resilience, alleviate emotional strain, and eradicate the societal stigma associated with mental health challenges.

### ▶ In 2023

**338**  
employees  
received  
counselling with a  
total of 1035.73  
hours

- ➔ An increase of 21.15 per cent from 2022 in number of employees utilising the service, demonstrating employees' willingness to address personal or professional challenges and issues. This also promotes a culture that prioritises well-being and personal growth.
- ➔ An increase by 81.98 hours (8.59 per cent) to 1,035.73 hours from 2022.
- ➔ 2,427 individual sessions were conducted, an increase by 864 (55.27 per cent) from 2022.
- ➔ 1,581 calls to the EAP Careline were made, an increase of 884 calls (126.83 per cent) from 2022.

## Clubs and Associations

### PETRONAS Sports and Recreation Club

PETRONAS Sports and Recreation Club (KSRP) promotes team camaraderie among employees through sports and recreational activities that encourage a healthy lifestyle and well-being. In 2023, KSRP also created a TikTok account to be more inclusive across all ages and engage with its younger demographic through its initiatives via the platform.

**18,699** members in 2023

**13,487** members participated in **250** various activities organised by KSRP across six regions in Malaysia

### Association for Wives and Women Staff of PETRONAS

Association for Wives and Women Staff of PETRONAS (PETRONITA) was established to foster unity amongst PETRONAS employees' spouses and female employees through recreational, charitable, and experience-sharing activities. As at 2023, the association had 5,584 members.

### PETRONAS Leading Women Network

PETRONAS Leading Women Network (PLWN) is a strategic initiative launched in 2015, dedicated to advancing gender inclusion within PETRONAS as part of the D&I Statement. It aims to empower the women workforce, fostering a work environment that is both enabling and fulfilling in line with the company's D&I goals. The network also seeks to promote gender inclusion across the organisation by encouraging all employees to actively support this cause and thereby drive meaningful organisational change.

PLWN is led by a committee of 20 leaders from across PETRONAS who reflect the initiative's commitment to diversity and inclusion.

### Young Professionals Club

Young Professionals Club (YPC) is a progressive community that serves as a platform to unite and empower PETRONAS' young talents. The club collaborates with various internal and external stakeholders for their activities and initiatives.

**19,909** members as at 2023

**3,908** new members in 2023

## Positive Social Impact

### Community Engagement and Enrichment

#### Why It Is Important

We recognise that our journey towards net zero carbon emissions by 2050 is not just about environmental goals but also about the people in the communities we serve. Investing in local communities is more than a responsibility; it's a cornerstone of our business philosophy. By actively engaging with these communities, we gain insights into their needs, mitigate conflicts, and foster harmonious relationships through mutual understanding. This approach builds trust and goodwill and creates shared value, contributing to the mutual success and sustainability of both PETRONAS and the communities we serve.

#### Our Approach

Our commitment to community development focuses on enhancing living standards, improving livelihoods, promoting equitable growth, and fostering environmental awareness. We believe in creating long-term sustainable programmes and have developed a structured approach to maximise our social impact. Our internal framework and guidelines steer our planning, implementation, measurement and reporting in ensuring the effectiveness of our activations.


Prior to the development of any community programmes, we will conduct a formal assessment and identify expected outcomes of the activation. This is to ensure that the activations will be impactful to stakeholders and community needs, meet the targeted United Nations Sustainable Development Goals (UNSDGs) and PETRONAS material topics, enhance business values, and address business risks. We also conduct upskilling and engagement sessions internally to ensure streamlined understanding and purpose among employees towards enhancing our role in preparing communities to be more adaptive and resilient for a just transition.

We recognise the importance of collaboration with key stakeholders at the Federal and State Governments, as well as strategic partners by leveraging on each other's expertise and experience. For our key programmes, we have established joint committees with our key stakeholders and partners to oversee the project progress in an open and transparent manner. We also engage with the communities to understand their issues, challenges and opportunities. We take them into consideration when we participate in initiatives by creating a platform that enables them to share any issues or complaints. We provide opportunities for others to participate in our programmes through Yayasan PETRONAS, including invitations to apply for grants and submission of activation proposals for our One Million Trees Programme. Post completion of any programme, we evaluate the effectiveness of the activation and gather feedback from relevant stakeholders and communities to help us in improving future activations.



## Our Focus

In PETRONAS, our social impact programmes are centred on education, community well-being and development, and environmental stewardship. In 2023, our pursuit was to drive consistent and streamlined activities aligned with PETRONAS' Sustainability Agenda. We introduced a social impact brand that helps to communicate our activities – **PETRONAS Powering Knowledge** for Education, **PETRONAS Uplifting Lives** for Community Well-being and Development and **PETRONAS Planting Tomorrow** for Environment.

	Education	Community Well-being and Development	Environment
Brand Name	<p>PETRONAS <b>Powering Knowledge</b></p> 	<p>PETRONAS <b>Uplifting Lives</b></p> 	<p>PETRONAS <b>Planting Tomorrow</b></p> 
Descriptor	<p><b>PETRONAS Powering Knowledge</b> is our commitment to champion the pursuit of knowledge among students and educators. We support their quest for quality education and expertise and are devoted to empowering them to strive for progress and positively impact a rapidly changing world.</p>	<p><b>PETRONAS Uplifting Lives</b> is our commitment to provide access to essential resources for underserved communities to enhance their living standards. We are devoted to our best efforts in empowering the communities to reach their full potential and create positive social impact and change.</p>	<p><b>PETRONAS Planting Tomorrow</b> is our commitment to champion awareness and promote the importance of biodiversity conservation. We support this through our education programmes on sustainable living, reforestation and rehabilitation activities, including mangrove tree planting and replenishing marine and freshwater ecosystems. We empower communities to contribute towards a healthier planet.</p>

Through **PETRONAS Powering Knowledge**, we provide comprehensive upskilling and training opportunities, breaking down barriers of income, gender, ethnicity and abilities to foster inclusivity and empower lives. Meanwhile, with **PETRONAS Uplifting Lives**, we prioritise the enhancement of physical and mental well-being, driving socio-economic development by offering sustainable livelihoods and economic opportunities, especially for the underserved. Our commitment extends to environmental stewardship through **PETRONAS Planting Tomorrow**, where we engage communities to promote sustainability and inspire collective responsibility for a healthier planet.

In 2023, our social impact contributions surpassed RM850 million, benefitting nearly 3 million individuals globally. Yayasan PETRONAS played a significant role, contributing RM44.17 million to over 125,000 beneficiaries nationwide. These efforts underscore our dedication to inclusive education, socio-economic advancement, and environmental sustainability, promoting a sustainable future for all.



## Positive Social Impact

### Value Created in 2023

#### PETRONAS Powering Knowledge

PETRONAS is passionate about developing and equipping students, teachers and communities with essential skills and knowledge that empower them to lead fulfilling lives through quality education. A significant portion of our social impact activities is dedicated to empowering students, teachers and communities with knowledge for the future and skills needed to participate in the workforce. Investing in education and training will help them pursue better opportunities to improve their socio-economic status, chart personal growth and meaningful careers, and contribute to the nation's economic growth through productivity and innovation.

To this end, we have a diverse range of programmes that cater to students, teachers and the general public by providing access to better education, financial assistance, with a focus on science, technology, engineering and mathematics (STEM) education, technical and vocational education and training (TVET) and other skills beyond the traditional curriculum. At national level, we work closely with the Ministry of Education and Ministry of Higher Education in ensuring that our programmes are aligned with the national education agenda.

#### Access to Better Education

We collaborated with the Sarawak State Government through Yayasan Sarawak and Sabah State Government together with *Majlis Amanah Rakyat* (MARA) to develop MARA Junior Science College known as *Maktab Rendah Sains Mara* (MARA) Bintulu and MRSM Ranau, with PETRONAS as the main sponsor for the overall construction of projects including the provision of furnishings and equipment. Construction began in 2019 with a total cost invested for both institutions amounting to RM224.23 million. Both MRSMs have been handed over to MARA in November 2023 with the first intake of students in March 2024.

Internationally, PETRONAS has played a pivotal role in advancing access to quality education through a variety of initiatives. We have undertaken the renovation and repair of school infrastructure, including supplying new furniture to enhance learning environments, in Kiyarly village, Turkmenistan, benefitting 500 students.

Additionally, we conducted free vision checks and provided prescription glasses to over 200 students from the local community surrounding the Garraf Contract Area in Iraq. Furthermore, we refurbished primary schools in Franceville, East Gabon, and Al-Saddan School, Al-Bu Hussein Village in Iraq, each benefitting more than 500 students.

In Suriname, we contributed information and communication technologies equipment and upgraded chemical laboratories in schools, benefitting over 500 students and teachers. Moreover, our support extends to Argentina, where we enhanced school facilities by providing furniture and school supplies, including stationery and bags, enriching the learning experiences of over 220 students.

#### Financial Assistance

Under Yayasan Universiti Teknologi PETRONAS (YUTP), we provided financial assistance to 2,697 beneficiaries through its scholarships and bursaries since it was established in 2007. In 2023, 592 students benefitted from YUTP's sponsorships and bursaries, allowing them to pursue knowledge, especially in science and technology.

Apart from this, education opportunities are also provided to all through *zakat* (alms) collection from UTP and PETRONAS employees. In 2023, under Tabung Amanah Zakat UTP (TAZU), a total of 1,035 UTP students received financial assistance through tertiary education sponsorship, 200 *asnaf* (beneficiaries of *zakat* from Muslims) students were selected for a Full Foundation Sponsorship Programme, and the Laptop Assistance Programme was expanded to support students from low-income families.





## Science, Technology, Engineering and Mathematics Education Programmes

Initiative	Aim	What We Did	Outcome
<b>Empowering Educators in STEM</b>	<ul style="list-style-type: none"> <li>To strengthen the capabilities of 4,500 STEM teachers serving schools with a majority of students from low income communities (B40) by 2030 through <i>Program Duta Guru</i> (Teacher Ambassador Programme).</li> </ul>	<ul style="list-style-type: none"> <li>Conducted a two-year programme per cohort to upskill STEM educators in schools, partnering with the Ministry of Education and Teach for Malaysia. Post graduation, we provided funding of up to RM20,000 per project to 14 selected teachers for STEM activities in schools.</li> <li>Organised National Symposium in October 2023 which garnered 800 attendees. The event aimed to provide the <i>Program Duta Guru</i> community a platform to exchange knowledge, encourage intellectual discussion as well as a learning and networking platform.</li> </ul>	<ul style="list-style-type: none"> <li>In 2023, 243 teachers from cohort 3 have completed the two-year programme.</li> <li>To date, 496 teachers from cohorts 1, 2 and 3 have completed the two-year programme and took on their roles as <i>Duta Guru</i> (teacher ambassador) to increase STEM interest and competency amongst students in secondary schools.</li> </ul>
<b>Interactive and Experiential Learning in STEM</b>	<ul style="list-style-type: none"> <li>To stimulate interest among students in the STEM field via academic excellence, interactive and experiential learning activities. It is also aimed to improve students' academic results in major examinations through intensive learning particularly in science subjects.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted six educational programmes attended by secondary school students in 2023, covering intensive, interactive and experiential learning modules through Pengerang Integrated Complex STEM education initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>Increased students' enrollment to pursue Form 4 science stream classes.</li> <li>Improved academic achievements in <i>Sijil Pelajaran Malaysia</i> (Malaysian Certificate of Education) examination especially in science-related subjects.</li> <li>Benefitted about 480 students in 2023 with a target of 1,900 students in total by 2026.</li> </ul>
<b>Upskilling Teachers and Students in Technical and Digital-Related Areas</b>	<ul style="list-style-type: none"> <li>To increase STEM interest among students in Sabah, Malaysia, cultivating 21<sup>st</sup> century technical skills in a fun and engaging manner to prepare participants for the workforce of the future.</li> <li>To expose teachers to innovative ways they can explore to ease the teaching process and guide students in enhancing their digital comprehension level, adding value to everyday solution design and curation of the solution.</li> </ul>	<ul style="list-style-type: none"> <li>Upskilled and enhanced the capacity of teachers in technical- and digital-related skills, as well as democratised digital creation activities for students from low-income families to deepen their interests in STEM.</li> </ul>	<ul style="list-style-type: none"> <li>80 teachers and 80 students from 41 secondary schools in Tawau and Sandakan benefitted from the two sessions conducted for each district.</li> </ul>

## Positive Social Impact

Petrosains was established 25 years ago as an extension of PETRONAS' commitment to nation-building by nurturing interest in STEM and driving the creation of a new generation of science and technology-minded and innovation-inspired individuals.

Initiative	Aim	What We Did	Outcome
<p><b>Petrosains</b></p>	<ul style="list-style-type: none"> <li>Petrosains was set up as one of PETRONAS' flagship social investment initiatives. Petrosains, The Discovery Centre is a not-for profit establishment that embodies PETRONAS' commitment to providing the nation, especially the younger generation, with the tools and experiences to cultivate a passion for scientific knowledge through immersive and imaginative experiences.</li> <li>The Discovery Centre continues to instil a sense of awe in visitors of all ages through its immersive exhibits, innovative challenges and enriching community as well as partnership programmes.</li> <li>To be the learning catalyst that provides immersive learning in science, technology, and sustainability aligned with PETRONAS' Education Agenda.</li> <li>To enable the creation of innovative solutions for shared progress, leaving no one behind.</li> <li>To educate on the evolving digital era through advanced technologies: robotics, artificial intelligence (AI), and the internet of things (IoT).</li> </ul>	<ul style="list-style-type: none"> <li>Collaborated with various entities in conducting impactful STEM programmes such as BSN Smart Junior @ Schools, Offshore Petroleum Industry Training Organisation (OPITO), the <i>Generasi Marikh</i> Academy for Junior Astropreneur Exchange (JAX), ASTRO for <i>Paper Lama Science Show</i>, PlayQuest Activation for AirAsia Academy, Young Energy Explorer at SEDA Roadshow for Sustainable Energy Development Authority (SEDA).</li> <li>Internationally, we have collaborated with PETRONAS Carigali Overseas Indonesia (PCOSB) at the 47<sup>th</sup> Indonesian Petroleum Association (IPA) Convention and Exhibition 2023 and Belt and Road International Science Popularization Week 2023 at Wuhan, China. Petrosains is also in the international Science Centre networking through the Asia-Pacific Network of Science and Technology Centres (ASPAC), European Collaborative for Science Industry and Technology Exhibitions (ECSITE), Association of Science-Technology Centers (ASTC).</li> <li>Petrosains was honoured with the prestigious Bronze Award for the Entertainment Category at the Putra Brand Awards, a testament to the dedication and passion that has fueled our journey over the past 25 years.</li> <li>Petrosains was also awarded with the Malaysian Industrial Safety and Health Association (MiSHA) Golden Awards on Occupational Safety and Health Principle of Prevention (OSHPoP) by MiSHA National Excellence Award 2023, signifying safety as one of our top priorities.</li> </ul>	<ul style="list-style-type: none"> <li>Recorded 874,725 visitors who interacted with Petrosains exhibits and exhibitions as well as outreach programmes in 2023, the highest number since its establishment in 1999.</li> <li>Petrosains, The Discovery Centre houses about 300 interactive exhibits and recorded 1,573 school visits to the centre in 2023.</li> <li>Achieved virtual reach of 78,162 by diversifying our learning approach across DeLiMa, PIXEL and SkyWalk 360 as well as through virtual activations of RBTX, Meet The Expert and thematics programmes.</li> <li>14,215 beneficiaries of Petrosains' learning programmes such as below:                     <ul style="list-style-type: none"> <li><b>Petrosains Playsmart™ and Maker Studio</b> <ul style="list-style-type: none"> <li>More than 620,389 visitors physically via its centres in Johor, Pahang, Sabah and Sarawak.</li> <li>Reached 1,050 beneficiaries through its beneficiaries-driven programmes, and 3,020 beneficiaries in the local communities through the Inspire Together Programme, providing access to STEM learning to underprivileged groups.</li> </ul> </li> <li><b>Petrosains RBTX Challenge</b> <ul style="list-style-type: none"> <li>6,049 beneficiaries, nearly a 100 per cent increase from 3,028 in 2022.</li> <li>Recorded participation of 1,795 teams from across Malaysia, Indonesia, Singapore, Mexico, India, Azerbaijan, American Samoa and Romania.</li> <li>RBTX 2023 was awarded the "Largest Participation in a Robotic Interactive Learning Event" by the Malaysia Book of Records for two consecutive years.</li> </ul> </li> <li><b>Petrosains Science Drama Competition</b> <ul style="list-style-type: none"> <li>117 teams from across Malaysia participated.</li> <li>The winner of PSDC in Malaysia performed at the ISDC in Thailand, and brought home two awards: First Prize Winner for Junior Category and Outstanding Performer for Male Category.</li> <li>The Malaysia Book of Records awarded PSDC 2023 with the "Most Participants in a Science Themed Drama Competition".</li> </ul> </li> </ul> </li> </ul>

## Mentoring and Other Training

Initiative	Aim	What We Did	Outcome
<b>Digital Literacy</b>	<ul style="list-style-type: none"> <li>To enhance digital literacy of young graduates in preparation for the constantly evolving job market of the future.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted a series of two-week intensive programme called the BeDigital Bootcamp which exposed participants to design thinking, data storytelling, transitioning into the working world and digital entrepreneurship.</li> </ul>	<ul style="list-style-type: none"> <li>296 participants benefitted from the bootcamp, whereby 37 participants received conditional job offers from PETRONAS and one participant received an internship offer from PETRONAS.</li> </ul>
<b>Supporting Personal Growth of Students</b>	<ul style="list-style-type: none"> <li>Project VENUS aims to build life skills through exposure to different career pathways and preparatory activities to support students' personal growth beyond academic syllabus.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted five modules focusing on harnessing and strengthening the students' confidence in public speaking, as well as providing them with a broad understanding on choosing their desired career path and industry.</li> </ul>	<ul style="list-style-type: none"> <li>Benefitted 1,900 students from Terengganu, Kuala Lumpur and Melaka, involving 480 PETRONAS volunteers for all five modules and the final presentation competition.</li> </ul>
<b>Education and Awareness on Chemicals Safety Handling</b>	<ul style="list-style-type: none"> <li>The SHOC4Schools programme increased students' awareness on basic first aid and lab safety procedures.</li> </ul>	<ul style="list-style-type: none"> <li>Provided school students with exposure to best practices in safe chemical handling.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed safety kits for safe chemical management to local school students in Labuan, Gebeng, Kertih, Bintulu and Sipitang, where PETRONAS operates.</li> </ul>
<b>Bridging Industry-Academia Knowledge in Technical Areas</b>	<ul style="list-style-type: none"> <li>To create more platforms for Technical Professionals (TPs) and Subject Matter Experts (SMEs), and bridge industry-academia knowledge sharing in technical areas through Collaboration with Higher Education Strategic Initiatives (CHES).</li> </ul>	<ul style="list-style-type: none"> <li>Facilitated opportunities for SMEs to perform Technical Professional Excellence responsibilities and build rapport with the Higher Education sector and young Malaysian top talents in creating awareness and interest in the energy industry.</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 500 academia, students and PETRONAS SMEs attended the CHES Symposium event held in June 2023.</li> <li>20 innovative ideas from 95 submissions were selected for final innovation pitching during the CHES Symposium to relevant SMEs for scale-up opportunities in four categories: <ul style="list-style-type: none"> <li>Artificial Intelligence (AI) and Robotics;</li> <li>New Energy and Sustainability;</li> <li>Additive Manufacturing and Circular Economy,</li> <li>Data Analytics and Internet of Things (IoT).</li> </ul> </li> <li>Two new university partnerships established under CHES: Universiti Tenaga Nasional (UNITEN) and Universiti Selangor (UNISEL), bringing it to a total of 22 participating universities since 2021.</li> <li>Over 60 knowledge-sharing sessions enabled on top of joint research, innovation activities, coaching programmes, Final Year Project (FYP) panels, and syllabus reviews.</li> </ul>

## Positive Social Impact

Initiative	Aim	What We Did	Outcome
<p><b>Discover PETRONAS @ Schools (DPS)</b></p>	<ul style="list-style-type: none"> <li>To engage and encourage secondary school students to pursue STEM and TVET education by highlighting the diverse career paths across the oil, gas and energy sectors and providing information on PETRONAS education sponsorship.</li> </ul>	<ul style="list-style-type: none"> <li>Organised career forums and booths for interactive engagements and experiential learning conducted by PETRONAS volunteers.</li> </ul>	<ul style="list-style-type: none"> <li>Over 3,227 students benefitted from the programmes conducted at eight centralised locations: Sandakan, Tawau and Pitas (Sabah), Miri, Bintulu, Lawas and Limbang (Sarawak) and Pengerang (Johor).</li> <li>Participation from 109 schools, involving 145 PETRONAS volunteers.</li> </ul>



## PETRONAS Uplifting Lives

We are dedicated to improving the well-being of our community to pursue greater opportunities and achieve improved standards of living. Our focus areas in achieving this include assisting community fundamental needs such as access to utilities, as well as providing upskilling opportunities to ensure long term self-sustainability. In ensuring smooth implementation and that the programme reaches the right targeted groups, we worked closely with relevant authorities and agencies at Federal and State levels such as the Malaysian Welfare Department (JKM), National Disaster Management Agency (NADMA), Malaysia Civil Defence Force (APM), Northern Corridor Economic Region (NCER), East Coast Economic Region Development Council (ECERDC), Department of Orang Asli Development (JAKOA) and Department of Fisheries (DoF).

### Providing Basic Necessities

Initiative	Aim	What We Did	Outcome
<b>Energy and Water for Indigenous People</b>	<ul style="list-style-type: none"> <li>To provide solar energy and clean water supply to <i>Orang Asli</i> (Indigenous People) villages nationwide. Our goal is to illuminate and uplift the lives of the underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>Provided <i>Orang Asli</i> villages with solar systems at identified households, as well as clean water sanitation facilities.</li> </ul>	<p><b>Solar and Lighting</b></p> <ul style="list-style-type: none"> <li>Provided 1,158 households across 38 villages in Perak, Pahang and Kelantan with Home 500x PICO, a compact solar-powered home and lighting system.</li> <li>Cumulatively, the community experienced an additional 1.6 million productivity hours, capturing an estimated RM3.2 million total electricity savings since 2022.</li> <li>Expanded the initiative to three villages in Sabah for 140 houses and three shared spaces.</li> </ul> <p><b>Clean Water</b></p> <ul style="list-style-type: none"> <li>Provided four villages with access to clean water and sanitation facilities by installing 18 units of Waterlily solar powered water purification systems and 16 communal toilets.</li> <li>Cumulatively, provided 111,120 litres of clean water to 620 <i>Orang Asli</i>, valued at RM166,680.</li> </ul>
<b>Access to Clean Water in International Operations</b>	<ul style="list-style-type: none"> <li>To ensure access to clean water in Garraf, Iraq and Gabon.</li> </ul>	<ul style="list-style-type: none"> <li><b>Iraq</b> Provided 90 water filters and coolers to schools.</li> <li><b>Gabon</b> Construction of water well for 3<sup>rd</sup> Libreville district.</li> </ul>	<p><b>Iraq</b></p> <ul style="list-style-type: none"> <li>Improved access to safe drinking water, thereby fostering improved health outcomes and facilitating a conducive learning environment was achieved through the provision of water filtration and cooling systems at schools. This initiative directly benefitted 15,000 school students and educators within the Garraf Contract Area.</li> </ul> <p><b>Gabon</b></p> <ul style="list-style-type: none"> <li>A reliable and sustainable source of clean water for the local community, improving health and reducing the burden of water collection to more than 6,000 individuals from the Libreville community.</li> </ul>



## Positive Social Impact

Initiative	Aim	What We Did	Outcome
<b>Flood Relief Assistance</b>	<ul style="list-style-type: none"> <li>To improve community resilience in disaster-prone areas to mitigate, manage, circumvent risks and recover from the effects of a disaster in a timely and efficient manner.</li> </ul>	<ul style="list-style-type: none"> <li>Supplied mineral water and 500 gas cylinders to flood victims in Johor, Malaysia.</li> <li>Several PETRONAS Station dealers volunteered to store and deliver mineral water to temporary relief centres during the monsoonal flood period.</li> <li>Distributed 1,800 Care Packages through Yayasan PETRONAS from January to March 2023 to affected districts.</li> <li>Distributed 10,000 Care Packages by Yayasan PETRONAS before the occurrence of floods from November to December 2023 to the Malaysia Welfare Department Depots nationwide.</li> <li>Provided 25 units of Four-Wheel Drive vehicles (on loan basis) to local agencies conducting rescue efforts in Johor.</li> <li>Provided PETRONAS gift cards (for purchase of petrol or diesel) to local flood relief agencies.</li> </ul>	<ul style="list-style-type: none"> <li>Provided immediate disaster relief assistance to affected communities and relevant agencies.</li> <li>Benefitted 13,806 beneficiaries nationwide.</li> </ul>
<b>Festive Celebrations</b>	<ul style="list-style-type: none"> <li>To contribute to the less fortunate during festive seasons to incite joy, love and care.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed essential items to low income communities (B40) through Yayasan PETRONAS.</li> <li>Supplied LPG cylinders and merchandise to <i>Masjid Jamek Kampung Baru</i> and <i>Bazaar Ramadan Plaza Angsana</i>.</li> <li>Distributed 1,025 <i>bubur lambuk</i> (rice porridge) to local communities around Kuala Lumpur.</li> <li>Provided essential food items during Ramadan (the Muslim fasting month) to underprivileged families in Iraq.</li> </ul>	<ul style="list-style-type: none"> <li>11,800 beneficiaries nationwide received food aid for the festive season.</li> <li>102,550 local communities around Kuala Lumpur benefitted throughout Ramadan.</li> <li>700 underprivileged families in Iraq benefitted from the programme.</li> </ul>

## Skills and Entrepreneurship Development

Initiative	Aim	What We Did	Outcome
<b>Income Generation for Low-Income (B40) Communities</b>	<ul style="list-style-type: none"> <li>To contribute to uplifting the livelihoods of the B40 community in Kelantan, Kedah, Terengganu, Johor, Pahang, Perak and Sabah through the <i>Memampankan Ekonomi Asas Rakyat</i> (MEKAR) Programme.</li> </ul>	<ul style="list-style-type: none"> <li>Provided training in skills, leadership and innovation to improve the living standards and increase opportunities for sources of income for the low-income community.</li> </ul>	<ul style="list-style-type: none"> <li>1,286 participants graduated from the programme.</li> <li>1,349 participants completed hard and soft skills training, and are currently in monitoring and guidance mode.</li> <li>933 participants have registered businesses and became entrepreneurs.</li> </ul>
<b>Building Sustainable Welfare Homes</b>	<ul style="list-style-type: none"> <li>To enable welfare homes to be self-sustaining while ensuring necessities of the occupants are met.</li> </ul>	<ul style="list-style-type: none"> <li>Kickstarted green chili planting at an orphanage, <i>Rumah Anak Yatim Nur Taqwa</i>, Kota Belud, Sabah.</li> <li>Kickstarted chili <i>boh</i> (paste) production training in the Malaysian Aids Foundation (<i>Pertubuhan Komuniti</i> CAKNA, Terengganu).</li> </ul>	<ul style="list-style-type: none"> <li>Three harvest cycles amounting to 30 kilograms of chillies were sold to local markets in Kota Belud.</li> </ul>
<b>Sustainable Economic Development for Fishing Communities</b>	<ul style="list-style-type: none"> <li>To enhance the economic well-being of fishing communities by providing an alternative fishing ground allowing better catchment and reducing encroachment at prohibited areas.</li> </ul>	<ul style="list-style-type: none"> <li>Signed a Memorandum of Understanding between PETRONAS and the State Government of Sabah, represented by the Department of Fisheries, Sabah, to contribute 40 Fish Aggregating Devices<sup>1</sup> for a span of two years from 2023 to 2024.</li> <li>Contribution of food rations and fishing equipment such as 100 cooler boxes enables fishermen to preserve their catch, reducing spoilage and increasing their ability to access markets with fresh seafood, thereby improving their livelihoods.</li> <li>Conducted a series of community engagement and awareness sessions on safety and security of fishing activities in collaboration with the Malaysian Maritime Enforcement Agency (MMEA).</li> </ul>	<ul style="list-style-type: none"> <li>Deployed 20 Fish Aggregating Devices benefitting more than 500 fishermen across Sabah.</li> <li>Deployed 160 mini-Fish Aggregating Devices, for Kota Belud, Kimanis and Besut which benefitted 1,100 fishermen.</li> <li>More than 1,500 fishermen's economic livelihoods have been improved through increased catchment via the expansion of the fishing areas.</li> <li>Estimated catch per Fish Aggregating Device is ten tonnes of fish per visit and the mini-Fish Aggregating Device yields 500 kilograms of fish per visit, with a reduction of encroachment reported to be 66.45 per cent less compared to 2019<sup>2</sup>.</li> <li>Recognised in The Malaysia Book of Records on the deployment of the first artificial reefs using concrete structures and a decommissioned vessel, preserving marine ecosystems while enhancing local community economies.</li> </ul>

**Note:**

<sup>1</sup> A fish aggregating device (FAD) is a floating object strategically deployed in the ocean to create alternative fish breeding and gathering grounds and providing a more efficient fishing experience to the fishermen by concentrating fish populations for easier catch.

<sup>2</sup> 2019 is taken as our baseline year as data could not be collected during the COVID-19 lockdown in 2020-2021 and restrictions in 2022.

## Positive Social Impact

Initiative	Aim	What We Did	Outcome
<p><b>Community Fire Safety and Preparedness</b></p>	<ul style="list-style-type: none"> <li>Empowering local communities in Bintulu and Miri with skills and support to ensure readiness, resilience and unity in the face of fire emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted <i>Program Bomba Komuniti</i> (Fire Community Programme) and Fire Point in collaboration with the Fire and Rescue Department (BOMBA), at the Long Busang community in Sarawak.</li> <li>Contributed disaster relief aid to fire victims of <i>Kampung Wireless</i>, Miri.</li> </ul>	<ul style="list-style-type: none"> <li>More than 1,250 individuals benefitted from the programme through increased awareness of early response in fire prevention to the local communities, basic skills in firefighting, live demonstrations and knowledge of firefighting equipment and the proper technique in using Portable Fire Extinguishers.</li> <li>Provided immediate disaster relief assistance to the affected communities, involving 12 families comprising 80 residents from <i>Kampung Wireless</i> Miri.</li> </ul>
<p><b>Continuous Development of Local Cooperatives</b></p>	<ul style="list-style-type: none"> <li>To create sustainable income and improve the socio-economic condition of local communities through establishment of various local cooperatives around Pengerang Integrated Complex.</li> </ul>	<ul style="list-style-type: none"> <li>Recultivated 121 acres of an abandoned palm oil plantation in Pengerang Integrated Complex into business opportunities for <i>Kampung Lepau</i> local cooperatives (KOLEPAU).</li> <li>Provided upskilling programmes for Cooperative Board Members through training related to financial management, business acumen and marketing.</li> </ul>	<ul style="list-style-type: none"> <li>First phase (pruning) of 5,000 trees was successfully completed.</li> <li>Created 15 job opportunities for the <i>Kampung Lepau</i> community.</li> </ul>

## Community Funding

Initiative	Aim	What We Did	Outcome
<b>Pediatric Cancer Research</b>	<ul style="list-style-type: none"> <li>Improving the survival rate for pediatric cancer</li> </ul>	<ul style="list-style-type: none"> <li>Supported Hospital Canselor Tuanku Muhriz UKM (HCTM) in conducting research on precision medicine that utilises genetic sequencing and raised public awareness on pediatric cancer.</li> </ul>	<ul style="list-style-type: none"> <li>Development of the analysis of Whole Genome and Targeted Sequencing with improved turnaround time between 8-13 weeks, aims to improve survival with precision therapies.</li> <li>Development of Minimal Residual Disease (MRD) using 8 colours for better sensitivity and precision, with improved turnaround time of 21 days, and sensitivity ability of 1 in 1,000,000 cells.</li> <li>Four awareness programmes were carried out and one book on pediatric cancer awareness for children was published.</li> </ul>
<b>Patient Navigation Programme</b>	<ul style="list-style-type: none"> <li>To close the care gap in cancer treatment and enable access to quality care for underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>Our grant went towards the maintenance of four PNP centres. This extended our ongoing support to Cancer Research Malaysia (CRM), which also includes support of cancer research activities and the funding to set up four additional PNP centres in future.</li> </ul>	<ul style="list-style-type: none"> <li>Helped medical professionals serve a total of 370 patients and achieved a marked reduction in treatment delays and patient defaults.</li> </ul>
<b>Pre and Post Natal Care Training Programme (A MEKAR-Related Grant)</b>	<ul style="list-style-type: none"> <li>Supporting Universiti Teknologi MARA's (UiTM) maternity department in helping them provide professional training in pre and post-maternity care to underserved communities.</li> </ul>	<ul style="list-style-type: none"> <li>Each participant received training in the theoretical and practical aspects of safe maternal and infant care, gaining certification from the Ministry of Health (MOH).</li> </ul>	<ul style="list-style-type: none"> <li>Trained 34 people from underserved communities in Papar, Beaufort and Kota Kinabalu, Sabah. The training enabled them to improve the quality of care and bring sustainable benefit to their communities.</li> </ul>
<b>Youth Employability and Entrepreneur training</b>	<ul style="list-style-type: none"> <li>To accelerate the journey of young entrepreneurs in Sabah by supporting the unique needs of early-stage business owners.</li> </ul>	<ul style="list-style-type: none"> <li>Provided funding, customised content and created an incubator to support and guide early-stage youth entrepreneurs.</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 500 youth trained.</li> </ul>
<b>Financial Literacy Upskilling BeSemart</b>	<ul style="list-style-type: none"> <li>This programme aims to empower food vendors with financial literacy so that they can make informed business decisions.</li> </ul>	<ul style="list-style-type: none"> <li>Provided food vendors with Point of Sales (POS) systems and devices for data collection, order management and educated food vendors on financial literacy for their businesses.</li> </ul>	<ul style="list-style-type: none"> <li>Benefitted 50 entrepreneurs who had undergone six months of training in Kedah.</li> </ul>

## Positive Social Impact

Initiative	Aim	What We Did	Outcome
<b>International Medical and Welfare Funding</b>	<ul style="list-style-type: none"> <li>To support and enhance the quality of life in the North Peace region, Canada through charitable contributions and community development initiatives via the North Peace Community Foundation.</li> <li>To provide critical care and rapid emergency medical transport services for those in need across Western Canada through STARS air ambulance.</li> <li>To improve healthcare services and facilities for the Fort St. John community through fundraising and support for the local hospital through the Fort St. John Hospital Foundation.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed funding to three prominent organisations in providing social assistance to local communities and First Nation communities across Fort St. John and British Columbia.</li> </ul>	<ul style="list-style-type: none"> <li>Strengthened the community across Fort St. John with a five-year commitment to the North Peace Community Foundation made since 2022.</li> <li>STARS air ambulance:                         <ul style="list-style-type: none"> <li>PETRONAS supported STARS Fleet renewals and a total of 1,667 missions carried out from across Alberta and British Columbia in 2023.</li> <li>STARS air ambulance service has assisted with medical emergencies to the public and in the field ensuring rapid and specialised medical care and transportation to critically ill and injured patients in remote and underserved areas.</li> </ul> </li> <li>The contribution to the Fort St. John Hospital Foundation has benefitted 69,000 community members including First Nations through improved healthcare services and facilities, leading to better patient outcomes and enhanced medical care for the residents of Fort St. John and surrounding areas.</li> </ul>

### PETRONAS Planting Tomorrow

In our journey towards better environmental stewardship, we believe in the power of collective action. Working alongside local communities and stakeholders, we engage in various initiatives to support environmental conservation through reforestation, rehabilitation activities, biodiversity conservation and preservation, as well as communication, educational and public awareness programmes. We work with partners from government agencies to Non-Governmental Organisations (NGOs) alike in delivering impact-driven environment programmes with multilevel co-benefits such as rehabilitation, biodiversity and community resilience.

#### Tree Planting

We have several programmes to promote awareness on the importance of biodiversity conservation and environmental sustainability through tree planting and rehabilitation activities across states. Our reforestation effort will serve as a habitat for various species of life and contribute to the overall health of the surrounding ecosystem. Through *Yayasan* PETRONAS, we started the Walk4Trees programme in 2020 with the aim to plant 50,000 trees and have exceeded the target with 74,652 trees. Following this successful implementation, *Yayasan* PETRONAS is extending the tree planting initiatives to achieve 1,000,000 native trees over a five-year period.



Initiative	Aim	What We Did	Outcome
<b>Tree Planting Activities</b>	<ul style="list-style-type: none"> <li>To protect, restore and promote terrestrial ecosystems while providing economic opportunities for surrounding communities.</li> </ul>	<ul style="list-style-type: none"> <li>Provided the low-income (B40) community with sustainable livelihood opportunities through seedling buy-back system and allowances for nursery maintenance and tree planting.</li> <li>Empowered local communities in sustainable ecosystem rehabilitation through effective resource management, focusing on forests, and mangrove and peat swamps.</li> <li>Enhanced the knowledge and skills of B40 local communities including <i>Orang Asli</i> (Indigenous People) in proper tree planting, environmental protection and soil erosion, while promoting mangrove management through learning visits and peer-to-peer training.</li> </ul>	<ul style="list-style-type: none"> <li>Completed the Walk4Trees programme nationwide with a total of 74,652 trees planted over 14 planting sites throughout Malaysia since 2020. To date, the programme has achieved 74 per cent tree survival rate and benefitted 255 local communities in terms of income generation and skills developed. The programme has won its first regional award and was recognised as an ASEAN Green Initiative by the ASEAN Centre for Biodiversity in 2023.</li> <li>In 2023, Yayasan PETRONAS launched the One Million Tree (OMT) project and kick started with UTP by planting 550 trees and with <i>Majlis Bandaraya Kuala Terengganu</i> by planting 3,000 trees.</li> <li>We also planted 10,000 mangrove trees at Regency East Java Indonesia, 5,500 mangroves at Tanjung Surat Johor, 3,000 mangroves in Sarawak with the Department of Environment (DOE) and Natural Resources and Environment Board (NREB), 750 mangroves at Kuala Selangor Nature Park and 200 mangroves at EcoCare Kertih.</li> </ul>

**Sustainability Education**

Initiative	Aim	What We Did	Outcome
<b>Speech Competition</b>	<ul style="list-style-type: none"> <li>To educate youth about environmental protection, build stronger ties with the community and be socially responsible.</li> </ul>	<ul style="list-style-type: none"> <li>PETRONAS China held the 'Student Voices' competition to enable future generations to share their thoughts and solutions to some of the planet's most pressing issues.</li> </ul>	<ul style="list-style-type: none"> <li>34 schools in China participated in the competition with nearly 700 submissions.</li> <li>Student Voices cumulatively reached about 650,000 people (participants and spectators) throughout 17 competitions with 69 WeChat posts.</li> </ul>

## Positive Social Impact

### Cleanup and Waste Management

Initiative	Aim	What We Did	Outcome
<p><b>Cleanup and Waste Management</b></p>	<ul style="list-style-type: none"> <li>To cultivate proper waste management practices.</li> </ul>	<p><b>Nationwide</b></p> <ul style="list-style-type: none"> <li>Organised PCG's Be Green initiatives and waste management competition in collaboration with the Ministry of Education, local authorities and waste collectors in areas where we operate, including Klang Valley, Labuan, Gebeng, Gurun, Kertih, Bintulu and Sipitang. Additionally, an MoU was established between PCG and Cenviro for waste management and recycling initiatives in central regions such as Putrajaya, Kuala Lumpur and Selangor.</li> <li>Beach cleaning activities were conducted in collaboration with local NGO <i>Geng Plastik Ija</i> in Terengganu, with volunteers cleaning beaches in Pantai Rantau Abang, Dungun, Terengganu.</li> </ul> <p><b>International</b></p> <p><b>Jakarta, Indonesia</b></p> <ul style="list-style-type: none"> <li>Hosted a plogging activity where participants jogged while picking up litter, in conjunction with Jakarta's Car Free Day in collaboration with a local NGO, KamiBox.</li> <li>Hosted an engaging and educational session with students from University of Indonesia, covering various topics including the Plastic, Sustainability and You Education module. We also provided 20 recycling bins around the campus to enable a culture of sustainability and 3R practices.</li> </ul> <p><b>Bangkok, Thailand</b></p> <ul style="list-style-type: none"> <li>Worked with over 80 students from Klong Song Kratiam School, Wat Lad Prao School and Satri Witthaya School to further clean up a section of the Lat Phrao Canal. This initiative was organised by PETRONAS subsidiary, PCM (Thailand) Co. Ltd and its partner, TerraCycle Thai Foundation. We also taught the students on the importance of recycling and instilled in them the values of sustainability.</li> </ul>	<ul style="list-style-type: none"> <li>Over 120 tonnes of recyclable waste collected from PCG's Be Green programme.</li> <li>Over 100 attended the plogging activity, including members of the Malaysian Embassy, local partners, surrounding communities and students.</li> <li>The activation in Thailand resulted in the removal of about 4,000 kilograms of ocean bound plastics from the canal.</li> </ul>

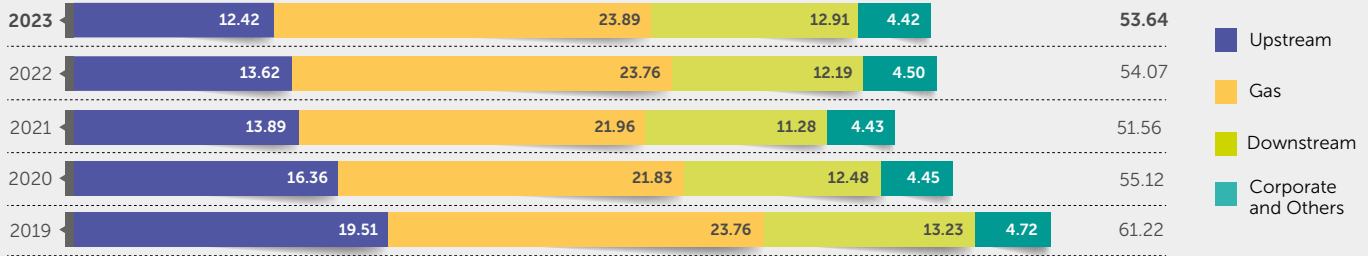
## Biodiversity Conservation and Preservation

Initiative	Aim	What We Did	Outcome
<b>Sea Turtle Conservation</b>	<ul style="list-style-type: none"> <li>To support the sea turtle conservation efforts led by <i>Jabatan Perikanan</i> Malaysia (Fishery Department).</li> </ul>	<ul style="list-style-type: none"> <li>Installed solar panel systems at the Turtle Nursery Centre and improved facilities at the turtle hatchery centre at Pulau Rusukan Besar.</li> <li>Cleaned turtle ponds at the conservation centre and painted walls and roadside kerb.</li> <li>Refurbished the turtle hatchery center with the construction of a new roofing structure.</li> </ul>	<ul style="list-style-type: none"> <li>Released 250 baby turtles into the sea.</li> <li>An average of 94 per cent hatchability rate on a yearly basis, providing better conditions for the incubation of turtle eggs, leading to higher hatchling success rates and a surge in turtle landings at Pulau Rusukan Besar.</li> </ul>
<b>Alveole Bee Programme</b>	<ul style="list-style-type: none"> <li>To enhance community knowledge on biodiversity conservation efforts through nature-based beekeeping solutions.</li> </ul>	<ul style="list-style-type: none"> <li>Conducted four workshops on Hive-to-Honey and Wonders of Beeswax to approximately 60 participants.</li> <li>Two wild pollinator BeeHomes were installed, and one of it was set up at the PECL Calgary office.</li> <li>Collaborated with local Indigenous artist, Star Crop Eared Wolf to paint the BeeHomes using bee friendly paint showcasing the land and history of the Blackfoot territory.</li> </ul>	<ul style="list-style-type: none"> <li>The honeybee hives obtained from the BeeHomes were used for honey environmental DNA sampling and testing contributing to global pollinator research.</li> <li>It is estimated that a single hive can produce as much as 100 140-gram jars of honey.</li> <li>Supports biodiversity improvement through notable sighting of various floral and fauna species including 726 different caterpillar species and 20 pollen specialist bees that have unique adaptation to only certain keystone native plant species.</li> </ul>
<b>Coral Conservation</b>	<ul style="list-style-type: none"> <li>To address the decline of coral reef populations and restore the health of marine ecosystems, aligned with Labuan Federal Territory and Labuan Corporation aspiration to boost the eco-tourism industries in Pulau Rusukan Besar.</li> </ul>	<ul style="list-style-type: none"> <li>Installed ten coral frames, in addition to the nine previously installed frames to expand the coral planting areas.</li> </ul>	<ul style="list-style-type: none"> <li>19 coral frames have been installed since 2019 resulting in a steady survivability and thriving rate at an average of 75 per cent for coral on each frame.</li> <li>The corals act as shelter and protection for the turtle population and other marine life as well as providing food for turtles in their new habitat.</li> </ul>
<b>Shoreline Preservation</b>	<ul style="list-style-type: none"> <li>Preservation and prevention of shoreline from further abrasion, safeguarding coastal areas from degradation.</li> </ul>	<ul style="list-style-type: none"> <li>Installed a retaining wall and planted 6,000 abrasion-resistant trees to prevent abrasion of shoreline in Indonesia.</li> </ul>	<ul style="list-style-type: none"> <li>Contributed to the resilience of over 1,000 communities in Randuboto Village, Sidayu District, Gresik Regency, East Java Province, Indonesia against coastal hazards, protecting homes, infrastructure, and livelihoods.</li> <li>Created a natural buffer, preserving habitats for wildlife and promoting biodiversity along the shoreline.</li> </ul>

# Sustainability Key Performance Data

## Greenhouse Gas (GHG) Emissions – Operational Control

### Total GHG Emissions Breakdown by Business, Operational Control (million tonnes CO<sub>2</sub>e)



**Notes:**

1. GHG data for 2019-2022 at Upstream, Gas and Downstream have been restated following external GHG verification conducted by LRQA Inspection Malaysia Sdn Bhd.
2. PETRONAS acquired BRB and Perstorp. Their respective GHG accounting systems are currently being established aligned with PETRONAS GHG accounting and reporting requirements. 2023 GHG emissions for BRB and Perstorp amounts to 893 tonnes CO<sub>2</sub>e and 0.36 million tonnes CO<sub>2</sub>e respectively. The GHG emissions from both subsidiaries will be included in subsequent disclosures.
3. Corporate and Others include MISC and KLCC Group of Companies (KLCCGoC).

PETRONAS has set 2019 as the base year for tracking the progress towards achieving the targets of its Net Zero Carbon Emissions by 2050 Pathway. As a part of PETRONAS' efforts to increase confidence in our disclosed GHG emissions data, PETRONAS has embarked on a three-year external GHG verification exercise based on ISO 14064-1: 2018. A limited level of assurance for PETRONAS Upstream, Gas and Downstream businesses covering Scope 1 and 2 GHG emissions under the operational control boundary has been completed in March 2024. Therefore, GHG data for 2019-2022 have been restated. PETRONAS will continue the external verification in phased approach for both operational control and equity share – Scope 1, 2 and 3 to increase the credibility of the disclosure.

Overall PETRONAS Global operations emitted 53.64 million tonnes CO<sub>2</sub>e in 2023, covering Scope 1 and Scope 2 emissions. The emissions are lower compared to 2022 as a result of good implementation of emissions reduction projects. Furthermore, GHG emissions accounting for Corporate and Others require further refinements due to different organisational boundary used previously. Hence, subsequent analysis depicted below excludes Corporate and Others.

### GHG Emissions Breakdown by Region (million tonnes CO<sub>2</sub>e) (excludes Corporate and Others)



## PETRONAS Global GHG Emissions *(excludes Corporate and Others)*

In 2023, GHG emissions from our operations recorded 49.22 million tonnes CO<sub>2</sub>e, which is 0.71 per cent lower compared to 2022. GHG emissions from Malaysia operations recorded 45.16 million tonnes CO<sub>2</sub>e, which is below the short-term target of capping GHG emissions from Malaysia operations to 49.5 million tonnes CO<sub>2</sub>e by 2024. Energy efficiency, flare and vent reduction as well as vent-to-flare conversion attributed to the emission performance improvement in 2023.

Scope 1 contributes to 48.50 million tonnes CO<sub>2</sub>e (98.54 per cent) and Scope 2 contributes to 0.72 million tonnes CO<sub>2</sub>e (1.46 per cent).

Out of the total Scope 1 GHG emissions, about 70 per cent of the footprint relates to stationary combustion (34.07 million tonnes CO<sub>2</sub>e), flaring (8.61 million tonnes CO<sub>2</sub>e), venting (2.54 million tonnes CO<sub>2</sub>e) and other Scope 1 emissions (3.28 million tonnes CO<sub>2</sub>e), such as refrigerant, equipment leaks, acid gas removal and mobile combustion.

	2019	2020	2021	2022	2023
<b>Total GHG Emissions (Scope 1 and 2)</b>					
PETRONAS (million tonnes CO <sub>2</sub> e)	56.49	50.67	47.13	49.57	<b>49.22</b>
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	52.98	48.16	44.62	46.10	<b>45.16</b>
International (million tonnes CO <sub>2</sub> e)	3.51	2.51	2.51	3.47	<b>4.06</b>
<b>Breakdown by Scope</b>					
Scope 1 – Direct GHG Emissions (million tonnes CO <sub>2</sub> e)	55.48	49.76	46.42	48.88	<b>48.50</b>
Scope 2 – Indirect GHG emissions (million tonnes CO <sub>2</sub> e)	1.01	0.91	0.71	0.69	<b>0.72</b>
<b>Scope 1 – Direct GHG Emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	52.42	47.64	44.16	45.60	<b>44.65</b>
International (million tonnes CO <sub>2</sub> e)	3.06	2.11	2.26	3.28	<b>3.85</b>
<b>Breakdown by GHG type</b>					
Carbon Dioxide (million tonnes CO <sub>2</sub> e)	44.56	40.34	40.29	43.33	<b>43.63</b>
Methane (thousand tonnes CH <sub>4</sub> )	428.69	369.36	238.42	214.86	<b>186.55</b>
Nitrous Oxide (thousand tonnes N <sub>2</sub> O)	0.74	0.64	0.62	0.69	<b>0.70</b>
<b>Breakdown by Sources</b>					
Combustion (million tonnes CO <sub>2</sub> e)	34.89	32.10	32.05	33.97	<b>34.07</b>
Flaring (million tonnes CO <sub>2</sub> e)	8.51	6.65	7.11	7.87	<b>8.61</b>
Venting (million tonnes CO <sub>2</sub> e)	9.08	8.19	4.98	3.86	<b>2.54</b>
Others (million tonnes CO <sub>2</sub> e)	3.00	2.82	2.28	3.18	<b>3.28</b>
<b>Scope 2 – Indirect GHG emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	0.56	0.51	0.47	0.49	<b>0.51</b>
International (million tonnes CO <sub>2</sub> e)	0.45	0.40	0.24	0.20	<b>0.21</b>
<b>Scope 3 - Indirect GHG emissions</b>					
Category 11 – Fuel (million tonnes CO <sub>2</sub> e)	315.93	283.83	292.92	286.29	<b>307.51</b>

**Note:**

Detailed breakdown may not add up to the total due to rounding.



## Sustainability Key Performance Data

### GHG Emissions Intensity

	2019	2020	2021	2022	2023
<b>GHG Intensity by Business Segments</b>					
<b>Upstream</b>					
Total (tonnes CO <sub>2</sub> e/kboe)	57.29	51.51	44.71	36.11	<b>32.73</b>
Malaysia Assets (tonnes CO <sub>2</sub> e/kboe)	66.11	61.04	50.14	42.77	<b>36.95</b>
International Assets (tonnes CO <sub>2</sub> e/kboe)	28.29	20.06	28.23	24.11	<b>26.05</b>
<b>Downstream</b>					
Refineries (tonnes CO <sub>2</sub> e/bbl)	0.016	0.018	0.018	0.021	<b>0.019</b>
Petrochemicals (tonnes CO <sub>2</sub> e/tonnes)	0.62	0.62	0.60	0.57	<b>0.60</b>

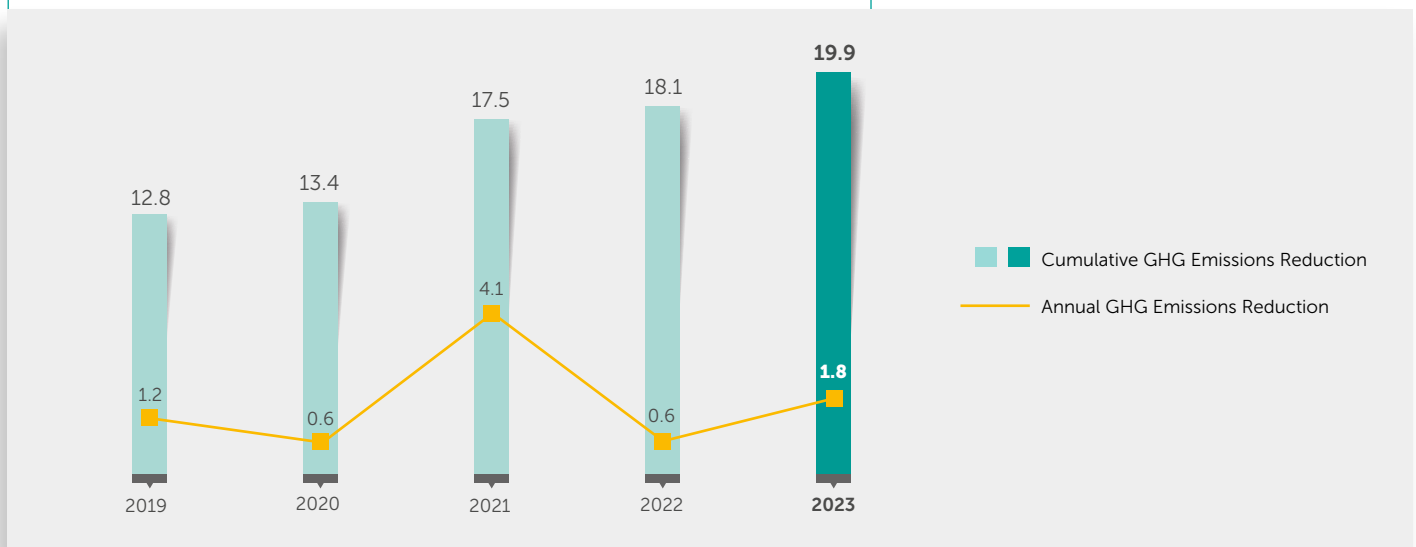
**Notes:**

1. Numerator for GHG intensity is a summation of Scope 1 and Scope 2 GHG emissions under operational control boundary.
2. Boundary for Downstream is Malaysia operations only.

No significant change for PCG and Refineries as operations are maintaining plant performance and efficiency at optimum level.

Upstream intensity shows a reduction of 9.36 per cent compared to 2022, as a result of ongoing efforts in reducing hydrocarbon venting and flaring.

### GHG Emissions Reduction from Projects (million tonnes CO<sub>2</sub>e/year)

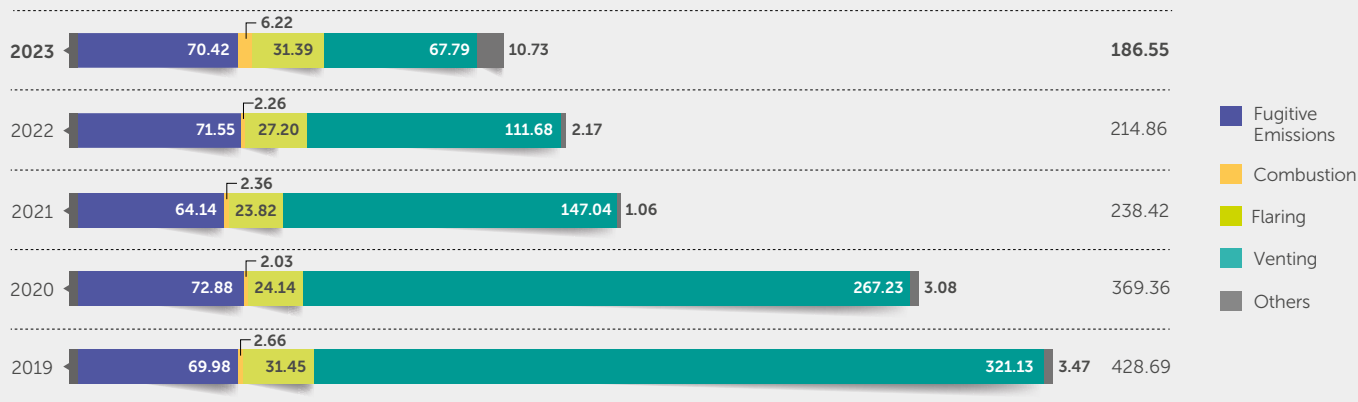


**Notes:**

1. GHG emissions reductions are calculated as per ISO 14064-2:2019 and does not reflect the year-on-year GHG emissions differences.

PETRONAS is continuously seeking opportunities to reduce its GHG emissions in contribution toward its Net Zero Carbon Emissions by 2050 Pathway. The completed GHG emissions reduction projects in 2023 may reduce the GHG emissions from PETRONAS' operations in Malaysia by 1.8 million tonnes CO<sub>2</sub>e per year compared to business-as-usual. Cumulatively since 2013, we have reduced 19.9 million tonnes CO<sub>2</sub>e of GHG emissions per year from our operations.

**Methane Emissions (PETRONAS Global Methane Emissions (thousand tonnes CH<sub>4</sub>) (excluding Corporate and Others))**

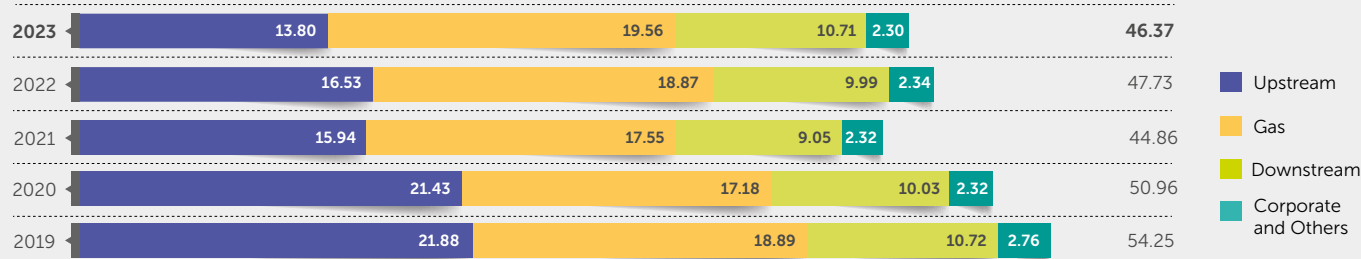


**Note:**

1. GHG emissions reductions are calculated as per ISO 14064-2:2019 and does not reflect the year-on-year GHG emissions differences.
2. As part of Oil and Gas Methane Partnership 2.0 continuous improvement in methane measurement, the methane emissions data will be reinstated post external verification in 2024.
3. Others are methane from acid gas removal, glycol dehydrator, mobile and transportation.

**GHG Emissions – Equity Share**

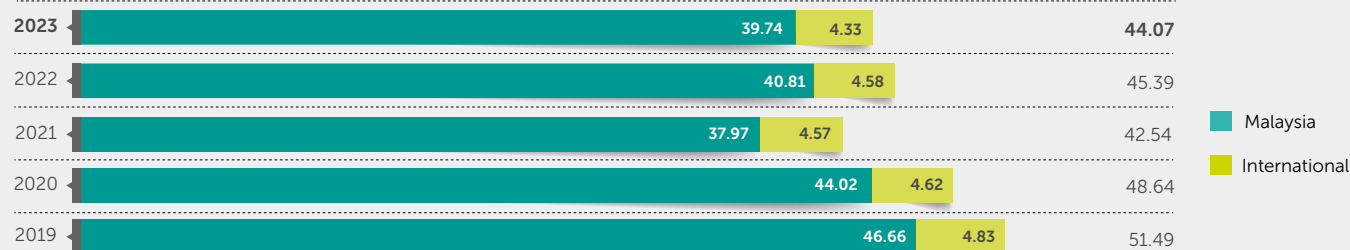
**Total GHG Emissions Breakdown by Business (million tonnes CO<sub>2</sub>e)**



From an equity share perspective, GHG emissions from PETRONAS global operations was lower by 2.85 per cent compared to 2022. Equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation. Hence, PETRONAS has set mid-term and long-term targets by referring to 2019 as the base year on an equity share approach. Analysis indicates the Scope 1 and Scope 2 PETRONAS GHG emissions from equity share have reduced 14.53 per cent from 54.25 million tonnes CO<sub>2</sub>e in 2019 to 46.37 million tonnes CO<sub>2</sub>e in 2023. The improvement was a result of ongoing investment in GHG emission reduction efforts since 2019.

## Sustainability Key Performance Data

### GHG Emissions Breakdown by Region (million tonnes CO<sub>2</sub>e) (excludes Corporate and Others)



In 2023, PETRONAS global GHG emissions by equity share approach, recorded GHG emissions of 44.07 million tonnes CO<sub>2</sub>e, accounting for a 2.62 per cent increase in Malaysia operations and about 5.46 per cent reduction from international operations compared to 2022. Scope 1 constituted to 43.24 million tonnes CO<sub>2</sub>e (98.12 per cent) and Scope 2 to 0.83 million tonnes CO<sub>2</sub>e (1.88 per cent).

### Detailed Breakdown for PETRONAS GHG Emissions Based on Equity Share

Key Performance Indicators (excludes Corporate and Others)	2019	2020	2021	2022	2023
<b>Total GHG Emissions (Scope 1 and 2)</b>					
<b>Breakdown by Scope</b>					
Scope 1 – Direct GHG emissions (million tonnes CO <sub>2</sub> e)	50.45	47.67	41.77	44.59	<b>43.24</b>
Scope 2 – Indirect GHG emissions (million tonnes CO <sub>2</sub> e)	1.04	0.97	0.77	0.80	<b>0.83</b>
<b>Scope 1 – Direct GHG Emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	46.09	43.51	37.54	40.32	<b>39.21</b>
International (million tonnes CO <sub>2</sub> e)	4.36	4.16	4.23	4.27	<b>4.03</b>
<b>Scope 2 – Indirect GHG Emissions</b>					
<b>Breakdown by Region</b>					
Malaysia (million tonnes CO <sub>2</sub> e)	0.57	0.51	0.43	0.49	<b>0.53</b>
International (million tonnes CO <sub>2</sub> e)	0.47	0.46	0.34	0.31	<b>0.30</b>
<b>Scope 3 – Indirect GHG emissions</b>					
Category 11 – Fuel (million tonnes CO <sub>2</sub> e)	266.25	267.30	286.33	277.16	<b>286.69</b>

### Scope 3 Emissions

#### Scope 3 Category 11 (million tonnes CO<sub>2</sub>e) by Operational Control and Equity Share Approaches



PETRONAS continues to strengthen its quantification and reporting of Scope 3 (Category 11: Use of Sold Products) emissions, where in 2023, PETRONAS recorded 307.51 million tonnes CO<sub>2</sub>e under operational control approach, which is higher by 7.41 per cent compared to 2022. Meanwhile, Scope 3 of PETRONAS GHG emissions for equity share have increased by 3.44 per cent from 277.16 million tonnes CO<sub>2</sub>e in 2022 to 286.69 million tonnes CO<sub>2</sub>e in 2023.

In the following table, in addition to Category 11 emissions, we progressively report the screening study's results for 2022 and 2023 Category 1 to 6 emissions for operational control approach.

### PETRONAS Group Scope 3, GHG Emissions for Category 11 and Category 1 to 6, the Progressive Results from Scope 3 Emissions Screening Study<sup>1</sup>, for Operational Control Approach

Scope 3 Categories	2022 GHG emissions (million tonnes CO <sub>2</sub> e)	2023 GHG emissions (million tonnes CO <sub>2</sub> e)
Category 1 (Purchased goods and services) <sup>2,8</sup>	25.90	<b>23.45</b>
Category 2 (Capital goods) <sup>8</sup>	2.42	<b>3.19</b>
Category 3 (Fuel- and energy-related activities) <sup>3,9</sup>	2.61	<b>3.10</b>
Category 4 (Upstream transportation and distribution) <sup>4,8</sup>	2.75	<b>2.69</b>
Category 5 (Waste generated in operations) <sup>5,9</sup>	0.01	<b>0.02</b>
Category 6 (Business travel) <sup>6,9</sup>	0.03	<b>0.05</b>
Category 11 (Use of sold products) <sup>7</sup>	286.29	<b>307.51</b>

<sup>1</sup> PETRONAS Scope 3 screening study is guided by GHG Protocol, Ipieca and benchmarking with peers.

<sup>2</sup> This category includes estimated upstream emissions (cradle to gate emissions) from goods and services purchased by PETRONAS from third-party supplier. Emissions from purchased capital goods are reported separately under Category 2. Emissions from upstream transportation and distribution services and emissions from transportation and distribution of purchased goods are reported separately under Category 4.

<sup>3</sup> This category includes emissions related to the production of fuels and energy purchased and consumed by PETRONAS in the reporting year that are not included in Scope 1 or Scope 2.

<sup>4</sup> The term "upstream" here refers to indirect GHG emissions related to purchased or acquired goods and services. This category includes emissions from transportation of purchased goods and capital assets, as well as purchased third-party transportation services from transportation services supplier.

<sup>5</sup> This category includes emissions from third-party disposal and treatment of waste that is generated in PETRONAS' owned or controlled operations.

<sup>6</sup> This category includes emissions from the transportation of employees for business related activities in vehicles owned or operated by third parties.

<sup>7</sup> Since 2022, PETRONAS has started reporting Scope 3, Category 11. In 2023, we continue to mature our data in calculating Category 11. The data above is based on Operational Control approach. PETRONAS Scope 3 Category 11 based on Equity Share approach is 277.16 million tonnes CO<sub>2</sub>e in 2022, and 286.69 million tonnes CO<sub>2</sub>e in 2023. Historical Scope 3 Category 11 can be found in PETRONAS Integrated Report 2023. Category 11 only includes emissions associated with fuel products sold to third party. All fuel products sold are assumed to be fully combusted.

<sup>8</sup> Spend based method is used to calculate Category 1,2 and 4. Spend-based method estimates emissions by collecting data on amount spent (such as, bills, invoices, etc.) and multiplying it by emission factors from United States Environmental Protection Agency (USEPA).

<sup>9</sup> Average data method is used to calculate Category 3,5 and 6. Average-data method estimates emissions by collecting data on the mass (such as, kilograms or pounds, etc.), or other relevant units and multiplying by the emission factors from Department for Environment, Food and Rural Affairs (DEFRA) Conversion Factors.

Going forward, we plan to report PETRONAS' material Scope 3 categories, which will be based on the outcome of the materiality assessment, that will be informed by the screening results of the remaining Scope 3 categories. To ensure credibility of its Scope 3 data, PETRONAS plans to verify its Scope 3 emissions in subsequent years.

### Cumulative Renewable Energy Installed Capacity

Key Performance Indicators	2019	2020	2021	2022	2023
Total Cumulative Renewable Energy Installed Capacity (megawatt)	10	644	851	1,086	<b>1,621*</b>
Malaysia	10	19	29	81	<b>78</b>
International	n/a	625	822	1,005	<b>1,543</b>

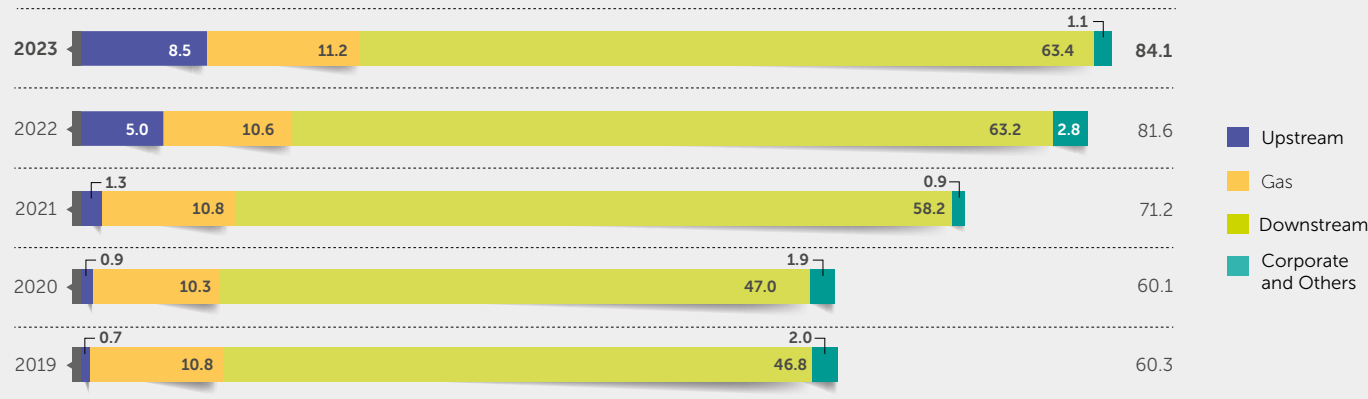
**Note:**

\* Cumulative renewable energy capacity is 2.9GW, including installed and under construction.

## Sustainability Key Performance Data

### Environment

#### Total Freshwater Withdrawal (million cubic metres per year)



Disclosures	2019	2020	2021	2022	2023
<b>Water</b>					
Total Freshwater Withdrawal (million cubic metres per year)	60.3	60.1	71.2	81.6	<b>84.1</b>
Freshwater Withdrawal by Business Segments					
Upstream (million cubic metres per year)	0.7	0.9	1.3	5.0	<b>8.5</b>
Gas (million cubic metres per year)	10.8	10.3	10.8	10.6	<b>11.2</b>
Downstream (million cubic metres per year)	46.8	47.0	58.2	63.2	<b>63.4</b>
Corporate and Others (million cubic metres per year)	2.0	1.9	0.9	2.8	<b>1.1</b>
Freshwater Withdrawal by Regions					
Malaysia (million cubic metres per year)	57.0	56.8	70.2	76.8	<b>75.7</b>
International (million cubic metres per year)	3.3	3.3	1.0	4.8	<b>8.4</b>
<b>Effluents</b>					
Discharges to Water (tonnes of hydrocarbon)	648	532	452	487	<b>327</b>
<b>Spillage</b>					
Number of Hydrocarbons Spills into the Environment over One Barrel (number of cases)	7	5	2	2	<b>5<sup>1</sup></b>
<b>Air Emissions</b>					
Total Sulphur Oxides Emissions (tonnes)	110,214	84,225	47,954	60,116	<b>60,212</b>
Total Nitrogen Oxides Emissions (tonnes)	148,446	138,035	133,962	62,790	<b>101,695<sup>2</sup></b>
<b>Waste</b>					
Total Hazardous Waste Generated (tonnes)	112,224	92,019	124,884	144,620	<b>152,037</b>
Hazardous Waste Generated by Region					
Malaysia (tonnes)	97,739	67,078	59,882	82,051	<b>66,444</b>
International (tonnes)	14,485	24,941	65,002	62,569	<b>85,593</b>
Total Hazardous Waste Sent for Reused, Recycled and Recovered (3R)	64,655	65,170	49,561	73,643	<b>57,424</b>
Hazardous Waste Sent for 3R by Region					
Malaysia (tonnes)	64,655	49,022	41,364	63,133	<b>52,147</b>
International (tonnes)	–	16,148	8,197	10,510	<b>5,277</b>
Total Hazardous Waste Disposed (tonnes)	42,121	33,349	59,228	76,485	<b>96,310</b>
Hazardous Waste Disposed by Region					
Malaysia (tonnes)	27,725	14,914	21,542	24,449	<b>20,023</b>
International (tonnes)	14,396	18,435	37,686	52,036	<b>76,287</b>

**Note:**

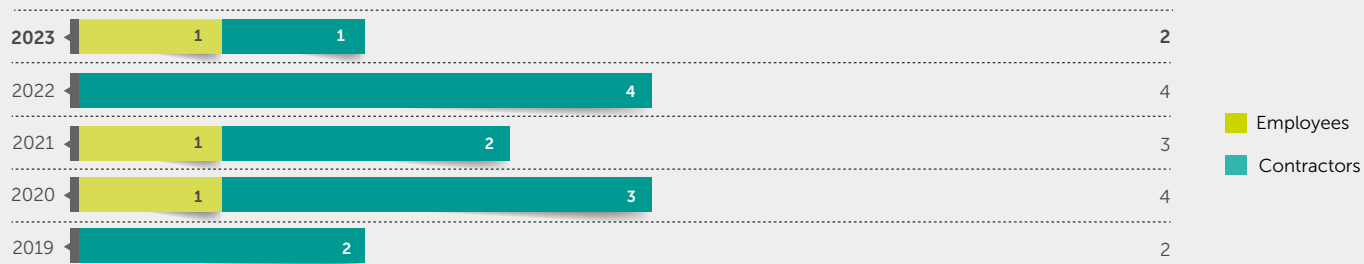
<sup>1</sup> In 2023, the increase in number of cases of hydrocarbon spills over one barrel, whereby four out of five cases were due to pipe leaks.

<sup>2</sup> Total nitrogen oxide emissions increased in 2023 to 101,695 tonnes from 62,790 tonnes. This increase was due to the high nitrogen oxide value from Malaysia LNG's combustion process and updated 2023 reporting scope by a subsidiary.



**Safety**

**Number of Fatalities** (number of cases)



Key Performance Indicators	2019	2020	2021	2022	2023
Total man-hours worked (million hours)	355	273	268	295	<b>292</b>
Employees	133	120	120	127	<b>131</b>
Contractors	222	153	148	168	<b>161</b>
Fatal Accident Rate (FAR) (number per 100 million man-hours)	0.56	1.47	1.12	1.36	<b>0.69</b>
Employees	0.00	0.84	0.84	0.00	<b>0.76</b>
Contractors	0.90	1.96	1.35	2.38	<b>0.62</b>
Lost Time Injury Frequency (LTIF) (number of cases per one million man-hours)	0.11	0.10	0.14	0.13	<b>0.11</b>
Employees	0.08	0.09	0.10	0.11	<b>0.08</b>
Contractors	0.12	0.11	0.17	0.14	<b>0.12</b>
Total Recordable Case Frequency (TRCF) (number of cases per one million man-hours)	0.34	0.29	0.41	0.34	<b>0.31</b>
Employees	0.28	0.27	0.28	0.26	<b>0.19</b>
Contractors	0.37	0.31	0.52	0.40	<b>0.40</b>
Total Recordable Occupational Illness Frequency (TROIF) (number of cases per one million man-hours – employees)	0.23	0.39	0.24	0.32	<b>0.66</b>
Number of Tier 1 Process Safety Events (number of cases)	9	9	10	7	<b>9</b>

## Sustainability Key Performance Data

### Employees

#### Total Number of Employees

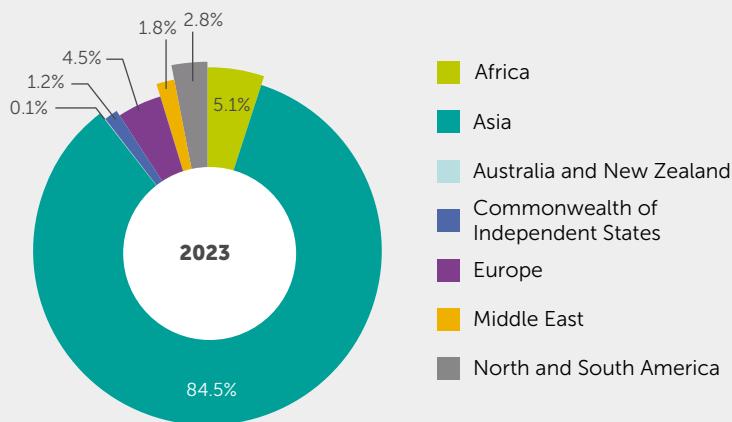


2023 workforce grew by 8.7 per cent fueled by business growth in alignment with PETRONAS Energy Transition Strategy whilst strengthening operational excellence.

#### Breakdown of Employees by Nationality (%)



#### Breakdown of Employees by Region in 2023 (%)



By monitoring our employee count across all regions where we operate, we have maintained a stable workforce in each region year-on-year. This ensures that our business operations can continue to perform.

## Employees

Key Performance Indicators	2019	2020	2021	2022	2023
Employment Type (%)					
Permanent	88	86	87	88	<b>87</b>
Contract	12	14	13	12	<b>13</b>
Age Group (%)					
Above 35	52	53	59	60	<b>58</b>
Below 35	48	47	41	40	<b>42</b>
Total Number of Union Members	8,420	8,476	8,353	8,360	<b>8,266</b>

### Note:

- Exclusively employing permanent and contract employees, we forgo non-guaranteed hours or part-time positions. This highlights our commitment to offering stable and fulfilling careers.
- Re-baseline Union Members disclosure for 2022 aligned with redefined boundaries for union members. The observed decrease in union membership is attributed to natural attrition.

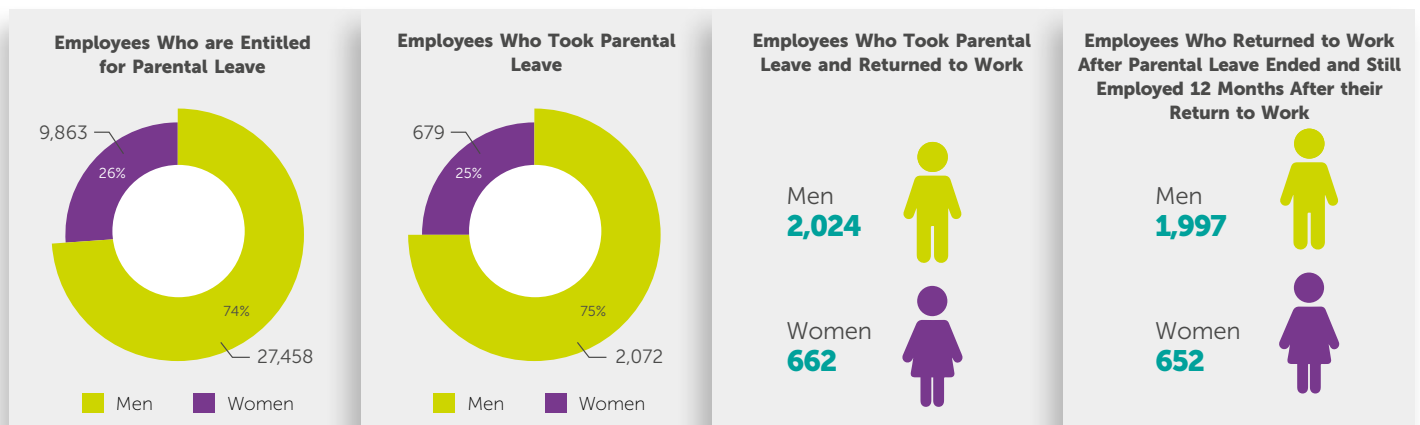
## Gender Diversity

Key Performance Indicators	2019	2020	2021	2022	2023
Breakdown of Employees by Gender (%)					
Men	73	72	72	71	<b>71</b>
Women	27	28	28	29	<b>29</b>
Breakdown of Senior Management Employees by Gender (%)					
Men	85	81	74	78	<b>79</b>
Women	15	19	26	22	<b>21</b>
Breakdown of Management Committee Employees by Gender (%)					
Men	89	78	78	78	<b>78</b>
Women	11	22	22	22	<b>22</b>
Breakdown of Board of Directors Employees by Gender (%)					
Men	86	75	70	82	<b>75</b>
Women	14	25	30	18	<b>25</b>
Women in Technical Position (%)	14	14	14	14	<b>15</b>

**Note:** Senior Management refers to Vice President and above. Management Committee refers to Executive Leadership Team.

## Benefits

Full-time employees in Malaysia have a comprehensive range of benefits including leave, allowances, medical coverage, financing options and talent development opportunities. Acknowledging the temporary nature of contract employment, contract employees may have different benefits depending on the duration and type of their contract. Certain benefits, such as dental or optical, preventive health screening, assistance for employees with a special needs child, Hajj or Umrah leave, pilgrimage leave, home financing, vehicle financing, substance misuse rehab assistance and staff development programmes, are only available to permanent employees.



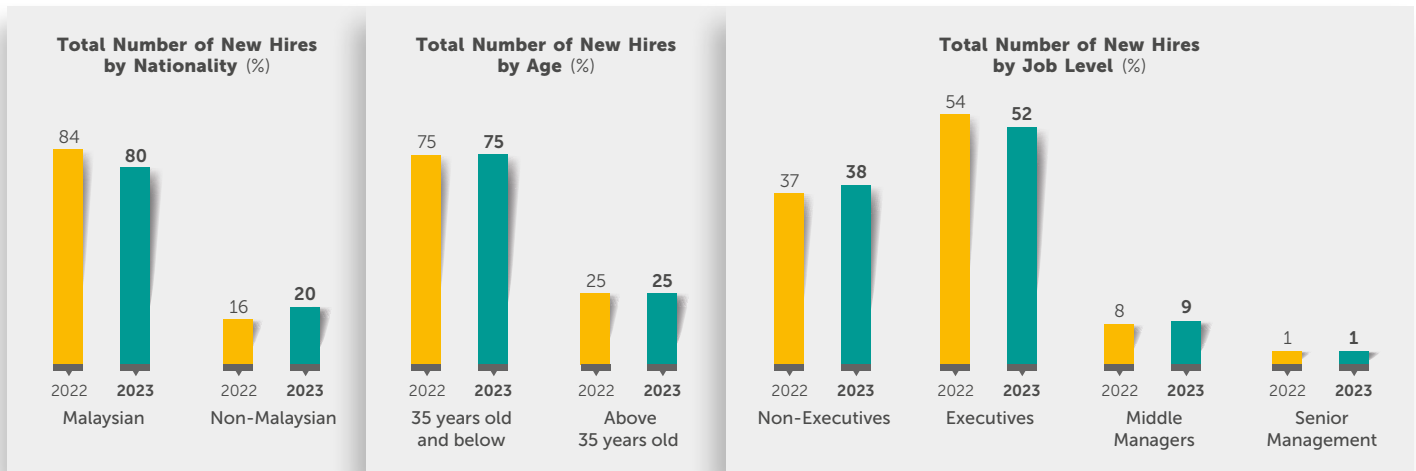
Parental Leave: **96%** retained within the Company

**Note:** Parental leave refers to Maternity and Paternity only.

## Sustainability Key Performance Data

### New Hires

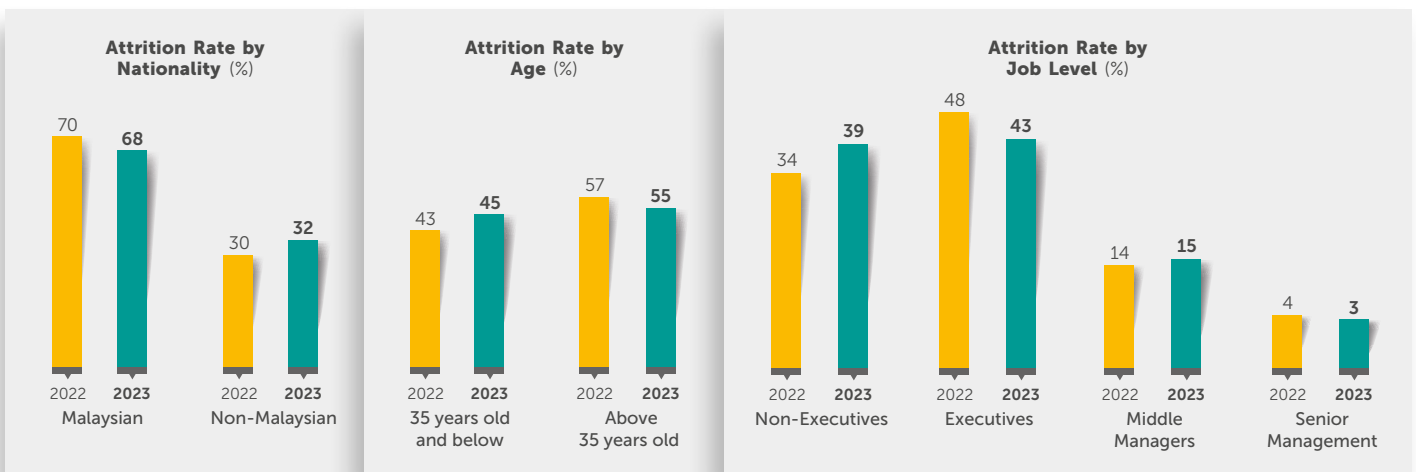
Key Performance Indicators	2019	2020	2021	2022	2023
Total Number of New Hires	3,498	2,160	2,172	5,210	<b>7,386</b>



**Note:**  
Our primary approach is to focus on internal talent development with vacancies primarily filled through transfers and promotions. External recruitment is pursued after internal options are fully explored. This underscores our commitment to upskilling talent to meet organisational growth objectives.

### Employee Attrition

Key Performance Indicators	2019	2020	2021	2022	2023
Employee Attrition Rate (%)	5.5	4.9	8.4	6.6	<b>6.4</b>
Men	3.7	3.6	5.7	4.7	<b>4.6</b>
Women	1.8	1.3	2.8	1.9	<b>1.8</b>



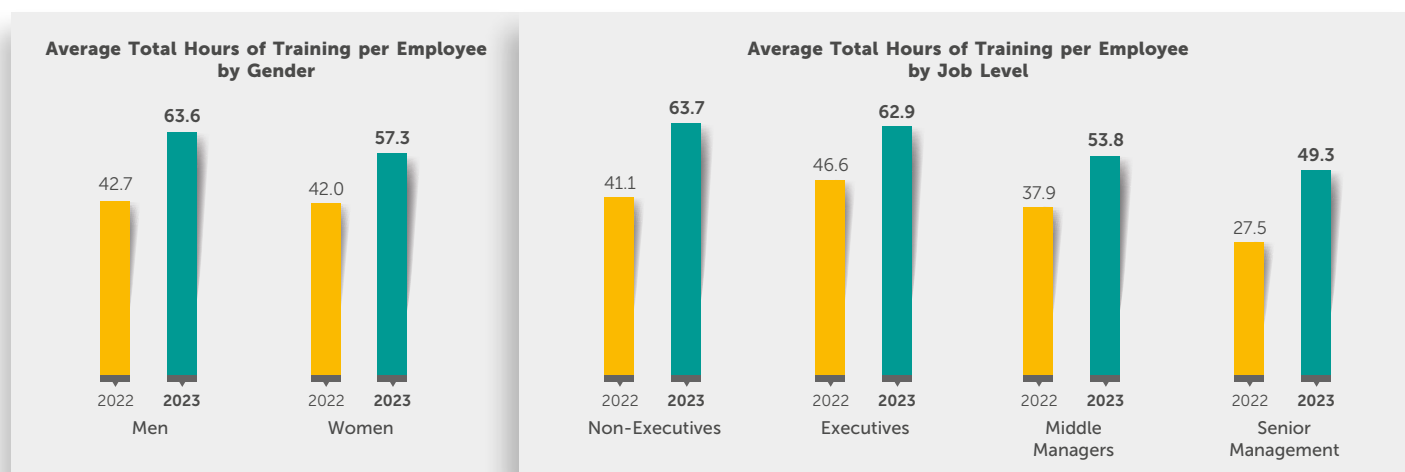
## Talent and Future Pipeline

### Training and Development

Key Performance Indicators	2019	2020	2021	2022	2023
Training days per employee	7.0	5.0	4.0	4.9	<b>7.3</b>
Training investment per employee (RM)	6,543	3,588	2,386	5,433	<b>6,771</b>
Average total hours of training per employee (person hours)	53.6	36.0	30.0	39.1	<b>58.2</b>

**Note:**

Significant increase in the learning hours resulted from efforts towards inculcating 'self-driven learning culture', and ensuring learning solutions support PETRONAS Capability Development Priorities such as Leadership, Technical, Agile and Innovation, Digital and Sustainability are being fulfilled.



### Groupwide Technical Expertise

Key Performance Indicators	2019	2020	2021	2022	2023
Technical Authorities (TA)	340	501	601	618	<b>786</b>
Technical Professionals (TP)	1,028	1,173	1,281	1,384	<b>1,380</b>
Technical Trade Specialists (TTS)	240	259	262	266	<b>255</b>

### Sponsorship

Key Performance Indicators	2019	2020	2021	2022	2023
Number of PETRONAS Scholars Recruited	206	219	220	281	<b>256</b>
Recruited by PETRONAS (%)	67	61	66	90	<b>90</b>
Recruited by Others (%)	33	39	34	10	<b>9</b>
Number of Scholarships Awarded to Malaysians	399	370	302	587	<b>615</b>
International Universities (%)	46	25	34	34	<b>35</b>
Malaysian Universities (%)	54	75	66	66	<b>65</b>
Number of Scholarships Awarded to Non-Malaysians at Universiti Teknologi PETRONAS	78	42	41	41	<b>32</b>

**Note:**

Re-baseline PETRONAS Scholars Recruited for 2022 data to reflect actual status of scholars pending placement. 1 per cent of 2023 PETRONAS's scholars are currently pending placement.

### Human Rights

Key Performance Indicators	2019	2020	2021	2022	2023
Number of security personnel trained in human rights policies or procedures	161	913	1,415	617	<b>115</b>