



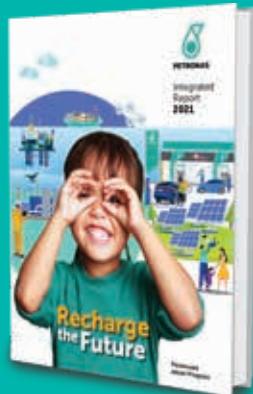
PETRONAS

Integrated
Report
2021



**Recharge
the Future**

Passionate
about Progress



Cover Rationale

The sheer pace and magnitude of energy transition are rapidly shifting how the world consumes energy. Society is demanding for a lower-carbon future, demonstrating a critical movement for sustainability goals to become even more central for governments and corporations.

In fulfilling our responsibility as a progressive energy and solutions partner, PETRONAS is committed to providing energy that is affordable, secure and sustainable for Malaysia and our customers across the globe.

By working closely with our stakeholders, we ensure that the oil and gas as well as the cleaner energy solutions we produce along our integrated value chain, are delivered with sustainability at the heart of our efforts.

Anchored to our purpose of enriching lives for a sustainable future, let's progress forward together and recharge the future for a better tomorrow.

We Aspire to Deliver
on Our Purpose:

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

Welcome to
the PETRONAS Integrated Report 2021

Our Three- Pronged Growth Strategy



Maximising Cash Generators



Cash generators are existing assets which provide strong and stable cash flows. Protecting and maximising these assets are paramount to provide a solid base for profitability and a foundation for growth.



Malaysia Integrated
Value Chain



International Asset

Expanding Core Business



Stepping Out



It is essential to expand the core business with a lower carbon footprint as it matures into becoming PETRONAS' new cash generator.

The strategies are as follows:



Deliver Material Resources



Monetise Unconventional Resources



Grow the Integrated Business Model and Expand Adjacencies

Global trends brought on by the Energy Transition are reshaping the energy landscape, consumption patterns and consumer preferences. PETRONAS continues to build capabilities and allocate resources to step-out beyond its current core business.



Specialty Chemicals



Customer-Centric Solutions



New Energy

Our Sustainability Agenda

Sustainability is deeply rooted in our Statement of Purpose, "A progressive energy and solutions partner enriching lives for a sustainable future". As a purpose-driven organisation, sustainability considerations contribute directly to what we do as a business, how we operate and how we engage with employees, customers, suppliers, service providers, local communities, regulators, investors and other stakeholders.

Scientific findings on climate change are accelerating the pace of the energy transition which demands tangible and urgent actions to reduce greenhouse gas (GHG) emissions to the atmosphere. Recognising the signs early on, PETRONAS' leadership has taken progressive steps to position the organisation forward. The leadership team, together with a strong mandate from the Board, has announced our net zero carbon emissions by 2050 (NZCE 2050) aspiration, the first from an oil and gas company in Southeast Asia. We are making this pledge to make a positive change, not only to pursue new opportunities in the energy transition, but because a fundamental shift is needed, and the organisation wants to be part of the solution towards a more sustainable future.

In stepping up our sustainability efforts, PETRONAS is shaping our approach to net zero carbon emissions and deliver on our aspiration. In the process of developing our Paris Agreement-aligned pathways, we will be conducting a systematic climate risk evaluation and quantification, as well as reviewing our emissions baseline and strengthening our carbon management capabilities. In doing so, we aim to shape our wider ecosystem and catalyse national and regional green growth. We are continuously guided by our four sustainability lenses and seven prioritised United Nations' Sustainable Development Goals (SDGs).



Our Sustainability Agenda

The delivery of our NZCE 2050 aspiration will build resilience and better prepare the organisation and Malaysian value chain for a sustainable future. As we decarbonise, we must also create social value and enable progress for society that will offer better prospects for more people, with the notion of leaving no one behind, thus promoting a Just Transition.

In pursuing our NZCE 2050 aspiration, we remain steadfast in achieving three short-term targets that were set in 2019:



Our Short-Term Targets

Greenhouse Gas Emissions

Cap GHG emissions at **49.5 million tonnes** of carbon dioxide equivalent (MtCO₂e) for our Malaysia operations **by 2024**.

Renewable Energy

Increase renewable energy capacity to **3,000 MW by 2024**.

Education Beneficiaries

Reach over **24,000 beneficiaries** through education programmes cumulatively between **2020 and 2024**.

As part of our broader efforts to achieve our NZCE 2050 aspiration, we are collaborating with various global organisations. In November 2021, we endorsed the World Bank's Zero Routine Flaring by 2030 Initiative and the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) to deliver greater transparency around actions on climate change.

The Zero Routine Flaring Initiative aims to end flaring of associated gas from oil production. We have pledged to avoid routine flaring in new field developments and end routine flaring at existing oil production sites by 2030. This is applicable to our upstream operations within operational control and excludes flaring sources due to safety and non-routine flaring. We will publicly report our flaring data on an annual basis, with our first disclosure targeted in 2023.

We have also announced our support towards the recommendations of the TCFD and will work to adopt the disclosure framework from 2023 onwards. We intend to proactively strengthen our reporting while shaping Malaysia's national climate-related risk disclosures.

In April 2021, we joined other oil and gas companies in submitting a letter of commitment to the World Economic Forum's Stakeholder Capitalism Metrics. We agreed to adopt the Stakeholder Capitalism Metrics in our reporting, promote the further convergence of existing environmental,

social and governance (ESG) frameworks and principles, as well as support the progress of a globally accepted solution for common ESG metrics. We have published the first PETRONAS disclosure on World Economic Forum Stakeholder Capitalism Metrics in our corporate website.

Meanwhile our membership in the World Business Council for Sustainable Development (WBCSD) helps us further align our efforts with global best practices, strengthen capacity and capability as well as raise awareness among leadership on sustainability. Our President and Group Chief Executive Officer, and Vice President and Chief Sustainability Officer are actively involved as Council Member and Liaison Delegate respectively. Additionally, our Executive Vice President and Chief Financial Officer is part of the WBCSD Chief Financial Officer (CFO) Network, and our Senior Vice President Group Human Resource Management is a member of the WBCSD Business Commission to Tackle Inequality.

Our President and Group Chief Executive Officer also chairs the CEO Action Network, a coalition of leaders of major Malaysian businesses that focus on sustainability advocacy, capacity building, action, and performance improvements.



PETRONAS

What's Inside

We are pleased
to present our

2021

Integrated Report



- 
- 02** Our Three-Pronged Growth Strategy
 - 04** Our Sustainability Agenda
 - 08** About This Report

PETRONAS in 2021



- 14** Our Shared Values | PETRONAS Cultural Beliefs
- 15** Competitive Advantage
- 16** Key Highlights
 - 16** Financial Highlights
 - 16** Business Highlights
 - 18** Sustainability Highlights
 - 20** Awards and Recognitions
 - 24** Event and Conference Highlights
- 26** Business Snapshots
- 30** Our Integrated Value Chain
- 32** PETRONAS Around the World
- 34** Corporate Structure



Key Messages

- 48** Letter from the Chairman
- 56** Letter from the President and Group Chief Executive Officer
- 62** Letter from the Executive Vice President and Group Chief Financial Officer
- 68** Letter from the Vice President and Chief Sustainability Officer

Value We Create

- 76** Our Integrated Approach to Value Creation
- 78** Our Key Capitals
- 80** Value Creation Model
- 82** Performance by Capital
- 88** Engaging with Stakeholders
- 96** Because We Care



Strategic Progress

- 102** The World in 2021
- 108** Material Topics
- 117** Risks Linked to Creating Value
- 132** Strategic Performance Review



Business Review

- 136** Upstream
- 144** Gas + New Energy
- 152** Downstream
- 160** Project Delivery and Technology



Our Sustainability Journey

- 170** Sustainability Governance
- 174** Safeguard the Environment
- 186** Positive Social Impact
- 218** Five-Year Sustainability Key Performance Data

Commitment to Governance

- 228** Board Composition
- 229** Profile of Board of Directors
- 239** Profile of Company Secretaries
- 241** Profile of Executive Leadership Team
- 245** Corporate Governance at PETRONAS

Financial Review and Other Information

- 262** Group Financial Results and Position
- 262** Analysis of Financial Results
- 269** Analysis of Financial Position
- 271** Analysis of Cash Flow
- 274** Five-Year Key Financial Indicators
- 276** Appendix
- 279** Glossary of Terms

About This Report

Dear Stakeholders,

We are pleased to present the PETRONAS Integrated Report 2021, which showcases our performance in creating financial and non-financial values for our stakeholders during the year. The report aims to offer a balanced assessment of our performance, progress and future direction. We continue to make great strides as a progressive energy and solutions partner; developing meaningful relationships with our stakeholders to create sustainable value and **Recharge the Future**.

While we are not a public listed company, we are committed to this process as a means of adding value for our stakeholders as it creates better visibility, transparency and allows an informed assessment of our operations.

Scope and Boundaries

The PETRONAS Integrated Report is produced and published annually, covering the full calendar year from 1 January to 31 December 2021, unless stated otherwise. The report covers all our operations and activities across PETRONAS and its subsidiaries (PETRONAS Group), joint operations and associates.

This report extends beyond financial reporting. It includes our non-financial performance, governance, key strategies, material topics, risks and opportunities, as well as stakeholder value creation. The non-financial data in this report includes data from our owned and operated businesses, in line with industry best practices. It does not include data from equity interest fields/projects, such as joint ventures, where we do not have operational control. Those areas that we do not have operational control over are included in disclosures of the management approach.

Reporting Frameworks

This report is guided by local and global standards, including:

- The International Integrated Reporting Council (IIRC) <IR> Framework, a principles-based approach that promotes the six capitals concept and considers material inputs as well as resources required to create and sustain value in the long term.
- International Financial Reporting Standards (IFRS).
- Malaysian Financial Reporting Standards (MFRS).
- Ipieca/API/IOPGP Sustainability reporting guidance for the oil and gas industry.
- Global Reporting Initiative (GRI) Standards.
- World Economic Forum's Stakeholder Capitalism Metrics.

Sustainability Reporting

We aim to embed sustainability consistently into our business strategy and decisions. We see this as an essential component of our value creation. By focusing on responsible environmental, social and governance (ESG) practices, we are better able to create long-term value for all stakeholders. With this in mind, this report includes our sustainability aspiration and performance aligned with

relevant international standards. Additionally, we seek to demonstrate how our business strategy and initiatives contribute to the United Nations' Sustainable Development Goals (SDGs).

Forward-Looking Statements

This report contains forward-looking statements. Words such as "believe", "anticipate", "intend", "seek", "will", "plan", "could", "may", "endeavour" and similar expressions are intended to identify such forward-looking statements but are not the exclusive means of identifying such statements. By their nature, forward-looking statements involve risk and uncertainty because they relate to future events and circumstances and should be considered in light of the various important factors. While these forward-looking statements represent our judgements and future expectations, a number of risks, uncertainties and other important factors could cause actual developments and results to differ materially from our expectations.

The key factors that could cause our actual performance or achievements to differ materially from those in the forward-looking statements include changes to IFRS and associated interpretations, applications and practices as they apply to past, present and future periods; ongoing and future acquisitions; changes to domestic and international businesses and market conditions such as exchange rate and interest rate movements; changes in domestic and international regulatory and legislative environments; changes to domestic and international operational, social, economic and political conditions; any labour disruptions and industrial action; and the effects of both current and future litigations.

Assurance

The financial information contained in this report, which has been extracted from the consolidated Audited Financial Statements for the financial year ended 31 December 2021, and was audited by KPMG PLT.

We have also completed third party verification for the Lifecycle Carbon Footprint (partial CFP) for PC Ethylene products by DNV, USA. This increases the credibility of internally conducted Life Cycle Assessment (LCA) towards our disclosure to stakeholders, particularly customers.

About This Report

Point of Contact

As part of our efforts to continuously improve our integrated reporting journey, we welcome all suggestions and inquiries from our stakeholders and readers. Please send your feedback to:

Group Strategic Communications
Level 70, Tower 1, PETRONAS Twin Towers
Kuala Lumpur City Centre
50088 Kuala Lumpur
Malaysia



www.petronas.com/contact-us

Approval by the Board

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

We believe that this report has been materially prepared in accordance with the International Integrated Reporting Council <IR> Framework.

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

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

Datuk Tengku Muhammad Taufik
President and Group Chief Executive Officer

NAVIGATION ICONS

Three-Pronged Growth Strategy



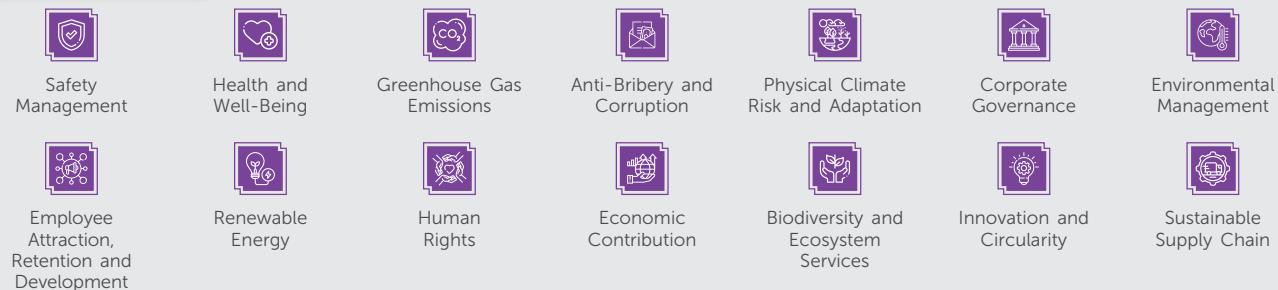
Key Stakeholders



United Nations' Sustainable Development Goals



Material Topics



About This Report

Cross References

 You can find more information within the report

 You can find more information online in our corporate website: www.petronas.com

 Additional information about PETRONAS on our corporate website is accessible via a QR Code

Feedback

PETRONAS is committed to continuously improving our reporting, and we value input from our stakeholders in making these enhancements. Should you have any queries or feedback on this report, please contact us through the following channels:

- Go online to our website at: www.petronas.com



This report is supplemented by the following disclosures, which can be accessed online via www.petronas.com:

- PETRONAS Activity Outlook 2022-2024
- PETRONAS Human Rights Report 2020
- PETRONAS Half-Yearly Sustainability Disclosures 2021
<https://www.petronas.com/sustainability/reporting>

We value and appreciate all feedback to help make our future reports more relevant to our stakeholders.



Petroliam Nasional Berhad (PETRONAS)

197401002911 (20076-K)

Tower 1, PETRONAS Twin Towers
Kuala Lumpur City Centre
50088 Kuala Lumpur
Malaysia

The PETRONAS Integrated Report is our primary report.



Integrated Report 2021

Provides a comprehensive overview of the Group's financial and non-financial performance in 2021 and our outlook for 2022.



Financial Report 2021

Provides access to the Audited Financial Statements comprising Directors' Report, Financial Statements, Notes to the Financial Statements and our Independent Auditors' Report.



Scan the QR code to access our **Integrated Report 2021** and **Financial Report 2021**



Recharge

to Deliver
a Positive Impact



PETRONAS in 2021

Our Purpose, mandate, aspirations, structure and presence

- 14** Our Shared Values | PETRONAS Cultural Beliefs
- 15** Competitive Advantage
- 16** Key Highlights
 - 16** Financial Highlights
 - 16** Business Highlights
 - 18** Sustainability Highlights
 - 20** Awards and Recognitions
 - 24** Event and Conference Highlights
- 26** Business Snapshots
- 30** Our Integrated Value Chain
- 32** PETRONAS Around the World
- 34** Corporate Structure



PETRONAS in 2021

A progressive energy and solutions partner enriching lives for a sustainable future

Our Shared Values

Loyalty

Loyal to corporation

Integrity

Honest and upright

Professionalism

Strive for excellence

Cohesiveness

United, trust and respect for each other

Petroliam Nasional Berhad (PETRONAS) is a dynamic global energy and solutions company with a core intent to power society's progress responsibly and sustainably. Recognised as one of the largest corporations in the world, included in the Fortune Global 500® ranking, we have a total of 46,884 employees with a global reach spanning over 100 countries.

As the custodian of Malaysia's national oil and gas resources, PETRONAS explores, produces and delivers energy, both hydrocarbon and renewables, to ensure the security of energy supply for the nation and our customers around the globe. We have four core businesses – Upstream, Gas + New Energy, Downstream, and Project Delivery and Technology.

PETRONAS is also the largest petrochemical producer in Southeast Asia. The Group delivers petrochemical products such as olefins, polymers, fertilisers, methanol and other basic chemicals and derivative products.

In upholding our commitment as a responsible and conscientious player in the global energy sector, sustainability remains a core consideration of what we do and how we do it. We are committed to growing our business responsibly, positively contributing to society and the environment. Driven by our passion for innovation to serve a lower carbon energy future, every step takes us closer to attaining our aspiration of net zero carbon emissions by 2050 (NZCE 2050).

PETRONAS Cultural Beliefs



Customer Focused

I deliver solutions from the customer lens



Be Enterprising

I seek opportunities and make them happen



Innovate Now

I challenge norms and push boundaries



Speak Up

I express my views openly



Courage to Act

I take action to progress with pace

Competitive Advantage



Our long track record as a global energy and solutions partner

Since 1974, we have transformed PETRONAS from a domestic-based national oil company into a fully integrated oil and gas multinational corporation. This experience has provided us with the winning formula to drive the transition to a lower carbon economy and further contribute to societal progress.



and expansive global reach

We are an organisation with a strong presence in over 100 countries and we strive to seek energy potential across the globe to deliver responsible energy solutions.



which is driven by a dedicated team of people

People are our strength and partners for growth, driving our passion for innovation to progress towards sustainable energy solutions. Our 46,884 employees worldwide continue to be at the forefront of executing our strategic objectives, equipped with the skills and expertise to thrive in a lower-carbon future.



and underpinned by responsible governance

Throughout the Group, we strive to achieve the highest standards of integrity in the conduct of our business and operations. We have robust policies, systems and protocols in place to ensure good governance and ethical business practices.



supports our expanding business and portfolio

We have a long history of success in exploration, development and production of crude oil and natural gas in Malaysia and abroad. Now, as the world's energy systems are transitioning, our portfolio is expanding to include cleaner conventional hydrocarbons, renewable resources and a range of advanced products and adaptive solutions.

Brand Positioning: "Passionate About Progress"

Key Highlights

Financial Highlights



Revenue

RM248.0 billion

2020: RM178.7 billion



Profit/(Loss) After Tax

RM48.6 billion

2020: (RM21.0) billion



Cash Flows from Operations (CFFO)

RM78.6 billion

2020: RM40.7 billion



Total Assets

RM635.0 billion

2020: RM574.1 billion



Return on Average Capital Employed (ROACE)

10.8%

2020: (4.1%)

Business Highlights

Upstream

Recorded a total daily production average of **2,275 thousand** of oil equivalent (boe) per day, a **3%** increase in comparison to 2020.

Achieved first hydrocarbon for 21 projects – **14 in Malaysia** and **7 abroad** (South Sudan (2), Chad (1), Myanmar (1), Turkmenistan (1), Brazil (1) and Indonesia (1)).

Achieved **Final Investment Decision (FID)** for **22 projects** – Malaysia (18), Indonesia (2), Brazil (1) and Turkmenistan (1).

Made **10 exploration discoveries** – Malaysia (7), Indonesia (1), Brunei (1) and United States (1).

Signed **7 Production Sharing Contracts (PSCs)** with new and existing players in Malaysia.

Downstream

Overall Equipment Effectiveness (OEE) of **93.3%** across all business segments.

Overall marketing **sales volume** of **21 billion litres** from PETRONAS Dagangan Berhad (PDB), Engen Petroleum and PETRONAS Lubricants International Sdn Bhd (PLI), a **200 million litres increase** from previous year.

Supplied fuel for the first Malaysia Airlines flight using a blend mixture of **38% sustainable aviation fuel (SAF)** and conventional jet fuel as a cleaner and more viable energy option.

Commenced commercial operations of **8,000 metric tonnes per year** silicone blending facility in Gebeng, Pahang, to strengthen position as key silicone manufacturer in the region.

Conducted **PETRONAS Marine's first LNG bunkering in Port Klang** and **Port of Sandakan** to provide a cleaner source of fuel in support of the International Maritime Organization's sulphur limit for ships' fuel oil.

Key Highlights

Gas + New Energy

First in the world to produce LNG from two floating facilities: PFLNG Satu and PFLNG Dua.

Delivered 12,000th LNG cargo from PETRONAS LNG Complex in Bintulu, Sarawak, Malaysia, that includes five carbon neutral LNG cargoes.

Completed 960 Virtual Pipeline System and LNG bunkering deliveries across Malaysia, and 2,026 LNG deliveries in ISO tanks to China.

Close to **1 GW of solar capacity** in operation and under development.

Grew Hydrogen expertise through strategic collaborations with Sumitomo Corporation, Tokyo Gas, ENEOS, JERA and MASDAR.



Project Delivery and Technology

Managed 587 projects

valued at more than **RM9 billion**.

25 key technologies achieved site readiness.

RM25 million registered in commercialisation revenue through the deployment of **17 technologies** and **98 TechApps softwares**.

Created **RM830 million** in total value creation through ARIES, our digital enabling engineering solutions.

Achieved **RM818 million** in cash generation through **Alpha Series**, a digital transformation of our value chain.

Reduction of **6.4% of GHG emissions** in support of NZCE 2050.



Key Highlights

Sustainability Highlights



Health and Well-Being

Mental health and well-being signature programmes contributed to:

- **70%** improvement in Depression, Anxiety and Stress Scores.
- **1,409** employees enrolled for Digital Healthy Lifestyle Coaching.

GHG Emissions

- GHG emissions reduced by **6.4%**.
- Upstream GHG intensity reduced by **27.3%**.
- A decrease of an estimated **4.1 million tCO₂e** from GHG Emissions Reduction Projects.
- Reduction of an estimated **0.1 million tonnes** of methane emissions.

Anti-Bribery and Corruption

- More than **90%** of PETRONAS employees completed online courses on the five Critical Legal Areas: Ethics and Integrity, Data Privacy, Sanctions, Export Control and Competition.

Corporate Governance

- Board members attended programmes to keep abreast on matters related to sustainability including **human rights, Just Transition and climate change**.

Environmental Management

- **40%** of total waste generated was recycled.



Employee Attraction, Retention and Development

- **2,172** new hires.
- Average **30 hours** per employee spent on training.

Key Highlights



Economic Contribution

- **RM48.2 billion** contributed to the Federal Government of Malaysia and state governments.
- Contributed **12,000** devices to students worth **RM30 million** for hybrid learning and teaching.
- More than **RM163 million** invested in the PETRONAS Education Sponsorship Programme (PESP).
- Invested up to **RM635.8 million** in CSR programmes driven by Yayasan PETRONAS (the Foundation) together with the businesses.

Human Rights

- **98%** of grievance cases closed.
- **68%** of employees completed **Human Rights Management** e-learning module.



Innovation and Circularity

- Identified **19 potential storage** sites to offer CCS as an option for carbon management solution.



Key Highlights

Awards and Recognitions



We are delighted with our numerous accomplishments over the year. These awards and accolades are a strong testimony to our continuous pursuit of excellence across the PETRONAS Group of Companies.



Key Highlights

2021 Australian Reporting Award (ARA)

- PETRONAS Chemicals Group Berhad
 - Bronze in General Award: Sustainability Reporting Award

46th International Convention on ICQCC 2021

- PETRONAS Penapisan (Terengganu) Sdn Bhd
 - Two PAR Excellence and one Excellence Awards

Annual Report Competition (ARC) Awards International

- PETRONAS Chemicals Group Berhad
 - Financial Data (Bronze)
 - Specialised Annual Reports – Integrated AR & CSR: Non-traditional Format (Silver)
 - Best of Shows (Winner – Malaysia)

APPIES Malaysia 2021 Marketing Campaign Awards

- PETRONAS Dagangan Berhad
 - Silver Award in Marketing Innovation Category

BTEC International Institution of the Year

- Institut Teknologi Petroleum PETRONAS (INSTEP)
 - Silver Award

Data Nerd Awards 2021

- PETRONAS Dagangan Berhad
 - Winner in Data Creativity Category

Diamond Arrow Award

- Engen Petroleum
 - The Most Admired Petroleum/Diesel Brand in Namibia (Winner)

Dow Jones Sustainability Indices (DJSI) 2021

- PETRONAS Chemicals Group Berhad
 - Member of DJSI World Index
 - Member of DJSI Emerging Markets Index

Duty of Care Summit and Awards 2021

- Group Security, Pandemic Preparedness and Response Team
 - Honorable Mentions in Remote Resilience Category

FTSE4Good Bursa Malaysia

- PETRONAS Chemicals Group Berhad
 - Full 4-Star ESG Rating of Public Listed Companies Assessed in line with the FTSE4Good Bursa Malaysia Review Cycle
- PETRONAS Dagangan Berhad
 - Full 4-Star ESG Rating of Public Listed Companies Assessed in line with the FTSE4Good Bursa Malaysia Review Cycle

GasTech Awards 2021

- Malaysia LNG Sdn Bhd
 - Engineering Partnership of the Year for AI Driven innovation, STELLAR Project that was co-developed by Malaysia LNG and PETRONAS Digital

GRADUAN Brand Awards 2021

- PETRONAS
 - Malaysia's Most Preferred Employer in Oil & Gas Sector

Graduates' Choice Award 2022

- PETRONAS
 - Top 5 Most Preferred Graduate Employers in Malaysia
 - First place in Chemical Sector
 - First place in Oil & Gas Sector & Engineering Sector
 - Top 10 in Convenience Store

Hari Orang Kurang Upaya Sedunia Peringkat Kebangsaan Tahun 2021

- PETRONAS
 - Anugerah Korporat Prihatin Tahun 2021

HSE Gold Medal Award

- Project Delivery and Technology
 - HSE Gold Medal Award (PGB – Utilities Kerteh)

IChemE Global Awards 2021

- PETRONAS Penapisan (Terengganu) Sdn Bhd
 - Oil & Gas Award "VGSP Eliminates Liquid in Sampling Bombs" (Highly Commended)

IChemE Malaysia Awards 2021

- PETRONAS Penapisan (Terengganu) Sdn Bhd
 - Oil & Gas Award "VGSP Eliminates Liquid in Sampling Bombs" (Highly Commended)
 - Process Safety Award "Digitalizing & Gamifying Process Safety" (Highly Commended)
 - Training & Development Award "Incident Investigation Methodology & Presentation" (Highly Commended)
- Project Delivery and Technology
 - Process Automation and Digitalisation Award (STELLAR)
 - Training and Development Award (Citizen Analytics)

IDC Future Enterprise Awards

- Project Delivery and Technology
 - Country Award for Future of Connectedness
 - Asia Pacific Award for Future of Connectedness

IPSOS Malaysia

- PETRONAS
 - Highest Scoring Organisation in Managing a Crisis Situation

Key Highlights

Awards and Recognitions



KPMG Customer Experience Excellence 2021

- PETRONAS Dagangan Berhad
 - First among Malaysia's Top 10 Leaders

Leading Employers Graduates 2021

- PETRONAS
 - Second in Malaysia's 100 Award
 - First in Energy, Oil and Gas, Utilities sector for the fourth consecutive year since 2018

LinkedIn Talent Awards 2021

- PETRONAS
 - Diversity and Talent Insight Pioneer

Majlis Amanat dan Makan Malam Apresiasi Sempena Ulang Tahun ke-75 Jabatan Kebajikan Masyarakat

- PETRONAS
 - Anugerah Korporat Prihatin

Majlis Anugerah Pembayar-Pembayar Cukai Terbaik 2020 dan Most Outstanding Hasilian 2020 Sempena Sambutan Hari Hasil ke-25

- KLCC Property Holdings Berhad
 - The Best Taxpayer Award

Malaysia Technology Excellence Awards 2021

- PETRONAS Digital Sdn Bhd and Malaysia LNG Sdn Bhd
 - AI: Oil & Gas Award for the entry "AI-driven Live Advisory for LNG Plant Start-Up"
 - Analytics: Oil & Gas Award for the entry "PETRONAS Integrated Pipeline Integrity Assurance Solutions (i-PIMS)"
 - Digital – Oil & Gas Award for the entry "HSSE Analytics Suite"
- Project Delivery and Technology
 - HSSE Analytics Suite
 - STELLAR: AI
 - Integrated Pipeline Integrity Management System (I-PIMS): Digital

Malaysian Society for Occupational Safety & Health (MSOSH)

- Upstream
 - 15 Gold Merit Awards
 - 6 Gold Class Awards

NACS Convenience Summit Asia 2021

- PETRONAS Dagangan Berhad
 - Convenience Retail Technology Award (Winner)

National Annual Corporate Report Awards (NACRA) 2021

- PETRONAS
 - Excellence Awards Non-Listed Organisations – Platinum
- PETRONAS Gas Bhd
 - Special Awards Best Designed Annual Report – Gold

Prime Minister's Hibiscus Award 2019/2020

- PETRONAS Carigali Sdn Bhd (Terengganu Crude Oil Terminal)
 - Excellent Achievement Award
- PETRONAS Carigali Sdn Bhd (Terengganu Gas Terminal)
 - Exceptional Achievement Award
- PETRONAS Carigali Sdn Bhd (Sarawak Oil)
 - Notable Achievement Award
- PETRONAS Carigali Sdn Bhd (Sabah Oil & Gas Terminal)
 - Notable Achievement Award
- PETRONAS Penapisan (Terengganu) Sdn Bhd
 - Bronze in Special Projects Award
 - Exceptional Achievement Award in Environmental Performance
- PETRONAS Gas Berhad (Gas Processing Kerteh)
 - Excellent Achievement in Environmental Performance

- PETRONAS Gas Berhad (Gas Processing Santong)
 - Notable Achievement in Environmental Performance
- PETRONAS Gas Berhad (Regasification Terminal Sungai Udang)
 - Exceptional Achievement in Environmental Performance
- PETRONAS Gas Berhad (Tanjung Sulong Export Terminal)
 - Notable Achievement in Environmental Performance
- PETRONAS Gas Berhad (Utilities Gebeng)
 - Excellent Achievement in Environmental Performance
- Malaysia LNG Sdn Bhd
 - Exceptional Achievement in Environmental Performance
- PETRONAS Chemicals Polyethylene Sdn Bhd
 - Exceptional Achievement Award in Environmental Performance
- PETRONAS Chemicals Ammonia Sdn Bhd
 - Exceptional Achievement Award in Environmental Performance
 - Silver in Special Project Award
- PETRONAS Chemicals MTBE Sdn Bhd
 - Notable Achievement Award in Environmental Performance
- Institut Teknologi Petroleum PETRONAS (INSTEP)
 - Notable Achievement Award in Environmental Performance for the year 2019/2020

Putra Brand Awards

- PETRONAS Dagangan Berhad
 - Gold Award in Automotive Fuel, Lubricants and Accessories

Randstad Malaysia Employer Brand Awards

- PETRONAS
 - Inducted into 'Most Attractive Employer' Hall of Fame since 2020

Royal Society for the Prevention of Accidents (RoSPA) 2021

- Institut Teknologi Petroleum PETRONAS (INSTEP)
 - Gold Award
- PETRONAS Chemicals Fertiliser Kedah Sdn Bhd
 - Gold Award
- Gas + New Energy
 - Gold Medal Award (PGB Gas Processing Plant, Santong)
 - Gold Medal Award (PGB Tanjung Sulong Export Terminal)
 - Gold Medal Award (PGB Utilities Plant Gebeng)
 - Gold Medal Award (PGB Utilities Plant Kerteh)

Sarawak Chief Minister Environmental Award (CMEA) 2019/2020

- PETRONAS Carigali Sdn Bhd (Sarawak Asset)
 - Champion under Large Enterprises Category for Mining & Resource Extraction Sector
 - Gold Award under Large Enterprises Category for Mining & Resource Extraction Sector
 - Merit Award under Large Enterprises Category for Mining & Resource Extraction Sector

Shared Services & Outsourcing Network (SSON) Impact Awards 2021

- PETRONAS
 - Silver Award in Process Improvement and Value Creation
 - Bronze Award in Best Shared Services Team
 - Bronze Award in Best Vendor Collaboration
 - Honorary Mention in Change Management Award
 - Customer Centricity Impact Award

Strategic Trade Act (STA) 2010 Compliance Award

- PETRONAS Chemicals Group Berhad
 - STA 2020 Compliance Award (Winner)

Sustainable Business Awards 2021

- PETRONAS
 - Winner, Community Pillar
 - Winner, Stakeholder Management Pillar
- PETRONAS Chemicals Group Berhad
 - Winner, Energy Management Pillar
 - Winner, Water Management Pillar
 - Significant Achievement – Sustainability Strategy Pillar
 - Significant Achievement – Workforce Pillar
 - Significant Achievement – Stakeholder Management Pillar
- MISC Berhad
 - Winner, Waste Productivity & Materiality Pillar
 - Winner, Climate Change & Emission Pillar
 - Winner, Land Use & Biodiversity Pillar
 - Significant Achievement, Stakeholder Management Pillar

KLCC Property Holdings Berhad

- Significant Achievement, Supply Chain Management Pillar
- Significant Achievement, Business Ethics and Responsibility Pillar

Talend Data Masters Awards

- Project Delivery and Technology
 - Data Masters Award for the Enterprise Data Hub

The Edge Billion Ringgit Club (BRC) Awards

- PETRONAS Chemicals Group Berhad
 - Super Big Cap Companies Above RM40 billion market capitalisation
 - Highest Returns to Shareholders over Three Years

Top Companies South Africa: Reputation Index Award

- Engen Petroleum
 - Oil & Gas (Winner)

Key Highlights

Event and Conference Highlights

Throughout 2021, we engaged with key stakeholders at local and international events. Through these events, we exchanged insights and knowledge to drive the industry and nation forward and deepen our understanding of how to unlock our own potential in meeting the energy needs of the future.

► World Economic Forum [V]

25-29 January 2021

We attended the World Economic Forum, represented by President and Group Chief Executive Officer (GCEO), Datuk Tengku Muhammad Taufik.

► Future Energy Asia [V]

25-27 August 2021

As one of the Sponsors, President and GCEO, Datuk Tengku Muhammad Taufik and VP LNG Marketing and Trading, Shamsairi Ibrahim spoke at the conference, hosted by the Ministry of Energy Thailand and co-hosted by EGAT and PTT.



International Conference on Nation-Building

8-9 September 2021

We were represented by Senior Vice President of Corporate Strategy Mazuin Ismail, who was invited as a conference speaker.



► CERAWEK 2021 [V]

1-5 March 2021

As a Strategic Partner and Agora Partner of CERAWEK 2021, we enhanced our position on the global platform with insightful topics and strategic content presented by our leadership team.



► EXPO 2020 DUBAI – Opening Ceremony

4 October 2021

As the Official Premier Partner of the Malaysian Pavilion at the Expo 2020 Dubai, we invested RM5 million in the third-largest global event in terms of economic and cultural impact.

► IPTC 2021 (International Petroleum Technology Conference) [V]

23-25 March 2021

We proudly hosted IPTC for the third time, alongside Mubadala Petroleum and Schlumberger. PETRONAS President and GCEO, Datuk Tengku Muhammad Taufik, delivered the keynote address during the Opening Ceremony.



► Khazanah Megatrends Forum [V]

4 October 2021

President and GCEO, Datuk Tengku Muhammad Taufik spoke at the conference during the Special Address session on "The Great Reset: Shaping a Sustainable Energy Future".



Key Highlights



The Economist: Future of Energy Week [V]

4-7 October 2021

President and GCEO, Datuk Tengku Muhammad Taufik was interviewed by the Editor of The Economist and spoke on "To the Last Drop: The End of Oil and Gas?" at the Plenary Session. We were also one of the event sponsors.

India Energy Forum by CERAWEK [V]

20-22 October 2021

Thousands of delegates from Indian, regional, and international energy companies, institutions, and governments gathered virtually and in New Delhi for the 5th India Energy Forum by CERAWeek, under the patronage of Hon. Shri Hardeep Singh Puri, Minister of Petroleum and Natural Gas & Housing and Urban Affairs. President and GCEO, Datuk Tengku Muhammad Taufik, participated as one of the speakers under the topic "Creating Resilience to Climate Change: Lessons from the pandemic".



ASEAN Methane Roundtable 2021 [V]

26 October 2021

PETRONAS supported by Thailand's PTT Public Company Limited (PTT), hosted the inaugural ASEAN Energy Sector Methane Roundtable 2021. In his welcoming address, President and GCEO, Datuk Tengku Muhammad Taufik stressed on the importance for ASEAN to embrace a transition strategy that is responsible and equitable to ensure the sustainability of the region's energy system.



ADIPEC 2021

15-18 November 2021

President and GCEO, Datuk Tengku Muhammad Taufik was one of the invited speakers at ADIPEC, hosted by the Abu Dhabi National Oil Company (ADNOC). We also inked four new agreements with technology partners.

Reuters IMPACT [V]

4-7 October

The event brought together world leaders, big business C-Suite, and forward-thinking pioneers to inspire, drive action and accelerate innovation towards the greatest challenge of our generation: the climate emergency. President and GCEO, Datuk Tengku Muhammad Taufik, participated as a speaker under the topic "Mobilising global business to deliver on climate action."



PETRONAS FutureTalks [V]

23-24 November 2021

PETRONAS' inaugural FutureTalks focus on region's progress in the energy transition – driven by emerging digital technologies and shifting business-as-usual to business-unusual.



Merdeka Award Grant Ceremony

26 November 2021

As a Merdeka Award Trustee, alongside ExxonMobil and Shell, we selected five young Malaysians to receive grants that offer learning opportunities at world-renowned institutions.

Energy Intelligence Forum (EIF) [V]

5 October 2021

President and GCEO, Datuk Tengku Muhammad Taufik spoke during the Leadership Dialogue session. Meanwhile, EVP and CEO of Upstream, Adif Zulkifli participated in a panel session on the "Advantage Oil and Gas: What Makes the Cut in the Age of Austerity".



LNG Producer-Consumer Conference (LPCC) [V]

5 October 2021

President and GCEO, Datuk Tengku Muhammad Taufik delivered a video message, in conjunction with the 10th Anniversary of the Conference.

Business Snapshots

Our role as Malaysia's fully integrated energy provider is built on a dynamic value chain. Through our core businesses, we are able to deliver society's growing energy needs and contribute to a better tomorrow for everyone.



Upstream

PETRONAS' Upstream business is a fully integrated business that encompasses Exploration, Development, Production and Malaysia Petroleum Management (MPM), covering a broad portfolio of resources and play types. Upstream's presence extends across more than 20 countries globally, with 247 producing fields, 432 offshore platforms and 30 floating facilities.

Upstream also promotes sustainable and orderly development of Malaysia's petroleum resources through 100 active Petroleum Arrangement Contracts (PACs), including within the Malaysia-Thailand Joint Development Area. We are also involved in 65 PACs internationally.

Business Snapshots



LNG production capacity of approximately **47** million tonnes per annum

Grown our solar capacity in operation and under development close to **1 GW** in India, Malaysia, and Dubai.

Gas + New Energy

Gas + New Energy (G+NE) business comprises the Liquefied Natural Gas (LNG), Gas and Power, New Energy and Hydrogen business segments.

As PETRONAS' one-stop centre for a reliable and cleaner energy solutions, G+NE provides accessible cleaner energy fueling through our integrated value chain to meet the growing global demand.

In addition, we strive to create sustainable value and profitable growth for PETRONAS and our partners by focusing on customer-centricity, operational and commercial excellence, supported by the right talent, culture and digital innovations.

Business Snapshots



Profits After Tax
RM0.7 billion



Refining Capacity
More than **700**
kilobarrels per day

Downstream

PETRONAS' Downstream business enhances the value of petroleum resources through the refining, marketing and trading of crude oil and petroleum products, as well as manufacturing and marketing of petrochemicals, specialty chemicals and derivatives.

Downstream owns and operates an extensive retail network of more than 2,000 PETRONAS and Engen stations in Malaysia and sub-Saharan Africa respectively, offering high quality fluids and lubricants, as well as innovative non-fuel solutions to create seamless and frictionless experience for our customers.

Guided by PETRONAS' Sustainability Agenda, the Downstream business also offers cleaner energy solutions including sustainable aviation fuel (SAF), LNG bunkering and electric vehicles (EV) infrastructure and fluids in supporting PETRONAS' NZCE 2050.

Business Snapshots



Portfolio value
of more than
RM9 billion
for 587 projects

Upskilled
10,366
participants in Citizen
Analytics

Project Delivery and Technology

PETRONAS' Project Delivery and Technology (PD&T) Division innovates and enables tech-digital transformation for PETRONAS, and leverages technology and digital synergy to achieve sustainable and regenerative development. PD&T's role is to service, safeguard, and shape the Group's growth and strategy, backed by distinctive research and technical expertise, innovative solutions, as well as robust systems and processes.

In recent years, PD&T's role has increased significantly as PETRONAS moves into new areas of opportunities beyond oil and gas to meet our NZCE 2050 aspiration. As the engine that drives groupwide growth, PD&T is committed to support the Group's business targets by leveraging data to deliver value via a wide spectrum of technology and digital products and solutions.

Our Integrated Value Chain

Upstream

Exploration

Exploration activities in PETRONAS is a consolidation of exploration functions in Malaysia and internationally, which explores, acquires, extracts and delivers new resources to sustain long-term production. The role also includes the responsibility to attract exploration investment in Malaysia through data enrichment, technical evaluation and overseeing exploration activities as part of the regulatory body for the upstream sector under the umbrella of Malaysia Petroleum Management (MPM) business unit of PETRONAS. Core activities include block promotion, block acquisitions, basin evaluations, play generation, prospect maturation and exploration drilling. Exploration delivers new resource addition through continuous exploration in basins domestically and abroad to provide a pipeline of hydrocarbon resources for a sustained and long-term hydrocarbon production.

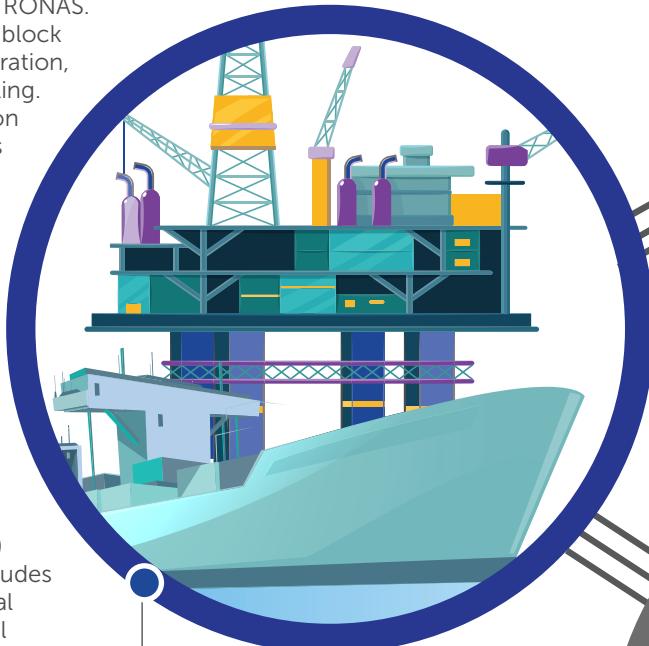
Development and Production

Development and Production (D&P) comprises a consolidation of development and production functions for Malaysia Assets, International Assets, and Centre of Excellence (CoE), which provide value-driven, world-class operational delivery, with utmost priority on Health, Safety and Environment (HSE) and Asset Integrity. D&P CoE, which includes Petroleum Engineering, Wells, Operational Excellence, Petroleum Economics, Global Resource Planning and Capability Development and Upstream Digital collectively provide value-driven operations in both technical and commercial solutions. This is done in collaboration with Assets, Exploration CoE, Project Delivery and Technology (PD&T) and Group Digital to support business growth.

Malaysia Petroleum Management

As the custodian of the country's hydrocarbon resources, PETRONAS through MPM plays its role as the oil and gas industry shaper and investment enabler by providing stewardship throughout the lifecycle of the upstream petroleum activities in Malaysia. PETRONAS' success in maximising the long-term value from hydrocarbon resources in Malaysia are realised through our effective partnerships with our Petroleum Arrangement Contractors (PACs), consisting of the oil and gas majors, large independents and specialised oil and gas companies. We continue to develop a competitive and conducive investment environment for our investors by offering

progressive fiscal terms whilst ensuring optimum production is achieved in a prudent and safe manner for people, facilities and the environment. We work with industry players to optimise efficiency throughout the field life by adopting innovative technical and commercial solutions. We also champion collaboration with various stakeholders ranging from government bodies to energy companies, business associations and higher learning institutions to create a strong ecosystem towards the development of a safe and sustainable industry.



Liquefied Natural Gas (LNG)

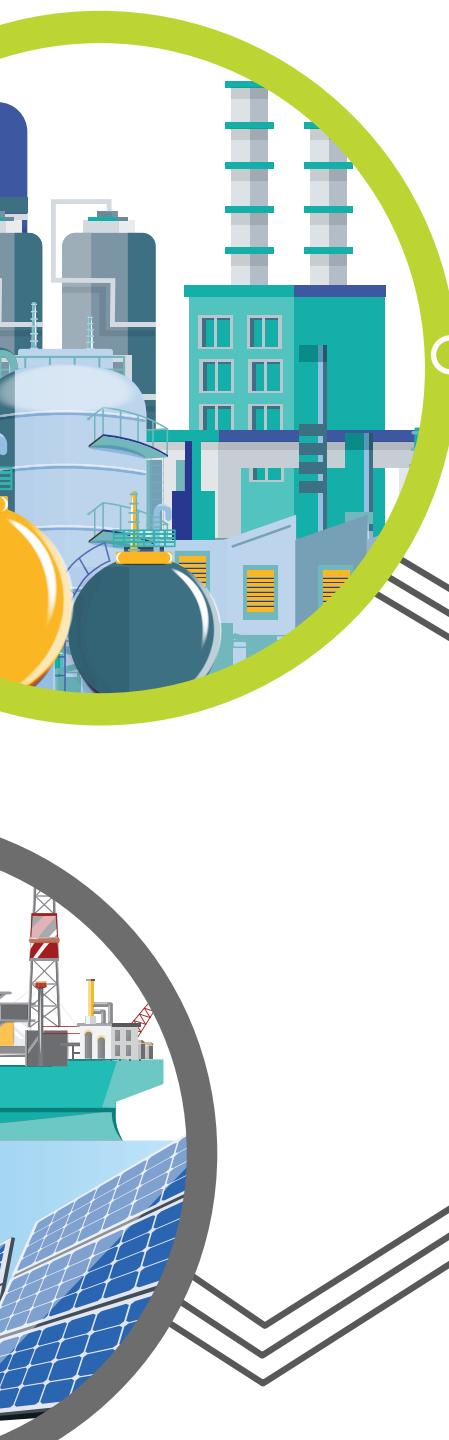
We are a leading global LNG producer and supplier. We have a diverse portfolio of assets and supply nodes located across Malaysia, Egypt, Australia and soon Canada.

Gas and Power

With a broad range of customer-centric products and solutions, we maximise our position domestically and pursue growth in emerging markets. Our world-class asset performance and diverse customer portfolio allow us to be the ideal solutions partner in delivering natural gas to our clients.



Our Integrated Value Chain



Refining

With a refining capacity of more than 700 kilobarrels per day, our processing plants transform and refine crude oil and various alternative raw materials into high-value petroleum products such as gasoline, kerosene, jet fuel, gasoil, bitumen, fuel oil and lubricant base oil.

Chemicals

We are one of the largest integrated chemicals producer in Southeast Asia, with over 12.8 million tonnes per annum production capacity from 11 manufacturing sites around the world. We manufacture and sell a range of solutions including olefins, polymers, fertilisers, methanols, specialty chemicals and derivative products to our industrial customers in various sectors such as personal care, textile, automotive, construction, packaging, pharmaceutical, among others.

Downstream



Lubricants

We manufacture and market a full range of high-quality automotive and industrial products in over 90 markets globally through more than 30 marketing offices located in 27 countries.

Marketing and Trading

We deliver high-quality solutions to customers including automotive, marine and aviation fuels, gas for cooking, heating and electrical power, as well as cleaner energy solutions such as electric vehicles (EV) charging stations, LNG bunkering and sustainable aviation fuel (SAF). In addition to operating the largest fuel retail network in Malaysia and South Africa, we also have retail presence in sub-Saharan Africa.

We also market and trade crude oil and petroleum products, including PETRONAS' equity crude where we are internationally present in development and production activities.

Hydrogen

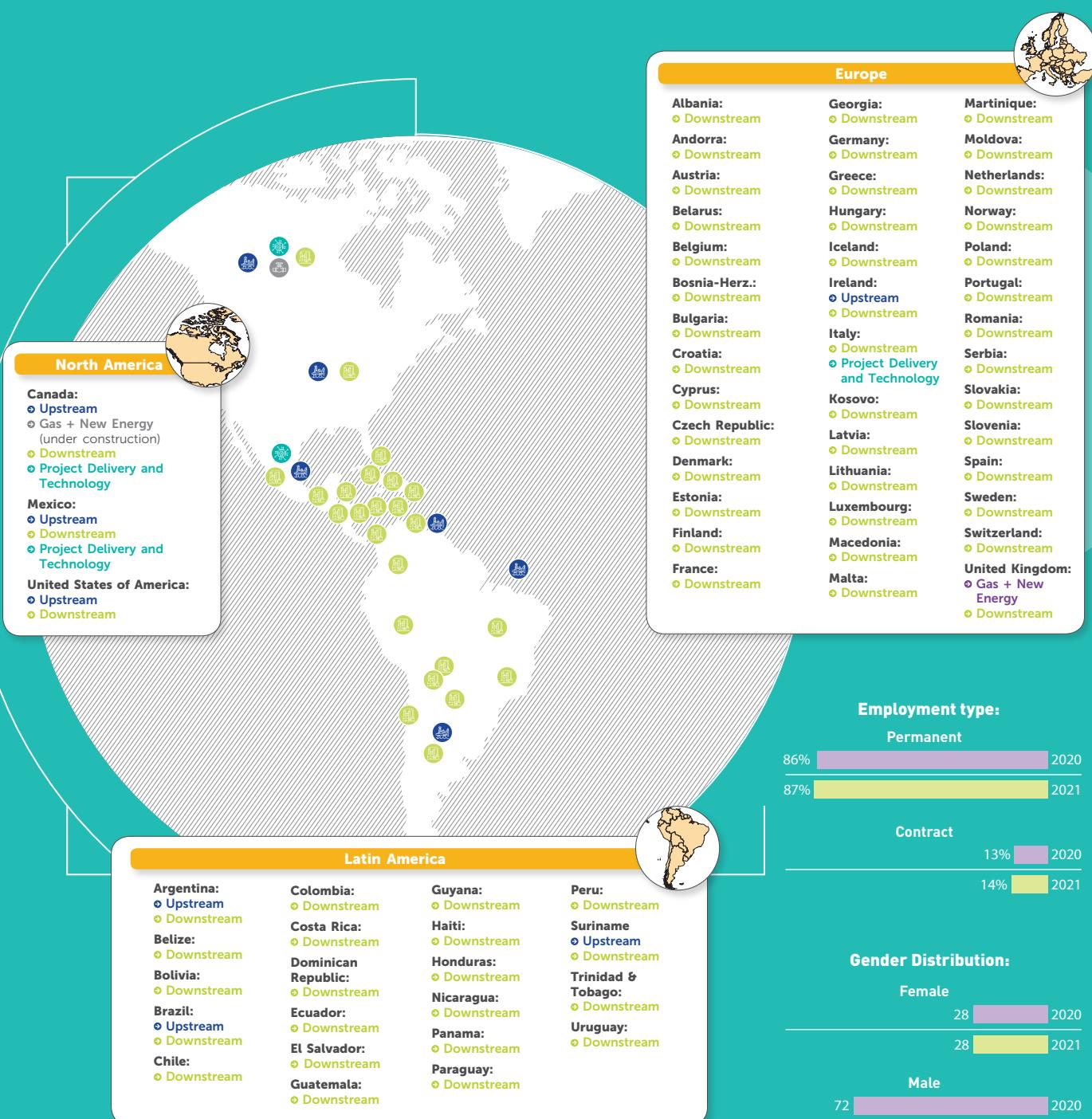
Our venture into hydrogen is built upon our expertise in extracting blue hydrogen from our facilities. We are developing a competitive green hydrogen supply chain by leveraging our expanding renewables portfolio, energy partnerships and advanced R&D in electrolysis. We continue to promote hydrogen as an energy source and grow Malaysia's position as a hydrogen hub and proximity to key demand centres in Asia.

New Energy

We continue to grow our position as an international renewable energy provider through flexible integrated solar and wind solutions. We offer a range of affordable and customer-centric solar energy solutions to ensure customers receive a reliable supply of clean energy. These solutions include on-site rooftop solar, off-site solar, battery storage, hybrid solutions and advanced analytics energy monitoring solutions. To date, we have grown our solar capacity in operation and under development to close to 1 GW locally and internationally, reinforcing our position as one of the key clean energy providers in the region.

Gas + New Energy

PETRONAS Around the World



Products and Listings by Business

Upstream	Gas + New Energy	Downstream	Project Delivery and Technology
<ul style="list-style-type: none"> Exploration Development Production 	<ul style="list-style-type: none"> LNG Gas Processing Gas Transportation Utilities Regasification Gas Infrastructure Gas Marketing and Trading Solar 	<ul style="list-style-type: none"> Petrochemicals Retail Refinery Lubricants Marketing and Trading 	<ul style="list-style-type: none"> Project Technology Technical Digital

**Breakdown of Employees by Region (%)**

Corporate Structure

Wholly-owned Subsidiaries (184)

PETRONAS Carigali Sdn Bhd

- PETRONAS Carigali Overseas Sdn Bhd
 - PETRONAS Carigali Nigeria Limited
 - PC Randugunting Ltd
 - PETRONAS Carigali (Ketapang) Ltd
 - PETRONAS Carigali (West Galagah Kambuna) Ltd
 - PETRONAS Carigali (Surumana) Ltd
 - PETRONAS Carigali White Nile (5B) Ltd
 - PETRONAS Carigali (Australia) Pty Ltd
- PC JDA Limited
- E&P Venture Solutions Co. Sdn Bhd
 - E&P O&M Services Sdn Bhd
- E&P Malaysia Venture Sdn Bhd
- Vestigo Petroleum Sdn Bhd

PETRONAS Assets Sdn Bhd

- Petrofibre Network (M) Sdn Bhd
- PETRONAS Digital Sdn Bhd
- Virtus IP Sdn Bhd

PETRONAS Hartabina Sdn Bhd

- PRBF Holdings Corporation Sdn Bhd
 - PRBF Properties Sdn Bhd

PETRONAS Trading Corporation Sendirian Berhad

- PETCO Trading (UK) Limited
- PETCO Trading Labuan Company Ltd
- PETCO Trading DMCC
- P.T. PETRONAS Niaga Indonesia

PETRONAS Technical Services Sdn Bhd

- PTSSB DMCC
- PETRONAS Technology Ventures Sdn Bhd
 - PTV International Ventures Ltd
- PETRONAS Global Technical Solutions Sdn Bhd

OGP Technical Services Sdn Bhd

Corporate Structure

Partly Owned Subsidiaries (54)

Associate Companies (49)

► Kebabangan Petroleum Operating Co. Sdn Bhd **(40%)**

► PCPP Operating Company Sdn Bhd **(40%)**

► Carigali Hess Operating Co. Sdn Bhd **(50%)**

► Carigali-PTTEPI Operating Co. Sdn Bhd **(50%)**

► BC Petroleum Sdn Bhd **(20%)**

► Ophir Production Sdn Bhd **(20%)**

Corporate Structure

Wholly-owned Subsidiaries (184)

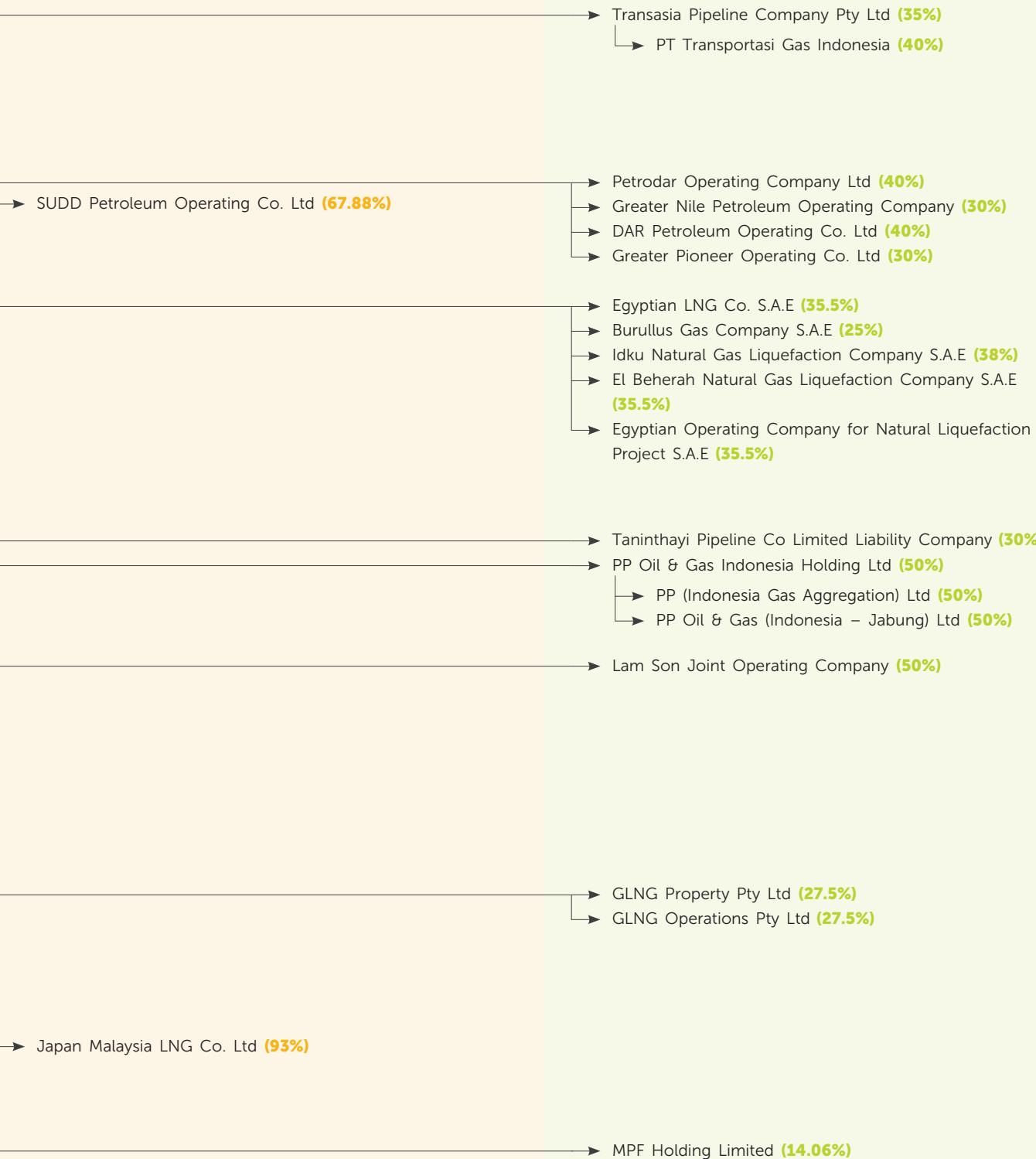
PETRONAS International Corporation Ltd

- PETRONAS Carigali Myanmar Inc.
- PETRONAS Carigali (Turkmenistan) Sdn Bhd
- MITCO Labuan Co. Limited (MLCL)
 - PCM Chemical India Private Limited (PCMCIPL)
- PETRONAS Carigali Nile Ltd
- PICL (Egypt) Corporation Ltd
 - WDDM Energy Ltd
- Nada Properties Co Ltd
- PC Madura Ltd
- PC Muriah Ltd
- PC (Myanmar) Holdings Limited
 - PC Myanmar (Hong Kong) Limited
- PETRONAS Carigali Myanmar III Inc.
- PETRONAS Carigali (Jabung) Ltd
- PICL Marketing Thailand Ltd
- Myanmar PETRONAS Trading Company Limited
- PETRONAS (Thailand) Co., Ltd
- PC Vietnam Limited
- PC Mauritania I Pty Ltd
- PC Mauritania II B.V
- PETRONAS Philippines Inc
- Argentinean Pipeline Holding Company S.A
- PETRONAS Australia Pty Ltd (PAPL)
 - PAPL Services Pty Ltd
 - PAPL (Upstream) Pty Ltd
 - PAPL (Upstream II) Pty Ltd
 - PAPL (Downstream) Pty Ltd
- Labuan Energy Corporation Limited
 - PSE Ireland Limited
 - LEC Ireland Employment Limited
- PETRONAS LNG Sdn Bhd
 - PETRONAS Energy (India) Private Limited
 - PETRONAS LNG (UK) Ltd
 - PETRONAS LNG Ltd
 - PETRONAS Energy Trading Limited
 - LNG Investments Europe Ltd
- PETRONAS Carigali Brunei Ltd

Corporate Structure

Partly-Owned Subsidiaries (54)

Associate Companies (49)



Corporate Structure

Wholly-owned Subsidiaries (184)

PETRONAS International Corporation Ltd (100%) (Cont'd)

- PETRONAS (E&P) Overseas Ventures Sdn Bhd
 - PETRONAS Iraq Garraf Ltd
 - Natuna 1 B.V.
 - PETRONAS Carigali Canada B.V.
 - PETRONAS Carigali International E&P B.V.
 - PETRONAS Carigali Iraq Holding B.V.
 - PETRONAS Brasil E&P Limitada
 - PETRONAS Angola E&P Ltd
 - Garraf Technical Services Ltd
 - PETRONAS Azerbaijan Upstream Sdn Bhd
 - PC Kualakurun Ltd
 - PC North Madura II Ltd
 - PETRONAS Carigali Chad Exploration & Production Inc
 - PC Senegal Ltd
 - Petroliam Manpower Services Mexico S.A. de C.V.
 - PC Sakakemang B.V
 - PC Gambia Ltd
 - PETRONAS Petroleo Brasil Limitada
 - PC Oman Ventures Ltd
 - Petroliam Manpower Support Services Mexico S.A de CV
 - PETRONAS Carigali International Sdn Bhd
 - PETRONAS Gebang Indonesia B.V.
 - PETRONAS Andaman III Indonesia B.V.
 - PETRONAS West Papua IV Indonesia B.V.
 - PETRONAS Aru Indonesia B.V.

PETRONAS Lubricants International Sdn Bhd

- PLI (Netherlands) B.V.
 - PLI Italy SPA
- PETRONAS International Marketing (Thailand) Co., Ltd.
- PETRONAS Base Oil (M) Sdn Bhd
- PETRONAS Lubricants Africa Ltd
 - PETRONAS Lubricants (India) Private Limited
 - PLAL DMCC
- PETRONAS Lubricants China Company Limited
 - PETRONAS Lubricants International (China) Co, Ltd.
 - PETRONAS Marketing (China) Co. Ltd
- PT PLI Indonesia
- PLI Australia Pty. Limited

Corporate Structure

Partly-Owned Subsidiaries (54)

Associate Companies (49)

- Guangxi Beihai Yuchai Petronas High Quality Lub Co. Ltd.
(50%)

Corporate Structure

Wholly-owned Subsidiaries (184)

PETRONAS International Power Corporation B.V.

- ▶ Amplus Energy Solutions Pte Ltd.
 - ▶ Amplus Energy Solution FZE
 - ▶ Amplus Energy Solutions (Thailand) Co Ltd.
 - ▶ Amplus Energy Solutions Private Limited
 - ▶ Amplus Solar Power Private Limited
 - ▶ Amplus Solar Solutions Private Limited
 - ▶ Amplus Andhra Power Private Limited
 - ▶ Amplus Power Solutions Private Limited
 - ▶ Amplus KN Solar Power Private Limited
 - ▶ Amplus KN One Private Limited
 - ▶ Amplus Management Services Private Limited
 - ▶ Grian Energy Private Limited
 - ▶ Amplus Sun Solutions Private Limited
 - ▶ Amplus Ages Private Limited
 - ▶ Amplus Solar Power MH Private Limited
 - ▶ Amplus Costal Power Private Limited
 - ▶ Nay Energy Private Limited
 - ▶ Amplus RJ Solar Private Limited
 - ▶ Sunroot Energy Private Limited
 - ▶ Amplus Green Power Private Limited
 - ▶ Amplus Dakshin Private Limited
 - ▶ Amplus Poorva Private Limited
 - ▶ Amplus Shams Private Limited
 - ▶ OneVolt Energy Private Limited
 - ▶ Solbridge Energy Private Limited
 - ▶ Amplus Green One Power Private Limited
 - ▶ Amplus Power Supply Private Limited
 - ▶ Amplus Tumkur Solar Energy One Private Limited
 - ▶ Amplus Pavagada Solar Energy Two Private Limited
 - ▶ Amplus Venus Private Limited
 - ▶ Amplus Athena Energy Private Limited
 - ▶ Amplus Helios Private Limited
 - ▶ Amplus Iru Private Limited
 - ▶ Amplus Vidyut Power Private Limited
 - ▶ Amplus Beat Energy Private Limited
 - ▶ Amplus Active Private Limited
 - ▶ Amplus Uttar Private Limited
 - ▶ Amplus EON Private Limited
 - ▶ Amplus Sunlight Private Limited
 - ▶ Amplus Centaur Solar Private Limited
 - ▶ Amplus Phoenix Energy Private Limited
 - ▶ Amplus Ampere Private Limited
 - ▶ Amplus IIFA Solar Private Limited
 - ▶ Amplus Alpha Solar Private Limited
 - ▶ Amplus Solar Shakti Private Limited

PETRONAS Power Sdn Bhd

- ▶ PETRONAS International Power Corporation (Mauritius) Ltd

Corporate Structure

Partly-Owned Subsidiaries (54)

Associate Companies (49)

- NE Suria Satu Sdn Bhd **(80%)**
- Voltage Renewables Sdn Bhd **(70%)**

➤ Eastern Sabah Power Consortium Sdn Bhd **(30%)**

Corporate Structure

Wholly-owned Subsidiaries (184)

Note:

Listed on Bursa Malaysia.

Corporate Structure

Partly-Owned Subsidiaries (54)

Associate Companies (49)

#PETRONAS Chemicals Group Berhad (64.35%)

- PETRONAS Chemicals Marketing Sdn Bhd (100%)
 - PETRONAS Chemicals Marketing (Labuan) Ltd (100%)
 - PCM (Thailand) Company Limited (99.99%)
 - PCM (China) Co., Ltd. (100%)
 - PT PCM Kimia Indonesia (99.67%)
- PETRONAS Chemicals Derivatives Sdn Bhd (100%)
- PETRONAS Chemicals Polyethylene Sdn Bhd (100%)
- Vinyl Chloride (Malaysia) Sdn Bhd (100%)
- PETRONAS Chemicals Methanol Sdn Bhd (100%)
- PETRONAS Chemicals Glycols Sdn Bhd (100%)
- PETRONAS Chemicals Ammonia Sdn Bhd (100%)
- Polypropylene Malaysia Sdn Bhd (100%)
- Kertih Port Sdn Bhd (100%)
- PETRONAS Chemicals Fertiliser Kedah Sdn Bhd (100%) → Malaysian NPK Fertilizer Sdn Bhd (20%)
- PETRONAS Chemicals MTBE Sdn Bhd (100%)
- PETRONAS Chemicals Isononanol Sdn Bhd (100%)
- PRPC Elastomers Sdn Bhd (100%)
- PETRONAS Chemicals Olefins Sdn Bhd (100%)
- PETRONAS Chemicals LDPE Sdn Bhd (100%)
- PETRONAS Chemicals Fertiliser Sabah Sdn Bhd (100%)
- PETRONAS Chemicals Ethylene Sdn Bhd (87.5%)
- Asean Bintulu Fertilizer Sdn Bhd (63.47%)
- PETRONAS Chemicals Aromatics Sdn Bhd (70%)
- PETRONAS Chemicals International B.V (100%)
 - ↳ Da Vinci Group B.V (100%)

BASF PETRONAS Chemicals Sdn Bhd (40%)

- Kertih Terminals Sdn Bhd (40%)
- Idemitsu SM (Malaysia) Sdn Bhd (30%)
- Ineos PCG Acetals Sdn Bhd (30%)
(formerly known as BP PETRONAS Acetals Sdn Bhd)
- PCG PCC Oxyalkylates Sdn. Bhd. (50%)
(formerly known as PCC Oxyalkylates Malaysia Sdn Bhd)
- Pengerang Petrochemical Company Sdn Bhd (50%)
- LG PETRONAS Chemicals Malaysia Sdn Bhd (49%)
- PT Anugerah Kimia Indonesia (49%)

#PETRONAS Gas Berhad (PGB) (51%)

- Industrial Gases Solutions Sdn Bhd (50%)

- Regas Terminal (Sg. Udang) Sdn Bhd (100%)
- Regas Terminal (Lahad Datu) Sdn Bhd (100%)
- Regas Terminal (Pengerang) Sdn Bhd (100%)
- Pengerang LNG (Two) Sdn Bhd (65%)
- Kimanis Power Sdn Bhd (60%)
- Kimanis O&M Sdn Bhd (60%)
- Pengerang Gas Solutions Sdn Bhd (51%)

#PETRONAS Dagangan Berhad (63.94%)

- IOT Management Sdn Bhd (20%)
- Tanjung Manis Oil Terminal Management Sdn Bhd (20%)
- P S Pipeline Sendirian Berhad (50%)
- P S Terminal Sendirian Berhad (50%)
- United Fuel Company Limited Liability Company (40%)

- PETRONAS Lubricants Marketing (Malaysia) Sdn Bhd (100%)
- Setel Ventures Sdn Bhd (100%)
- PETRONAS Aviation Sdn Bhd (100%)
- PDB (Netherlands) B.V. (100%)
- Mesra Retail & Cafe Sdn Bhd (100%)
- Setel Express Sdn Bhd (100%)
(formerly known as D-Two Couriers (M) Sdn Bhd)
- Kuala Lumpur Aviation Fuelling System Sdn Bhd (65%)

Corporate Structure

Wholly-owned Subsidiaries (184)

KLCC (Holdings) Sdn Bhd

PETRONAS Research Sdn Bhd

Primesourcing International Sdn Bhd

Institute of Technology PETRONAS Sdn Bhd

↳ UTP FutureTech Sdn Bhd

PETRONAS Gas & New Energy Sdn Bhd

↳ PETRONAS Hydrogen Sdn Bhd
(formerly known as PNW LNG Marketing Sdn Bhd)

PETRONAS Penapisan (Terengganu) Sdn Bhd

PETRONAS Penapisan (Melaka) Sdn Bhd

Malaysian Refining Company Sdn Bhd

PETRONAS Management Training Sdn Bhd

PETROSAINS Sdn Bhd

Sanzbury Stead Sdn Bhd

PETRONAS Capital Limited

PETRONAS Global Sukuk Limited

PETRONAS NGV Sdn Bhd

Energas Insurance (L) Limited

PETRONAS Technical Training Sdn Bhd

PETRONAS Floating LNG 1 (L) Ltd

PETRONAS Floating LNG 2 (L) Ltd

PETRONAS Refinery and Petrochemical Corporation Sdn Bhd

↳ PRPC Utilities and Facilities Sdn Bhd

↳ PRPC Water Sdn Bhd
↳ Pengerang Power Sdn Bhd
↳ PRPC SPJ Sdn Bhd

PETRONAS Marketing International Sdn Bhd

PETRONAS Energy & Gas Trading Sdn Bhd

Note:

This chart excludes subsidiary companies of MISC Berhad, KLCC (Holdings) Sdn Bhd and Engen Limited.

Listed on Bursa Malaysia.

Corporate Structure

Partly-Owned Subsidiaries (54)

Associate Companies (49)

#KLCC Property Holdings Berhad (66.94%)

#MISC Berhad (51%)

Malaysia LNG Sdn Bhd (90%)

Malaysia LNG Dua Sdn Bhd (80%)

PETRONAS LNG 9 Sdn Bhd (65%)

Malaysia LNG Tiga Sdn Bhd (60%)

Bintulu Port Holdings Berhad (28.52%)

Indianoil PETRONAS Private Limited (50%)

Trans Thai-Malaysia (Thailand) Ltd (50%)

→ TTM Sukuk Berhad (100%)

Trans Thai-Malaysia (Malaysia) Sdn Bhd (50%)

- Pengerang Terminals (Two) Sdn Bhd (40%)
- Pengerang Refining Company Sdn Bhd (50%)
- SPT Services Sdn Bhd (30%)

Other Companies (7)

Shell MDS (Malaysia) Sdn Bhd (7%)

Labuan Reinsurance (L) Ltd (10%)

Tenaga Nasional Berhad (0.40%)

Through PETRONAS Gas Berhad

Gas Malaysia Berhad (14.8%)

Through PETRONAS Technology Ventures Sdn Bhd

LanzaTech New Zealand Limited (3.6%)

Through Petrofibre Network (M) Sdn Bhd

Fiberal Sdn Bhd (10%)

Through PETRONAS Marketing International Sdn Bhd

Vivo Energy Plc (3.68%)

ENGEN Limited (74%)

Recharge

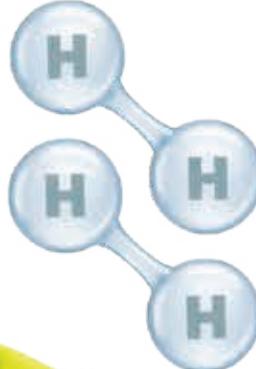
with Passion



Key Messages

Leadership perspectives from the front line

-
- 48** Letter from the Chairman
 - 56** Letter from the President and Group Chief Executive Officer
 - 62** Letter from the Executive Vice President and Group Chief Financial Officer
 - 68** Letter from the Vice President and Chief Sustainability Officer





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

Letter from the **Chairman**

Dear Stakeholders,

Two years have passed since the pandemic began, and our world continues to be challenged by volatility and uncertainty on an unprecedented scale in living memory. Even as countries and industries alike strive to recover from the brutal impact of COVID-19, they now face newfound challenges in the wake of the ongoing Russia-Ukraine conflict whose consequences may well long outlast the hostilities themselves and which are likely to reshape the industry landscape in fundamental and complex ways.

Letter from the Chairman

Notwithstanding the prevailing uncertainties, the role that PETRONAS plays as an energy company in the context of the wider society remains clear – namely, that it continues to serve as an effective engine that drives economic recovery for Malaysia and beyond by ensuring the safe, secure and reliable supply of energy, while taking vital steps that pave the way to gradually transition to a lower-carbon future in a just and equitable way.

In our efforts to fulfil this role, PETRONAS remains unwavering in the delivery of its *amanah* (trust), always striving to dutifully discharge its obligations and responsibilities despite the overwhelming odds and challenges. With prudent financial management and an unyielding commitment to upholding safety performance as well as delivery of commercial and operational excellence, PETRONAS registered a strong performance in 2021 after two years of extreme disruptions to the energy ecosystem. This achievement by the Group is credited to the courage, dedication and tenacity of our people. In this opportunity, I would also like to thank our stakeholders for their support and assistance that allowed us to continue operating safely and optimally throughout the lockdown periods.

Looking ahead, changes in the energy landscape will provide new challenges and growth opportunities that we must approach with a credo and mindset for progress and innovation. To this end, I am confident that with the right steer and support from the Board, PETRONAS is well-positioned to progress with pace and resilience to deliver profitable and sustainable growth aligned to our Three-Pronged Growth Strategy and net zero carbon emissions by 2050 (NZCE 2050) aspiration.



Reflecting on 2021

PETRONAS' performance for the year in review demonstrates its relentless focus on operational and commercial excellence across the Group. The organisation ensured the reliability of its operations to leverage the recovery in global energy demand seen in 2021 with the safety of our people and assets as its highest priority.

Although some degree of stabilisation was seen with the rollout of vaccinations and economies recovering from easing of lockdowns and gradual removal of border restrictions, delivering the Group's performance did not come easily. During the year, the oil and gas industry continued to be very volatile and uncertain in the face of sudden shocks to the market, many of which were beyond our control. These included:

- 1 The threat of new and highly infectious COVID-19 variants derailing economic recovery which proved to be of grave concern for the safety of our people and its impact on our supply chain.
- 2 The oil and gas industry remaining fragile as the rebound in oil price was driven by the multi-speed reopening of economies, steadfast active market management by OPEC+ and an unfolding global energy supply crisis.
- 3 The increasing pace of the energy transition causing sustainability-driven structural changes to our industry with stakeholders demanding more visible, impactful results in our efforts to decarbonise.

Letter from the Chairman



Nevertheless, PETRONAS successfully demonstrated its ability to respond and become part of the solution. Together, the PETRONAS Board and Leadership Team were able to not only preserve and enhance its core oil and gas portfolio but also grow in the new energy space for long-term business sustainability and resiliency.

As a result, PETRONAS was able to generate healthy financial returns and contribute to its stakeholders in the form of cash payments, tax, export duties, state sales tax and dividends. In 2021, we paid the scheduled RM25 billion dividend payments to the Government of Malaysia.

Accelerating Sustainability

As a National Oil Company, hydrocarbons will still be part of our energy mix even as we seek to integrate renewables and lower-carbon solutions as well as specialty chemicals into our portfolio in a gradual and phased manner. It remains our duty to maximise the value of Malaysia's hydrocarbon resources to provide long-term economic value creation for shared prosperity and energy security – this, while also contributing to the low-carbon aspirations of the nation.

Reaching net zero carbon emissions is a monumental undertaking and requires a steady, evolutionary approach of continuous improvements on emissions reduction. For PETRONAS, we have responded decisively to accelerated energy transition with clarity and discipline with our 2024 sustainability targets and carbon commitments, supported by the right ecosystem for growth. We are making progress on zero venting and flaring, operational improvements, electrification and developing lower carbon solutions.

It remains our duty to maximise the value of Malaysia's hydrocarbon resources to provide long-term economic value creation for shared prosperity and energy security – this, while also contributing to the low-carbon aspirations of the nation.

Letter from the Chairman



To enhance these efforts and further entrench momentum, the PETRONAS Board has expressed its support to incorporate environmental, social and governance (ESG) elements in our assessments of future investments in which decisions would consider value-creation from the perspective of the 3Ps of sustainability – people, planet and profits.

With the significant progress achieved under our core portfolio in 2021, PETRONAS will continue to focus on building a resilient portfolio that is not only robust to the energy transition but also captures attractive business opportunities which the transition presents. Since we announced our NZCE 2050 aspiration last year, the Group has undertaken deliberate steps in moving from a commodity player to a customer-centric solutions provider. PETRONAS' roadmap for our NZCE aspiration will see the organisation play its part in moving the needle towards the goal of net zero, contributing to Malaysia's Nationally Determined Contributions (NDC) to the Paris Agreement for the long-term, while supporting our customers in decarbonising their energy systems.

Reinforcing Strong Governance

In an increasingly challenging environment characterised by market uncertainties and heightened geopolitical risks, PETRONAS must continue to reliably demonstrate its ability to deliver its core responsibilities while transforming to meet the energy needs of the future.

PETRONAS holds Malaysia's hydrocarbon resources in trust, and we have always striven to ensure its potential continues to be harnessed for the benefit of the people and the nation. Similarly, in our global ventures, we have sought to build partnerships and gain hand-in-hand support from our partners as well as customers in our journey towards progress.



With a strong foundation built on trust, PETRONAS has successfully balanced its unique position to fulfil its commitment as Malaysia's NOC while living up to the demanding expectations of being an international energy player. Over the years, our stakeholders have given us the opportunity to serve and create new value as their partners in progress, allowing us to continue growing as a FORTUNE Global 500 company.

Letter from the Chairman

As we embrace a more enterprising way of work and position ourselves to seize opportunities for future growth, PETRONAS will continue to uphold the highest standards of governance and integrity as a culture in everything that we do. With our global footprint and commitment to enriching the lives of those around us, we must do our very best to strengthen our commitment to integrity at both individual and organisational levels. PETRONAS adopts zero tolerance standards on corruption, and a strict consequence management approach should the boundaries be crossed.

The foundational integrity embedded in our Shared Values along with Loyalty, Professionalism and Cohesiveness are the core principles of work ethics for all employees. We have in place a Corporate Governance framework and introduced our Code of Business Ethics (CoBE) in 2012 accompanied by an Anti-Bribery and Corruption Policy & Guidelines Manual. We have continued to step up our collaboration with the Malaysian Anti-Corruption Commission (MACC) to develop adequate measures as defined by Section 17A of the MACC Act.

In 2021, significant initiatives were implemented to strengthen groupwide awareness of the CoBE and the Anti-Bribery and Corruption Manual. This will empower employees to speak up on any wrongdoing, facilitated under the Whistleblowing Policy, to ensure secure and confidential disclosures.

A Leaders Speak Integrity series was also launched as a platform for leaders to pledge their commitment towards integrity and rally employees to always aim for exemplary conduct at all levels as a collective responsibility. Virtual dialogues were also held to provide a safe space for employees to discuss integrity-related topics.

I am also pleased to share that PETRONAS is a signatory of the World Economic Forum's Partnering Against Corruption Initiative (PACI). As part of the PACI Vanguard Board, PETRONAS leverages on the platform to collaborate with leaders from international organisations, academia and civil society to address and advocate the importance of anti-corruption measures, upholding business integrity, transparency, and accountability.

To this end, I would like to assure that the PETRONAS Board is wholly committed to upholding the highest standards of governance and steadfastly supports all Group initiatives on integrity-related matters.

Delivering Our Amanah to The Nation

As we set out to serve our stakeholders safely and reliably, PETRONAS has never wavered from its commitment to ensure the well-being of society wherever we operate. Anchored on our Statement of Purpose, we recognise the importance of enriching the lives around us, especially in these prolonged trying times.

In 2021, PETRONAS' CSR contribution which is focused on Education, Community Well-being and Development, and the Environment totalled RM1.4 billion in a span of two years alone.

Following last year's efforts, we continued to support COVID-19 relief initiatives at home and abroad where we operate, amounting to more than RM75 million in 2021. Among the efforts were repeated contributions to the National Disaster Management Agency (NADMA) funds through staff and corporate donations, *Program Bakul Prihatin Negara*, and *Program CERDIK*, as well as the contribution of essential items to hospitals and communities to help ease the burden in coping with the effects of COVID-19.

PETRONAS also supported the Government of Malaysia's vaccination drive with the setup of six *Pusat Pemberian Vaksin Industri* (PPVIN) for the oil and gas sector. This is in line with our commitment to provide a safer environment within the oil and gas ecosystem by achieving herd immunity for its frontliners. We donated wheelchairs to *Pusat Pemberian Vaksin* (PPV) through Yayasan PETRONAS and also launched the PETRONAS Foodbanks at our Mesra stations across Malaysia. It was indeed heartening to see our people stepping up to adopt the Foodbanks, pooling their own resources to ensure a continuous and sustainable supply of essential items to the needy. Our people continued to demonstrate exemplary courage by banding together to lend a helping hand when Malaysia endured the effects of a devastating flood in December that severely affected up to eight States. The organisation actively participated in relief efforts and contributed RM25 million to assist the Government of Malaysia with post-flood recovery.

Letter from the Chairman



Despite the cyclical and volatile swings in the energy market, I would like to reiterate that PETRONAS will continue giving back to society towards creating positive social impact for Malaysians and the countries where we operate.

In 2021, the organisation awarded 302 scholarships via the PETRONAS Education Sponsorship Programme and enhanced the technical and vocational capabilities of 93 students through the PETRONAS Vocational Institution Sponsorship & Training Assistance (VISTA) programme to nurture a market-ready future workforce.

PETRONAS expanded its community well-being and development programmes in South Sudan with the Water for Life programme which provides rural communities with access to clean water. Closer to home, a Solar Systems Project was launched to provide electricity to Kampung Orang Asli in Berasau, Johor. In collaboration with Tata Consultancy Services, PETRONAS onboarded 50 social entrepreneurs to SEEd.Lab, a social enterprise innovation hub to address youth unemployment in Malaysia through entrepreneurial opportunities.

Our ability to uplift societies to achieve a better and sustainable quality of life has been through effective collaboration. PETRONAS has long viewed its relationship with stakeholders as a partnership underpinned by common objectives and sustained by mutual understanding, respect and trust.

For a partnership to be successful for the long-term especially at a time of uncertainty and turbulence, the aspirations of each party which include industry partners, Oil & Gas, Services and Equipment (OGSE) players, customers, the community and indeed governments must be duly recognised, and the right balance achieved to produce outcomes that prove mutually beneficial for all.

On our part, PETRONAS will continue to adapt and transform to safeguard its ability to uphold the amanah to our nation and the well-being of the people around us, and we welcome meaningful participation as well as genuine support from all parties to ensure effective contributions that create value as we forge ahead together.

Letter from the Chairman

Moving Forward with Purpose

The year 2021 has proven that we need to constantly be prepared to pivot when faced with the unexpected. The unprecedented challenges of the past year offered PETRONAS an opportunity to reform strategies, expedite transformation and prioritise sustainability risks. It was imperative that PETRONAS emerged from this trying period more resilient, more agile, technologically stronger and financially more robust.

The achievements of 2021 demonstrate the dedication and strength of our people coupled with a robust integrated portfolio that provided PETRONAS with the strong foundation it needed to capitalise on price recovery. I am deeply grateful to the women and men who stood by PETRONAS amidst the turbulence and offer my sincere thanks to each and every one of them.

As we progress to capitalise on this period, PETRONAS will continue in its efforts to safely deliver commercial and operational excellence. We remain focused on maintaining fiscal discipline and careful operational spending as well as preserving liquidity to ensure resiliency and high performance across the Group. We are determined to seize new opportunities for sustainable, profitable growth as we uphold our commitment to our shareholder and lay the foundation for our future growth.

The PETRONAS of the future will still have hydrocarbons as a key part of its portfolio with products delivered safely, responsibly, cost optimised, and emissions abated. The new forays that we are making in step-outs today will complement our core portfolio to provide energy for a world that continues to progress and develop, while being in ever-greater need of solutions for emissions.

While the variety of our business offerings expands, the heart of the organisation, in its purpose and values are timeless and remain the same. Our Purpose, Cultural Beliefs, and Shared Values of Loyalty, Integrity, Professionalism and Cohesiveness will continue to bind us together.



PETRONAS will continue in its efforts to safely deliver commercial and operational excellence.

Letter from the Chairman



We continue to bear the expectations and aspirations of Malaysia and the communities where we operate.

Looking ahead, the pressures on PETRONAS are only going to increase as we continue to bear the expectations and aspirations of Malaysia and the communities where we operate. We must make our move to navigate through the turbulence to find our position for the future. In our quest to create a sustainable legacy for the next generation, we must steer the business and shape an energy future that they deserve, one in which PETRONAS will continue to be their preferred energy and solutions partner.

In Appreciation

On behalf of the PETRONAS Board, I would like to take this opportunity to record my sincere appreciation to Tan Sri Ahmad Nizam Salleh for all his contributions as Chairman since August 2018 and wish him every success in his new undertakings. I would also like to extend a warm welcome to three of our Directors who joined the Board during the year – namely, Mr Thayaparan S. Sangarapillai as Independent Non-Executive Director, Chairman of the Risk Committee and a member of the Audit Committee; Puan Liza Mustapha as Executive Director; and Datuk K Y Mustafa as Non-Independent and Non-Executive Director. I am confident that their collective experiences and diverse insights will be valuable additions in providing the right steer for the Group, especially as we navigate through these challenging times.

Furthermore, I would like to thank Datuk Tengku Muhammad Taufik, President and Group CEO of PETRONAS, and his Leadership Team for ensuring the company continues to dutifully discharge its obligations and responsibilities despite facing overwhelming odds and challenges. My deepest gratitude also to our employees for their perseverance in upholding the trust as we continue to brave these trying times.

Finally, I would like to express my deep gratitude for our valued stakeholders – the Federal Government of Malaysia, State Governments and the Governments of our Host countries, industry partners and customers for their strong support and understanding during these times of prolonged turbulence and uncertainty. With your trust and confidence in PETRONAS, I am optimistic that we will continue to grow and deliver the energy for today and tomorrow, as your progressive energy and solutions partner.

Tan Sri Dato' Seri Mohd Bakke Salleh
Chairman

Letter from the President and Group Chief Executive Officer

The Group is fully committed to remain disciplined in its delivery of our Three-Pronged Growth Strategy, and resolute in our efforts to achieve the goal of net zero carbon emissions by 2050.

Even as we contend with this volatile period, PETRONAS' priority remains to ensure the security of energy supply for Malaysia and our customers around the world. The Group is fully committed to remain disciplined in its delivery of our Three-Pronged Growth Strategy, and resolute in our efforts to achieve the goal of net zero carbon emissions by 2050 (NZCE 2050).

In discharging this daunting responsibility, I am pleased to report that PETRONAS delivered a strong performance in 2021. The results were delivered under challenging circumstances faced by every member of the PETRONAS family as the threat of the COVID-19 pandemic remains ever present in our day-to-day operations. It is with great pride that I am able to report that given the unwavering contribution and support of PETRONAS' employees and its partners, the Group remained on steady footing to weather possible market shocks. Given the resilience on display, I remain confident that PETRONAS can, and indeed will, continue to deliver even more meaningful results as a progressive energy and solutions partner enriching lives for a sustainable future.

Profit/(Loss)
After Tax
RM48.6
billion
2020: (RM21.0) billion
+>100%

Revenue
RM248.0
billion
2020: RM178.7 billion
+39%

Upholding the Safety of Our People

Upholding our people's safety is PETRONAS' top priority. In 2021, the Group ensured operations continued to run safely, reliably and efficiently with minimal interruptions. Across our operations, significant efforts were undertaken where work practices were modified to build safe working environments and quality processes in accordance with COVID-19 guidelines, upholding zero compromises on safety and integrity.

Although Major Fire was contained to one incident, the lowest in the past 12-year period, we remain susceptible to high-risk situations in our work. Regrettably, we lost three colleagues in the line of duty. The Safety Stand Down was held for the Group to reflect on the incidents and its root causes. I cannot emphasise enough that we must learn from these incidents and do everything possible in strengthening a safe working environment and culture where everyone goes home safely.

Extensive vaccination programmes were also rolled out for employees, contractors and the community where we operate. Sadly, 64 deaths involving staff and contractors were recorded cumulatively due to COVID-19 since the

Letter from the President and Group Chief Executive Officer

Esteemed Stakeholders,

As we are now all too aware, recent events have overtaken the brief respite which the oil and gas industry experienced in 2021, following the unprecedented challenges of 2020. The impact of the tragic conflict between Russia and Ukraine, which continues to unfold as I write this, is still being felt globally and it is our hope that a peaceful resolution will be achieved soon.

This conflict has roiled energy markets and has presented fresh uncertainties that threaten an already uneven and extremely fragile post-pandemic recovery. Driven by heightened concern over disruption in energy supply in a market already facing structural supply issues, prices for human sustenance and economic activity have escalated to record highs- presenting even more complex challenges and added uncertainty to the economic recovery.



**Datuk Tengku
Muhammad Taufik**
President and
Group Chief
Executive Officer

pandemic started. Recognising the psychological impact of COVID-19 on mental health, various targeted interventions focused on employees' mental well-being were also implemented to provide employees with access to trained professionals to improve their physical and mental health.

By the end of 2021, the Group achieved 80 per cent vaccination and booster rates for employees. These deliberate efforts were absolutely essential for PETRONAS to continue serving our customers safely and efficiently, ensuring their energy security as we weathered the unavoidable challenges of operating during a pandemic.

Strengthening Our Core and Growth Portfolio

PETRONAS recorded a commendable performance in 2021, significantly outperforming the previous reporting year. We achieved RM48.6 billion in Profit After Tax (PAT), in marked contrast to a Loss After Tax of RM21.0 billion in 2020. Revenue stood at RM248.0 billion in 2021.

The sustained operational resilience demonstrated by the Group contributed to its strong performance, further supported by surging commodity prices driven by the recovery in global energy demand as key economies reopened and travel restrictions eased amid higher COVID-19 vaccination rates around the world.

The results we registered for the year in review demonstrated the unwavering dedication of the PETRONAS workforce and the robustness of the Group's integrated portfolio. We remained resilient through two years of extreme disruptions to the energy ecosystem, eventually benefiting from the oil price and market recovery. Our consistent emphasis on ensuring strong integrated operational performance enabled us to maximise our cash generators.

Letter from the President and Group Chief Executive Officer

The Group achieved significant progress in line with our Three-Pronged Growth Strategy, further strengthening our core and growth portfolio to provide the energy needed for today while we invest for the future.

Upstream

Delivered projects and commercial solutions as a safe, resilient, low-cost and low-carbon exploration and production (E&P) business.

- Recorded total daily production average of 2,275 thousand barrels of oil equivalent (boe) per day.
- Malaysia Bid Round 2021 – one of our most successful bidding rounds where close to 50 per cent of acreages offered were taken up by small and major players, further demonstrating Malaysia as a world class investment destination.
- PETRONAS marked its entry into the prolific Santos Basin of Brazil with 21 per cent participating interest in the Sépio field, in line with the Group's global growth strategy.
- Eight greenhouse gas (GHG) emissions reduction projects were completed in Peninsular Malaysia, Sarawak and Sabah with cumulative GHG reductions estimated to be 3.83 million tonnes of carbon dioxide equivalent (tCO₂e) per year.

Gas + New Energy

Strengthened reliability to meet customer needs for lower-carbon energy at a cost to serve to support the energy transition.

- Safe delivery of more than 12,000 LNG cargoes from the PETRONAS LNG Complex (PLC) in Bintulu since operations began in 1983.
- Providing customers in Japan and China with reliable supply of carbon neutral LNG cargoes, supporting their respective transition to a low-carbon economy.
- 960 Virtual Pipeline System (VPS) and LNG bunkering deliveries completed in 2021, ensuring greater access to LNG for off-grid customers.
- Close to 1 GW of solar capacity in operation and under development.

Downstream

Sustained operational performance and expanded its offerings with innovative customer-focused solutions.

- Recorded stable operations with Overall Equipment Effectiveness (OEE) sustained at 93.3 per cent, on the back of strong asset reliability.
- BRB International located in PCG's petrochemical complex in Gebeng, Kuantan – a 8,000 tonnes per year facility manufacturing cosmetic grade silicone gum blend, technical and food grade silicone emulsion and silicone antifoam is the first and only producer in Southeast Asia.
- PETRONAS Marine – a one-stop marine solutions partner for the shipping industry completed its first LNG bunkering operations in Sabah, developing Malaysia as an LNG bunkering hub.
- Malaysia Airlines' inaugural flight from Amsterdam to Kuala Lumpur using sustainable aviation fuel (SAF) supplied by PDB in collaboration with PETCO Trading (UK) Ltd, Malaysia Aviation Group and Neste demonstrates the viability of SAF in decarbonising the aviation sector.

Project Delivery and Technology

Maximised value for PETRONAS' businesses with project delivery excellence, technical innovations and digital synergy.

- Managed 587 projects valued at more than RM9 billion.
- RM25 million registered in commercialisation revenue through the deployment of 17 technologies and 98 TechApps softwares.
- Created RM830 million in total value creation through ARIES, our digital enabling engineering solutions.
- Achieved RM818 million in cash generation through Alpha Series, a digital transformation of our value chain.

As much as we contend with the inexorably accelerating energy transition, oil and gas continues to remain essential sources of energy to propel the global economy. In recognising this, PETRONAS will continue to focus and amplify its efforts towards the decarbonisation of our operations and seize new areas for growth. The Group will execute this even as it steadfastly adheres to ensure safety in pursuit of commercial and operational excellence. We will continue to exercise firm discipline when reinvesting to strengthen our core and grow our portfolio, given our responsibility to prudently manage our financial commitments and debt obligations.

During the year in review, PETRONAS also continued with its practice of enforcing effective portfolio management. It is necessary to emphasise that continuous portfolio management is part and parcel of any commercial entity's ongoing obligation to its shareholders. This ensures the assets under its care are capable of generating the required returns from the capital it deploys, given the risks it expects to undertake.

To this end, the Board of PETRONAS regularly examines the Group's portfolio and determines candidates for both growth and divestment. The recent conclusion of our

Letter from the President and Group Chief Executive Officer

divestment from Myanmar, Azerbaijan, and Chad signifies the ongoing effort to reshape our portfolio and redeploy capital to our identified areas of growth. The direction we are undertaking is centred on preserving and strengthening our core portfolio even as we grow our new energy business to remain relevant, resilient and sustainable given a lower carbon future.

In laying the foundation for our future growth and upholding our commitment to our shareholder for long-term economic value creation, PETRONAS' priority going forward is to deliver energy from our portfolio as differentiated products that are safe, responsible, cost-optimised and emissions abated for the energy security and sustainability of Malaysia and our customers across the globe.

Nurturing an Ecosystem for Collective Progress

In our role as the National Oil Company, PETRONAS fully recognises the *Amanah* – the duty of trust- it has to fulfil to its stakeholders to be their partner in progress. This sacred responsibility to maximise the value of the nation's hydrocarbon resources is enshrined in the 1974 Act that brought us into being and remains our duty for shared prosperity and energy security.

In 2021, PETRONAS together with the State Governments of Sarawak and Sabah have entered into mutually beneficial agreements which now secure the path to value creation opportunities for all parties. On our part, PETRONAS will continue to grow our heartlands in Sarawak and Sabah for shared prosperity, anchored on our mutual commitment to develop the respective State's oil and gas industry. PETRONAS will deliver this by inviting increased participation throughout the value chain- in effect, working closer together to grow the "value pie".

While the oil and gas industry has long been vulnerable to the boom-and-bust cycles, the unprecedented challenges of the past two years will very likely remain significant for a good while yet. Therefore, resilience will be required to respond to the

energy market shocks and navigate the challenges presented by energy transition – which includes nurturing a robust and strong Oil & Gas, Services and Equipment (OGSE) ecosystem.

In recognition of this, it is important to note that the Group's initiatives to elevate the robustness of the OGSE sector were initiated as far back as 1993 with the rollout of the Vendor Development Programme. Initiatives continue to be introduced and implemented to improve the overall resilience and maintain the stability of the ecosystem at large.

These initiatives have been wide-ranging: from facilitating financial assistance in collaboration with banks under the Vendor Financing Programme, to becoming the first Government Linked Company (GLC) to support the JanaNiaga initiative by the Ministry of Finance and Exim Bank to assist Small and Medium Enterprises (SMEs) under the Malaysia economic recovery plan.

We have also been continuously investing in upskilling OGSE capabilities under the PETRONAS Vendor Development Programme (VDP) since its inception. To this end, the VDPx programme launched in 2018 empowered VDP anchors to replicate the programme to develop their very own vendor ecosystem.

PETRONAS recognises its role as a catalyst for the Malaysian OGSE sector, and it remains committed in working together with our partners. This collaboration will become even more important, even as the oil and gas industry collectively accelerate its efforts to decarbonise operations as part of a far-reaching energy transition. Such a transition must be executed responsibly and sustainably, where we would need to deploy lower-carbon technologies strategically and systematically.

So, this next statement cannot be reiterated enough times, it has become absolutely critical for our OGSE players to pursue innovation, so they can ultimately be as competitive as global players in the course of doing business. This would ensure the

projects we pursue and the production we aspire can remain technically and economically feasible, despite the inevitable cyclical swings in the energy market.

Overall, PETRONAS will continue to nurture a robust OGSE ecosystem to strengthen our resilience in responding to these challenges and effectively contribute to Malaysia's economic growth. In this opportunity, I would like to thank our valued stakeholders – Federal and State Governments, agencies and authorities, and OGSE partners for their many efforts and support for PETRONAS to continue growing the value pie of the nation's hydrocarbon resources for the benefit of the nation and its people.

Accelerating Our NZCE 2050 Aspiration

As we navigate the increasingly challenging operating landscape, the call for greater action to manage the energy transition has never been stronger. As I write to you today, we now live in a time described by many as a "post-Glasgow" era. It has become abundantly clear to the world at large – after COP26 was convened in this Scottish city in 2021 – that a more intense focus on decarbonisation efforts must be accelerated, not later, but right now.

Governments are transitioning towards a low-carbon future where approximately 90 per cent of the world has committed to net zero targets. Malaysia is no exception: it too has pledged to reduce its carbon intensity by 45 per cent by 2030 and aims to deliver net zero by 2050, with its path to action outlined in the Twelfth Malaysia Plan.

On this front, PETRONAS had the privilege and opportunity to collaborate with the Economic Planning Unit (EPU) to develop clear targets and policies for the National Energy Policy and the Natural Gas Roadmap which aims to provide the optimal balance of energy equity, security and sustainability for Malaysia.

Letter from the President and Group Chief Executive Officer

PETRONAS will indeed support these national ambitions and strengthen our own targets and governance towards progressing our NZCE 2050 aspiration. Our recent progress on this front includes the endorsement of the World Bank Zero Flaring Commitment and the successful organisation of the ASEAN Methane Roundtable. We are also leveraging on our partnership since February 2020 with the World Business Council on Sustainable Development (WBCSD) towards adopting the Task Force on Climate-related Financial Disclosures (TCFD) to ensure our continued ability to access financial markets.

Furthermore, through increased technological partnerships with industry players, PETRONAS is undertaking efforts to unlock Malaysia's potential as a regional carbon capture and storage solutions (CCS) hub. PETRONAS is also exploring opportunities in lower-carbon solutions through collaborations in carbon dioxide (CO₂) storage technologies, deployment of DC Fast EV chargers at Mesra stations across Malaysia, and undertaking a joint feasibility study in carbon-neutral methane.

Through rigorous efforts in decarbonising our operations, I am pleased to share that we are on track with total reduced GHG emissions in Malaysia by 5.4 per cent in 2021 to 43.8 million tCO₂e, below our 2024 mid-term target which is to cap GHG emissions to 49.5 million tCO₂e in Malaysian operations. While our methane emissions intensity has also recorded a steady downward trend, more can be done and accordingly our efforts will be intensified on this front.

Seizing Opportunities for Future Growth

Looking ahead to 2022, while there is a certain degree of recovery and growth expected with the reopening of economies, immense uncertainties still prevail. Therefore, PETRONAS will continue exercising prudent financial management given our cautious outlook amid an ultra-volatile geopolitical environment and an accelerating energy transition. At the same time, it is also imperative for the Group to seize the attractive opportunities which will surface as the energy transition unfolds.

In 2022, PETRONAS will be undertaking its next phase of growth by elevating the progress that has been achieved under the Gas + New Energy (G+NE) business. PETRONAS is determined to grow the new energy business profitably at scale and with pace by establishing a new, independent entity focused fully on cleaner energy solutions. This entity will be charged to capture opportunities at pace in the energy transition alongside our core portfolio by providing customers with lower-carbon solutions in three core offerings – Renewables, Hydrogen and Green Mobility. Our ambition is for the entity to eventually be uncompromisingly green, addressing our customers' growing need for cleaner energy solutions and supporting the shared global aspiration for a lower carbon future.

PETRONAS will also be accelerating decarbonisation efforts across its own entire integrated value chain by managing a carbon storage portfolio for emissions produced by its operations and establishing a regional storage hub for carbon emissions as a new revenue generator.

We are positioning ourselves to accelerate growth in these fast-developing spaces with the new entity and the Carbon Management Unit. The Group is confident that with the strength and reliability of its core portfolio combined with our new suite of offerings, PETRONAS will evolve to present itself to its customers as an 'energy superstore' that powers businesses and fuels progress in a just and sustainable manner.

I look forward to sharing more exciting updates with you in due course.

Upholding the Trust Anchored on Shared Values

As PETRONAS positions itself for the future, it remains our sacred duty to manage and maximise the nation's hydrocarbon resources for the benefit of all, and we will continue to do so with integrity and professionalism.



PETRONAS has in place a fully functioning Corporate Governance framework. Our constituted organisational structure continues to see an Internal Audit function that reports directly to the independent directors on our Board Audit Committee.

Our employees are guided by the PETRONAS Code of Business Ethics (CoBE) and the Anti Bribery and Corruption Policy & Guidelines Manual in how they should ethically carry out his or her duties. PETRONAS also continues to leverage its collaboration with the Malaysian Anti-Corruption Commission (MACC) which was initiated since 2012. Following the formation of an Integrity Unit in PETRONAS, we have a fully functioning Whistleblowing Committee chaired by a Chief Integrity Officer who independently reports to the PETRONAS Board.

With collaboration as the cornerstone of all our endeavours, PETRONAS takes accountability of the resources we have been entrusted with. The organisation's actions are deeply embedded with the Shared Values of Integrity, Professionalism, Cohesiveness and Loyalty, living up to our purpose as a trusted partner for progress for our stakeholders.

Even as it discharges its duty of trust in managing the nation's valuable resources, PETRONAS fully recognises that managing such finite resource cannot be an infinite venture. For the benefit of the nation and the generations to come, PETRONAS contributed RM100 million to the

Letter from the President and Group Chief Executive Officer

National Trust Fund during the year where the fund size stood at RM17.5 billion as at 31 December 2021. Since the Fund was created in 1988, PETRONAS remains its sole contributor with cumulative contributions of RM10.5 billion as at 2021.

Despite the obvious headwinds we faced and challenging markets we contended with, Alhamdulillah I am pleased to report that PETRONAS was able to continue with its social initiatives in the areas of Education, Community Well-being and Development, and the Environment. It is a great source of pride to the organisation that it was able to remain unwavering in its commitment to these causes, and registered RM1.4 billion in Corporate Social Responsibility (CSR) contributions in these areas within the past two difficult years alone.

PETRONAS' commitment – to Malaysians and the societies we serve – remains intact and we will continue to uphold the highest standards of governance and integrity for the well-being of the organisation, even as we continue to navigate in a volatile and uncertain business landscape.

Acknowledgements

The stage is well and truly set for PETRONAS to step up even more meaningfully in pursuing its purpose and delivering profitable growth, responsibly and sustainably. To this end, we would be the first to recognise that the respectable performance we registered in 2021 was due to the contribution and efforts of many parties whom we now wish to acknowledge.

Permit me to firstly place on record my appreciation to members of the PETRONAS Board of Directors, for their wise counsel and vigilant stewardship that saw us navigate the challenging period to emerge a stronger and more resilient organisation.

Given this opportunity, please allow me to extend my personal and heartfelt appreciation to Tan Sri Ahmad Nizam Salleh, who will always be remembered as an upright and thoughtful leader who has made innumerable contributions - not only throughout his three-year tenure as Chairman, but over his many decades of service to the PETRONAS Group of Companies.

On 1 August 2021, it was the distinct privilege of PETRONAS to welcome Tan Sri Dato' Seri Mohd Bakke Salleh as its new Chairman. Given Tan Sri Dato' Seri Mohd Bakke's reputation for integrity, astute insights and commercial acumen, I am assured his vast experience will ensure that the organisation remains a trusted partner for progress.

In 2021, we bid farewell to two members of the PETRONAS Executive Leadership team – Encik Maliki Kamal Mohd Yassin, who retired as Senior Vice President and Group General Counsel and Haji Samsudin Miskon, who retired as Senior Vice President of Project Delivery and Technology (PD&T). We are immensely grateful for their dedicated service to the organisation and unwavering support to see us through the many challenges faced by the industry. They have now been ably succeeded by Encik Razman Hashim and Haji Bacho Pilong respectively.

In early 2022, we saw the departure of Datuk Md Arif Mahmood, Executive Vice President and CEO of PETRONAS Downstream Business, after 37 illustrious years with the company. A friend and mentor to many, he became known as a leader who pushes boundaries, as demonstrated in his pivotal role in our Pengerang Integrated Complex (PIC). In his stead, we welcome Datuk Sazali Hamzah, who previously served as Vice President and CEO for PETRONAS Chemicals Group Bhd (PCG).

No acknowledgment would be complete without thanking our employees, stakeholders and industry partners both at home and wherever we operate for their unwavering contribution, support and trust in PETRONAS.

The PETRONAS family looks forward to navigating this next phase of growth with you as we fulfil our purpose and become your preferred progressive energy and solutions partner.

Datuk Tengku Muhammad Taufik
President and
Group Chief Executive Officer



Letter from the Executive Vice President and Group Chief Financial Officer



Liza Mustapha

Executive Vice President and
Group Chief Financial Officer

PETRONAS Group delivered a strong set of financial and operational results for the year as the company continued to accelerate its recovery efforts. Improvements in global energy prices have been fundamental this year, with the reopening of economies globally. Despite the rising trend in energy prices, the situation remained volatile and uncertain. The global landscape faces ongoing COVID-19 challenges, geopolitical factors and supply chain disruptions, which coincided with the acceleration of the energy transition. Therefore, the Group responded to the favourable market conditions with a disciplined approach. Despite the prevailing high oil price towards the end of the year, we exercised fiscal discipline to ensure long term sustainability and growth. As such, we remain prudent and maintain our long-term price outlook within the range of USD50-60/bbl. At the same time, the Group continued to strengthen the core business through commercial and operational excellence, while accelerating its efforts to pursue growth in non-traditional businesses. The focused execution of strategies coupled with agile and resilient operations, has been key to the Group's commendable performance in 2021.

Letter from the Executive Vice President and Group Chief Financial Officer



The Group saw a substantial rise in revenue to RM248.0 billion, a 39 per cent increase from the RM178.7 billion recorded in 2020, and exceeds the RM240.3 billion recorded in 2019.

Our Financial Year in Review

PETRONAS achieved a Profit After Tax (PAT) of RM48.6 billion for 2021, which is a major turnaround from the Loss After Tax (LAT) of RM21.0 billion the previous year. PAT for the year also exceeded the RM40.5 billion recorded in FY2019, before the industry-wide disruptions caused by COVID-19. The substantial rise in profit was driven by a rebound in revenue and the effectiveness of cost discipline measures that PETRONAS continued to practice.

The Group saw a substantial rise in revenue to RM248.0 billion, a 39 per cent increase from the RM178.7 billion recorded in 2020, also exceeding the RM240.3 billion recorded in 2019. The significant increase in revenue was contributed by rising energy prices, following a rebound in demand for gas, petroleum products and Liquefied Natural Gas (LNG), amongst other market influences.

PETRONAS also saw stronger performance across other key financial metrics. In line with the higher revenue and effective cost management, Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA) rose to RM100.5 billion, an 82 per cent increase from the previous year's RM55.3 billion.

Segmental Performance

PETRONAS Group recorded improved performance across all three business segments in 2021. While the volatile crude oil prices in 2021 had varying impacts across different business segments, the Group as a whole benefitted from the integrated business that encompasses the total oil and gas value chain.

Upstream business recorded revenue growth of 48 per cent to RM104.4 billion by capitalising on rising energy prices and higher gas demand from Malaysia and international operations. Upstream's PAT stands at RM34.5 billion for the year.

Gas + New Energy (G+NE) business recorded a 38 per cent increase in revenue, to RM85.8 billion. G+NE's overall performance was positively impacted by the increase in energy prices, maximising gas and LNG sales to fulfil the market supply-demand gap. G+NE also achieved growth by leveraging the increasing demand for new energy products.

Downstream revenue rose by 46 per cent to RM124.5 billion. The business saw a rise in the cost of inputs as energy and feedstock prices were higher than normal in 2021. Stronger financial results for the year can be attributed to an increased focus on cost discipline and securing more favourable commercial deals by being more customer-centric.

Letter from the Executive Vice President and Group Chief Financial Officer



Total Assets
RM635.0 billion
(2020: RM574.1 billion)



CFFO
RM78.6 billion
(2020: RM40.7 billion)



CAPEX
RM30.5 billion
(2020: RM33.4 billion)

Strong Financial Position

The Group's Cash Flows from Operations (CFFO) remained robust at RM78.6 billion, in line with higher cash operating profits. CFFO margin also increased to 32 per cent in 2021, up from 23 per cent in 2020. Stronger cash flow during the year resulted in a 29 per cent rise in the Group's net cash position to RM67.2 billion for 2021. The current solid cash position puts PETRONAS in the top quartile among its peer group of international oil majors.

Total assets stood at RM635.0 billion as of 31 December 2021, marking an 11 per cent rise from RM574.1 billion in the preceding year. Growth in assets during the year was attributable to higher cash and fund investments, as well as higher receivables, in line with higher benchmark prices.

Cash flows from operating activities grew by RM37.9 billion or 93 per cent from 2020, in line with higher cash from operations. Additionally, gearing ratio increased to 23.1 per cent from 21.3 per cent in 2020, which is primarily due to the issuance of notes and bonds.

Prudent Financial Management

Despite the more favourable operating environment, PETRONAS continued to maintain stringent financial discipline during the year. The Group worked to achieve the right balance between financial prudence and strategic investments to catalyse future growth.

During the year, PETRONAS continued to invest in growth projects. However, many projects were affected by the prolonged movement restriction order, coupled with supply chain interruptions. Both domestic and international projects experienced delays and deferrals, resulting in a nine per cent decrease in capital expenditure (CAPEX) to RM30.5 billion.

CAPEX continues to be divided almost equally between Malaysia and international projects. A total of RM15.0 billion was directed to domestic projects, principally in the Upstream segment, where the focus remained on the development of new fields. International expenditure continues to be primarily directed to the monetisation of gas in Canada and the shipping business in China and the Americas.



Letter from the Executive Vice President and Group Chief Financial Officer



Both bond issuances were well received by investors in the international debt capital market, drawing high demand, resulting in the lowest coupon and tightest issue spreads in PETRONAS' 30-year issuance history.

Additionally, the Group invested in innovative technologies that aim to improve the efficiency and costs of operations. For instance, Upstream adopted remote operations applications at eight drilling sites for improved cost savings.

The majority of the CAPEX for 2021 was directed to maintaining existing cash generators. However, significant investments were channelled towards future growth drivers, which includes non-traditional businesses such as solar and speciality chemicals.

Debt Capital Market

PETRONAS continuously assesses its funding requirements and evaluates financing strategies in order to optimise the cost of funding and capital. During the year, PETRONAS issued two bonds as part of the Global Medium-Term Notes programme. The first bond, worth USD600 million, was issued by PETRONAS Energy Canada Ltd (PECL) to fund its continued development and production activities in Canada. The second bond was issued by PETRONAS Capital Limited (PCL), amounting to USD3 billion, to refinance PETRONAS' maturing debts

in 2022. Both issuances were well received by investors in the international debt capital market, drawing high demand, resulting in the lowest coupon and tightest issue spreads in PETRONAS' 30-year issuance history. This is a testimony to the strength of its credit and investors' confidence in the Group's financial future. These issuances have further strengthened PETRONAS' balance sheet and extended its debt maturity profile.

Letter from the Executive Vice President and Group Chief Financial Officer

Credit Rating

PETRONAS' credit ratings remain strong, with a rating of A2, A- and BBB+ from Moody's, Standard & Poor's (S&P) and Fitch, respectively. The standalone credit profile is four notches above PETRONAS' credit ratings, as assessed by S&P and Fitch. These ratings bear testimony to PETRONAS' robust financial strength and solid business fundamentals, which bolster our ability to adapt and remain resilient amidst the new normal for the industry and market.

Contributions to Governments

PETRONAS' contribution to the Federal Government of Malaysia and state governments amounted to RM48.2 billion for the year ended 31 December 2021. This includes dividends, taxes and cash payments. In addition, PETRONAS paid RM100 million to the National Trust Fund (NTF) in 2021.

To this end, PETRONAS' cumulative contributions to the Federal Government of Malaysia, state governments and NTF amounted to RM1.3 trillion.

Delivering on Our Purpose Beyond Profit

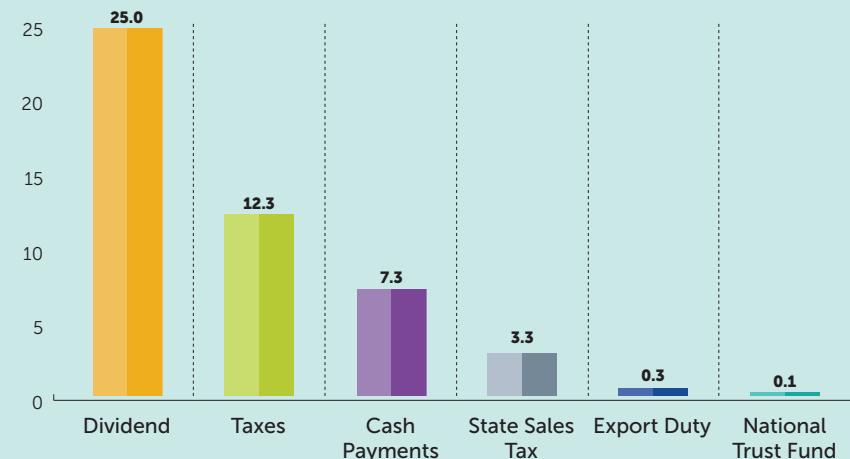
The year witnessed evolving stakeholder expectations and global pressure on businesses to identify and manage their environmental, social and governance (ESG) impacts. Within the energy industry, oil and gas producers are expected to devise strategies to respond to the energy transition as well as any direct implications on their business and operations. Against this backdrop, one of the biggest changes for oil and gas (O&G) companies would be to redirect sizeable capital or investment towards other sustainable sources of energy and low carbon solutions such as carbon capture and storage (CCS) technologies.

In response to this changing landscape, PETRONAS has allocated approximately 20 per cent of total CAPEX over the next five years for green investments in pursuit of meeting the net zero carbon emissions by 2050 (NZCE 2050) aspiration. In 2021, close to RM1.0 billion of CAPEX was spent on stepping out beyond our



Components of contributions to the Federal Government of Malaysia, state governments and NTF

(RM billion)



Cumulative Contributions to Governments and NTF
RM1.3 trillion

In 2021, close to RM1.0 billion of CAPEX was spent on stepping out beyond our core business, mainly on renewables.



core business, mainly on renewables. In 2020, PETRONAS Group embarked on its first decarbonisation project for high carbon dioxide (CO₂) gas field at the Kasawari gas field in the waters off Sarawak.

The project will deploy CO₂ reinjection technology into a storage reservoir, potentially preventing up to 90 per cent of emissions, or 3.7 million tonnes of carbon dioxide equivalent (tCO₂e), from being released into the atmosphere. This will entail significant initial investment. Under the annual Plan and Budget FY2022-2026, various investments shall be explored including carbon offsets and carbon technologies towards delivering NZCE 2050.

Moving Forward

The outlook for the year ahead remains uncertain. Volatility in oil prices will continue to pose new challenges in the operating environment. The strong rebound in energy prices since the beginning of 2021 has been supportive of PETRONAS Group's performance. Notwithstanding, the current state of higher prices could well be short-lived, given the uncertainties of geopolitical climate, along with other shocks that could hit the energy market. This is further aggravated by significant pressure arising from energy transition, which necessitates us to intensify efforts to decarbonise, and scale up investments in the renewables space. Accordingly, the business remains cautious and continues to focus on operational efficiencies, commercial excellence and prudent financial management.

The year 2022 will be critical to revive delayed or deferred projects mainly from the disruptions caused by COVID-19. An increase in capital expenditure from project launches and deals is expected, coupled with a steep rise in renewables and low carbon technology and solutions spending in the near to medium-term. PETRONAS is well-positioned to leverage this changing landscape, with its affordability matrix, where necessary investments have been earmarked towards future growth strategies and sustainability goals while exercising strict capital discipline.

As it enters a new year, PETRONAS will remain committed to its strategic planning process, driven by the energy transition and NZCE 2050 aspiration. The Group will achieve its ESG commitments and growth through risk assessments, cost controls, responsible governance and above all, strong fundamentals for sustainable value creation.

Liza Mustapha

Executive Vice President and Group Chief Financial Officer

Dear Stakeholders,

I am pleased to join PETRONAS as its first Vice President and Chief Sustainability Officer during an exciting albeit trying time. The world is at a pivotal moment. The events of recent years have highlighted the importance of addressing societal and environmental challenges. From the socio-economic impacts of the COVID-19 pandemic to rising climate-related disasters, the need to build a more resilient and sustainable future is clearer than ever. People across society are looking at businesses to help drive this sustainability agenda, with increasing pressure from customers, investors, regulators and other stakeholders. For the energy sector, this means undergoing a radical shift towards greener, low-carbon solutions capable of meeting long-term energy demands. This energy transition is necessary to limit the worst effects of climate change and stimulate sustainable and inclusive economic development.

At PETRONAS, we are embracing these rising expectations for sustainable business practices. Sustainability to us goes hand-in-hand with our long-term strategic objectives. By taking a proactive stance we protect our business from environmental, social and governance (ESG) risks and improve our prospects to achieve long-term growth while supporting the needs of our stakeholders. Therefore, we view the rapid changes as a defining opportunity to create positive change benefitting more segments of the population – transforming the energy system to create economic growth, revitalising society and leaving behind a better planet for future generations.

The Sustainability Landscape

At the 2021 United Nations' Climate Change Conference (COP26) held in Glasgow, United Kingdom, I sensed new levels of commitment to climate action. People from a range of groups, including the private sector, governments, investors, NGOs and activists, came together to try and solve the global climate crisis. The conference was framed by the findings of the 6th Assessment Report by the Intergovernmental Panel for Climate Change (IPCC), which warns that without drastic and immediate action to reduce greenhouse gas emissions, the world is headed towards a global temperature increase significantly above 1.5°C that is expected to result in irreversible consequences.

Letter from the Vice President and Chief Sustainability Officer

Letter from the Vice President and Chief Sustainability Officer



Charlotte Wolff-Bye
Vice President and
Chief Sustainability Officer

Letter from the Vice President and Chief Sustainability Officer

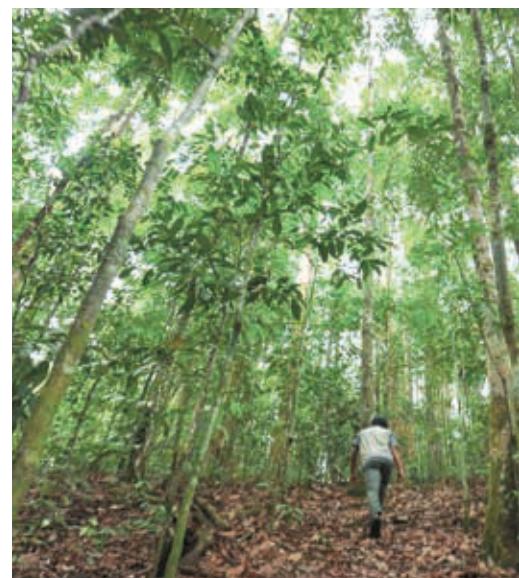
COP26 is considered a significant turning point in collective climate action, as 90 per cent of global Gross Domestic Product (GDP) has now committed to achieving net zero carbon emissions. The pledges made alongside the COP26 event support the global shift to more sustainable solutions, with many international leaders taking a stance on the energy transition. For instance, over 100 countries signed the Global Methane Pledge, limiting methane emissions by 30 per cent by 2030, compared to 2020 levels. Several nations have also committed to phasing out the use of coal, including Malaysia. In support of the energy transition, the Glasgow Financial Alliance for Net Zero (GFANZ), a global coalition of leading financial institutions pledged over USD130 trillion of private capital to accelerate decarbonisation with a specific emphasis on developing countries.

Over the year, nature has become a key aspect in climate-related policy discussions. The alarming loss of biodiversity is now recognised as a critical factor in securing a stable climate and well-being for the world's population. Also here we can expect greater demands on corporate action.

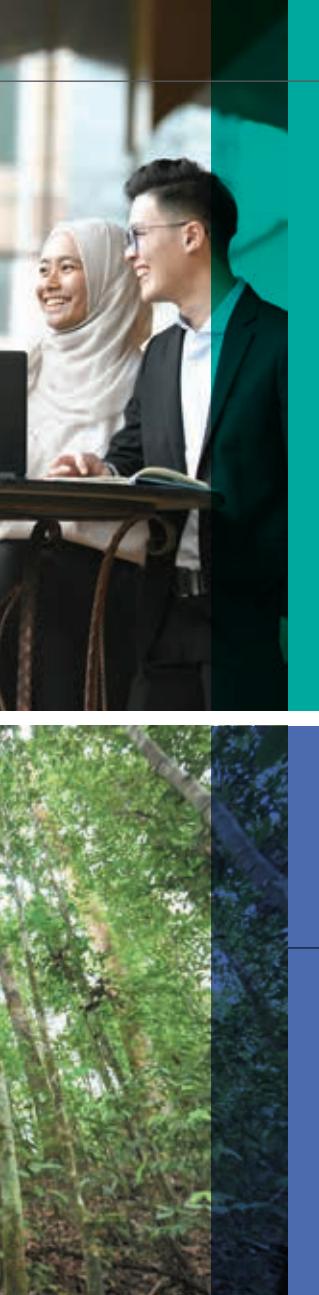
Malaysia is classified as one of the most biodiverse-rich countries in the world. Going forward, we will seek to better understand our impact on nature and take more assertive action in promoting nature conservation.

The social aspect of sustainability has also gained much needed attention recently. The disproportionate impacts of COVID-19 on vulnerable communities highlighted severe inequalities faced by society, resulting in increased calls for action. Companies are scrutinised for their diversity and inclusion efforts, human and labour rights practices, and stance on other societal issues.

It is important to note that many economies are at very different stages of maturity in navigating the sustainability landscape. We are conscious that the energy transition needs to be just and equitable, especially in Asia, where major economic gaps exist between and within countries. This requires unprecedented collaboration between policymakers, industry, investors, community groups and society at large in driving an energy transition that creates better outlooks for the growing population of the region.



The social aspect of sustainability has also gained much needed attention recently. The disproportionate impacts of COVID-19 on vulnerable communities highlighted severe inequalities faced by society, resulting in increased calls for action. Companies are scrutinised for their diversity and inclusion efforts, human and labour rights practices, and stance on other societal issues.



It is pertinent that PETRONAS, in its capacity as a national oil and gas company, develops its own unique narrative that is specific to Malaysia, building on the strength and ambition of the nation.

Institutionalising Sustainability

The inherent link between climate change, nature loss, persistent inequality, and business resilience and performance is now better understood. The debate has moved on from the 'why' to the 'how' we should be addressing these systemic sustainability challenges. We are seeing a rapid scale up in emissions-related regulation, ESG standards and frameworks that in turn drive investor confidence in low carbon technology and solutions.

PETRONAS recognises sustainability as a critical element in how we develop our business. We are responding to the external context by developing robust data collection and analysis as a basis for future target setting, firming up governance, capacity and capability around sustainability management. We are exploring better integration of ESG factors into PETRONAS' Enterprise Risk Management (ERM) process. Similarly, we conduct an annual materiality assessment to determine key ESG matters that impact our sustainable

value creation, which is considered during risk assessments and strategic decision making. All risks identified in our corporate risk profile are deliberated by the Board through the Board Risk Committee. In 2021, this included deliberation on ESG risks associated with climate change, health and safety, and human rights.

The establishment of my new role, Chief Sustainability Officer (CSO), reporting directly to the President and Group Chief Executive Officer, sets out to orchestrate PETRONAS' roadmap for our net zero carbon emissions by 2050 (NZCE 2050) aspiration, to guide future business propositions and PETRONAS' journey across the value chain in working towards this aspiration. It is pertinent that PETRONAS, in its capacity as a national oil and gas company, develops its unique narrative specific to Malaysia, building on the strength and ambition of Malaysia as a nation.

Letter from the Vice President and Chief Sustainability Officer

Towards a Low Carbon Future

We acknowledge the scientific consensus on climate change, and recognise the express need to cut our emissions in contribution towards global climate goals. In 2020, we announced our aspiration to reach net zero carbon emissions by 2050 (NZCE 2050) – the first oil and gas company in Southeast Asia to do so. Our aspiration underscores our ambition to meet higher sustainability goals for the longer term that address stakeholder concerns and support the ambitions of the Paris Agreement.

In 2021, we recorded a total of 45.2 million tonnes of carbon dioxide equivalent (MtCO₂e) emissions across our global operations, a reduction of 6.4 per cent from 2020. In Malaysia, our greenhouse gas emissions decreased by 5.4 per cent to 43.8 MtCO₂e from 46.3 MtCO₂e, in 2020 mainly contributed by venting and flaring reduction projects in Upstream operations.

We understand that our NZCE 2050 aspiration will require a major shift in how we develop our business going forward. We are committed to expedite our emissions reduction, including a specific focus on methane emissions. To this end, PETRONAS has endorsed the World Bank's Zero Routine Flaring by 2030 Initiative, which aims to end routine flaring of associated gas from our oil production. We are also signatory to the international Methane Guiding Principles initiative that promotes collaboration between stakeholders to expedite emissions abatement.

The shift to cleaner, more sustainable energy sources present a major growth opportunity for our business. We are already on this journey. In 2021, we had close to 1 GW of solar capacity in operation and under development. We have also formalised our collaborations with customers, technology and industry partners to develop carbon capture and storage (CCS) technology as a viable abatement option for our own operations and other high emitting industries, studying the feasibility of producing carbon neutral methane and sustainable aviation fuel (SAF), to mention a few areas with promising growth prospects.

Our NZCE 2050 aspiration provides the necessary impetus for us to pursue more climate-friendly solutions and opportunities in the broader energy space that will create sustainable new values for the organisation.

To openly inform and engage our stakeholders in how climate change may affect our business both from downside risk and opportunity angles, PETRONAS will adopt the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), with a target to commence our disclosures in 2023.

Partners of Society

As we increase our efforts in protecting the planet, we remain steadfast in our commitment to providing positive social impact.

Our commitment to safeguarding people intensified with the COVID-19 pandemic. We swiftly introduced COVID-19 platforms and programmes with the aim to keep our people safe with minimal disruptions to our operations – a true testament to the agility of our organisation. Further details about our robust response to the pandemic is outlined on page 193 of this report.

Additionally, through Yayasan PETRONAS, the Corporate Social Responsibility arm of PETRONAS, we provided flood relief aid to hard-hit communities, delivering necessary supplies to prevent, control and treat impacted communities located across our assets. We mobilised our employee volunteers to offer on-the-ground assistance to local communities with an additional contribution of RM25.0 million towards relief and assistance for the victims.

The COVID-19 pandemic has forcefully exposed and exacerbated inequalities across the world. As partners of society, we recognise the need to accelerate our efforts in providing equal access to resources and opportunities, as well as the importance of putting human rights at the centre of our operations. We are continuously looking to improve and systemise our human rights assessments in the company and throughout the value chain.

Strengthening Performance through Collaboration

As a national oil and gas company with an extensive international reach, we play a strong role in supporting sustainable development, particularly in driving a low-carbon energy future for Malaysia. The energy transition demands a whole transformation of society. To better prepare the organisation and our value chain, we need to bring our partners along the path to a low carbon economy, while ensuring our employees, partners and stakeholders are all upskilled on sustainability. We firmly believe that real positive change can only occur through collective action and a more assertive approach.

Letter from the Vice President and Chief Sustainability Officer



In 2020, we became a member of the World Business Council for Sustainable Development (WBCSD), joining over 200 other forward-thinking multinational companies. Through WBCSD, we can shape and gain insights and collaboratively develop solutions to address pressing sustainability challenges. We can leverage WBCSD's wide networking platform across a variety of sectors.

To remain a WBCSD member, we need to adhere to stringent criteria, such as setting ambitious science-informed environmental goals, committing to becoming net zero by 2050, declaring support for the United Nations Guiding Principles on Business and Human Rights, supporting inclusion, equality and diversity, and operating at the highest level of transparency through sustainability disclosures.

We are also part of the CEO Action Network (CAN), Malaysia's first sustainability-focused coalition of leading CEOs and senior decision-makers. CAN focuses on changing the nation's market landscape through sustainability advocacy, capacity building, action and performance. PETRONAS President and Group Chief Executive Officer, as CAN chairperson of the steering committee, announced collective ESG commitments for 2023. These commitments will be pivotal to enabling Malaysia's transition to a net zero carbon future, as well as accomplishing the aspirations of Malaysia's Shared Prosperity Vision 2030.

We are also working closely with the Malaysian government to support policy development and further drive the nation's sustainability efforts. For example, we are engaging directly with the government in the development of voluntary carbon markets for nature-based carbon solutions. This will be an important tool in not only preserving biodiversity and the ecosystem, but also supporting a net zero carbon economy.

What the Future Holds

In the years ahead, the need for green and sustainable practices will only grow. For PETRONAS, we are determined to seize new opportunities for sustainable, profitable growth as we uphold our responsibility as Malaysia's national oil and gas company and lay the foundation for our future growth. In 2022, we will be stepping up even more meaningfully in pursuing our purpose to become a progressive energy and solutions partner enriching lives for a sustainable future. This includes releasing more details about our pathway towards NZCE 2050 and how this will lay the foundation for other sustainability priorities.

Charlotte Wolff-Bye

Vice President and Chief Sustainability Officer

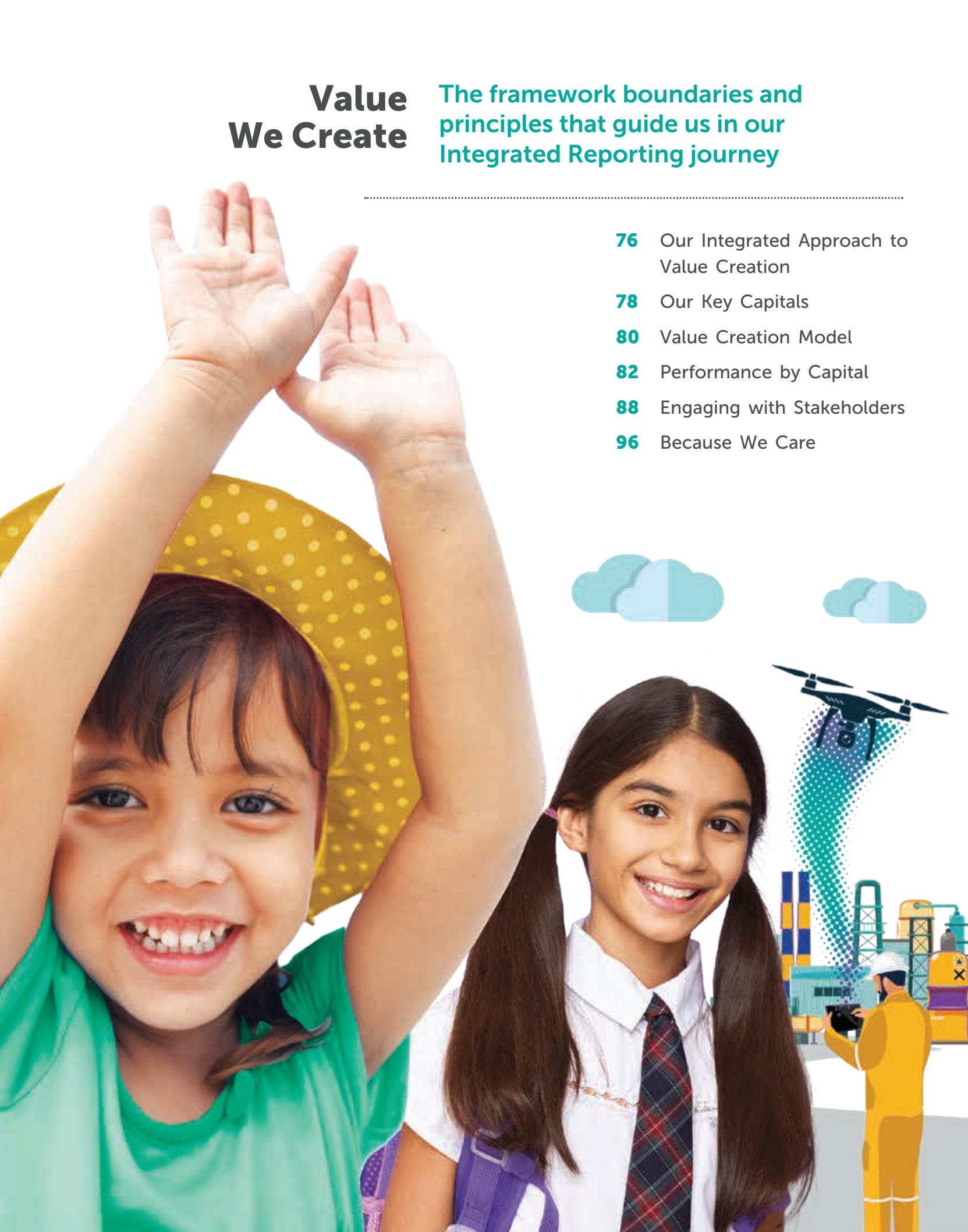
Recharge

to Grow



Value We Create

**The framework boundaries and
principles that guide us in our
Integrated Reporting journey**

- 
- 76** Our Integrated Approach to Value Creation
 - 78** Our Key Capitals
 - 80** Value Creation Model
 - 82** Performance by Capital
 - 88** Engaging with Stakeholders
 - 96** Because We Care

Our Integrated Approach to Value Creation

At PETRONAS, we adopt an integrated approach to deliver long-term sustainable value to our stakeholders. We do this to gain a holistic view of our activities, examining the interaction between the environment, the evolving expectations of our stakeholders and our overall operations to achieve our business aspirations. This ensures that our business remains strong, resilient and sustainable, thus enabling us to meet the energy needs of current and future generations.

Understanding the Context

Operating Landscape

Our ability to realise our value creation abilities hinges on the global macroeconomic landscape and its impact on the global oil and gas industry. The varying factors that affect the macroenvironment are closely analysed in relation to our business and operations, allowing us to identify potential trends and opportunities.

See page 102

Developing and Deploying Our Strategy

Material Topics

Our ability to deliver stakeholder value is influenced by a range of ESG factors. Hence, we identify material topics that are closely related or could impact our stakeholders to help us develop and execute the right strategies that will drive the future of energy.

See page 108

Stakeholder Expectations

As we transition to expand our portfolio to include cleaner energy solutions, we are aware of the importance of managing the changing needs of our stakeholders. We proactively engage in meaningful dialogues, collaborations and engagements on various platforms to position ourselves as a credible, trustworthy partner.

See page 88

Strategy

We are guided by PETRONAS' Three-Pronged Growth Strategy (3PGS), designed to meet our long-term stakeholder needs and position us as a progressive energy and solutions partner enriching lives for a sustainable future. The 3PGS are:

1. Maximising Cash Generators
2. Expanding Core Business
3. Stepping Out

See page 132

Our Integrated Approach to Value Creation

Reinforcing Good Governance

We see corporate governance as a critical tool in our value creation story. For us, it means going beyond compliance in protecting the best interest of all stakeholders. We uphold the highest levels of integrity, governance and ethical business practices, anchored by a strong culture of transparency and accountability. This safeguards our business and protects the best interest of all our stakeholders.

Our Key Capitals

The effective execution of our strategy is measured based on our ability to reasonably and intelligently utilise the following six types of resources:

Creating Meaningful Value for All



Financial Capital:

The pool of funds obtained through financing or generated by our business.



Manufactured Capital:

The physical assets and infrastructure required to ensure our business operates.



Intellectual Capital:

The intellectual capabilities and intangibles associated with our brand, technical expertise and experience.



Human Capital:

The skills and knowledge inherent in our workforce to drive business operations.



Social and Relationship Capital:

The network of relationships between our business and stakeholders



Natural Capital:

The natural resources such as water, fuel, and materials used across our operations.

Our ultimate goal is to create sustainable value for all our stakeholders. Through our integrated approach, we ensure all elements are taken into consideration to allow us to deliver value, now and for the future.



See pages 80-81 for a full disclosure of how the capitals are fully utilised in our Value Creation Model

See page 80

Our Key Capitals

Our value creation story relies on a range of resources broadly categorised into Financial, Manufactured, Intellectual, Human, Social and Relationship, and Natural Capitals. The efficient and intelligent utilisation of these capitals is key to achieving our operational, commercial and growth aspirations.



Financial Capital



Guided by strong financial metrics and a prudent financial management track record, we have built a pool of funds to finance operations and deliver business growth. By upholding disciplined Financial Capital spending, we are able to balance stakeholder value with business growth.



Manufactured Capital



We possess an extensive range of highly reliable and efficient assets, such as our offshore platforms, floating facilities, processing plants, innovative equipment, world-class office buildings and many more. Our Manufactured Capital allows us to meet the changing market and energy demands, current and future.



Intellectual Capital



Our operations are backed by proprietary technologies, knowledge, systems procedures and protocols that drive value creation and deliver sustained growth. This is our differentiating factor and will enable us to meet our long-term strategic objectives.

→ **Return on Average Capital Employed
10.8%**
2020: (4.1%)

→ **Net Cash Position
RM67.2 billion**
2020: RM52.1 billion

→ **Return on Total Assets (ROTA)
11.2%**
2020: (2.3%)

→ **Property, Plant and Equipment
RM282.9 billion**

→ **Capital Investment
RM30.5 billion**
2020: RM33.4 billion

→ **Overall Equipment Effectiveness (OEE)
98.1% G+NE
93.3% Downstream**

→ **RM361.80 million
Investment in Technology**

→ **175 researchers attached to 178 laboratories in PETRONAS Research Sdn Bhd**

→ **RM84.8 million spent for digital intangible assets**

Our Key Capitals

Although each capital is distinct from one another, they are interrelated. Therefore, our strategy development and execution involve contemplating the dynamics between the six capitals to optimise stakeholder value over the short, medium and long term.



Human Capital



The future of our organisation depends on the skills, knowledge and capabilities of our people. We invest in providing a wholesome talent experience to nurture a high-performing, innovative culture that is able to navigate a volatile industry for long-term growth.

- Investment in Employee Training and Development: **RM111.9 million**
- A diversified workforce of **46,884** employees across the globe
- Employees breakdown **72%** Male **28%** Female



Social and Relationship Capital



We develop long-lasting, mutually-beneficial relationships with our stakeholders to help business growth and improve the well-being of the communities. Doing so enables us to build stakeholder trust and support in our ability to deliver value far into the future.

- More than **RM163 million** was invested in the PETRONAS Education Sponsorship Programme (PESP)
- Over **7,000** benefited from various education programmes
- **2** MARA Junior Science College (MRSM) campuses are in construction in Ranau, Sabah and Bintulu, Sarawak



Natural Capital



Our business model leverages natural resources to ensure the security of energy supply as well as the development of quality products and services for customers. Respecting the delicate balance between the natural environment and human economy, we advocate responsible utilisation of natural resources to create sustainable value for all stakeholders.

- **RM0.6 billion** of CAPEX spent in renewable energy

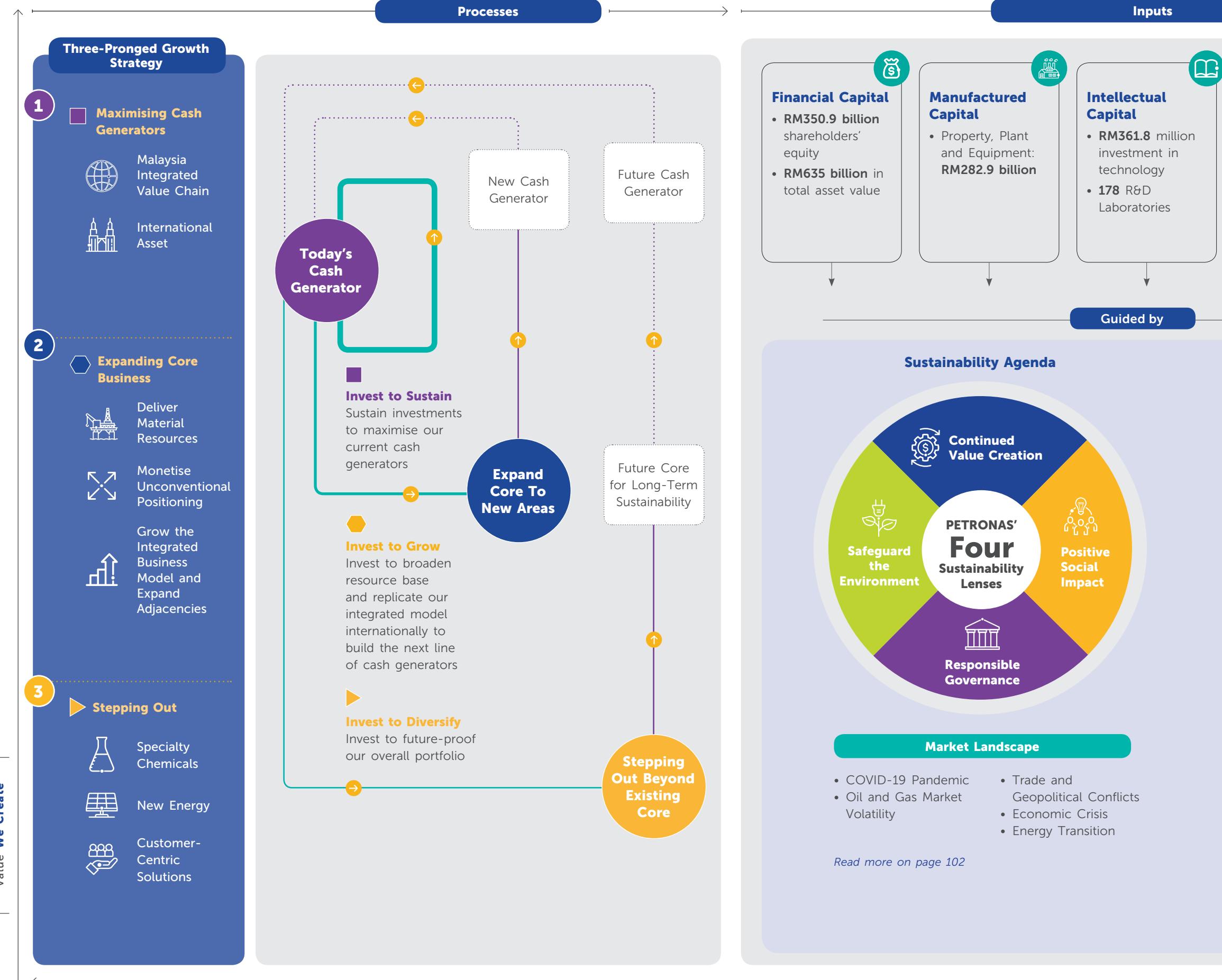
Value Creating Business Model

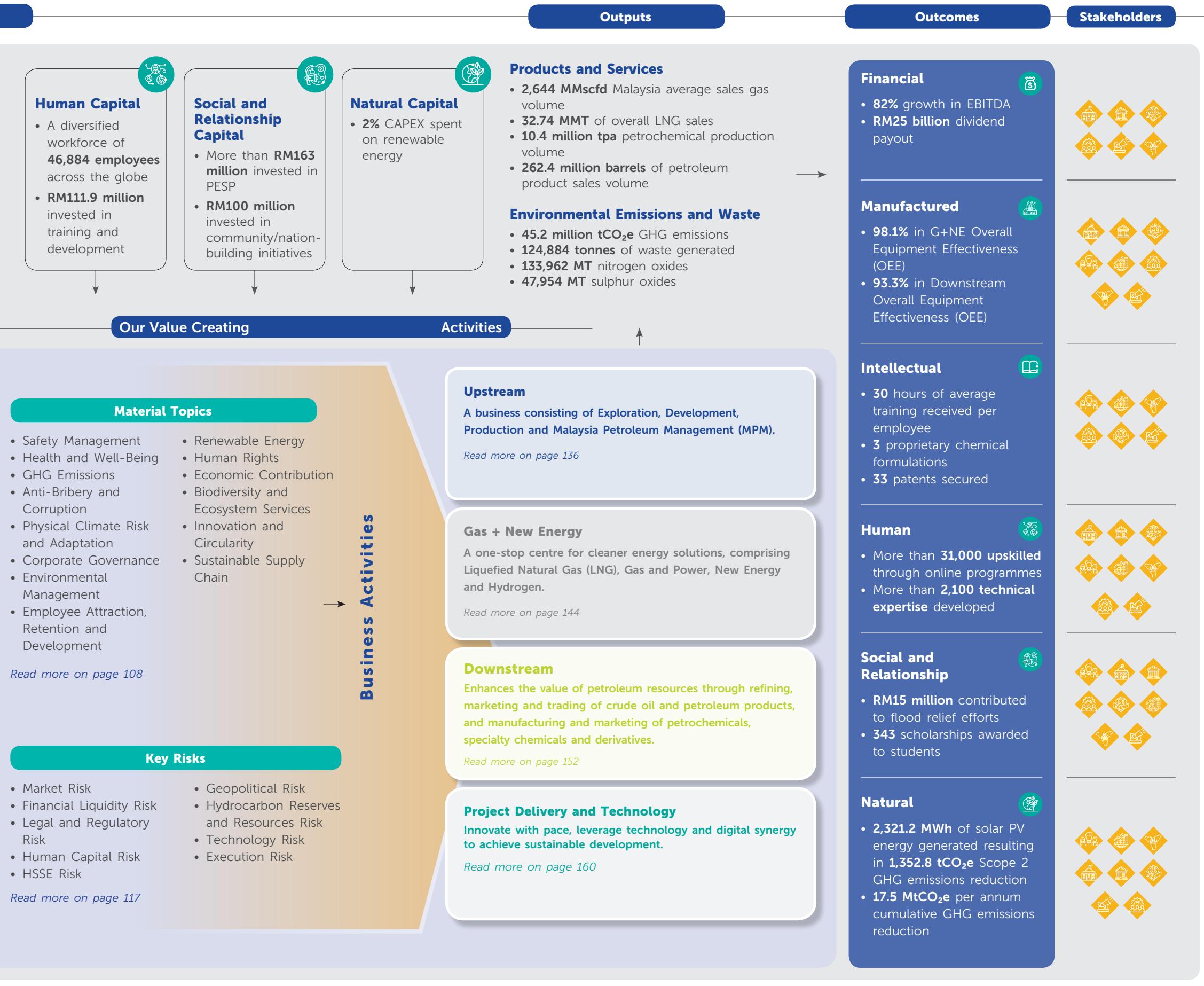
Statement of Purpose

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

Brand Positioning
Passionate About Progress

Value Creation Model





Performance by Capital

How We Sustain Value: Performance by Capitals

The business growth achieved over the long-term is dependent on our ability to draw value from our six capitals, which are categorised as Financial, Manufactured, Intellectual, Human, Social and Relationship, and Natural Capitals. As these capitals are largely based on our resources and relationships that are essential to our business, they provide stakeholders with greater clarity on how we maximise positive outcomes, minimise trade-offs and, at the same time, balance our environmental, social and governance (ESG) scorecard. We leverage these capitals in a responsible manner to deliver our strategy for long-term sustainable growth and, most importantly, create added value for our stakeholders.

Performance by Capital



Financial Capital

Our strong financial base through income and earnings generated by our business, is necessary to fund our long-term objectives.

	Inputs	
	2021	2020
Total assets (RM billion)	635.0	574.1
Shareholders' equity (RM billion)	350.9	330.6
Cash Flows from operations (CFFO) (RM billion)	78.6	40.7
Free cash flows (RM billion)	48.1	7.3

Trade Offs

- Financial Capital helps create value through its conversion into other forms of capital.
- We need to balance the utilisation of Financial Capital between investments in our core business, predominantly Manufactured Capital, and growth.
- Financial Capital is utilised to fund capital investments and operating expenditures to increase other capitals to achieve long-term growth and sustainable performance.
- Although this may reduce our short-term Financial Capital, we can replenish this and create greater financial value in the long run through disciplined and effective investment decisions.



Outputs/Outcomes

	2021	2020
Revenue (RM billion)	248.0	178.7
Profit/(Loss) After Tax (RM billion)	48.6	(21.0)
EBITDA (RM billion)	100.5	55.3
CAPEX (RM billion)	30.5	33.4
Dividend Payout to Government (RM billion)	25.0	34.0

Actions to Enhance Outcomes

- Strengthen liquidity and risk management to protect cash flow.
- Maintain prudent and disciplined financial management system.
- Uphold and strengthen transparency and corporate governance disclosures.

Performance by Capital



Manufactured Capital

Our highly reliable and efficient equipment, infrastructure and other physical assets are required to meet evolving market demands.



	Inputs	2021	2020
Number of producing fields	247	247	
Offshore platforms	432	432	
Floating Facilities	30	30	
Number of LNG Plants	4	3	
LNG Floating Facilities	2	2	
Number of gas processing complexes	2	2	
Number of utilities complexes	2	2	
Number of regasification terminals	2	2	
Number of gas pipelines	4	4	
Number of processing plants	5	5	
Number of petrochemical production sites	11	11	

	Outputs/Outcomes	2021	2020
LNG Sales (MMT)	32.74	33.12	
Malaysia average sales gas volume (MMscfd)	2,644	2,521	
Total petrochemical production volume (million tpa)	10.4	10.7	
OEE (%)			
– G+NE	98.1	96.8	
– Downstream	93.3	90.0	
Renewable energy installed capacity (MW)	851	644	

Trade Offs

- As an asset-heavy organisation, the growth of our company depends on growth in our Manufactured Capital.
- Financial Capital needs to be used to expand our infrastructure, processing plants, equipment, renewable technologies, and more so that we can continue meeting society's energy demands, which contribute to our Social and Relationship Capital.
- However, we must manage our Manufactured Capital in a responsible manner. Health and safety issues will negatively affect our Human Capital, while poor environmental practices impact our Natural, and Social and Relationship Capital (loss of stakeholder trust).
- Our focus on clean energy solutions means expanding our Manufactured Capital to include renewable infrastructure, which requires a high amount of Financial Capital in the near term, but this will positively impact all other capitals, particularly Natural, Social and Relationship, and Intellectual Capitals.

Actions to Enhance Outcomes

- Improve asset reliability and integrity to deliver business targets.
- Ensure world-class maintenance of assets to deliver operational excellence.
- Increase focus on customer-centric and demand-led solutions to gain access to broader market and achieve business targets.

Performance by Capital



Intellectual Capital

Our proprietary technologies, knowledge, systems procedures and protocols that enable us to deliver sustained value and growth.



Inputs

	2021	2020
Number of R&D Laboratories	178	160
Number of dedicated researchers	175	184
Investment in technology (RM million)	361.8	335.7

Outputs/Outcomes

	2021	2020
Number of new products and softwares launched	35	14
Number of patents secured	33	31
Number of proprietary chemical formulations	3	5
Number of technical solutions deployed/piloted	62	23
Number of registered trademarks	67	54

Trade Offs

- It is important to invest in smart and innovative solutions that improve our Intellectual Capital and overall competitive advantage.
- We channel Financial Capital into research and development (R&D) to enhance our end-to-end visibility and processes across the value chain, including operational and cost efficiencies.
- Although this may immediately deplete our Financial Capital, the expected benefits gained in the coming years will strengthen our long-term value through improved Natural, Social, Human, and Intellectual Capitals, which inadvertently results in sustainable financial growth.

Actions to Enhance Outcomes

- Foster innovation and accelerate presence in the digital space for optimised, effective solutions across the value chain.
- Intensify low-carbon technology solutions, R&D capabilities and innovation pipeline to maximise efficiency and support towards NZCE 2050.
- Improve cost and operational effectiveness in the delivery of top quartile products.
- Improve the number of patents secured.

Performance by Capital



Human Capital

A diverse and high-performance workforce equipped with future-ready skills and capabilities.



	Inputs	
	2021	2020
Total number of PETRONAS employees	46,884	48,679
Total investment for training and development (RM million)	111.9	170.0
Gender diversity in workforce (% of women)	28	28

	Outputs/Outcomes	
	2021	2020
Lost Time Injury Frequency (LTIF)	0.14	0.10
Fatal Accident Rate (FAR)	1.13	1.47
Employee attrition rate (%)	8.4	4.9
Number of employees completed online training	31,207	30,268
Number of Technical Professionals developed	1,281	1,173

Trade Offs

- We believe in investing in upskilling and reskilling our global workforce to compete and win in the future marketplace, given the constantly changing market landscape.
- We invested in digital tools to better churn insights and intelligence from data, simplify work processes, empower decision making and enable seamless collaboration.
- Additionally, we continue to invest in providing the right environment for our people to thrive, for example a conducive workplace that promotes well-being, Diversity and Inclusion (D&I), and organisational culture.
- This may impact Financial Capital but will positively impact Human Capital to deliver business performance, hence, it will also benefit Financial Capital in the longer term.

Actions to Enhance Outcomes

- Intensify investment in upskilling/reskilling programmes especially in areas such as agile ways of working, innovation, analytics, and digital, as well as sustainability.
- Provide flexible work arrangements to ensure the safety, health, and well-being of employees.
- Continue to build awareness and progress to improve D&I.
- Continue to inculcate the refreshed PETRONAS Cultural Beliefs through various engagements and communications.

Performance by Capital



Social and Relationship Capital

A strong network of mutually-beneficial relationships that allow us to contribute to societal well-being and empowerment.



Inputs

	2021	2020
Total investment in PETRONAS Education Sponsorship Programme (PESP) (RM million)	>163	>177
Investments in community/nation-building initiatives (RM million)	100	100

Trade Offs

- To achieve our strategic vision, we need to build stakeholder trust and loyalty, which is essentially reflected in our Social and Relationship Capital.
- We utilised our Financial Capital in 2021 to protect our stakeholders and business from the impact of COVID-19. Funds were channelled to help employees navigate new work environments, support suppliers' operations during lockdown periods, and provide critical assistance to communities in need.
- While this may have impacted Financial Capital, it has enhanced our position as a responsible corporate citizen among our stakeholders, which indirectly serves all our other capitals.

Outputs/Outcomes

	2021	2020
Total number of beneficiaries from various PETRONAS programmes	7,272	5,175
Total contribution to flood relief efforts (RM million)	15	n/a
Number of students awarded scholarships (Malaysian)	302	370
Scholars recruited by PETRONAS (%)	66	61
Total contribution to COVID-19 relief efforts (RM million)	86.0	50.6

Actions to Enhance Outcomes

- Strengthen collaboration and relationships with industry players.
- Drive multifaceted strategic initiatives with government agencies to help shape policies for the energy industry.
- Amplify collaborations with the Malaysian Government and host governments for humanitarian relief efforts such as COVID-19, natural disasters, and others.
- Enrich the lives of our communities by continuing to provide education opportunities through sponsorship, programmes, and infrastructure.
- Advocate the use of natural gas and renewable energy to stakeholders to realise our energy transition plan.

Performance by Capital



Natural Capital

The responsible utilisation of natural resources by our operations, as well as our ability to take care of the environment.



Inputs

	2021	2020
Total freshwater withdrawal (million m ³)	71.19	60.03

Outputs/Outcomes

	2021	2020
Absolute GHG emissions (MtCO ₂ e)	45.2	48.3
Hazardous waste disposed (MT)	59,228	33,349
Oil in water content (MT)	452	532
Sulphur oxides emissions (MT)	47,954	84,225
Nitrogen oxides emissions (MT)	133,962	138,035

Trade Offs

- A large part of our operations still depend on carbon-based energy and materials, resulting in waste and emissions that could potentially impact Natural Capital.
- In achieving our NZCE 2050 aspiration, we need to improve our consumption of Natural Capital. This requires investments in reduction and mitigation initiatives that minimise our environmental footprint.
- Financial Capital is channelled into our Manufactured Capital as we invest in resource-efficient infrastructure and operations, thus minimising our use of Natural Capital.
- We also use Financial Capital to improve our Human Capital, in which we train and upskill employees so they can accelerate the move towards a low-carbon economy, which improves Natural Capital in the long term.
- Through resource efficiency, we can achieve cost savings for improved Financial Capital in the long run. Furthermore, by taking care of our Natural Capital, we also gain stakeholder trust (Social and Relationship Capital).

Actions to Enhance Outcomes

- Continue to reduce carbon footprint by accelerating lower carbon solutions, leveraging technology-driven operations.
- Enhance operational efficiency and achieve zero continuous hydrocarbon venting and flaring to reduce GHG emissions.
- Pursue new plastics economy and waste reduction potential to address global waste issue and Malaysia's sustainability agenda.
- Enhance our research and development activities in carbon capture and storage (CCS) technology to effectively manage high carbon dioxide (CO₂) field development.

Engaging with Stakeholders

Our stakeholders are at the heart of everything we do. We work with a broad range of stakeholders, with a strong emphasis on proactive, transparent and open engagement. This, in turn, promotes mutually beneficial relationships and value for our stakeholders and PETRONAS. From rising inequalities, climate change, natural disasters and the COVID-19 pandemic; stakeholder management has been key in navigating a volatile business environment. Hence, meaningful collaborations and timely engagements with relevant stakeholders are important in fulfilling our strategic objectives.

To ensure this, we identify, attend to our stakeholders' expectations, track our engagement outcomes against our planned initiatives, and measure our stakeholders' sentiments through a stakeholder management system through periodic surveys. Ultimately, our goal is to be recognised as a credible and progressive partner in providing the right solutions and contributing towards common goals.



Federal/Host Governments

Quality of Engagement: ●●●●○

Material Topics:



Why They Are Important

We proactively engage with government agencies and regulators as this enhances lasting relationships in ensuring continuous business operations. In addition, we serve as a key thought partner in shaping policies that support the broader economy with the foresight to anticipate future regulations that may potentially affect the industry. It also builds trust and promotes synergies to advance mutually-beneficial objectives. This strengthens our position as a responsible solutions partner for the industry and for the government, as well as a trusted partner in nation-building.

How We Create Value

- Catalyse nation-building through economic contributions, as well as provide human capital development and employment opportunities.
- Engage as a credible thought partner in shaping policies for the energy industry to help realise the government's aspiration in advancing the country's sustainability agenda.

Stakeholders' Key Concerns

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

PETRONAS' Response

- Supported Government nation building and economic recovery initiatives such as *Program Bakul Prihatin Negara* and *Program CERDIK*.
- Participated in Government's initiative under the collaboration with the Economic Planning Unit (EPU) to develop clear targets and policies for the National Energy Policy and the Natural Gas Roadmap.
- Collaborated in COVID-19 responses and management measures to ensure business continuity.
- Strengthened collaborations on NZCE 2050 aspiration and sustainability ambitions.
- Operated in compliance to safety standards, laws and legislations.
- Provided timely updates and information on PETRONAS business operations.

Engagement Channels/Platforms

- Face-to-face and virtual meetings.
- Regular reporting, briefings and meetings.
- Participated in government-related conferences and exhibitions.



Value Creation Highlights

- Conducted various programmes that benefitted 3,111 students in vocational and industrial training such as GEES, VISTA, internship and others.
- Advisory role in Chemical Industry Roadmap to bring up the chemicals sector to position Malaysia amongst the top competitive nations by 2030.
- Allocated RM25 million for disaster relief aid nationwide.

Engaging with Stakeholders

Quality of Engagement

- No existing relationship
- Relationship established, but much work to be done to improve quality of relationship
- Relationship established, value-generating connection, but with some room for improvement
- Good-quality, mutually beneficial relationship, with some room for improvement
- Strong relationship of mutual benefit

Frequency of Engagement

- | | | | |
|----------|------------------|----------|--------------|
| W | Weekly | Q | Quarterly |
| M | Monthly | T | Twice Yearly |
| E | Every Two Months | Y | Yearly |



State Governments

Quality of Engagement: ●●●●○

Material Topics:

Why They Are Important

As PETRONAS operates in various states within Malaysia, continuous engagements with state governments help broaden their understanding of our operations and build trust over the long term. We operate according to the state's regulatory requirements to ensure safe operations and minimise business disruptions. In return, it creates business opportunities for the local industries, enriches local communities, and contributes to the state and country's economy.

How We Create Value

- Spur the state's economic growth and social upliftment through local industry and human capital developments, as well as equitable employment opportunities.
- Establish partnership with the states and leverage the pool of local talents and the new energy growth frontiers.

Stakeholders' Key Concerns

- Employment opportunities.
- Skills and entrepreneurship development.
- Environment and climate change.
- Community investment.
- Compliance with laws and regulations.
- Social development.
- Ethical business practices.
- Health and safety.

PETRONAS' Response

- Supported the states' economic transformation projects, and economic recovery efforts.
- Provided technical advisory to states during crisis such as during water supply shortages in certain states.
- Ensured business continuity by adhering closely to state laws and regulations.
- Provided timely updates and information on PETRONAS' business operations.
- Contributed to the construction of two MARA Junior Science College (MRSM) campuses in Sabah and Sarawak to encourage and promote students' interest in STEM for a combined capacity of 900 students.

Engagement Channels/Platforms

- Face-to-face and virtual meetings.
- Regular meetings, briefings and dialogues with state Ministries.
- Joint Working Committee meetings and Strategic Dialogues.

Value Creation Highlights

- W** • Participated in state governments' policy-shaping initiatives and programmes.
- W** • Facilitated engagements and communications between businesses and various state governments as well as agencies for business opportunities in the new energy sector.
- Q**

Engaging with Stakeholders



Customers

Quality of Engagement: ●●●●○

Material Topics: 

Why They Are Important

Customers provide valuable feedback, which enables us to deliver innovative and quality customer-centric products, services and technological solutions that create value and improve their overall experience. Our strong ability to constantly diversify our portfolio will also build long-term trust and loyalty from customers, which ultimately will support our growth and sustainability agenda.

How We Create Value

Provide positive customer experience through superior, innovative products and timely product delivery with reliable after-sales support.

Stakeholders' Key Concerns

- Customer experience.
- Health and safety.
- Operational efficiencies.
- Product quality and availability.
- Product pricing and credit terms.
- Ethical practices.
- Sustainability matters.
- Environment and climate change.

PETRONAS' Response

- Introduced high-quality and innovative products and solutions.
- Ensured supply reliability and security of oil and gas products.
- Rolled out the PETRONAS Dynamic Diesel Euro 5 with Pro-Drive that contains less sulphur at more than 1,000 PETRONAS stations nationwide.
- Expanded Setel® ecosystem, enabling seamless service delivery across key lines of our business and providing added convenience to our customers.
- Increased usage of environmentally friendly products and packaging such as sustainable fabrics for PETRONAS merchandise through PRYSM products.
- Issuance of biodegradable and compostable bags at PETRONAS stations.
- Continued collaboration with Alam Flora for drive-through recycling initiatives at selected PETRONAS stations and collected 8.72 tonnes of recyclable items.
- Mobilised ROVR (mobile refuelling service) to provide critical refuelling services in areas affected by flood in Malaysia.

Engagement Channels/Platforms

- Face-to-face and virtual meetings.
- Events, dialogues, roadshows and engagements.
- Marketing activities and outreach programmes.
- Social media platforms (such as YouTube, Facebook, Instagram and Twitter).
- Company's website.
- Feedback management system.
- Customer appreciation programmes.



Value Creation Highlights

- Provided reliable services, innovative and sustainable products and solutions to customers.

Engaging with Stakeholders



Internal/Employees

Quality of Engagement: ●●●●○

Material Topics:



Why They Are Important

Our workforce is unquestionably our most valuable asset. We value their talent and contributions, and that is why their health, safety and overall well-being remain our top priority. Despite challenges faced during the COVID-19 pandemic, they remained committed and dedicated to helping PETRONAS achieve its 2021 business goals against a challenging market landscape. They are fundamental to our success, growth and sustainability.

How We Create Value

- Provide a wholesome talent experience that emphasises on a self-driven culture for growth via learning and development, supported by the right environment.
- Encourage the spirit of innovation and creativity to accelerate the move towards a lower carbon future and new energy industry.

Stakeholders' Key Concerns

- Competitive remuneration and benefits.
- Flexible work arrangement.
- Opportunities for career growth.
- Learning and development.
- Strategic direction, business growth and performance.
- Safe and healthy work environment.
- Ethical and sustainable business practices.
- Diversity and inclusion.

PETRONAS' Response

- Provided upskilling and reskilling of existing talents to ensure we have the best talents in the right role.
- Provided regular enterprise engagement and communications to keep employees informed and engaged.
- Ensured the overall safety, health and well-being of employees.
- Enhanced PETRONAS' Remote Working Arrangement.
- Provided New Ways of Working (NWOW) assistance and introduced monthly Connectivity Assistance.
- Conducted various programmes as part of Diversity and Inclusion (D&I) efforts to enhance gender diversity in many areas including leadership.
- Established Employee Assistance Programme 2.0 (myFriends), MIND-A-CARE (First Aid for Mental Health), Building Personal Resilience via iC4RE in efforts to safeguard PETRONAS' employees mental well-being.
- Introduced myLearningX, a new digital learning platform that offers personalisation and flexible learning options.
- Advocated youth empowerment through PETRONAS Young Professionals Club (YPC).

Engagement Channels/Platforms

- Staff engagement sessions.
- Leaders' Townhall.
- Employee feedback sessions.
- Intranet and email blast announcements.



Value Creation Highlights

- Close to 100 per cent of PETRONAS employees have been fully vaccinated.
- More than 30,000 users on PETRONAS Dot App – an internal platform for employees to stay engaged with the latest happenings within the Group, have dialogue with Leaders and quick access to important announcements during the Movement Control Order (MCO). It became a valuable and cohesive tool for PETRONAS staff groupwide to remain connected.

Engaging with Stakeholders



Shareholders/Investors/Credit Rating Agencies

Quality of Engagement:

Material Topics:

Why They Are Important

We nurture stakeholders' trust and confidence to ensure continued access to capital at competitive rates/terms. We also value the stakeholders' support in imparting market intelligence and insights, which enable early identification of opportunities and emerging trends within the financial markets.

How We Create Value

Progressive business with strong fundamentals, prudent financial performance and good governance with firm commitment towards energy transition and sustainability goals.

Stakeholders' Key Concerns

- Business and industry outlook.
- Financial positions and shareholders' returns.
- ESG and energy transition.
- Regulatory compliance.

PETRONAS' Response

- Provided accurate and timely reporting with transparency.
- Robust fundamentals and resilient financial performance.
- Strong commitment to delivering NZCE 2050 aspiration (aligned with the international frameworks, standards and progressive improvements in ESG practices).

Engagement Channels/Platforms

- Stakeholder engagements.
- Financial results announcements.
- Analyst briefings.
- Announcements and disclosures via corporate websites.
- Annual General Meetings.



Value Creation Highlights

- Maintained standalone credit ratings.
- Continued access to capital at competitive rates and terms, notably USD3.6 billion bonds issued with lowest coupon and tightest issue spread for PETRONAS in recent years.

Engaging with Stakeholders



Media

Quality of Engagement: ●●●○

Material Topics: 

Why They Are Important

The media is an important partner in relaying the right messages and information to our stakeholders. It builds brand strength, safeguards our reputation and strengthens rapport. Continuous engagements are conducted with the media to increase PETRONAS' share of voice, to shape perception and address the expectations of our targeted audiences (media/industry/public).

How We Create Value

- Communicate accurate and timely information to build trust and confidence.
- Advocate transparency, ethical business conduct and practices, business performance, environmental, social and corporate governance.
- Sustain media trust towards PETRONAS.
- Maintain professional relationship with the media.
- Credible conduit for information dissemination.
- Enhance visibility of PETRONAS' corporate agenda and business developments.
- Manage positive perception towards PETRONAS' performance, behaviour and transparency.

Stakeholders' Key Concerns

- Governance.
- Products/Services.
- Financial Performance.
- Leadership.
- Technology and digital innovation.
- Sustainability and renewables.
- Environment and climate change.

PETRONAS' Response

- Fostered open and transparent communication.
- Ensured timely communication and dissemination of information.
- Undertook robust activation of media strategies and plans.
- Initiated collaboration and support for meaningful initiatives.

Engagement Channels/Platforms

- Face-to-face and virtual engagement sessions (dialogues, press conferences, press releases, announcements).
- Timely dissemination of information via press releases, statements or announcements.
- Media sponsorships.

Value Creation Highlights

- Positive reporting on PETRONAS-related news.
- Improved mitigation on issues.
- Increased publicity.
- Strengthened media presence.
- Facilitated fair and informed reporting of stories.
- Maintained positive news sentiment.
- Maintained positive public perception.



Engaging with Stakeholders



Industry Partners and Government-linked Companies (GLCs)

Quality of Engagement: ●●●●○

Material Topics:

Why They Are Important

We continue to work closely together with industry partners to elevate industry standards as well as develop new cleaner technology and solutions for a mutually-thriving and sustainable energy industry. This enables us to improve operational efficiencies and build capabilities to explore new areas for growth that support our NZCE 2050 aspiration in meeting the energy needs in a lower-carbon future.

How We Create Value

- Develop the nation in a sustainable manner through collaborations on research, development and commercialisation of technology solutions fit for the energy industry and beyond.
- Improve industry standards/regulation through advocacy via regulators (government/non-government).
- Deploy and exchange best practices to improve operations, products and services across multiple industries.

Stakeholders' Key Concerns

- Governance and integrity.
- Business continuity and industry relevance amidst Just Transition phase.
- Health, safety and environment.
- Local participation in the industry.
- Industry requirements, local content, regulations and policies.
- Business opportunities.
- Oil and gas as well as energy capabilities.

PETRONAS' Response

- Timely delivery of capital projects for PETRONAS.
- Applied best practices, research and development (R&D), commercialisation and technology solutions.
- Strengthened the supply chain through collaborative programmes and initiatives.
- Continued to nurture vendors under programmes such as Vendor Development Programme (VDP) and support the vendors by facilitating access to financing under the Vendor Financing Programme (VFP).
- Collaborated with relevant stakeholders in countries where we operate, such as the governments, regulators, agencies and organisations.
- Elevated knowledge sharing and technology transfer in engineering solutions.
- Improved monetisation through commercialisation of PETRONAS' emerging technologies.

Engagement Channels/Platforms

- Face-to-face and virtual meetings.
- Familiarisation visits for stakeholders.
- Content sharing and festive greetings via emails.
- Official events (MoU signings, launching ceremonies, etc).



Value Creation Highlights

- Capabilities in key energy industry activities through multilateral knowledge sharing with regional industry players.
- Technical expertise and technologies on hydrogen production available to customers from both industry players and public.
- Drones at PETRONAS facilities are being used as a case study for application in other industries and wider purposes resulting in operational efficiency, cost optimisation and reduction of HSE risks.

Engaging with Stakeholders



Communities/Non-Government Organisations (NGOs)

Quality of Engagement: ●●●●○

Material Topics:



Why They Are Important

Community engagement reflects our position as a responsible corporate citizen, builds public trust and ensures the continued viability of our business in the long term. We aim to enrich the lives of the communities through the social investments we make towards societal upliftment and safeguarding the environment.

How We Create Value

Uplift communities and work with NGOs of similar cause for greater social good in creating positive social impact, safeguarding the environment and continuous value creation.

Stakeholders' Key Concerns

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

PETRONAS' Response

- Implemented community development and socio-economic programmes.
- Collaborated with NGOs for the protection and preservation of wildlife, environment and social causes such as recycling and rainwater harvesting.
- Introduced eco-friendly product designs and operations.
- Amplified Food Bank Programme at 400 PETRONAS stations.
- Established Industry Vaccination Centre or *Pusat Pemberian Vaksin Industri* (PPVIN) at six locations across Malaysia.
- Conducted periodic engagement with communities on safety education and crisis preparedness at PETRONAS operations areas to improve community resilience.
- Conducted surveys and focus group discussions to identify and mitigate social and safety risks with local communities near to PETRONAS' operation.

Engagement Channels/Platforms

- Corporate Social Responsibility (CSR) programmes.
- Regular briefings and engagements with local communities.

Value Creation Highlights

- Improved the economy of communities through the MEKAR programme.
- Increased the livelihood of local farmers and the lower-mid income demographics (B40 and M40) via PETRONAS Dagangan Berhad's (PDB) Segar@Mesra.
- Promoted local brands via the Love Local campaign at PDB's *Kedai Mesra*.
- Local community grasp the significance of environmental care and coastal ecology with about 20,263 mangrove trees planted in a 14,000 sqm ecoCare area along the Sungai Kertih in Terengganu.

Because We Care

The year 2021 has been particularly difficult for many Malaysians. Not only were there resurgence of new COVID-19 variants and economic slowdown, but also severe floods that affected several states in Malaysia at the end of the year. It was a challenging year for everyone across various stakeholder groups who faced loss of lives and livelihoods, leaving far-reaching economic consequences.

Despite the challenges, we rallied our workforce together. We stood united to reach out and help those in need, through on-the-ground support, digital solutions, and monetary contributions. To this end, we prioritised the health and safety of our workforce and our communities through rapid, coordinated and effective response. Leveraging on our workforce's broad range of competencies, we partnered with governments and forged powerful alliances to drive economic recovery, assisting our vendors through a difficult period significantly marked by the pandemic. Meanwhile, for our customers, we introduced products, services and solutions to cater to their needs.



Federal Government/Host Governments



What Happened

Governments around the world faced continuous pressure to revitalise the economy. In Malaysia, the government accelerated the National Vaccination programme and gradually opened economic sectors. Various stimulus packages were introduced to help businesses and the population, especially those from the lower-income group.

Our Response

- Strengthened COVID-19-related Standard Operating Procedures (SOPs) throughout our value chain.
- Contributed RM4 million towards the setup and operation of six PPVINS.
- Introduced the Green Bubble and Green Net approaches at 33 assets in Malaysia and PETRONAS' selected international locations to curb the spread of COVID-19.
- Channelled funds to purchase critical medical equipment and supplies to hospitals and frontliners.
- Collaborated with government agencies to facilitate approvals for essential vendors to operate during the MCO.
- Facilitated business continuity mitigation during the pandemic by liaising with authorities and government agencies as well as coordinated approval for *Program Imunisasi Industri COVID-19 Kerjasama Awam-Swasta* (PIKAS) for more than 10,000 employees and contractors nationwide.
- PETRONAS contributed RM10 million and Yayasan PETRONAS contributed RM5 million to NADMA's flood relief efforts.

Because We Care



State Governments

What Happened

State governments faced challenges in accelerating vaccinations and managing post COVID-19 economic recovery efforts.



Our Response

- Collaborated with oil-producing state governments (Sabah, Sarawak and Terengganu) to minimise oil and gas supply disruption by assisting in state-led economic recovery, COVID-19 and natural disaster relief aid.
- Contributed more than RM750,000 towards the development of vaccination centres in Kedah, Perak, Perlis and Selangor.
- Mobilised ROVR to flood-impacted areas to help residents' refuelling needs in Kuala Lipis, working closely with the Ministry of Domestic Trade and Consumer Affairs, Pahang.
- Mobilised assistance for COVID-19 and flood relief efforts in the respective states.
- Yayasan PETRONAS also contributed medical equipment and supplies to Hospital Canselor Tuanku Muhriz UKM (HCTM), Kuala Lumpur; Hospital Sungai Buloh and Hospital Shah Alam, both in Selangor; and Hospital Labuan, and to the Kelantan State Health Department, amounting to approximately RM3.4 million.



Customers

What Happened

Customers adapted to the new normal by leveraging technology and solutions to work, learn as well as stay connected with friends and family. In addition to strict COVID-19 SOPs, border closures and restricted movements led to challenges in obtaining their daily needs and disrupted the security of energy supply.

Our Response

- The Setel® App, which was introduced by PDB to encourage customers to make seamless purchases minus the queues, was also used as a platform for donations toward PETRONAS' Food Bank Programme.
- Implemented innovative solutions to ensure the security of energy supply to customers via ROVR, ISO tanks, bunker solutions, Virtual Pipeline System (VPS) and more.
- Implemented strict SOPs in retail and customer-facing areas.



Because We Care



Internal/Employees

What Happened

The safety and well-being of our employees remained a top priority. With the implementation of a flexible working arrangement policy, employees continued to Work From Home (WFH), except for those in critical and essential sectors. Strict safety measures, including cybersecurity awareness, were implemented. Assistance on mental well-being was also rendered to employees in managing WFH challenges, particularly having an appropriate work-life balance.

Our Response

- Provided financial and connectivity assistance to support employees working from home.
- Achieved close to 100 per cent vaccination rate among employees with the establishment of 11 vaccination centres, onshore and offshore across our operations nationwide, partnering with governments and the private sector.
- Established COVID-19 One-Stop Centre, Incident Action Plan (for international assets), Pandemic Preparedness and Response Team (PPRT), COVID-19 digital platform and E-Health Vaccination, backed by 85 technical guidelines and directives to improve Business Continuity and safeguard the workforce.
- Introduced My Personnel e-Tracker (MyPeT) app for oil and gas personnel and supply chain to ensure minimal industry-wide disruption at domestic and international assets.
- Partnered NALURI (for EAP Counselling) and Malaysian Psychiatric Association (for MIND-A-CARE Programme) to improve mental health and overall well-being of employees.
- Partnered with the private medical sectors to provide 200 emergency/non-emergency assistance to COVID-19 infected employees.
- Enhanced security measures during the various containment measures to protect PETRONAS' interests, locally and abroad.
- Distributed hygiene kits to employees.
- Extended financial support to vaccinated employees and international assignees and their families returning to Malaysia.
- Established quarantine centres for employees from the Upstream and gas operations at local hotels to allow smooth transition and changes in shifts.



Because We Care



Industry Partners and Government-linked Companies (GLCs)

What Happened

The pandemic caused disruption to the supply chain, both locally and globally. The MCOs and cautious outlook by various economic sectors led to suppliers and vendors facing difficulties in obtaining access to financial assistance and also inability to operate during the lockdowns.

Our Response

- Enabled essential vendors to operate during restrictive movement periods for business continuity by facilitating approvals with government agencies.
- Simplified internal interface processes between PETRONAS and vendors to overcome logistic challenges due to travel restrictions.
- Continued to support and ease Oil and Gas Services and Equipment (OGSE) vendors by facilitating access to financing under the Vendor Financing Programme.



Communities/Non-Government Organisations (NGOs)

What Happened

More segments of our communities, especially those in the lower-income segment, continued to be impacted by COVID-19. Apart from unemployment, many lacked access to food, basic hygiene necessities, and remained unaware of the importance of being vaccinated.

Our Response

- Initiated COVID-19 relief aid by providing necessary supplies to prevent, control and treat impacted communities located across our domestic and international assets.
- Total donations of more than RM2 million raised for the PETRONAS Food Bank Programme which benefitted 2,142,000 recipients during the COVID-19 pandemic.
- Assisted frontliners via the PDB Coffee Break Programme at 15 hospitals nationwide, with discounts for vehicle-related services.
- Contributed medical equipment and hygiene products/kits to frontliners and communities in collaboration with Federal and State authorities.
- Activated disaster relief for communities affected by flood in key operating states.
- Contributed over RM30 million worth of learning devices that benefitted 12,000 B40 students to support virtual learning during the pandemic for the CERDIK initiative.



Recharge

for a Shared Future



Strategic Progress

Insights into how we
execute strategy to
create value

102 The World in 2021

108 Material Topics

117 Risks Linked to Creating Value

132 Strategic Performance Review

Business Review

136 Upstream

144 Gas + New Energy

152 Downstream

160 Project Delivery and Technology



The World in 2021

In 2021, the world faced pandemic-led challenges as a resurgence of COVID-19 variants weighed heavily on businesses and people across the world. Heightened geopolitical tensions followed by uneven global vaccination rates also led to uneven economic growth. In Malaysia, the national vaccination programme made inroads in stemming the spread of COVID-19 though new variants led to extended lockdowns that slowed economic recovery. The global oil and gas sector rebounded strongly in 2021, which saw an increasing number of industry players scaling up their commitments towards driving a low-carbon future.

Geopolitics

1

Throughout 2021, geopolitical flashpoints continued to erupt despite the resurgence of new COVID-19 variants that kept many regions and countries under lockdown measures. In certain countries, elections were called as leaders aimed to gain fresh mandates to implement policies to revive spending and boost their economy to counter economic headwinds. Amidst efforts to curb the spread of the pandemic and the uneven pace in vaccination rates, nations refocused efforts on improving domestic recovery. While vaccine roll-outs led to improved consumer confidence, some countries faced additional setbacks from military coups and proxy wars that led to further political instability worldwide.

Economy

2



According to the International Monetary Fund (IMF), the global economy expanded 5.9 per cent in 2021, even with border restrictions and intermittent mobility restrictions imposed by nations to limit the impact on their healthcare systems. These pandemic-led limitations resulted in prolonged supply chain disruptions that sent prices of commodities and consumer goods soaring.

Oil

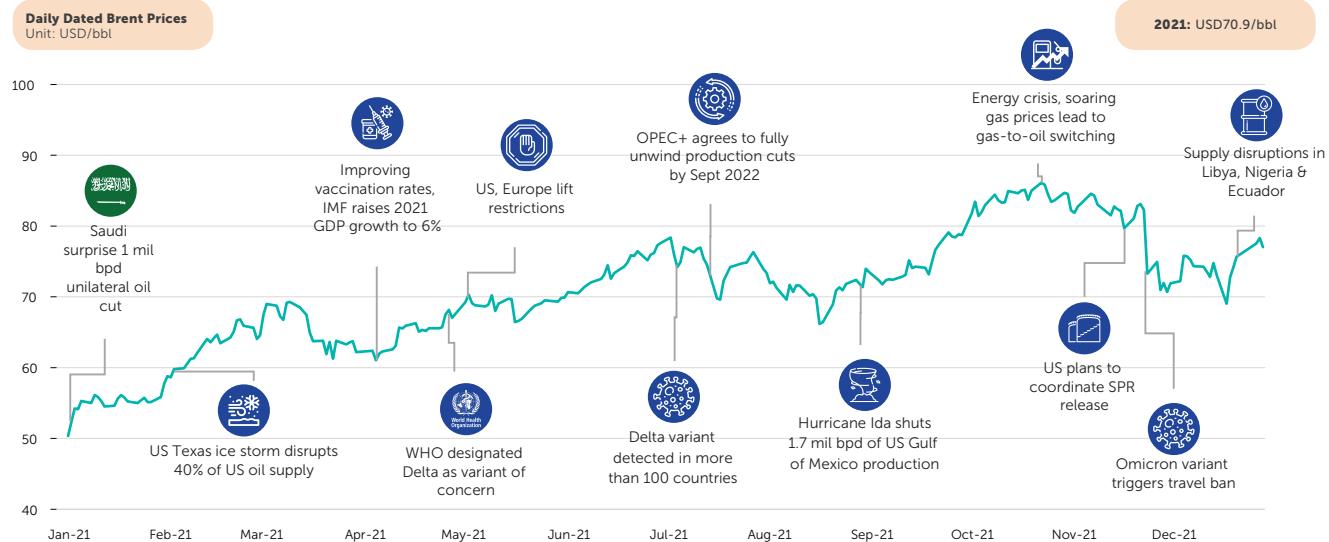
3

In 2021, a re-opening of economies led to oil demand outpacing supply, and the world experienced one of its worst energy crises. Dated Brent rose from USD50/bbl at the beginning of 2021 to a three-year high of USD86/bbl in late October. For 2021, Brent crude averaged USD71/bbl, up from USD42/bbl a year earlier. Oil inventories in developed markets fell below the five-year average since May 2020, as OPEC and its allies remained cautious in releasing more oil into the market. Supply was disrupted in the US due to a deep freeze in Texas and hurricanes in the Gulf of Mexico.



The World in 2021

Oil



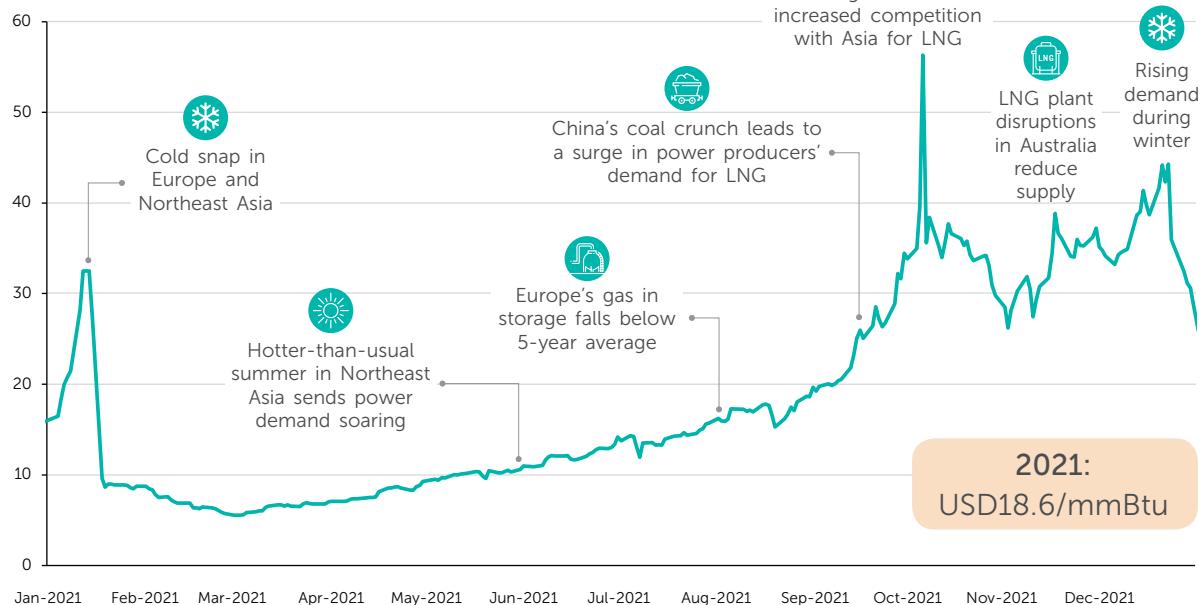
Gas and Liquefied Natural Gas (LNG)

4

Gas and LNG prices surged to record levels in 2021, mainly due to the increase in demand that coincided with supply disruptions at LNG plants and reduced gas supply from Russia. Asian spot LNG exceeded USD50/mmBtu, a record, in the year due to extreme cold weather in Europe and China at the start of 2021, followed by hotter-than-usual summer in the middle of the year. These events led to depleted gas storage in Europe, just as Russia cut supplies. As a result, spot LNG prices in Asia surged to levels unseen in the past.

Northeast Asia gas price

Unit: USD/mmBtu

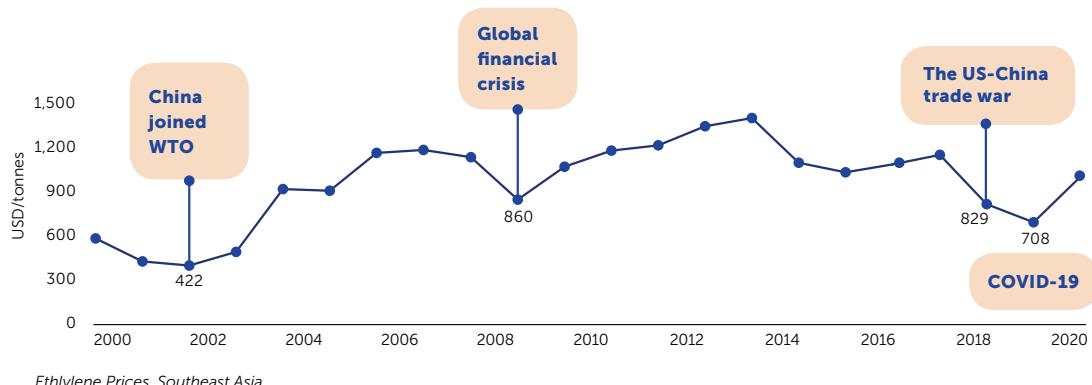


The World in 2021

Chemicals

5

The chemicals market rebounded in 2021 from the lowest in more than a decade, led by a surge in demand for plastics used in food packaging, personal protection and medical equipment and electronic goods. Ethylene, a benchmark for chemicals, averaged USD1,009 per metric tonne last year, up 43 per cent from the average in 2020. Prices had tumbled in 2020 as the COVID-19 pandemic led to lockdowns and consumption fell. China, the world's biggest market for most chemicals, drove the recovery as its economy expanded 8.1 per cent in 2021, fastest in 10 years, bolstered by the reopening of economies and post-lockdown spending surge which boosted demand for chemicals and other goods and materials.



Upstream

6

In 2021, Upstream spending rebounded from the lowest level in 15 years as the reopening of economies boosted energy prices. Upstream capital expenditure (CAPEX) stood at about USD400 billion as oil and gas players remained focused on sustaining capital discipline to improve cash flows. Following the recovery experienced in oil prices, US-led mergers and acquisitions reached a two-year high in the second quarter of 2021. During this period, companies realigned their portfolios. Some players disposed petroleum assets while others picked-up assets to gain economies of scale and cut operational costs.

The energy crisis in the previous year led to an increase in nationalistic pride as countries looked inwards to ensure security of supply. While short-term energy security means nations have to be able to meet sudden surges in demand, as seen across the world when lockdowns were eased, longer-term energy security requires sufficient investments to be made today.

Alternative Energy

7

Governments made stronger pivots towards a low-carbon future to reverse the effects of climate change in 2021. To date, 90 per cent of emitters have made the pledge towards net zero carbon emissions. A noteworthy event that took place during the year in review was the establishment of the first-ever climate pact that directly referenced coal and fossil fuels at the United Nations (UN) Climate Change Conference (COP26) in Glasgow. This was followed by key pledges to reduce methane, phase-out inefficient fossil fuel subsidies and increase commitment towards zero-emission vehicles.

The World in 2021

2022 Outlook: What the Future Holds

Geopolitics

1

Due to heightened tensions on multiple fronts, the world is expected to move into multipolarity. The emergence of proxy wars and attacks on key infrastructure will further elevate the risk of supply disruptions, leading to increased volatility in oil prices and operational risks, especially in upstream oil and gas. Protests against authoritarian regimes are also likely to escalate as the extensive impact of social media platforms prevents governments from cracking down on dissidents.

Economy

2

The International Monetary Fund (IMF) expects the global economy to expand by 4.4 per cent in 2022, a downgrade from the earlier 4.9 per cent projections, citing the spread of the Omicron variant that would lead to border closures, travel restrictions, supply chain disruptions, elevated inflation and the return of tightening monetary conditions. High energy prices are also expected to contribute to inflation, adding to manufacturers' and businesses' ongoing supply chain issues. Given the rising concerns over stagflation, where prices remain high while economies stagnate, it is anticipated that businesses, including the oil and gas sector, will struggle due to higher costs, even as demand fails to pick up as quickly.

Oil

3

Oil prices are seen facing greater volatility amid heightened geopolitical strife that has disrupted output from key producers, especially those in the Middle East and North Africa. In 2022, OPEC+ agreed to fully unwind its historic production cuts of 9.7 mil bpd while continuing its active market management. However, operational issues in Nigeria and Angola coupled with declining OPEC spare capacity have trimmed the Group's ability to react to supply-demand shocks. Meanwhile, rising supply from non-OPEC producers such as the US, Canada and Brazil, including threats of new COVID variants on oil demand recovery, will pose downside risk to the oil market.

As governments around the world prioritise climate change and draw up related policies, adoption of cleaner alternatives in the transport sector is set to increase at a faster pace. Escalating oil prices will also force consumers to seek more efficient transport solutions, hastening the transition towards electric mobility.



Growing calls for the oil and gas sector to decarbonise have also pushed industry players to seek and deploy carbon-removal solutions along their entire value chain. Slow adoption of decarbonisation strategies will stand the risk of being side-lined by key stakeholders, namely the financial industry, regulators and end-consumers.

The World in 2021

Gas and LNG

4



Gas and LNG prices are expected to remain elevated in 2022, driven by Europe's heightened demand as the Russia-Ukraine conflict prolongs. Amid a re-opening of economies and Europe's determination to wean itself off Russian gas, has increased LNG demand. Europe, which consumes more than 500 bcm of natural gas a year, is competing for LNG with Asia when extended plant disruptions keep supply limited. Following a subdued 2020, the surge in gas and LNG prices is expected to boost developers' confidence in taking FID for LNG projects.

The number of carbon-neutral LNG cargoes being sold globally has multiplied, from less than a handful in 2019. This is due to buyers increasing demand for cleaner fuels to avoid taking on emissions in their value chain, after adopting stricter emission targets.

Chemicals

5

In 2022, the chemical industry is in a strong position for growth as consumer demand strengthens and restocking of supplies takes place amid rising demand. The chemicals market is set for a second year of recovery supported by growing demand for plastics and packaging amid a growing population, rising urbanisation and improving living standards. As the pandemic alters consumer behaviour and amplifies the importance of sustainability in daily products, specialty chemicals is an area with potential for faster growth. Rising pressure from consumers and other stakeholders is pushing chemical producers to invest in boosting the circularity of their products through plastics recycling, battery recycling and incorporating bio-based feedstock in their value chain.



The World in 2021

Upstream

6

Upstream CAPEX is forecasted to rise in 2022 to around USD500 billion, though spending may remain below the peak of USD800 billion achieved in 2014. The increase is due to higher costs that have eroded the expenditure's value to boost production. This has emerged as a cause of concern for the oil and gas sector as a lack of growth in spending will impede output growth in the later years.

Supply chain disruptions and increased commodity prices, including steel, will also increase costs. Following growing calls to lower their carbon footprint, there will be many players allocating spending on carbon-abatement technology.

Escalating oil and gas prices is expected to increase merger and acquisition activities in 2022, opening up opportunities for cash-rich companies to expand market share by acquiring smaller rivals. There is increased vibrancy in the M&A sphere with opportunities present in many regions. Companies with pledges of net zero are gravitating toward differentiated opportunities to swap out and highgrade their portfolios in an effort to reduce carbon intensity. The oil and gas sector will be seeing costs rise as commodity prices jumped and the labour market remains tight. Some projects under consideration may be delayed as project economics are impacted by higher costs.

With oil prices remaining volatile, net importing countries will look for alternative energy supply or boost domestic production to meet demand.

Alternative Energy

7

The 2021 United Nations Climate Change Conference (COP26) has left the world with a longer climate to-do list, pressuring governments and corporations to transition towards a low-carbon future. Amidst increasing scrutiny and regulations, ESG will be the immediate focus for companies as more investors face sustainability mandates.

With renewables becoming more cost-competitive and playing an increasing role in the energy mix, the demand for green hydrogen and energy storage is expected to rise, though this is a likely scenario for the long term.

To this end, technology and innovative solutions to reduce and capture emissions are becoming more critical, especially the adoption of carbon capture, utilisation and storage (CCUS), and methane capture. Carbon offsets are poised for growth in the quest to net zero as companies race for time to achieve short-term targets. Meanwhile, the upcoming COP27 in Egypt this year will see governments being called to account for their pledges and provide updates on their progress.

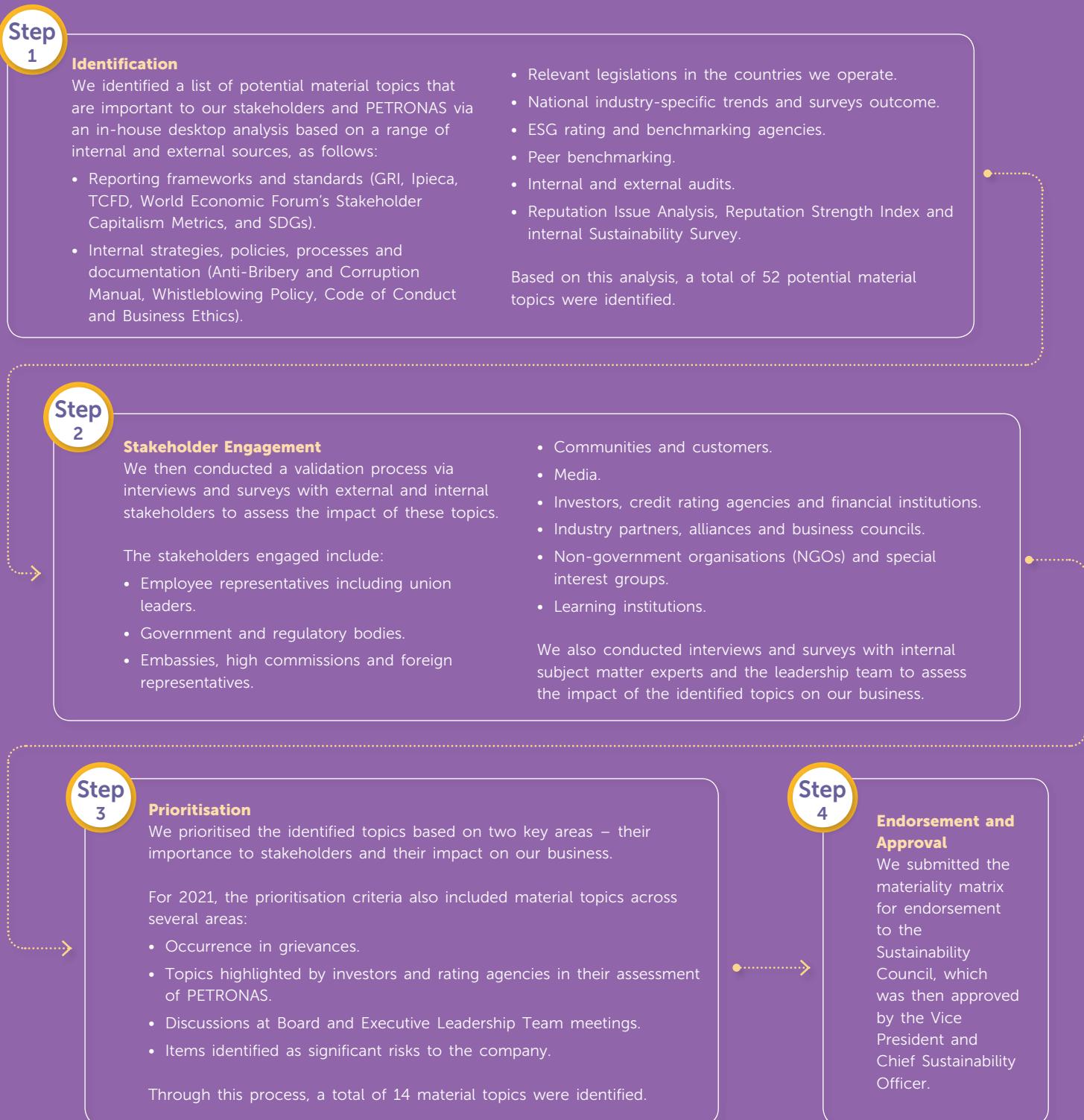


Material Topics

Material topics are an essential aspect of our value creation and growth strategy. By addressing these topics, we are able to stay ahead of new trends, evolving customer demands and other challenges based on our operating environment.

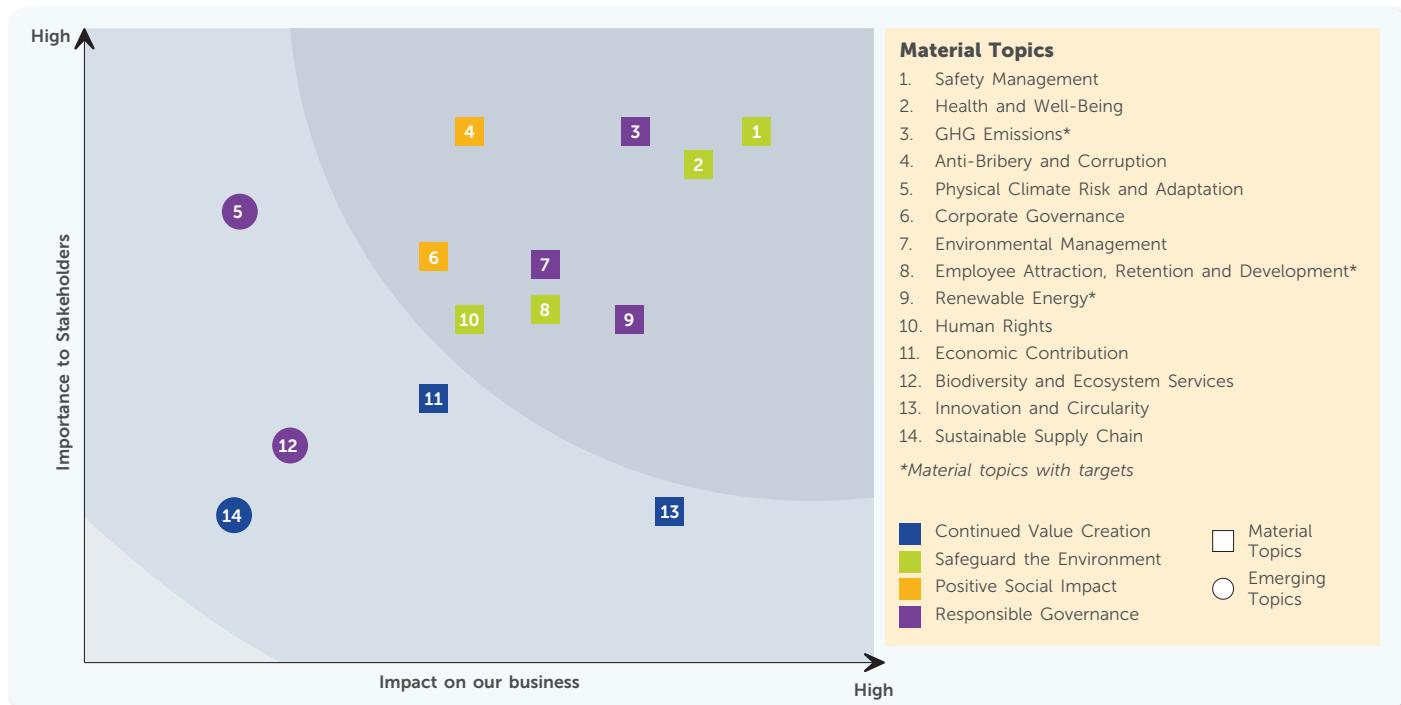
Materiality Assessment Process

We conduct a materiality assessment on an annual basis to capture topics that substantively affect our ability to create sustainable value over the short, medium and long term, guided by the International Integrated Reporting Council (IIRC) <IR> Framework. Our materiality assessment process consists of four steps:



Material Topics

Materiality Matrix



The emerging topics demonstrate the changing landscape and stakeholder expectations. Similar to our material topics, we are currently developing the appropriate monitoring and reporting processes for the emerging topics, as well as looking into their impact on our business and portfolio.

Management Approach to Material Topics

Lens 1: Continued Value Creation

Economic Contribution

What It Means	Why It Is Important	Risks	Opportunities
Generating economic value from capital contribution to the economy through generation of products and services, servicing of capital, payment of wages, taxes, and community investment. Ensuring that PETRONAS is responsible and transparent in tax practices, governed by applicable local or regional tax regulations.	The long-term success of our business goes hand-in-hand with the prosperity of the markets and communities in which we operate. Our ultimate goal is to drive economic development that benefits all segments of society.	<ul style="list-style-type: none"> Impacted business performance due to economic recession. A weak economy impacts the expansion of our market reach. 	<ul style="list-style-type: none"> Prioritising local employment increases the community's socioeconomic performance. Responsible and transparent tax payments contribute to economic growth and stakeholder trust.

Our Response

- Substantial rise in revenue driven by a rebound in demand for our products and cost optimisation measures allows us to continuously contribute to the Government, amounting to RM48.2 billion in 2021.
- In the face of evolving stakeholder expectations and global pressure to identify and manage ESG impacts, we intensify our planning for capital allocations, including the introduction of Green CAPEX, in preparation for our NZCE 2050 aspiration.
- Yayasan PETRONAS introduced various academic, skills and entrepreneurship training programmes to uplift and empower the low-income communities and improve their income level and be self-sustaining in the long term.

Material Topics

Innovation and Circularity

What It Means	Why It Is Important	Risks	Opportunities
Embracing innovation and circularity through implementation of internal frameworks and measures that promote challenging current norms and practices in product design and operations to generate new solutions which enhance competitive advantage and brand reputation, add value to customers and create operational and cost efficiencies.	Innovation drives PETRONAS' competitive advantage. We encourage continuous innovation to develop products, services and solutions that support growing market demand and drive sustainable product consumption.	<ul style="list-style-type: none"> Poor development of technology solutions lowers our product/solutions pipeline and growth aspirations. Failure to manage waste negatively impacts the environment, social safety and overall reputation. 	<ul style="list-style-type: none"> Strong pipeline of innovative products using recycling technologies reinforces our role as a sustainable leader. Continuous development of solutions improves operational efficiency.

Our Response

- Leveraging the full potential of technologies at our disposal, including partnering with industry players to unlock Malaysia's potential as a regional carbon capture and storage (CCS) solutions hub.
- Exploring methods to convert end-of-life plastic waste into reusable products, to recover 100 per cent of the plastic waste of our polymer production volume for the Malaysian market by 2030.



Sustainable Supply Chain

What It Means	Why It Is Important	Risks	Opportunities
Demonstrating long-term commitment to product stewardship, procurement and supply chain management which considers the environmental, social, and economic risks, consequences and benefits, as well as the sustainability and safety of our products over the entire life cycle. This includes sourcing locally and supporting local suppliers in boosting the development of regional supply chains where possible and applicable, as well as supporting a stable local economy and sharing global work practices with local companies.	Supplying customers with off-specification products could damage our reputation, lead to regulatory action and legal liability, and impact our financial performance. It is also essential to strengthen supply chain resilience by considering ESG risks across our value chain. We rely on a wide network of suppliers to deliver products and services crucial to our operations.	<ul style="list-style-type: none"> Loss of trust in our products and potential legal implications. Inability to manage the supply chain leads to unreliable products and solutions, and operational disruptions. Poor ESG practices within the supply chain may lead to financial and non-financial implications. 	<ul style="list-style-type: none"> Sustainable products are in demand and may improve brand perception. Strong partnerships with local suppliers improve productivity and supply chain resilience. Continuous supply of skilled suppliers ensures the quality of products and solutions.

Our Response

- Embedding product stewardship in PETRONAS' research and development to ensure that product safety, compliance and sustainability aspects are considered for all new products, and adopting a Life Cycle Thinking approach during product development.
- Supporting local suppliers in boosting the development of regional supply chains where possible and applicable.
- Supporting a stable local economy and sharing global work practices with local companies.



Material Topics

Lens 2: Safeguard the Environment

GHG Emissions

What It Means

Assessing and addressing climate-related risks and opportunities to guide PETRONAS' strategic decisions. Measuring and monitoring greenhouse gas (GHG) emissions and intensity from our business operations, and reducing GHG emissions through reductions in flaring and venting, improvements in energy efficiency in operations, utilisation of renewable energy solutions, CCS and others. Additionally, improving measurements and mitigating methane emissions from operations to limit the impact of GHG emissions over a more immediate period, as well as participating in collaborative initiatives with industry peers. Demonstrating a clear understanding of energy consumption within the company and throughout our value chain to support our emission mitigation efforts.

Why It Is Important

Climate change poses a risk to our business growth, societal well-being and shared prosperity. Thus, it is important to minimise our global emissions to mitigate the worst impacts of climate change.

Risks

- Inability to achieve climate targets may lead to loss of stakeholder trust.
- Failure to mitigate emissions from operations may result in financial and non-financial penalties.

Opportunities

- Lower resource consumption leads to better cost management and financial performance.
- Future proofs our business against new risks, such as regulatory changes.

Our Response

- Lowering GHG emissions through reductions in flaring and venting, improvements in energy efficiency in operations, and utilisation of renewable energy solutions.
- Improving measurements and mitigating methane emissions from operations.
- Participating in collaborative initiatives with industry peers.

Capitals:	Risks:	Strategic Thrusts:	Stakeholders:	SDGs:
-----------	--------	--------------------	---------------	-------

Physical Climate Risk and Adaptation

What It Means

Strengthening PETRONAS' resilience to the physical impacts of climate change and building business sustainability, while reducing potential asset damage.

Why It Is Important

The rise in extreme weather events exposes our assets and operations to significant damage and disruptions. We need to build our climate change resilience to continue meeting society's long-term energy needs.

Risks

- Inability to protect assets may impact financial performance and reputation.
- Failure to manage climate change impact could cause injuries and fatalities.

Opportunities

- Regular asset monitoring improves asset reliability and reduces repair cost.
- Increase in digitalisation of assets improves efficiency, safety and lowers carbon footprint.

Our Response

- Putting in place the necessary tools, processes and governance to assess, identify and adapt to physical climate risks, in order to effectively quantify the net risk value.

Capitals:	Risks:	Strategic Thrusts:	SDGs:
-----------	--------	--------------------	-------

Material Topics

Environmental Management

What It Means	Why It Is Important	Risks	Opportunities
Identifying and assessing the environmental impact of our operational activities, and sustainably managing resources in our operations, including but not limited to reducing the impact of emissions and waste streams, developing water management strategies, preventing spills to the environment and decommissioning assets sustainably and safely.	As an environmental steward, we have a responsibility to minimise the impacts of our operations on the surrounding environment. This means protecting environmental health, which is linked to long-term social and business health.	<ul style="list-style-type: none"> Inadequate management of natural resources may lead to penalties or future resource availability issues. Non-compliances to environmental regulations result in stop-work orders and business disruptions. 	<ul style="list-style-type: none"> Strong efforts in environmental management improve stakeholder trust and public perception. Waste reduction and resource efficiency reduce operational costs.

Our Response

- Integrating our environmental stewardship practices into our business processes and operations by emphasising compliance with international standards and leveraging technologies.



Renewable Energy

What It Means	Why It Is Important	Risks	Opportunities
Reporting company's installed renewable energy capacity and renewable energy power generation. Aligning research initiatives and projects with future global energy demand by using renewable energy which reduce carbon footprint of operations and products.	To achieve a lower carbon economy, society needs to transition to energy systems of lower carbon and renewable sources. As a national energy solutions provider, we need to progressively drive the energy transition.	<ul style="list-style-type: none"> Inability to increase renewable energy capacity impedes access to new markets. Failure to expand the energy mix may impact our ability to achieve a low carbon future and NZCE 2050 aspiration. 	<ul style="list-style-type: none"> Aligning with future global energy demand increases visibility as a trusted renewable energy provider. Collaborating with industry and government to drive renewables helps accelerate the energy transition.

Our Response

- Exploring the development of green hydrogen production and promoting a hydrogen value chain to key demand centres in Asia.
- Growing our solar capacity both locally and internationally to reinforce our position as one of the key clean energy providers in the region.



Material Topics

Biodiversity and Ecosystem Services

What It Means	Why It Is Important	Risks	Opportunities
Preventing and minimising impacts to biodiversity and the ecosystem, while restoring and rehabilitating the ecosystems around us through conservation efforts.	Biodiversity is a key indicator of planetary health. The human population, and by extension our business and activities, rely on a range of ecosystem services to generate economic and social value.	<ul style="list-style-type: none"> Inability to prevent biodiversity loss may cause environmental disruptions and reputational damage. Severe biodiversity loss exacerbates climate-related risks. 	<ul style="list-style-type: none"> Conservation efforts improve public perception and stakeholder trust. Strong biodiversity management may result in more financing from investors.

Our Response

- Conducting detailed Biodiversity and Ecosystem Services Risk Assessments and implementing Biodiversity Action Plans for operations that are categorised as High and Very High risks.
- Collaborating with the private sector on issues related to biodiversity conservation to support the implementation of Malaysia's National Policy on Biological Diversity (NPBD).
- Supporting the development of a national Voluntary Carbon Market Framework.

Capitals:	Risks:	Strategic Thrusts:	Stakeholders:	SDGs:
-----------	--------	--------------------	---------------	-------

Lens 3: Positive Social Impact

Safety Management

What It Means	Why It Is Important	Risks	Opportunities
Ensuring all employees, contractors and assets under our care are working under the safest possible conditions, through proactive risk management approach across the organisation in striving for operational excellence.	The safety of our people has always been our utmost priority. It protects not only our operations, but more importantly our stakeholders from possible harm and injuries.	<ul style="list-style-type: none"> Injuries and fatalities result in regulatory actions and legal liabilities. Health and safety incidents lead to operational disruptions. 	<ul style="list-style-type: none"> Enhanced safety management framework attracts and retains top industry talents. Improved operational discipline safeguards workforce, assets, information and operations.

Our Response

- Ensuring all employees, contractors and assets are under the safest possible conditions.
- Implementing proactive safety risk management across the organisation through stringent HSE policies and management systems which are aligned with the International Organisation for Standardisation's (ISO) 14001:2015 and ISO 45000:2018.

Capitals:	Risks:	Strategic Thrusts:	Stakeholders:	SDGs:
-----------	--------	--------------------	---------------	-------

Material Topics

Health and Well-Being

What It Means	Why It Is Important	Risks	Opportunities	
Protecting all employees and contractors from work-related hazards and promoting good health and well-being in our workforce and the wider community, through risk assessments and implementation of adequate controls, while providing a range of health and wellness programmes which address both physical and mental well-being.	As the backbone of our organisation, employees' health and well-being directly impact our long-term performance. It is important to create a safe and conducive work culture that protects their overall well-being.	<ul style="list-style-type: none"> Poor employee morale and health may impact overall productivity. Unhealthy and toxic work environment lead to high employee turnover. 	<ul style="list-style-type: none"> Continuous risk assessments and adequate controls increase productivity levels. A wide range of health and wellness programmes attracts and retains top talent. 	
Our Response				
<ul style="list-style-type: none"> Implementing risk assessments and adequate controls for employees' good health and well-being. Providing a range of health and wellness programmes for both physical and mental health in the face of the COVID-19 pandemic, including remote working arrangement, paid leave for employees who obtained vaccination, provision of oximeter and COVID-19 self-test kits, financial assistance and reimbursements for vaccinations and others. 				
Capitals:  	Risks:    	Strategic Thrusts: 	Stakeholders:  	SDGs:  

Employee Attraction, Retention and Development

What It Means	Why It Is Important	Risks	Opportunities	
Attracting and retaining the best talents with emphasis on the well-being of everyone in our workforce, by providing flexible working arrangements, competitive remuneration, nurturing of individual's potential and reward-based performance. Enabling a high-performing workforce by developing new types of capabilities, tools, and ways of working, building capabilities of our employees, and broadening their career prospects, while making meaningful investments into developing future talents for PETRONAS and the industry.	In today's fast-paced and dynamic landscape, we require top talent with the right type of skills to drive our long-term strategies. It is important to make meaningful investments to develop future talents for our business and the energy sector.	<ul style="list-style-type: none"> Underperforming and disengaged employees may lower productivity and impact reputation. Undeveloped skills and capabilities impede innovation and growth. 	<ul style="list-style-type: none"> Investment in a high-performing and professional talent pool ensures efficient business operations. An inclusive and empowering work culture attract high performing talents. 	
Our Response				
<ul style="list-style-type: none"> Investing in the cultivation of high-potential and high-performing talents by equipping them with future-ready skills through on-the-job training, leadership and core skill programmes, as well as a self-learning platform to promote self-driven culture. In ensuring we have quality future talents, we support them through sponsorship and industrial programmes. 				
Capitals:  	Risks: 	Strategic Thrusts: 	Stakeholders: 	SDGs:   

Material Topics

Human Rights

What It Means	Why It Is Important	Risks	Opportunities
<p>Respecting human rights across our suppliers, contractors, partners, and communities where we operate through establishment and implementation of human rights policies and practices, to address issues of forced labour, human trafficking, modern slavery, fair working and living conditions, non-discrimination, and Diversity and Inclusion (D&I).</p> <p>Establishing and integrating processes for human rights due diligence and compliance within PETRONAS' systems, processes, and functions throughout the value chain, including remediation actions when encountering human rights issues.</p>	<p>Human rights through fair and ethical treatment are fundamental to our business. It creates a safe and secure operating environment that meets the expectations of our stakeholders.</p> <p>Our focus are community well-being, labour and working conditions, responsible security, and supply chain.</p>	<ul style="list-style-type: none"> Failure to adhere to human rights leads to regulatory penalties and damaged reputation. Loss of trust from stakeholders and the public due to human rights breaches. 	<ul style="list-style-type: none"> Enhanced integration of human rights practices improves position as a fair and ethical employer. Robust human rights practices attract a strong talent pool.

Our Response

- Centering human rights in our operations by ensuring strict compliance with human rights principles and laws, and embedding industry practices throughout our Social Performance standards and guidelines in alignment with the United Nations Guiding Principles for Business and Human Rights.
- Continuously raising awareness to respect, identify, and address any human rights risks through the introduction of initiatives to employees and periodic dialogues and discussions with stakeholders.
- Managing grievances via an integrated platform to ensure sufficient oversight of all cases.



Material Topics

Lens 4: Responsible Governance

Anti-Bribery and Corruption

What It Means	Why It Is Important	Risks	Opportunities
Preventing bribery and corruption among employees and business partners throughout the value chain, including suppliers, contractors, and other intermediaries, with internal controls, responsible business practices, and other processes in compliance with PETRONAS' Anti-Bribery and Corruption Policy and Guidelines and other applicable laws.	A strong foundation of ethics and integrity are important to create shared and equitable values for stakeholders. We have a moral and business obligation to protect our operations from any corrupt and unethical activity.	<ul style="list-style-type: none"> Bribery and corruption within the supply chain lead to regulatory and reputational risks. Disputes and legal proceedings may cause operational disruptions, reputational damage and value deterioration. 	<ul style="list-style-type: none"> Enhanced policies, procedures and risk practices improve reputation among stakeholders. Strong culture of integrity enhances our position as a top employer.
Our Response			
<ul style="list-style-type: none"> Ensuring consistent adherence to PETRONAS' Anti-Bribery and Corruption Policy and Guidelines, Whistleblowing Policy and other applicable laws by practising zero tolerance for malpractices and non-compliance. Joining collective initiatives such as the World Economic Forum's Partnership Against Corruption Initiative to increase public trust in business, deliver fair markets and level the playing field by fighting corruption. 			
Capitals:	Risks:	Strategic Thrusts:	Stakeholders:

Corporate Governance

What It Means	Why It Is Important	Risks	Opportunities
The system of rules, practices, and processes by which PETRONAS is directed and controlled. Corporate Governance refers to the way in which companies are governed and to what purpose. It identifies who has power and accountability, and who makes decisions. This also includes the highest-level governance on the structures, policies, and strategies on sustainability-related matters, including the strategy and roadmap to realise our NZCE 2050 aspiration.	Our ability to operate and create value relies on upholding the highest standards of corporate governance, which is crucial to business continuity and long-term growth.	<ul style="list-style-type: none"> Failure to comply with standards leads to business disruptions, regulatory and reputational risks. Poor corporate governance impacts our strategic execution. 	<ul style="list-style-type: none"> A strong governance framework improves reputation with stakeholders. High level of transparency ensures efficient and effective execution of business strategies.
Our Response			
<ul style="list-style-type: none"> Incorporating sustainability discussions as part of the strategic review and planning cycle led by the PETRONAS Board of Directors. Engaging with external sustainability experts and undergoing various sustainability-related training as part of the Board of Directors and top management's upskilling programmes. 			
Capitals:	Risks:	Strategic Thrusts:	Stakeholders:
SDGs:			

Risks Linked to Creating Value

Effective risk management is a fundamental component of our value creation strategy. This has been particularly crucial given the increasingly dynamic and volatile landscape, particularly with the COVID-19 pandemic posing uncertainties on many fronts. Building on our experiences gained in the previous year, we pushed ahead to continuously identify, assess and manage our risks and opportunities to realise our strategic imperatives. We have a robust risk management and internal control system to build our resilience, strengthen our ability to meet stakeholder demands and deliver on our long-term strategic goals.

Preserving Value Through Effective Risk Management

To ensure that the PETRONAS Group is able to continue creating, preserving and realising value, we are proactively leveraging on a comprehensive system of risk management and internal control to mitigate any significant risks. This system, which includes identifying, assessing, managing and monitoring a range of financial and non-financial risks, remains a cornerstone of our business strategy and is fundamental to our goal of delivering sustainable long-term value. It is not intended to eliminate risk entirely, but instead to manage our risk exposure across our businesses, while at the same time making the most of any opportunities. This system provides reasonable but not absolute assurance against material misstatement or loss.

Setting the tone from the top, our risk management and internal control system is driven by the PETRONAS Board and its sub-committees, namely the Risk Committee (RC) and Audit Committee (AC) as well as the Executive Leadership Team (ELT). In addition to the above committees, risk oversight is supported by the Risk Management Committee (RMC) and respective Risk Management functions.

Roles and Responsibilities



The above risk oversight structure shall be read together with the "Corporate Governance at PETRONAS" section.

Risk Management Committee (RMC)

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

Risk Management Functions

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

How We Manage Risks

PETRONAS Risk Policy

The PETRONAS Risk Policy outlines the general principles and guidelines for making risk-based decisions. Through this Policy, we continuously strive to implement risk management best practices to protect and create value. The Policy also ensures a balanced and holistic view of exposures to achieve business objectives, thus strengthening our position as a risk resilient organisation.

This Policy is complemented by the PETRONAS Resiliency Model, which provides an integrated and holistic view of the overall strategy for more effective risk management. It focuses on three (3) areas of business resilience, namely Enterprise Risk Management (ERM), Crisis Management (CM) and Business Continuity Management (BCM).

PETRONAS Risk Policy and PETRONAS Resiliency Model

PETRONAS is committed to become a risk resilient organisation.

PETRONAS shall continuously strive to implement:

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

Managing risk is everyone's responsibility.

Enterprise Risk Management

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

Crisis Management

Comprehensive set of processes that aim to PREPARE the organisation to respond and manage crises to protect people, environment, assets and reputation.

Business Continuity Management

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

Enterprise Risk Management (ERM)

The ERM process is an integral part of managing the business as it acts as a guide to systematically identify, assess, treat, monitor and review risks. It aims to improve our ability to reduce the likelihood and/or impact of the identified risks that may affect the achievement of business objectives.

These risk profiles are established through the ERM process and monitored at the corporate level across the PETRONAS Group. It identifies principal risks with the corresponding risk mitigations and key risk indicators. This ensures that risks are being effectively managed by the respective units.

The PETRONAS Group's Risk Appetite articulates the type of risks that we are willing to accept to guide strategic

decisions at the corporate level. It reflects our position, propensity and acceptability to take risks in various areas, namely strategic, financial, operational, and reputational, while maintaining legal and regulatory compliance. It is defined by the respective area's tolerance and threshold levels. At the corporate level, PETRONAS Group's Risk Appetite is monitored and reported every quarter to the ELT, RC and the Board.

Risk assessments are conducted at key decision points to ensure decisions that have a significant impact on our business operations and strategies are made based on considerations of the risk-reward trade-off and to create risk-reward conversation at respective decision platforms and/or Approving Authority (AA).

ERM Framework

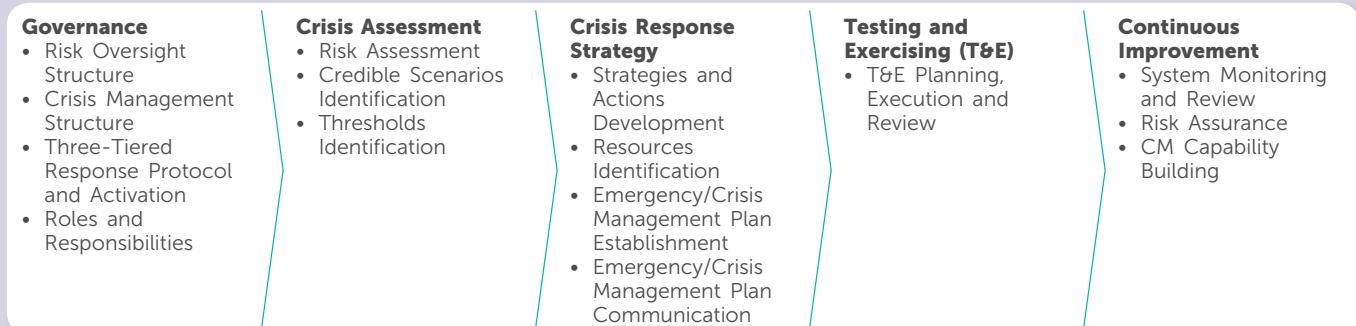
Governance	Context Setting	Risk Assessment	Risk Treatment	Risk Monitoring and Review	Continuous Improvement
<ul style="list-style-type: none"> • Risk Policy • Organisation and Structure • Roles and Responsibilities 	<ul style="list-style-type: none"> • External Context • Internal Context • Risk Appetite • Risk Criteria 	<ul style="list-style-type: none"> • Risk Identification • Risk Analysis • Risk Evaluation 	<ul style="list-style-type: none"> • Risk Treatment Strategy • Risk Treatment Plan 	<ul style="list-style-type: none"> • Risk Reporting and Monitoring • Risk Information System 	<ul style="list-style-type: none"> • System Monitoring and Review • Risk Assurance • ERM Capability Building

Crisis Management (CM)

CM is an integrated process that aims to prepare an organisation's domestic and international operations to respond to and manage crises in risk areas to protect the People, Environment, Assets and Reputation (PEAR). Under CM, there is a three-tiered response protocol that demarcates the roles and responsibilities of the emergency site management, operating unit management, corporate and internal/external response agencies, and/or authorities.

Testing and Exercising (T&E) via simulation of test scenarios are conducted to ensure the effectiveness of response strategies and promote continuous improvement, as identified in the Emergency/Crisis Management Plan.

CM Framework

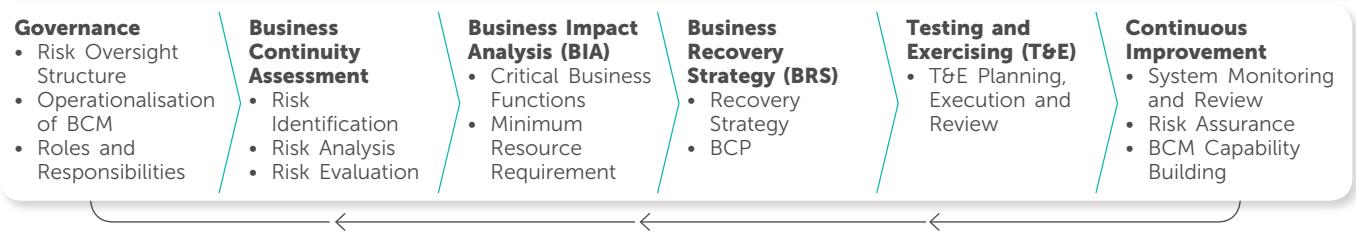


Business Continuity Management (BCM)

BCM is a management process that aims to build our capabilities to recover and continuously deliver products or services at acceptable, predefined levels following any prolonged disruption.

Key to the BCM Framework is the Business Continuity Plan (BCP), which aims to enhance the PETRONAS Group's preparedness to recover and restore business-critical functions within a reasonable period, to sustain activities and minimise disruptions to stakeholders. T&E via simulation of test scenarios are also conducted to validate the effectiveness of recovery strategies as well as maintain a high level of competence and readiness as identified in the BCP.

BCM Framework



Risks Linked to Creating Value

Our extensive network of operations and businesses is subject to several factors, some of which are beyond our control. Whether known or unknown, these and other risks may have potential material adverse impacts on our operations. The risks set out below are linked to our targets of achieving the Group objectives. However, this is not an exhaustive list of challenges that we currently face or may develop in the future. The order in which these risks and uncertainties appear also does not necessarily reflect the likelihood of their occurrence or the relative magnitude of their potential material adverse impact on our business.

In addition to the key risks highlighted below, we are strengthening our risk management efforts and corresponding disclosures for environmental, social and governance (ESG) risks, including a specific climate change risk. To ensure consistency with global sustainability frameworks and standards, our efforts are positioned in due course, to align with the recommendations of the Task force on Climate-related Financial Disclosures (TCFD) and the World Economic Forum's Stakeholder Capitalism Metrics.

Market Risk

Our financial performance is impacted by the volatility of commodity prices, change in customer preferences, fluctuations in exchange rates and the general macroeconomic outlook.

Impact on Value

- Our core business is predominantly in oil and gas. Hence, our financial performance is highly influenced by commodity price volatility, which is generally determined by the supply and demand in the market. The prolonged COVID-19 pandemic and its adverse effects on the global economy have substantially influenced the fluctuation in commodity prices and customers' demands.
- Other players within the industry also felt the effects of the prolonged pandemic, and indirectly, PETRONAS was impacted by the performance of key counterparties, among others, our vendors, contractors and partners. The impact may extend to contractual specifications, non-performance and counterparty obligations. On a bigger scale, this could lead to supply or operational disruptions.
- We have also witnessed a shift in customers' preferences, namely increasing demand for lower-carbon energy sources. The change in customers' preferences and the emergence of cleaner energy sources have intensified competition within the oil and gas industry, indirectly affecting PETRONAS' value chain.
- The Group is exposed to exchange rate volatility as our reporting currency is in Ringgit Malaysia, while some transactions are dealt with in the US Dollar. Our global presence also exposes us to the changes in the value of other currencies and exchange controls imposed by our countries of operations.

Risks Linked to Creating Value

Mitigation Strategies

- A review of our Holding Company Units (HCUs) strategies is continuously undertaken in response to the wide-ranging market risks and the corresponding challenges in generating value from our business. We focused on prioritising resources to areas of the highest importance to the organisation and business whilst meeting the expectations of our key stakeholders. We also proactively conduct rigorous efforts to secure new demands within the core business and growth areas.
- The PETRONAS Financial Policy (PFP) sets the overarching philosophy to become financially resilient over the long term. Supporting the PFP is the PETRONAS Financial Standard (PFS), which outlines high-level principles and requirements to promote efficient capital and liquidity management practices. Relevant supporting guidelines are also in place to guide and ensure the effective implementation of financial management and financial risk management practices. This also enables us to identify financial risk exposures for improved risk management through required reporting to relevant HCUs.
- As part of financial and business risk management, businesses undertake regular monitoring and review of counterparties' performances to identify any critical issues with the key counterparties. Where relevant, specific actions to limit PETRONAS' exposure are undertaken.
- To address the integrated demand and supply chain, digital and strategic initiatives have been outlined. This enables the creation of new demand and optimisation of value within the value chains. The PETRONAS Risk Appetite was also implemented across the Group. Key factors affecting PETRONAS' financial performance and risk appetite, including market risk, are reviewed and monitored regularly to facilitate strategic decision-making, ensure business activities are undertaken within the approved thresholds, and trigger actions promptly.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: External risks that can undermine our capacity to realise strong returns will impact the pool of funds available for the Group to sustain and grow its operations.



Manufactured Capital: Identifying the assets that can be the core engine to support our current and future operating model may also be at risk of changing market demands and external regulations.



Intellectual and Human Capitals: Existing intellectual capital required to support the business can be made redundant in the face of sharp changes to the market environment.

Risks Linked to Creating Value

Financial Liquidity Risk

Our business activities require significant capital investments, sufficient operating cash flows and/or sufficient external financing to support business activities and growth projects.

Impact on Value

- Financial performance deterioration and the inability to obtain the required financing during these challenging times may affect our capital investments and achievement across our growth projects. In addition, the global or regional financial crisis, unfavourable credit events and market conditions may negatively affect liquidity, customers, businesses and operational results.
- The year 2021 has seen an upward trend and strong emphasis on green funding and ESG-related investing. Key stakeholders such as investors and banks highly focus on organisations that contribute towards ESG. Failure to demonstrate our efforts in supporting these targets may affect our competitiveness and ability to tap into the capital market as and when needed.

Legal and Regulatory Risk

Changes in the regulatory landscape and rising climate change concerns could increase the cost of compliance, reduce demand for our products, affect provisions and limit access to new growth opportunities. Inherent uncertainties due to litigation proceedings could adversely impact our business operations, financial condition, and/or reputation.

Impact on Value

- As a multinational corporation, we comply with the wide-ranging legal and regulatory requirements unique to each country in which we operate. These include critical legal areas such as international sanctions, anti-trust, anti-bribery, anti-corruption, anti-money laundering and data protection laws with extra-territorial effects.
- We are also exposed to various claims, suits and legal proceedings that could involve shareholders, labour, intellectual property, tax and other matters. The disputes and legal proceedings are often subject to many uncertainties beyond our control and can be difficult to predict outcomes. Due to the inherent uncertainties in the litigation and dispute resolution process, the resolution of any particular legal proceeding or dispute may adversely impact our business operations, operational results and/or financial condition.
- With 46,884 employees in our workforce, limited awareness and misaligned incentives can lead to intentional or unintentional non-compliance with laws and regulations by personnel, which is beyond our control. These actions may go beyond personal liability, with the possibility of impacting the wider organisation.
- Rising concerns over climate change could lead to additional legal and regulatory measures, including higher compliance costs. The nature of oil and gas operations may expose us to potential claims and suits by environmental and legal authorities and communities on issues pertaining to carbon emissions, waste materials, as well as commissioning and decommissioning activities of our operations.

Risks Linked to Creating Value

Mitigation Strategies

- The Asset Liability Committee (ALCO) oversees, deliberates, reviews and monitors asset and liability management strategies in managing foreign exchange, interest rate and liquidity risks. Our liquidity position is reviewed and monitored regularly, aligned to the risk appetite established for liquidity and indebtedness levels.
- Like managing Market Risks, we are also guided by the PFP and PFS to ensure that financial management and risk management practices are implemented.
- To ensure responsiveness and the Group's financial sustainability is safeguarded in a crisis, we established the Liquidity Risk Contingency Protocol (LRCP), which will act as a liquidity crisis management plan. The LRCP is carried out by the Liquidity Crisis Management Team (LCMT), which has the responsibility to deliberate on impact assessments as well as decide on the relevant mitigation strategies and financial levers.
- Engagements with key stakeholders, including current and potential investors, banks and other counterparties, are regularly performed to ensure clear narration and communication, in line with substantial efforts undertaken in the ESG space.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: The ability to hold a strong financial and liquidity position can be affected by changing regulations and unfavourable market conditions, limiting our ability to secure financing.

Mitigation Strategies

- The establishment of appropriate governance, compliance and legal frameworks, including the PETRONAS Code of Conduct and Business Ethics (CoBE), is central to managing legal and regulatory risks. The Legal Compliance Framework (LCF) serves as a control oversight and measure of legal compliance for the Group. LCF is based on five critical legal areas that could pose as an enterprise risk to the Group.
- Regular communications, awareness sessions and training programmes on critical legal areas and specific laws affecting the respective entities are conducted by Group Legal to enhance awareness and emphasise strict compliance with legal and regulatory requirements.
- Compliance levels by the workforce and business are regularly reviewed and monitored, aligned to the risk appetite established for compliance with critical laws and anti-corruption measures. Strict compliance with legal and regulatory measures is emphasised Groupwide. We have zero-tolerance for non-compliance to legal and regulatory standards, including acts of bribery and corruption.
- We aspire to achieve net zero carbon emissions by 2050 (NZCE 2050). The Group's Sustainability Agenda supports our efforts in reducing carbon emissions and managing other environmental impacts resulting from our business operations.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: Legal and regulatory breaches can result in financial penalties and reduced access to external financing.



Social and Relationship Capitals: Relationships with key stakeholders will be damaged due to loss of trust and credibility, should there be legal and regulatory breaches.



Human Capital: Reputational damage to our position as a favourable employer due to legal and regulatory breaches.

Risks Linked to Creating Value

Health, Safety, Security and Environmental (HSSE) Risk

The nature of our business operations exposes us to a wide range of health, safety, security and environmental risks which could cause harm to people, the environment, and our social assets. It may also result in regulatory action, legal liability, business interruptions, increased costs, damage to our reputation, and potentially, our social licence to operate. Additionally, the ongoing COVID-19 pandemic has continued to affect the health of our people and operations.

Impact on Value

- Any incidents during business operations could result in injury or loss of life, environmental damage, resulting in rectification costs as well as damage to our equipment and facilities. A shutdown of the affected facilities could disrupt production and increase production costs.
- The ongoing COVID-19 pandemic and movement restriction orders globally have resulted in interruptions and deterioration of financial performance within certain parts of our business. This has led to adverse market impacts and affected the health of our people.
- Security threats such as acts of terrorism, piracy/sea robbery, demonstration and kidnapping may adversely affect our business operations, the safety of our people and assets, as well as causing environmental damage.

Mitigation Strategies

- The management's clear requirements and commitment are stipulated in the Group's Health, Safety, and Environment (HSE) and Security policies. These policies are supported by dedicated HSE and Security Management Systems, covering requirements for health, operational and process safety, environment and security for consistent as well as effective Groupwide implementation. The HSE Mandatory Control Framework (MCF) and Minimum Mandatory Security Standards (M2S2) provide minimum HSE and Security standards to effectively manage HSE and security risks. Both frameworks and management systems strengthen HSE governance within the Group.
- PETRONAS is committed to respecting human rights in areas of our operations, complying with its Code of Conduct and Business Ethics (CoBE) and all relevant legal requirements.
- Operational discipline has been further heightened through intervention and oversight via HSE assurances, enhancements to contractor management and leveraging of the HSE digital system. The Generative Culture Leadership Programmes at all levels focused on psychological safety and conscious risk awareness. Process Safety Management was strengthened by establishing the Loss of Primary Containment (LOPC) Reduction Framework and the Fire Prevention and Mitigation Framework. The adoption of new businesses and asset acquisition was reinforced by accelerating due-diligence and post-acquisition integration processes, as well as firming up our first line of assurance to drive an effective management system and compliance.
- Security risk assessments are carried out to identify potential threats, analyse the adequacy of current security measures and develop mitigation actions, gap closure activities and countermeasures to address the risk. Additionally, security exercises to strengthen capabilities, response and readiness in the event of security crisis and/or incidents are conducted to safeguard our people, assets, information and operations.
- Continuous protective security monitoring and predictive analyses are control measures to enable timely security insights, taking into account direct and indirect factors which could impact wider security environment in our countries of operations. The tailored and bespoke insights developed by dedicated in-house security practitioners facilitate informed management decision making to safeguard PETRONAS' interests in upholding our duty of care. In addition, periodic engagements with PETRONAS international businesses are also carried out as a proactive solution to enable discourse and sharing on relevant security subject to facilitate optimum security readiness.
- As the risks for the COVID-19 pandemic remained high, the Corporate Command Centre (C3) task force and Pandemic Preparedness and Response Team (PPRT) continued to make critical cross-business decisions to ensure the safety of our people and continuity of business operations. Directives, guidelines, daily updates and awareness materials are issued via the COVID-19 One-Stop Centre. Efforts undertaken in curbing transmission risk within the Group included implementing operational green bubbles for key plants and operations, COVID-19 immunisation programmes to expedite vaccination and support the nation's effort towards achieving herd immunity, and strong collaborations with key stakeholders on COVID-19 management.
- Given the importance of mental health, a series of initiatives and programmes were conducted to address psychosocial risk factors to improve employees' mental well-being. These programmes were coordinated and tracked by the Wellness Committee, with regular reports to the management.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: HSSE incidents can result in penalties, damaged assets, and disrupted business operations, impacting the Group's financial position.



Social and Relationship Capital: HSSE incidents can lead to loss of trust and reputational damage among key stakeholders.



Natural Capital: HSSE incidents can affect the natural environment where we operate, undermining our efforts to be responsible stewards of natural resources.



Human Capital: HSSE incidents can cause reputational damage to our status as a favourable employer.



Manufactured Capital: HSSE incidents can cause significant damage to key assets.

Risks Linked to Creating Value

Risk Management in Action: PETRONAS' Health Safety and Environment (HSE) Efforts

Business continuity management is a core element of our risk management strategy. As a Group, we were not spared from the global disruptions arising from the pandemic in early 2020. Learning from the experiences gained in 2020, effective plans were put in place to ensure business continuity, protect employee health and well-being, and minimise operational disruptions.

1. Operation Green Bubbles

Given the nature of PETRONAS' business, about 30 of our assets, mainly critical PETRONAS' offshore and plant-based operations, require the on-site presence of around 500 employees to ensure continued operations. This, however, posed significant risks on two fronts. First is the increased likelihood of our people contracting COVID-19 due to workplace exposure. Secondly, the large number of people required could lead to significant operational disruptions should there be workplace infections.

As a result, the Green Bubble Strategy was introduced, whereby screened workers were isolated for a specified period at dedicated accommodations away from the community who were at high risk of COVID-19 transmission. This significantly reduced the likelihood of COVID-19 infections and ensured operational continuity for these critical projects.

We adopted a Green Net approach in places where the Green Bubbles strategy was not feasible. Here, employees could either stay at the dedicated accommodation provided or designate their home as the fixed Green Net accommodation.

2. PETRONAS Immunisation Programme Taskforce

As a responsible energy provider, we made significant strides to expedite vaccination programmes to bring Malaysia closer to herd immunity status.

Collaborating with the relevant government ministries, state health authorities and service providers, we assisted with the establishment of six (6) *Pusat Pemberian Vaksin Industri* (PPVIN). This includes Pengerang Integrated Complex (PIC), Kerteh, Malaysia Refining Company Sdn Bhd (MRCSB), Bintulu, Miri and Pulau Duyong Jetty Terminal (PDJT). The PIC PPVIN emerged as the first PPVIN established in Malaysia, following a collaboration between the Ministry of International Trade and Industry (MITI) and the relevant industries.

The PPVINS contributed RM4.0 million to support the National Immunisation Programme. PETRONAS also contributed another RM750,000 to *Pusat Pemberian Vaksin* (PPVs) in Kedah, Perak, Perlis, and Selangor.

Offshore Outreach Programme

Meanwhile, a relatively unique approach was taken to drive vaccination efforts was the offshore outreach programme. This first-of-its-kind was conducted in Labuan, Sabah and Sarawak to ensure our offshore operations did not experience business disruptions once it was fully operational. It was a collaborative outreach that involved working together with other contractors across five offshore locations to ensure the successful vaccination of more than 2,000 employees and contractors.

3. Strong Collaboration with Key Stakeholders on COVID-19 Management

Beyond our Green Bubble framework and vaccination drives, we also ensured our operations were fully aligned to the COVID-19 SOPs introduced by the Government. In this regard, PETRONAS maintained regular communication with key stakeholders, including the Ministry of Health (MOH), MITI, National Security Council, Department of Occupational Safety & Health (DOSH) and various state governments. We also maintained close communication with key government agencies where we have an international presence.

By communicating openly with our key stakeholders, we swiftly adapted to the dynamic COVID-19 situation affecting Malaysia and adjusted to SOPs accordingly, minimising operational disruptions and transmission risk within our business.

Beyond regular communication with relevant government agencies, we also consulted with external health and security experts to discuss best practices in navigating the pandemic.

4. Staff Mental Health and Well-being Programmes

Mental health and well-being was another area that came into focus following the onset of the COVID-19 pandemic and various movement restriction orders implemented throughout 2020/2021.

Group HSE and Group HRM organised various programmes, in collaboration with businesses and representatives from corporate functions, to address mental health concerns among our employees throughout the organisation as well as implement proactive measures to improve their mental well-being. Among the programmes established and conducted were the Employee Assistance Programme 2.0 (myFriends), i-C4RE, and Leaders Reach Out sessions, alongside publications on mental resilience. These programmes, among others, helped improve employees' mental health and resilience, thus reducing the number of cases of mental illness.

Risks Linked to Creating Value

Geopolitical Risk

Our domestic and global businesses are exposed to a wide range of political, legal and fiscal developments, which could affect our operations and financial condition.

Impact on Value

- We operate across numerous countries with differing degrees of political, legal and fiscal stability. This exposes us to a wide range of political developments that could change contractual terms, laws and regulations.
- Our global business activities are subjected to regulations and directives of national and host governments concerning limitations on production volumes and exports, pricing and trade policies, environmental protection controls, and possible nationalisation of assets, expropriation and cancellation rights. Governments may intervene directly or indirectly in our commercial and operational affairs, adversely impacting our business.
- The inability to mitigate the internal and external challenges within the domestic and international business landscapes may deteriorate our financial condition and constrain our growth capacity.

Hydrocarbon Reserves and Resources Risk

We recognise that our oil and gas reserves and resources may decline over time. Our reserves and resources depend on exploration success, project maturation, reservoir or field performance, asset acquisition or relinquishment and commercial factors.

Impact on Value

- Ineffective management of reserves and resources can severely threaten the viability of our business operations, cause financial performance deterioration, and adversely impact our growth ambitions.
- Oil and gas resources are provided in different scenarios and levels of estimations to capture the range of uncertainty. While the reliability of these estimates is done via a rigorous assurance process, the estimations still involve some degree of uncertainty and may differ from the actual levels. The reliability of discovered resource estimates depends on the quality and quantity of technical and economic data, and the production performance of the fields, all of which may also be subject to revision due to changes in published rules and guidance.

Risks Linked to Creating Value

Mitigation Strategies

- The Country Risk Management Framework (CRMF) was established to govern oversight structure, roles and responsibilities, and assessment tools to ensure country risks are managed systematically across the Group. CRMF also prescribes pre-entry, in-country and exit management requirements to support decision-making concerning international investments and managing in-country risk holistically. This is then reported to the respective country's Management and Board.
- Crisis and business continuity plans were established in each country we have a presence in to ensure management and recovery from any incidents and/or crises. Plans were regularly tested and exercised to ensure readiness for execution when required.
- The geopolitical landscape and investment concentration in the countries we are in is also regularly reviewed and monitored to ensure it aligns with the risk appetite established for our international investments. Frequent review of our investment portfolio is undertaken to optimise the value generated from the overall portfolio.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: Geopolitical issues can lead to disruptions that lower returns from key assets.



Manufactured and Human Capitals: Escalated geopolitical incidents can compromise the safety of staff and assets.



Social and Relationship Capitals: Inability to manage key relationships in foreign countries may deteriorate trust among key stakeholders.

Mitigation Strategies

- Reserves and resources are reviewed annually via the Annual Review of Petroleum Resources (ARPR) process, as per the requirements stipulated in PETRONAS Reserves and Resources Management System (PRrMS). Assets are reviewed through in-year and year-end assurance processes, aligned to PRrMS. PETRONAS' international ventures form part of the strategy to secure new resources.
- The ongoing efforts to manage production sustainability include the development of the carbon capture and storage (CCS) technology for the development of the high carbon dioxide (CO₂) fields.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: Inability to monetise resources can compromise the financial stability of the Group as it is the core activity.



Manufactured and Intellectual Capitals: Inability to develop new technologies and innovate will result in low-value assets that may not perform to the required standards.

Risks Linked to Creating Value

Technology Risk

Deployment of innovative practices and new technology are essential to our long-term competitiveness. However, new technology is itself at risk of becoming obsolete. Particularly where technological advancements exceed the pace of investment and deployment.

Besides that, if we inadvertently develop technology that has unfavourable effects on safety and the environment, this could impact our financial condition and reputation.

The acceleration of digital efforts across the organisation has been intensified to ensure Information Technology (IT) and Cyber Security resiliency. Our inability to do so may impact the safety of our operations, people, environment, data and sensitive information. It may also lead to legal and regulatory breaches as well as reputational damage.

Impact on Value

- We remain dedicated to creating and delivering the best solutions to support the growing requirements of analytics, where trusted data is liberated for valuable insights. Implementing new technologies comes with an inherent set of risks covering adoption, legal and regulatory compliance, cyber security exposure and in-house capabilities.
- Investments in new technology also come with the risks of identified technology being rendered obsolete by newer offerings.
- While we strive to deliver excellence in business operations, there could still be an adverse material impact on the delivery of our strategy and our licence to operate, resulting from ineffective development and deployment of technology and innovation. Inability to develop the right technologies and products in a timely and cost-effective manner, or the development of technologies and products that adversely impact the environment or safety of the people, could damage our financial performance and reputation.
- Rising cyber security threats could lead to major business disruptions globally. A breach or failure of our digital infrastructure from cyber-attacks could result in the loss or misuse of data or sensitive information, injury to people, business disruptions, and cause harm to the environment or our assets. It could also lead to legal or regulatory breaches and legal liability.

Mitigation Strategies

- To strengthen competitive advantage, we drive dynamic in-house research and innovation solutions. We have the PETRONAS Technology Management System (PTMS), which is used to mitigate and manage risks. This ensures the development of technology solutions that meet business needs and are also aligned with the current challenges and agenda. It curates the value chain and focuses on the technology journey, beginning from ideation, development, management, deployment, and optimisation of technology programmes to the commercialisation aspects of each technology.

Risks Linked to Creating Value

- We also maintain a strong position in mitigating risks on the Intellectual Property (IP) front. We hold over 4,000 IPs ranging from patents and trade secrets to copyrights and trademarks across different technology segmentations, including Bio-Chemical and Advanced Materials. A robust IP Policy has been developed at an enterprise level to protect our innovations. It also provides systematic structure, procedures and guidelines to manage our technology IPs effectively. IP Guidelines are also included as part of the key processes in the PTMS.
- We have established a strict recruitment policy for our research and development arm, hiring best-in-class experts to help develop and deploy technology and continuously upskill its current crop of researchers. Group Digital is responsible for shaping and driving a unified digital vision and strategy Groupwide, as well as accelerating concerted efforts to drive digital transformation. This is done via a strong pipeline of technical talents nurtured from the implementation of Digital Skill Group and Digital Academy, including continuous Upskilling and Reskilling programmes in Agile, DevOps, Cloud, Software Engineering, Data, and Cyber Security.
- Group Digital is also accountable for upholding Digital and Information and Communications Technology (ICT) governance across the Group in Cyber Security, Enterprise Architecture and Enterprise Data. We are guided by the PETRONAS ICT Principles and PETRONAS Records Management Principles, supported by the ICT Framework, Standards and Guidelines, which set out the purpose, commitment and governance of ICT and Records Management for the Group. Any incidents involving ICT and cyber-attacks are monitored and alerted regularly, aligned to the risk appetite established for ICT and cyber security.
- Group Digital established an IT Disaster Recovery Plan for identified critical business applications and Cyber Security Incident Response Procedure for cyber incident recovery strategies, covering all business units. The Business Continuity Plan (BCP) prescribes an overarching strategic response and recovery plan to oversee and steer prolonged ICT and cyber security crises that significantly impact business operations. Scheduled drills and exercises are conducted periodically to ensure readiness in the event of an IT and cyber security disaster.
- The Enterprise Cyber Security Governance Framework (ECSGF) was established to provide a single consolidated view of the frameworks, standards and guidelines required to govern and manage cyber security across PETRONAS. It is aligned to leading industry standards and best practices, namely the National Institute of Standards and Technology (NIST), ISO 37001, ISA/IEC 62443, Personal Data Protection Act (PDPA), General Data Protection Regulation (GDPR) and Payment Card Industry Data Security Standard (PCI DSS).

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: Inability to innovate and adopt best practices can put the Group at a competitive disadvantage and reduce projected returns.



Manufactured and Intellectual Capitals: Inability to innovate can leave current physical and intellectual assets obsolete, and lack of cyber defence leaves assets vulnerable to attacks.

Risks Linked to Creating Value

Execution Risk

Our business, financial performance, and results of operations depend on the successful delivery of complex, long-term, capital-intensive projects and asset portfolio optimisation. Insufficient insurance coverage could have an adverse material impact on financial performance.

Impact on Value

- Our overall business and financial performance within the Upstream, Downstream, Gas + New Energy, Corporate and other divisions are highly dependent on the successful execution of projects. The complex nature of oil and gas projects relies on the high degree of technology applied, technical capabilities of our talent, capacity to undertake the required capital investments and market conditions at the point of the investment decision.

Mitigation Strategies

- The progress achieved for key projects is reviewed and monitored regularly, aligned to the risk appetite established for project delivery.
- Project risk management is implemented following the PETRONAS Project Management System (PPMS) to reduce the risk of unexpected technical and/or commercial factors significantly affecting the project's viability. The PPMS Phase Gated Process aims to retain and maximise project value across a project's life cycle, from identifying business opportunities until the operationalisation of the project. This is done to bring a measure of rational processes to decision-making associated with the transformation of business opportunities into operational assets.

Human Capital Risk

Our people are PETRONAS' greatest asset in delivering our strategies and sustaining our business. As such, it is crucial to attract and retain the best talents with the right capability, mindset and behaviour to achieve our aspirations.

Impact on Value

- Our skilled talents are an important asset to the company and crucial for the achievement and delivery of our business objectives, strategies and performance. Talent acquisition and retention are key to our overall human capital strategy. We must ensure our talent pool is equipped with the right skill sets and competencies to ensure performance delivery.
- The inability to attract and retain the right skilled talents will adversely impact our talent pipeline and ability to remain competitive in the market. This, in turn, may affect the delivery of our strategies and objectives.

Mitigation Strategies

- Several efforts have been established to ensure we get the right, capable talent at the right place, at pace.
- Efforts are made to enhance our Employee Value Proposition to attract and retain the best talents to meet the changing needs of our traditional and non-traditional business activities. We have enhanced our Performance Management in linking to our business targets with a focus on performance and development including coaching to ensure talents achieve their full potential. Our on-going HR transformation aims to redefine our talent experience towards an empowered, agile, and enabled workforce through people, process and platform to enable better talent decision making through analytics and artificial intelligence.

Risks Linked to Creating Value

- Group Project Delivery (GPD) provides oversight on all capital, technical deployment and plant change projects, plus performs its role as Asset Owner Representative, where we are the major shareholder. Throughout execution, project performance, cost and scope are monitored regularly. Emerging risks and early warning signals are tracked and mitigated accordingly to protect the overall project value.
- The risk management of our plant and facilities are governed by PETRONAS Asset Management System (P-AMS), PETRONAS Technical Standard (PTS), PETRONAS Technical Guideline (PTG), PETRONAS Technical Authority Standard, and Plant and Facility Risk Management (PFRM) guidelines. P-AMS provides a comprehensive overview of managing physical assets to achieve the required safety, utilisation, availability, maintainability, integrity, and cost performance of the Group's plants and facilities, over the design, operation and maintenance asset life cycle. It is supported by governing documents that prescribe the specific system and work processes.
- Meanwhile, PFRM prescribes the principles and structured processes for managing operational risks following the PETRONAS Resiliency Model. It guides plants and facilities to systematically identify, assess, control, monitor and review operational risks to reduce the likelihood and/or impact of identified risks.
- Capability development programmes are conducted to equip personnel with the technical knowledge required. Collaborative efforts with peers/partners within the oil and gas industry facilitated the transfer of technical knowledge.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Financial Capital: Inability to execute growth strategies will affect the Group's long-term financial position.



Intellectual Capital: Inability to properly execute targets may lead to obsolete intellectual property due to a lack of innovation.

- We intensified our upskilling and reskilling efforts to ensure our talents are equipped to win in the marketplace. We equipped senior leaders to lead and navigate the business and the workforce towards achieving organisational goals anchored on PETRONAS Cultural Beliefs and Shared Values through several key programmes. We also continued to build a pipeline of leaders by nurturing leadership at all levels to ensure sustainable bench strength for succession. In 2021, we focused heavily on creating a pervasive innovation culture at all levels, from Board members right down to the masses to bring to life PETRONAS Cultural Beliefs (specifically Innovate Now, Customer Focused, Be Enterprising) through programmes like Innovation Masterclass (IM) and Agile Awareness, to immerse employees in the innovation and agile methodology designed to drive new innovative ideas towards achieving business objectives.
- We continuously strengthen our efforts to create and sustain the right environment for our people to thrive, through our PETRONAS Cultural Beliefs anchored on our Shared Values and fostering Diversity and Inclusion.

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



Human and Social and Relationship Capitals: Inability to position PETRONAS as the desired workplace will result in reputational damage, loss of stakeholder trust and inability to attract and retain top talent.



Intellectual and Manufacturing Capitals: Inability to recruit, train and match talents to fit business needs will result in poorly executed strategies, leading to lower quality intellectual and manufacturing capital.

Strategic Performance Review

Our growth aspirations follow a thematic strategic approach that enables us to operate safely, reliably and cost effectively, seize growth opportunities, and create positive impacts that benefit all stakeholders. Throughout the year, we continue to make significant progress in each of these three themes, thus accelerating our growth momentum towards becoming a progressive global energy and solutions partner that meets the energy demands of current and future generations.



THEME 1: Operational Excellence – Strong Foundation for Growth

During the year, we were steadfast in operational excellence to maximise value creation, while prioritising safety aspects.

Sub-theme	Strategic Focus Areas
Health, Safety and Environment (HSE)	<ul style="list-style-type: none"> • Sustain a health and safety awareness culture across all businesses and operations, including consumer touch points. • Minimise impact of the COVID-19 pandemic and natural disasters on the communities in areas where we operate. • Leverage new technologies in high-risk environments to minimise HSE risk and environmental footprint. • Embark on initiatives that focus on managing our employees' mental health and overall well-being.
Reliability and Value Creation	<ul style="list-style-type: none"> • Ensure safe, reliable, and cost-effective operations across all operating assets and units. • Implement agile measures to preserve the value and optimise production. • Leverage technology, digitalisation and intelligent facilities to reduce costs. We also increased productivity and efficiency to drive informed decision-making.

Strategic Performance Review

THEME 2: Growth – Seizing New Opportunities

In 2018, we introduced our 3PGS to provide a sharper guard rail for all ongoing efforts to pursue non-traditional growth as we reshape our portfolio to future-proof the organisation. Given the changing industry landscape, this growth strategy was conceptualised alongside the accelerated energy transition brought on by the pandemic.

Sub-theme	Strategic Focus Areas
Expanding Core Business	<ul style="list-style-type: none"> Promote opportunities in Malaysia exploration and production (E&P) sector to increase investments via greater industrial engagements, opportunity matching and data sharing. Secure new E&P acreages and assets as well as maximise value from existing assets via commercial excellence. Create new monetisation route for East Malaysia gas resources. Pursue new supply nodes for LNG. Extend value chain into higher margin chemical products. Achieve full Euro 5 compliance in Malaysia.
Stepping Out into Non-Traditional Business	<ul style="list-style-type: none"> Pursue growth in non-traditional businesses to capture opportunities in the energy transition space: <ul style="list-style-type: none"> – Specialty chemicals. – Renewable energy and storage. – Hydrogen. – Green mobility. – Carbon capture and storage. – Non-fuel retail.
Fortifying Future Position with Stakeholders	<ul style="list-style-type: none"> Fortify relationship with key stakeholders both within and beyond the oil and gas industry, technology partners and academic institutions to pave the way for new opportunities. <p><i>Refer to the section on 'Engaging with Stakeholders' for more information.</i></p>

Strategic Performance Review

THEME 3: Sustainability – Progress in a Responsible Manner

Sustainability is deeply rooted in our Statement of Purpose, as “a progressive energy and solutions partner enriching lives for a sustainable future”. As a purpose-driven organisation, sustainability considerations contribute directly to what we do as a business, how we operate and how we engage with employees, customers, suppliers, service providers, local communities, regulators, investors and other stakeholders.

Sub-theme	Strategic Focus Areas
Path to NZCE 2050	<ul style="list-style-type: none"> Develop a credible approach to net zero carbon emissions. Deliver interim commitment to GHG reduction. Collaborate with government agencies on national policies and regional green growth to build resilience and prepare the organisation for a sustainable future.
Lower Carbon Solutions	<ul style="list-style-type: none"> Expand our portfolio offerings to include lower carbon solutions: <ul style="list-style-type: none"> Implement CCS in Upstream producing assets Carbon Neutral LNG LNG bunkering Sustainable aviation fuel Biodiesel.
Diversity and Inclusion (D&I)	<ul style="list-style-type: none"> Nurture an inclusive workplace that values equal opportunities, diversity, talent, and overall employee well-being, and operate with a strong foundation of merit and equality. Our remuneration structure is anchored on a pay-for-job principle, irrespective of gender, age, nationality, ethnicity, or religion. <p><i>Refer to the section on ‘Employee Welfare and Fair Remunerations’ for more information.</i></p>
Corporate Social Responsibility (CSR)	<ul style="list-style-type: none"> Contribute and drive CSR programmes to deliver sustainable impact, improve the quality of life and socio-economic outcomes for communities in regions where we operate based on three key pillars – Education, Community Well-being and Development, and Environment.
Governance	<ul style="list-style-type: none"> Align business operations and decision with PETRONAS’ overall purpose, objectives and interests through effective governance document management and ensure good governance across PETRONAS Group through PETRONAS Group Management Framework (PGMF). Establish various governance documents such as policies, standards, guidelines, frameworks and procedures which are the foundation for carrying out internal controls such as PETRONAS Code of Conduct and Business Ethics, PETRONAS Anti-Bribery and Corruption Manual, Whistleblowing Policy, others. Deliver enterprise or customised training and awareness programmes for its employees and Directors to ensure firm understanding of internal controls through various digital and communication platforms. Manage third-party risks through PETRONAS Third Party Risk Management (TPRM), a robust due diligence process to safeguard PETRONAS Group from any exposure in the event of misconduct by third parties including partners, contractors, vendors, suppliers, distributors, agents.

Strategic Performance Review

2022 Strategy Outlook

In 2022, PETRONAS will continue to focus on the strategic themes in 2021 with heightened intensity specifically in pursuing the 3PGS, in the following areas:

- High-grade portfolio with higher value return and lower carbon intensity.
- Establish an independent entity to deliver cleaner energy solutions in the spaces of Hydrogen, Renewable Energy and Green Mobility.
- Pursue growth in specialty chemicals which pivots towards technology driven customer-centric businesses.
- Undertake opportunity framing in new business areas such as Carbon Capture and Storage, Circular Economy and Advanced Materials.

and at the same time accelerate the momentum towards decarbonisation.



Business Review



Upstream

Business Review



Adif Zulkifli

Executive Vice President and
Chief Executive Officer,
Upstream

"The year 2021 saw the industry stabilise and start to recover from the shocks of 2020, albeit in a shroud of uncertainty as the world continued to grapple with multiple waves of COVID-19. Valuable lessons were learnt about our vulnerability as a business, driving us to step up our efforts to ensure that we continue to be resilient in providing the world with the energy security it needs. This resilience begins with ensuring the health, safety and security of our employees and those they work with; we are proud to maintain our solid HSE record, true to our goal that "everyone goes home safely", every time.

Recognising that we have a large part to play supporting PETRONAS' net zero carbon emissions by 2050 (NZCE 2050) aspiration, while balancing the obligation to deliver energy to the world, the Upstream business has stepped up its efforts in lowering our carbon footprint, with several projects underway to achieve zero continuous flaring and venting, an increased level of digitalisation towards energy-efficient operations, and a marked level of collaboration with leading industry players to advance carbon capture and storage (CCS) technologies and solutions.

We believe that Upstream will continue to be PETRONAS' main cash generator that will provide crucial support for the Group's sustainability aspirations. As the custodian of Malaysia's hydrocarbon resources, we continue to increase Malaysia's resource base through efforts such as the Malaysia Bid Round (MBR), bringing in responsible investors who share the same pragmatic approach in providing the world with affordable energy via a safe, resilient, low cost and lower carbon exploration and production."



Made **10**
exploration
discoveries

Achieved first hydrocarbon for
21 projects

Achieved Final Investment
Decision (FID) for
22 projects

GHG emissions reduction
3.83 million
tCO₂e
(8 projects completed)



Total daily production
average (boe) per day
2,275
thousand

Total Contingent
Resources (2C)
15.34
Bboe



Total Petroleum
Reserves (2P)
9.11
Bboe

3-year average Overall
(2P + 2C) Resources
Life Index (ORLI)
39.7 years

Reserves Life
Index (RLI)
9.8 years

More than
10,000
employees



Business Review

What We Do

Our Upstream business is involved in the exploration and development of hydrocarbon resources and the operations of oil and gas production assets, with a growing international presence in over 20 locations across the globe. In Malaysia, through Malaysia Petroleum Management (MPM), we regulate and manage the country's petroleum resources. We spearhead the growth and development of the nation's oil and gas industry.

The Upstream business continues to deliver results operationally through strategic and decisive measures. We adopted digitalisation and technology in the way we work to deliver business excellence. We reduced costs and maintained liquidity, strengthening our portfolio by encouraging more value-driven exploration and development of discovered resources to promote a vibrant oil and gas landscape.

Key Priorities and Results

Key Priorities

Sustainable Supply

- Ensured a sustainable supply of energy to stakeholders.

Capitals Deployed:   

Results

- Recorded a total daily production average of 2,275 thousand barrels of oil equivalent (boe) per day.
- Achieved first hydrocarbon for 21 projects – 14 in Malaysia (12 Brownfield, 2 Greenfield) and 7 abroad – 2 Greenfields (in Turkmenistan and Brazil), 5 Brownfields (2 in South Sudan, 1 in Chad, 1 in Myanmar and 1 in Indonesia).
- Achieved Final Investment Decision (FID) for 22 projects; in Malaysia (18), Indonesia (2), Brazil (1) and Turkmenistan (1).
- A total of 10 exploration discoveries were made in 2021 of which eight discoveries contributed to our resource addition, namely in Malaysia, Indonesia and Brunei.
- Signed seven Production Sharing Contracts (PSCs) in Malaysia, attracting four new investors.
- Awarded six of the 13 offshore exploration blocks offered in the Malaysia Bid Round (MBR) 2021. MBR is an annual Malaysia licensing round hosted by MPM which offers investors diverse upstream opportunities.

Portfolio Expansion

- Grew business portfolio as part of our global strategy.

Capitals Deployed:  

- Expanded footprint in Brazil with the acquisition of the Sépia field, located in the Santos Basin. This marks PETRONAS Petróleo Brasil Ltda's entry into the prolific basin, strengthening its ventures in the country and presence in the Americas.
- Secured a 20-year extension for the Jabung Production Sharing Contract. With the extension, PETRONAS Carigali (Jabung) Ltd. will continue to add value to Indonesia's energy industry and grow its business portfolio in the region.
- Acquired 10 per cent participating interest from JAPEX Montney Ltd in the North Montney Joint Venture (NMJV), bringing PETRONAS Energy Canada Ltd's interest to 72 per cent, up from 62 per cent.
- Signed the Block 29 Production Sharing Contract in Angola, which expands our presence in West Africa.
- Signed a Multi-Well Participation Agreement with Chevron USA Inc for participation in exploration acreages in the US Gulf of Mexico, in line with PETRONAS' continuous efforts to explore opportunities in the Americas.

Business Review

Key Priorities

Technology-Driven Operational Excellence

- Leveraged technology, digitalisation, and intelligent facilities to reduce costs and increase productivity and efficiency to drive informed decision-making.
- Harnessed data to gain integrated, end-to-end visibility across key markets and data centres for better decision making on new discoveries and new block acquisitions.

Capitals Deployed:  

Results

- Gained incremental production of 1,320 thousand barrels of oil equivalent per day (boe/d) from Brownfields via Digital Fields solutions that unlocked production enhancement opportunities leveraging on artificial intelligence and machine learning technologies.
- Achieved cost avoidance of RM17.5 million in production maintenance and drilling operations through execution of predictive maintenance and machine learning technologies across Malaysia Assets namely Baronia, Baram, D35 and Angsi.
- Enabled 30 per cent process efficiency improvement at Dulang, Belud, PC4, Baronia, Tukau Timur and PM Gas fields via a cloud-based Software as a Service (SaaS) solution with LiveFDP that allows secured data accessibility to users.
- Implemented non-intrusive inspection of TharJath export pipeline using Magnetic Tomography Method (MTM) technology for Sudd Petroleum Operating Company (SPOC) which lowered the risk of pipeline failure and shortened the duration of inspection campaign compared to conventional methods. This resulted in a safe production resumption, six weeks earlier than scheduled.
- Replication of Physical Asset Management (PAM) digital solutions such as PROTEAN (real time alerts), VINCI (digital inspection reporting), SICS (digital risk ranking and prioritisation) in Turkmenistan and Iraq operations enabled for faster, accurate and transparent decision making, which improves overall process cycle efficiency.



Business Review

Key Priorities and Results

Key Priorities

Health and Safety

- Robust management of COVID-19 cases among employees and contractors to ensure business continuity at our areas of operations.
- Fostered Generative HSE Culture at all our areas of operations.

Capitals Deployed:

Sustainability

- Operational Excellence and Collaboration to lower overall carbon footprint.

Capitals Deployed:

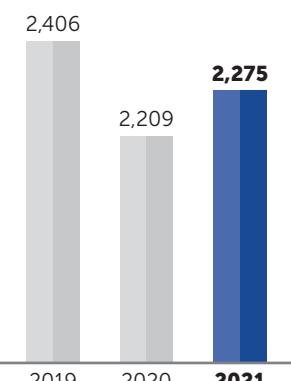
Results

- Introduced the My Personnel e-Tracker (MyPeT) app, designed for more than 10,000 oil and gas personnel in Malaysia. The app allows for real-time check-in and tracking of COVID-19 vaccination and health status from embarkation to disembarkation points at various offshore locations in the country.
- Recorded the best HSE performance in terms of major HSE incidents in five years.
- PETRONAS Carigali Sdn Bhd received 15 Gold Merit Awards and six Gold Class 1 Awards at the 39th Malaysian Society for Occupational Safety & Health Award ceremony for its HSE performance.

- Completed eight GHG emissions reduction projects estimated to reduce GHG emissions by 3.83 million tonnes of carbon dioxide equivalent (tCO₂e) annually from Upstream operations in Malaysia with an estimated value creation of RM161 million per annum. This includes the integrated Bokor-Betty project, located off the coast of Sarawak, which achieved zero continuous flaring of hydrocarbon while monetising the recovered flared and vented gases.
- Signed three agreements with industry partners to explore carbon capture and storage technologies as well as carbon dioxide (CO₂) storage solutions to decarbonise Malaysia's upstream sector and provide CO₂ storage solutions for the region. The partners are ExxonMobil Exploration and Production Malaysia Inc, Sarawak Shell Berhad and POSCO International Corporation and POSCO Engineering & Construction Co Ltd.

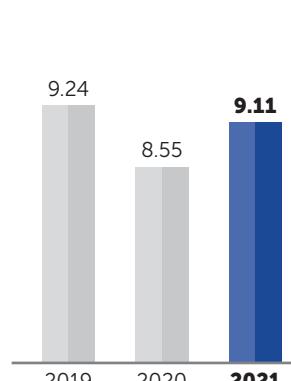
Performance Highlights and Achievements

Total Daily production average (boe) thousand per day



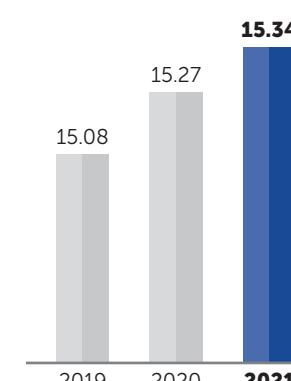
Year	Total Daily production average (boe) thousand per day
2019	2,406
2020	2,209
2021	2,275

Total Petroleum Reserves (2P) (Bboe)



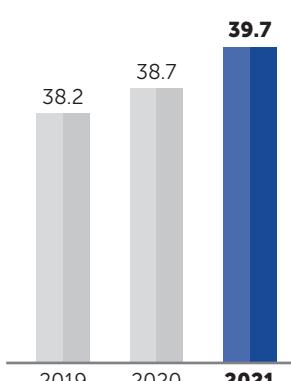
Year	Total Petroleum Reserves (2P) (Bboe)
2019	9.24
2020	8.55
2021	9.11

Total Contingent Resources (2C) (Bboe)



Year	Total Contingent Resources (2C) (Bboe)
2019	15.08
2020	15.27
2021	15.34

3-year average Overall (2P + 2C) Resources Life Index (ORLI) (years)



Year	3-year average Overall (2P + 2C) Resources Life Index (ORLI) (years)
2019	38.2
2020	38.7
2021	39.7

Note:

- Reserves and Contingent Resources volumes based on a new gas to oil-equivalent conversion factor of 5,650 scf = 1 boe. The new conversion factor results in an approximately 5 per cent increase in Reserves and Contingent Resources volumes across all levels of uncertainty.

Business Review

Value Created for Stakeholders

Stakeholder	Expectations	Value Created
Government 	Malaysia <ul style="list-style-type: none"> Maximise long-term value of the nation's oil and gas resources. International host authorities <ul style="list-style-type: none"> Development of host nation's oil and gas industry. 	<ul style="list-style-type: none"> Spearhead the growth and development of Malaysia's exploration and production (E&P) industry towards maximising the value of the country's hydrocarbon resources whilst ensuring sustainable energy security. Promote Malaysia as an investment destination to grow energy portfolio with the right infrastructure and attractive opportunities via the annual Malaysia Bid Round. Contribution to host countries through our commitment to deliver safe energy supply as well as socio-economic development by creating job opportunities and upskilling of the workforce via training programmes.
	<ul style="list-style-type: none"> Healthy return on investments. 	<ul style="list-style-type: none"> Facilitate and champion industry-wide collaboration with the industry players including the government bodies to ensure business continuity post pandemic recovery and production sustained for year 2021 in a prudent and safe manner for people, facilities and the environment. Significant enhancements in the Malaysia Bid Round 2021, both in fiscal and non-fiscal of the PSC terms, designed to match the risk and rewards of the investments with the type of assets available.
Petroleum Arrangement Contractors 	<ul style="list-style-type: none"> Monetisation of oil and gas discoveries. 	<ul style="list-style-type: none"> Leveraging on our fully integrated value chain to meet with customers' demands and expectations. Adopt innovative technical and commercial solutions to enable monetisation of resources and to prolong the economic life of fields. Implement measures to lower cost and promote efficiency in operations. Proven track record of prudent financial management. Implementation of HSE measures and standards at our operations to ensure safety of personnel.
Partners 	<ul style="list-style-type: none"> Corporate Social Responsibility initiatives to support community development. 	<ul style="list-style-type: none"> We have invested in programmes designed to promote and support health, environment, education and social welfare initiatives in our areas of operations. Examples: <ul style="list-style-type: none"> COVID-19 contribution in both our domestic and international operations amounted to RM1.2 million. PETRONAS Carigali Sdn Bhd (PCSB) planted 500 saplings in Kerteh, Terengganu and 300 saplings in Miri, Sarawak, as part of PETRONAS Sentuhan Alam mangrove rehabilitation programme. PCSB also contributed fire extinguishers, safety helmets, life jackets, floating rope and safety boats to the villagers in Sabah as part of the Community Emergency Response Team programme for safety awareness. PETRONAS Carigali Brunei Ltd sponsored and organised the PETRONAS School of Life Programme aimed at educating the youth in Brunei on essential life skills beyond the classroom. As part of PETRONAS Carigali Iraq Holding B.V. (PCIHBV)'s commitment to the social well-being of the Republic of Iraq, PCIHBV together with its partner refurbished two schools at the Garraf Contract Area. PETRONAS Carigali Nile Ltd completed Water for Life project for Nyakuron West, Juba, South Sudan. The project aims to provide clean water to the community in the area.
Communities 	<ul style="list-style-type: none"> Opportunities to upskill themselves. 	<ul style="list-style-type: none"> Upstream continuously upskills all of its employees with the right training to improve their capabilities according to their skill groups (Technical and Business).
Employees 		

Business Review

Risks and Opportunities

Risks	Opportunities	Actions Taken	Results
<ul style="list-style-type: none"> Energy transition coupled with COVID-19 pandemic. 	<ul style="list-style-type: none"> Leveraged digitalisation and technological innovation. Collaborated with industry partners and solution providers. 	<ul style="list-style-type: none"> Focused on cost optimisation for both CAPEX and OPEX to maintain our resilience and competitiveness through technical, commercial and operational excellence. Pursued strategic assessment on investment and acquisition globally to align with our growth agenda. Carried out phased initiatives to reduce emissions in keeping with our NZCE 2050 aspiration. 	<ul style="list-style-type: none"> Paved the way for strict liquidity management and financial disciplines which contributed to cost containment and successful cash repatriations in 2021. Acquisition of new assets globally in strengthening PETRONAS' presence in Brazil, US Gulf of Mexico, Angola and Indonesia. Completed eight GHG emissions reduction projects, which is estimated to reduce 3.83 million tCO₂e of GHG emissions from offshore operations. Improved production output, increased operational efficiency and cost savings through digitalisation and technology such as machine learning, artificial intelligence, Open Subsurface Data Universe (OSDU), and the cloud-based Software as a Service (SaaS) solution. Three agreements were signed to collaborate on CCS technologies as well as CO₂ storage solutions to decarbonise the country's upstream sector and provide CO₂ storage solutions for the region, namely Memorandum of Understanding (MoU) with POSCO International Corporation and POSCO Engineering & Construction Co Ltd, MoU with ExxonMobil Exploration and Production Malaysia Inc.

Business Review

Moving Forward

Throughout 2021, the upstream business experienced volatility due to the pandemic and geopolitical tensions that disrupted output from key producers. In 2022, the adoption of cleaner alternatives is expected to accelerate, given growing calls to decarbonise the sector.

Production is expected to increase as governments worldwide focus on increasing the security of energy supply.

Upstream will continue to execute its plans anchored on making sure our business is safe, resilient, low cost and low carbon.

Moving forward into 2022, our key focus areas include:

- **Malaysia**

Our plan to revitalise Malaysia's E&P landscape remains imperative in ensuring continued growth and to make Malaysia a home for dynamic and robust investors. Focused efforts such as the Malaysia Bid Rounds would offer investors attractive exploration blocks and discovered fields, with innovative fiscal terms. In addition to these efforts, Late Life Assets and Small Field Assets are being effectively managed through technocommercial solutions with simplified processes and governance.

- **International**

- **Canada**

PETRONAS has a unique integrated position in Canada that allows maximising our value from Upstream production to LNG markets. Moving forward, PETRONAS will continue focusing on monetising its competitive resources while leveraging on the growing gas demand markets in North America and globally.

- **Mexico and Brazil**

We will pursue and realise material growth in Mexico and Brazil by focusing on exploration activities with a clear path to monetisation to build a value driven portfolio. Key efforts are being put in place to realise planned resource addition while we continue to be a safe operator and partner, leveraging on our synergy with partners and host authorities.

- **Carbon management**

In delivering the aspiration towards a low carbon Upstream business, the establishment of a centralised Carbon Management Division (CMD) shall drive carbon capture and storage and physical decarbonisation at pace. This is in alignment with PETRONAS' NZCE 2050 aspiration to maximise value while executing sustainable production through physical decarbonisation of Upstream activities, monetising resources from high carbon dioxide fields and delivering carbon dioxide storage facilities. Additionally, CMD is empowered to deliver carbon capture and storage business to generate new revenue for Upstream and PETRONAS.

- **Technology and digitalisation**

There will be continued focus and investments being placed on key technologies to further compress cost while maintaining asset integrity and reliability. This includes the development and adoption of robotic inspection tools, online sensors, and advanced materials as part of the new way of working in Upstream.

The development of new competitive advantages is being supported through rigorous R&D efforts and digitisation of the Upstream ecosystem to help address the pain points and achieve higher operational efficiency. We are determined to create an agile, secure and trusted digital ecosystem that is fundamental to the new way of working in a data-driven organisation.



Business Review



Gas + New Energy

Business Review



Adnan Zainol Abidin

Executive Vice President and
Chief Executive Officer,
Gas + New Energy

"To meet the growing demand as economies reopened in 2021, Gas + New Energy (G+NE) adapted to the changing landscape to deliver flexible and tailored solutions for our customers. This resulted in G+NE recording a solid financial and operational performance in 2021, backed by favourable Liquefied Natural Gas (LNG) and sales prices.

We achieved this by fulfilling our role as a one-stop centre for cleaner energy solutions, providing customers with a reliable supply of LNG, renewables, and hydrogen. Additionally, we are accelerating digitalisation to provide optimised and efficient solutions across our integrated gas value chain. G+NE plays a pivotal role in delivering low-to-zero carbon energy that enables sustainable business growth for our customers while progressing with the decarbonisation of our operations."

Gross LNG sales of

32.7 MMT



Close to

1 GW

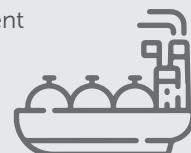
of solar capacity in
operation and under
development



Overall Overall Equipment
Effectiveness (OEE) of

98.1%

for onshore gas and
offshore floating LNG plants



Delivered

**5 Carbon
Neutral**

LNG cargoes to China and Japan



960

Completed Virtual Pipeline
System and LNG bunkering deliveries across
Malaysia and

2,026

LNG in ISO tanks to China



6.69 MTPA

of LNG sales concluded



697 MMscfd

of natural gas deals secured



Business Review

What We Do

G+NE's portfolio underscores our commitment as a cleaner energy solutions partner. It reflects our support for the global energy transition that has accelerated the shift from fossil-based to lower carbon-based sources. As part of the Group's aspirations to meet the growing demand for cleaner energy and realise a low carbon future, G+NE provides a wide range of low-to-zero carbon-based energy sources. In this regard, G+NE powers businesses while ensuring a sustainable future for customers and society at large by growing our position in the natural gas, renewables, and hydrogen businesses. This allows PETRONAS to be a partner in enabling our customers to undertake their energy transition plan.

With the increased momentum of the energy transition, G+NE aims to provide long-term value creation and profitable growth for PETRONAS and its partners by focusing on sustainability, customer-centricity, operational and commercial excellence, supported by the right talent, culture and digital innovations.

With business presence across 12 countries and over 4,000 employees globally, G+NE serves as PETRONAS' one-stop centre for cleaner energy solutions and is a crucial enabler in realising PETRONAS' net zero carbon emissions by 2050 (NZCE 2050) aspiration.

Our Businesses and Key Focus Areas

LNG

- Expand and create markets through customer-centric solutions.
- Maximise production from existing assets through East Malaysia gas development.
- Expand footprint by securing new markets for North America supply portfolio.

Gas and Power

- Maximise position in domestic market.
- Sustain operational excellence.
- Pursue growth in domestic and emerging markets.

Hydrogen

- Capture opportunities to generate revenue streams.
- Co-create the market for hydrogen as the future fuel of choice.

New Energy

- Expand business presence in Malaysia.
- Enter and expand the Asia Pacific portfolio in solar and wind.
- Enhance our business presence in India by developing new solutions and securing contracts for energy storage/hybrid solutions.



Business Review

Key Priorities and Results

Key Priorities

Operational Excellence

- Provide reliable gas supply through top quartile operational performance.
- Strengthen position as a one-stop centre for cleaner energy solutions.

Capitals Deployed:



Results

- Achieved Gross LNG sales of 32.7 MMT.
- Achieved overall OEE of 98.1 per cent for onshore gas and offshore floating LNG plants in Malaysia.
- Gas processing business achieved OEE of 99.7 per cent for ethane, propane and butane respectively.
- Emerged as the first global energy company to produce LNG from two floating facilities – first LNG production and cargo delivery by PFLNG Dua.
- PETRONAS' first FLNG, PFLNG Satu, produced its 50th LNG cargo.

Customer-Centricity

- Provide innovative and customised solutions to meet customers' energy demand.
- Collaborate with industry players to explore possibility in co-creating innovative and customer-centric solutions.
- Pursue integrated small-scale solutions in Southeast Asia to enhance accessibility of natural gas to various industries.

Capitals Deployed:



- Concluded five carbon-neutral LNG deals with China's Shenergy Group Company Limited (Shenergy) and Japan's Hiroshima Gas and Shikoku Electric.
- Completed 960 Virtual Pipeline System (VPS) and LNG bunkering deliveries across Malaysia and 2,026 cryogenic-fitted ISO tanks of LNG to off-grid customers in China and enabled access to clean energy.
- Performed the first LNG bunkering operation via LNG Bunker Vessel, MV Avenir Advantage, in Port Klang, Selangor. Conducted the first LNG bunkering operation in Sabah for HL Green, the world's largest 180,000-tonne LNG-powered vessel.
- Introduced Canada Alberta Energy Company (AECO) Index to offer customers a competitive pricing structure.

Business Review

Key Priorities and Results

Key Priorities

Growth Delivery Excellence

- Explore opportunities to increase LNG market share.
- Develop new LNG projects.
- Expand supply nodes to strengthen ability to serve market demands.
- Strengthen position as the nation's leading gas infrastructure and centralised utility company.
- Strengthen New Energy's business presence in renewable energy internationally and domestically.
- Offer flexible generation and delivery solutions to strengthen our position as an end-to-end renewable energy solutions provider.
- Collaborate with industry players and government agencies to build nationwide hydrogen supply chain capabilities, capacity and infrastructure.
- Capture opportunities to emerge as a hydrogen producer through critical projects.

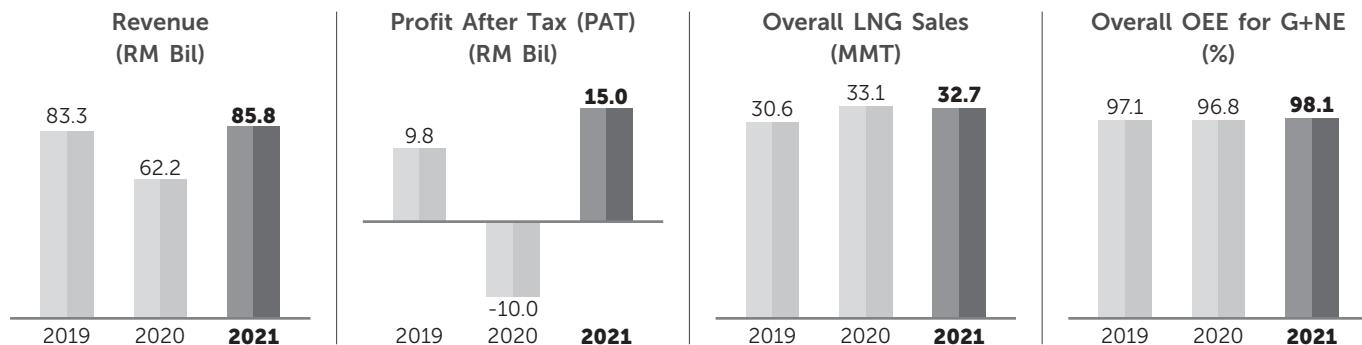
Capitals Deployed:   

Results

- Entered into a 10-year deal with CNOOC Gas and Power Trading & Marketing, a subsidiary of CNOOC, to supply 2.2 MTPA of LNG.
- Concluded a 0.36 MTPA of LNG deal with Mercuria.
- Awarded Front End Engineering Design (FEED) contracts for the development of nearshore LNG project in Sabah.
- Initiated the following growth projects:
 - 42 km lateral gas pipeline extension project to the new power plant in Pulau Indah, Selangor.
 - Project to expand Southern Peninsular Gas Utilisation (PGU) delivery capacity through the installation of gas compressor station in Kluang, Johor.
 - Executed the Southern PGU debottlenecking exercise to meet higher pressure requirements in Segamat, Johor.
- Successfully commissioned the following solar projects:
 - MMHE in April 2021 with 8.3 MW capacity.
 - Lotus's Phase 1 in December 2021 with 10.8 MW capacity.
 - Project Neo (India) in January 2021 with 75 MW capacity.
 - Project Matahari (India) in July 2021 with 48 MW capacity.
 - Expanded our footprint in the Middle East with successful and timely commissioning of the first Commercial and Industrial (C&I) project in Dubai.
- Pursued collaboration with the following partners to grow RE industry:
 - Signed Memorandum of Understanding (MoU) with Institut Teknologi Petroleum PETRONAS (INSTEP) in March 2021.
 - Expanded partnership in Asia Pacific via signing of MoU with Abu Dhabi National Oil Company (ADNOC) and Masdar in March 2021.
- Delivered PETRONAS' first Battery Energy Storage System (BESS) with 1 MW standalone storage for Amazon (India).
- Project Yelo, powered by Amplus, expanded its fleet of electric vehicles (EV) for cargo delivery to two more cities, Hyderabad and Pune. Currently, it has 14 hubs across India that provide EVs for clients such as Amazon, Flipkart, and Big Basket.
- Embarked on a technical-commercial joint-study of a hydrogen supply chain to explore other hydrogen opportunities via a partnership with ENEOS Corporation.
- Entered into an MoU with JERA Co., Inc. to collaborate on ammonia and hydrogen supply chains.
- Participated in the Government's initiative through collaboration with the Economic Planning Unit (EPU) to develop clear targets and policies for the National Energy Policy and the Natural Gas Roadmap, which aim to provide the optimal balance of energy equity, security and sustainability for Malaysia.

Business Review

Performance Highlights and Achievements



Value Created for Stakeholders

Stakeholder	Expectations	Value Created
 Customers	<ul style="list-style-type: none"> Reliable, affordable and customer-centric solutions that contribute to their green agenda. 	<ul style="list-style-type: none"> Delivered more than 12,000 LNG cargoes to customers around the world from PETRONAS LNG Complex (PLC). Delivered innovative solutions such as VPS and ISO tanks to off-grid customers in Malaysia and China to enable greater access to cleaner energy. Offered carbon-neutral LNG as part of cleaner energy solutions to help customers achieve their sustainability aspirations. First in Southeast Asia to offer LNG as a cleaner marine fuel via LNG bunkering solution.
 Government and Regulators	<ul style="list-style-type: none"> Security and reliability of gas supply to power the nation. Safety and reliability of gas and power plant operations and impact on the surrounding communities. Promote usage and provide greater access to renewables to support the country's sustainability agenda. 	<ul style="list-style-type: none"> Continued to expand natural gas delivery network throughout Peninsular Malaysia. Ensure safe, reliable and efficient operations across all facilities. Collaborated with government agencies to build Malaysia's Hydrogen and RE industry as well as reduce carbon dioxide (CO₂) emissions domestically.
 Communities	<ul style="list-style-type: none"> Corporate Social Responsibility (CSR) initiatives that will create positive impact to the environment and community at large. 	<ul style="list-style-type: none"> Implemented Rays of Hope, a G+NE Signature CSR project to power homes of <i>Orang Asli</i> (indigenous peoples of Malaysia) and community centres with clean energy. Introduced CSR initiatives focusing on education, environment and community outreach: <ul style="list-style-type: none"> Back-to-School programmes under PETRONAS Sentuhan Ilmu. Sayangi Sungai Latoh mangrove planting in Johor under PETRONAS Sentuhan Alam. Outreach programmes to foster good relationship with the community.

Business Review

Risks and Opportunities

Risks	Opportunities	Actions Taken	Results
<ul style="list-style-type: none"> Energy transition accelerated by COVID-19. Highly volatile and competitive market. 	<ul style="list-style-type: none"> Collaborate with key stakeholders and customers to maintain our business competitiveness and ensure business goals are achieved. Leverage digital and technology to enhance business operations and innovate to meet customers' demands. 	<ul style="list-style-type: none"> Offered a suite of customer-centric offerings to meet customers' differing needs. Focused on cost optimisation for CAPEX and OPEX to maintain our business' resilience and competitiveness. Embarked on new projects to strengthen our position as a global LNG producer and natural gas supplier in Peninsular Malaysia. Continued to expand our RE business to provide greater access to clean energy in support of energy transition. Pursued collaboration with potential partners to offer hydrogen as an alternative form of clean energy. 	<ul style="list-style-type: none"> Concluded 6.69 MTPA of new LNG sales to customers in Japan, South Korea, China and Indonesia. Deployed large-scale LNG ISO Tank deliveries to inland China by working with our partner, Tiger Clean Energy, to enable greater access to inland China. Achieved Profit After Tax (PAT) of RM15 billion and maintained high level of OEE at 98.1 per cent. Dual FEED contracts for Sabah nearshore LNG were awarded timely and received full support and commitment from Sabah State agencies for the project to further mature. Development of 42 km gas pipeline project in Pulau Indah, Selangor. Debottlenecking of Southern gas pipeline in Peninsular Malaysia to meet increasing demand. Construction of a new gas compressor station in Johor. Expanded utilities contract to supply electricity to KANEKA, renewed contact with PETRONAS Chemicals Group Berhad (PCG) and its subsidiaries for the next 20 years. Strengthened NE portfolio with the commissioning of four new Amplus projects. Diversified revenue to the Middle East with the first RE project. Delivered PETRONAS' first Battery Energy Storage System (BESS) with 1 MW standalone storage for Amazon (India). Secured two new contracts in Malaysia and expanded into new cities in India (Hyderabad and Pune) via Yelo. Initiated four Hydrogen projects in Malaysia (Kerteh, Terengganu and Bintulu, Sarawak) which are currently in FEL studies. Signed MoUs with key partners in Japan (ENEOS and JERA) and domestically (Sarawak Energy Berhad).

Business Review

Moving Forward

As the world moves towards a low carbon future, natural gas and LNG continue to play an important role within the energy mix, alongside renewable energy. It provides a reliable and flexible lower carbon energy supply, thus complementing renewable energy. As PETRONAS' one-stop-centre for cleaner energy solutions, G+NE is well-positioned to meet the changing energy demands by providing a diverse range of cleaner energy solutions.

Key focus areas for G+NE in 2022:

- **Maximise value via LNG and domestic gas sales**

With the expected increase in global demand for LNG and domestic gas, G+NE seeks to maintain market leadership by leveraging its global LNG portfolio, world-class operations and customer-centric solutions. G+NE continues to build its LNG portfolio through LNG Canada and Sabah's first nearshore LNG facility. For domestic gas, G+NE is engaging various government agencies and authorities to secure the approval of Regulatory Period 2 (RP2) tariffs for PGU and regasification terminals (RGT) to ensure sustainable returns for our assets.

- **Expand market reach through customised solutions**

G+NE seeks to meet growing demand from new customer segments and smaller-scale natural gas customers. In this regard, G+NE is expanding its VPS, LNG bunkering and LNG in ISO tanks solutions to increase accessibility to natural gas. Plans are also in place to venture into the power generation business in emerging markets.

- **Pursue lower carbon customised solutions**

G+NE continues to expand in renewable energy spaces, focusing on solar, wind and energy storage. Furthermore, G+NE is also building its Hydrogen business with the aspiration to make Malaysia an important hydrogen energy hub within the region.

- **Advocate for the benefits of gas and renewable energy**

In supporting Malaysia's energy transitions target, we worked closely with policymakers to create the right regulatory environment, backed by a proper fiscal regime. Given our long-standing experience in the industry, we will continue to support Government initiatives such as Malaysia's Natural Gas Roadmap, and the Malaysia Gas Hub Study.



Business Review



Downstream

Business Review



Datuk Sazali Hamzah

Executive Vice President and
Chief Executive Officer,
Downstream

"In 2021, Downstream business continued to be challenged by a rapidly evolving industry, shaped by the onset of digitalisation, disruption from new technologies and economic uncertainties. Against this backdrop, we took decisive and strategic measures to ensure the resilience of our business, guided by our strategic pillars: Operational Excellence, Commercial Excellence and Growth Delivery.

We executed our strategies in an agile manner, improving overall efficiency to further unlock value from our core business while innovating sustainable and customer-centric solutions to generate new revenue streams. We optimised on the interplay between various technologies to sharpen our competitive advantage, while closely monitoring changes within the volatile industry. Overall, I am grateful for our team's resilience amid new challenges and their dedication in sharing their unique talents to support the growth of the business."

Downstream Overall Equipment Effectiveness (OEE)

93.3%



Downstream Reliability

96.6%



Petrochemical Plant Utilisation (PU)
(Nexant)

92.6%



Achieved petroleum product sales volume of

262.4
million barrels



Business Review

What We Do

PETRONAS' Downstream businesses encompass a diverse set of activities to enhance the value of our petroleum resources, transforming it into high-quality, value-added products available in over 90 markets across Asia-Pacific, Central Asia, the Middle East, Africa, Europe and the Americas.

Downstream's activities include:

- Refining with a capacity of 700 kilobarrels per day (kbpd).
- Marketing and trading of crude oil and petroleum products.
- Manufacturing and marketing of petrochemical products including polymers, fertilisers, methanol, other specialty chemicals and derivative products.
- Supplying marine solutions including LNG bunkering, sulphur fuel oils, marine gas oil and lubricants.



Leveraging digital technology, advanced infrastructure and robust strategies, the Downstream business remains committed to continue providing innovative, sustainable and customer-centric products and services. We will continue to enhance our operational and commercial excellence while simultaneously diversifying and expanding our portfolio towards becoming an agile business and preferred solutions partner worldwide.

Key Priorities and Results

Key Priorities

Operational Excellence

- Sustained safe, stable, and efficient operations at all operating units.

Capitals Deployed:   

Commercial Excellence

- Increased efficiency and captured bigger margins by optimising delivery.
- Expanded core business to create long-term value and new revenue streams.

Capitals Deployed:   

Results

- Achieved an Overall Equipment Effectiveness (OEE) rate of 93.3 per cent for Downstream business.
- Maintained petrochemicals Plant Utilisation (PU) (Nexant) rate at 92.6 per cent.
- Recorded annual petrochemicals production volume of 10.4 million metric tonnes.

- Achieved petrochemicals product sales volume of 8.2 million metric tonnes, sustaining the achievement from the previous year.
- Achieved petroleum product sales volume of 262.4 million barrels, a 0.6 million barrel increase from 2020.
- Achieved overall marketing sales volume of 21.2 billion litres from PETRONAS Dagangan Berhad (PDB), Engen Petroleum and PETRONAS Lubricants International (PLI), a 200 million litre increase from 2020.
- Reshaped portfolio mix to ensure high value returns with focus on non-fuel business and specialty chemicals.

Business Review

Key Priorities and Results

Key Priorities

Portfolio Expansion

- Identified and ventured into new businesses with high growth potential.
- Expanded non-fuel business in domestic marketing.
- Strengthened position in sustainable solutions for greener mobility and commercial aviation.
- Continued growth in specialty chemicals segment.

Results

- Acquired D-Two Couriers Sdn Bhd in a move to accelerate PDB's strategic expansion into e-commerce delivery service.
- Launched Segar@Mesra in collaboration with the Ministry of Domestic Trade and Consumer Affairs, and Ministry of Agriculture and Food Industries to bring locally farmed fresh produce to *Kedai Mesra* at affordable prices.
- Signed an MoU with Mercedes-Benz Malaysia and EV Connection Sdn Bhd to deploy DC Fast electric vehicle (EV) chargers at five PETRONAS stations by 1H2022, providing faster EV charging coverage in strategic locations for long distance travel.
- Achieved milestone with first Malaysia Airlines flight fuelled by sustainable aviation fuel (SAF), supplied by PDB in collaboration with PETCO Trading (UK) Ltd, Malaysia Aviation Group and Neste.
- Established the largest and most accessible network for Euro 5 compliant diesels in Malaysia with three biodiesel blends of PETRONAS Dynamic Diesel Euro 5 with Pro-Drive to provide drivers access to cleaner fuel options with a smaller carbon footprint.
- Commenced construction on new oxyalkylates plant at the Kerteh Integrated Petrochemical Complex, Terengganu via PETRONAS Chemicals Group Berhad (PCG)'s PCC Oxyalkylates Sdn Bhd to produce ethoxylates and polyether polyols, with commissioning scheduled for 2023.
- Commenced commercial operations at BRB International's 8,000 tonnes per year silicone blending facility in Gebeng, Pahang, to manufacture cosmetic grade silicone gum blend, as well as technical and food grade silicone emulsion and silicone antifoam for the Asia-Pacific and Middle East-Africa regions.
- Invested in the world's first direct conversion of high-purity Bio-Monoethylene Glycols (Bio-MEG), a by-product of palm biomass.
- Conducted PETRONAS Marine's first LNG bunkering in Port Klang, Selangor and Port of Sandakan, Sabah to provide cleaner source of fuel in support of the International Maritime Organization's sulphur limit for ships' fuel oil (IMO 2020).
- Doubled the paddy yield and income of 68 farmers in Kedah through the Paddy Integrated Smart Farming Project in collaboration with National Farmers Organisation, Braintree Technologies Sdn Bhd and Social Enterprise Education Lab (SEEd.Lab), an innovation hub powered by PETRONAS Downstream. The project introduced the new Enhanced Efficiency Fertiliser (EEF), drone technology and paddy planting standard operating procedures to deliver the improved results.

Capitals Deployed:  

Health and Safety

- Sustained a culture of health and safety awareness at all businesses and operations, including consumer touchpoints.

Capitals Deployed:  

- Recorded zero major fire incidents and fatalities across Downstream's operations.
- Advocated a safety-first mindset to consumers via PDB's Consumer Safety Campaign in collaboration with the Ministry of Domestic Trade and Consumer Affairs.
- Promoted the Setel® app to encourage safer transactions among customers with minimal physical touchpoints.

Business Review

Key Priorities and Results

Key Priorities

Digitalisation

- Institutionalised a culture of innovation.
- Promoted enterprise-wide technology-digital transformation.

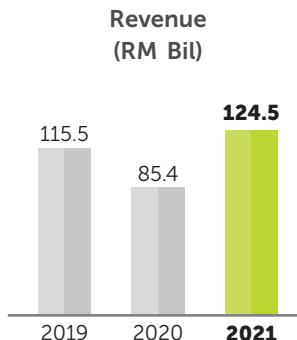
Capitals Deployed:  

Results

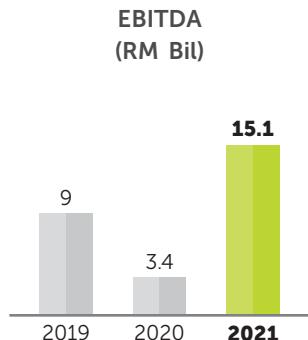
- Collaborated with Amazon Web Services (AWS) to customise Innovation Engine programmes to drive innovation.
- Harnessed data, advanced artificial intelligence (AI), analytics and machine learning technologies to inspire innovation, experimentation and scaled solutions.
- Enhanced end-to-end data visibility across the value chain via Enterprise Data Hub, with 70 Downstream operating units (OPUs) signing the Group Data Liberalisation Agreement.

Performance Highlights and Achievements

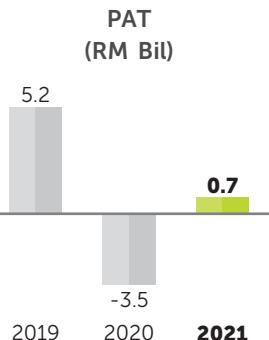
Revenue
(RM Bil)



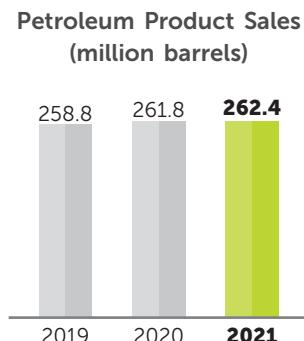
EBITDA
(RM Bil)



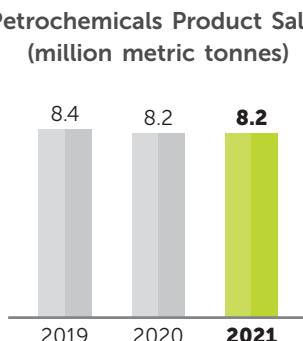
PAT
(RM Bil)



Petroleum Product Sales
(million barrels)



Petrochemicals Product Sales
(million metric tonnes)



Business Review

Value Created for Stakeholders

Stakeholder	Expectations	Value Created
 Customers	<ul style="list-style-type: none"> Products and solutions that are sustainable and innovative. 	<ul style="list-style-type: none"> Introduced sustainable and innovative solutions via Setel® and the greater Setel® ecosystem, ROVR, Segar@Mesra, Makan@Mesra, EV chargers and e-fluids (PETRONAS iona) and sustainable aviation fuel (SAF). Expanded into specialty chemicals. Diversified product offerings with bio-based and circular economy portfolios, such as Bio-MEG. Enhanced packaging design for marketing products to use 15 per cent less plastic.
 Employees	<ul style="list-style-type: none"> Relevant training and capability development opportunities. 	<ul style="list-style-type: none"> Enhanced Agile practices through new training modules, coaching enablement and Agile Enterprise team setup. Developed PETRONAS Working Backwards in collaboration with AWS to enhance innovation capabilities.
 Government and Regulators	<ul style="list-style-type: none"> Adhere to rules and regulations set by local and foreign authorities in countries we operate in. Ensure zero non-compliances to laws and regulations. 	<ul style="list-style-type: none"> Strengthened regulatory collaborations for better market growth. Ensured good governance in the local oil and gas industry.
 General Public	<ul style="list-style-type: none"> Social impact initiatives to support community operations. Platforms and support for education and career enhancement. 	<ul style="list-style-type: none"> Provided platform for social enterprises to address social pain points via SEEEd.Lab to positively impact communities. Amplified Food Bank Programme at over 400 PETRONAS stations to benefit Malaysians affected by the COVID-19 pandemic. Championed the Love Local programme to create greater awareness of local brands in support of small and medium enterprises (SMEs) with Kedai Mesra as a platform. Conducted nine webinar sessions nationwide through the Plastic, Sustainability & You Education (PSYE) programme, involving 130,000 teachers, students, government officers, industry players, the public and internal PETRONAS employees. The webinars aim to accelerate circular economy in Malaysia and educate the audience on sustainable and responsible plastic production and consumption. Supported the Imbumba Foundation's Caring4Girls initiative which saw 11,402 sanitary towels distributed to female learners in 22 schools located close to Engen's facilities in Mpumalanga, Limpopo, North West Province, Free State and KwaZulu-Natal.

Business Review

Risks and Opportunities

Risks	Actions Taken	Results
<ul style="list-style-type: none"> Energy transition accelerated by the COVID-19 pandemic. Continued challenging outlook in the energy industry. Need to future-proof business through diversification of portfolios in view of continued challenging outlook in the energy industry. 	<ul style="list-style-type: none"> Commenced commercial operations for BRB International (a wholly-owned subsidiary of PCG's silicone blending plant in the vicinity of PCG's petrochemical complex in Gebeng, Pahang, to strengthen our footing in specialty chemicals. Incorporated LG PETRONAS Chemicals Malaysia Sdn Bhd for nitrile butadiene latex (NBL) plant in Pengerang, Johor; began business and operation readiness activities, as well as ongoing recruitment. Invested in the world's first direct conversion of high-purity Bio-MEG, a renewable by-product of palm biomass. 	<ul style="list-style-type: none"> BRB became the first and only producer of silicone antifoam in Southeast Asia. Targeted to achieve 8,000 tonnes per year production capacity for cosmetic grade silicone gum blend, as well as technical and food grade silicone emulsion and silicone antifoam for the Asia-Pacific and Middle East-Africa regions. Expected annual NBL capacity to reach 200,000 tonnes upon plant completion in 2023 to capture increased demand for medical, critical appliances, and Personal Protective Equipment (PPE). Achieved first drop of Bio-MEG product from the pilot plant and continued to evaluate the technology for commercial scale. Paved the way to provide sustainable solutions for customers in packaging, textile, automotive and electronics industries.
Opportunities		
<ul style="list-style-type: none"> Growing middle income market segment in the Asia-Pacific region. Increased demand for lower carbon solutions as international organisations and nations commit to net zero goals. Increased demand for petrochemical products post-pandemic for economic recovery. Increased demand for customer-centric and innovative products for a more seamless customer experience. 	<ul style="list-style-type: none"> Advanced sustainability impact in the aviation industry via a collaboration between PDB and the Malaysia Aviation Group. Provided access to the Virtual Pipeline System (VPS) for industries in Peninsular Malaysia. Expanded Setel® ecosystem and other non-fuel offerings by PDB. 	<ul style="list-style-type: none"> Achieved aviation historic milestone with the first Malaysia Airlines flight using a blend of approximately 38 per cent sustainable aviation fuel (SAF) made from used cooking oil as well as conventional jet fuel, travelling successfully from Amsterdam to Kuala Lumpur International Airport. Planned greenfield biorefinery/co-processing plant targeted for 2025 and positioned to supply SAF with operational flexibility to also produce Hydrogenated Vegetable Oil (HVO) or renewable diesel. Commemorated PDB's 1,000th VPS delivery. Served 3.5 million motorists and counting with Setel®, with over 46 million transactions and 1.9 billion Mesra points redeemed on the app. Enhanced offerings with Setel® Share, Malaysia's first e-wallet sharing feature. Utilised Setel® as an important tool/enabler to provide basic necessities for the needy through the Food Bank Programme. Mobilised ROVR as part of the emergency rescue team during floods in Malaysia.
	<ul style="list-style-type: none"> Initiated discussions between PETRONAS Lubricants International (PLI) and industry players on e-mobility via an Electric Vehicle Fluids Webinar. Developed safe, high-performing and dependable fluids specifically for electric powered trains via a collaboration between PLI and Imperial College London, FEV Group, IAV and other additive companies. 	<ul style="list-style-type: none"> Attended by 150 participants comprising industry experts, Original Equipment Manufacturer (OEM) partners, academia and suppliers from around the world to discuss opportunities for collaboration to co-engineer EV solutions. Introduced the latest range of iona EV fluids, designed for OEM first-fill applications in November 2021.
	<ul style="list-style-type: none"> Offered a wide range of marine solutions via PETRONAS Marine including a selection of marine and LNG bunker fuels. 	<ul style="list-style-type: none"> Strengthened Malaysia's position as an LNG bunkering hub in the region with successful LNG bunkering operations in Pasir Gudang, Johor; Port Klang, Selangor and Port of Sandakan, Sabah.

Business Review



Moving Forward

The Downstream business will continue to sustain operational excellence as well as seize new opportunities in key growth markets in Malaysia and around the world. Given the increasing focus on decarbonising our operations, we have taken a holistic approach to drive operational excellence guided by economic, environmental, social and governance (EESG) standards.

Moving into 2022, we will continue to focus on growing our sales volume through competitive pricing strategies, revolutionising customer experience and delivering high-value products in a sustainable manner. Anchored on our net zero carbon emissions aspiration, we will improve energy efficiency for manufacturing and reduce emissions by shifting towards lower carbon sources. To this end, the Downstream business is well-positioned to capture new offerings in the non-fuel segment to maximise our growth potential, expand our portfolio, and optimise value across our entire value chain as we shape future growth.

Moving forward into 2022, our key focus areas include:

- **Continued expansion and diversification** into derivatives, specialty chemicals and solutions to sustain our position as one of the largest integrated chemicals producers in Southeast Asia.
- **Sustain operational and commercial excellence** in petrochemicals to deliver value with PU above 90 per cent, production volume above 10 million tonnes per annum and sales volume above 8 million tonnes per annum.
- **Startup of the Pengerang Integrated Complex** targeted for 2H2022 to maximise growth potential and capture new opportunities further downstream.
- **Strengthen presence in the biofuels space** through a planned greenfield biorefinery/co-processing plant targeted for 2025. The facility will be positioned to supply SAF with operational flexibility to also produce HVO, also known as renewable diesel.
- **Execute Refinery-to-Terminal Project** to convert Engen's refinery in Durban into a world-class import and storage facility to capture new profit opportunities and safeguard against market threats in a challenging refining environment.
- **Continued expansion of non-fuel business in domestic marketing** to increase retail market share and future-proof business.
- **Growth of Setel® ecosystem** to deliver more innovative and customer-centric solutions in a single app, with features including e-Wallets, parcel delivery services, and vehicle insurance purchase.
- **Innovate solutions in sustainable mobility** through providing faster charging facilities for EVs in Malaysia via PDB's strategic network of stations, innovating next-generation EV fluids via the iona range and harnessing the power of collaboration through EV symposiums and webinars.
- **Expand lubricants market share in the industrial segment** to capture opportunities from construction, agriculture, mining, power generation and other industries
- **Establish stronger foothold in the Asia-Pacific lubricants market** leveraging Fluid Technology Solutions™ to capture opportunities from the growing middle-class population in the region.
- **Strengthen PETRONAS Marine** as a one-stop marine solutions provider and establish Malaysia as a regional LNG bunkering hub.

Business Review



Project Delivery and Technology

Business Review



Bacho Pilong

Senior Vice President,
Project Delivery and Technology

"The challenges brought forth by the COVID-19 pandemic have shed light on Project Delivery and Technology (PD&T)'s strengths in driving digital transformation across PETRONAS. Guided by PETRONAS' Three-Pronged Growth Strategy to drive groupwide advancement and maximise value across the three business segments, we continue to take decisive, proactive actions to fortify differentiated portfolios and elevate low-carbon energy delivery with innovation. We harness the power of data, technology and digital solutions to drive operational excellence and create growth opportunities. We proffer and deploy technology and digital solutions that bring step changes to business operations, to enrich and bring betterment to the lives of PETRONAS' customers and stakeholders within, and beyond the energy industry."

587

projects managed valued at
more than RM9 billion



6.4%

reduction of GHG emissions in
support of NZCE 2050

RM25 million

commercialisation revenue

25

Site readiness for **25**
key technologies achieved



17

technology and digital solutions deployed

98

TechApps™ softwares available

Technology Digital

RM830 million

total value creation through ARIES, our digital
enabling engineering solutions

RM818 million

in cash generation achieved through Alpha Series,
a digital transformation of our value chain

37 million

man-hours with a Full Time
Equivalent of

12,600

personnel
at work site and achieved zero
fatality



Business Review

What We Do

PD&T provides technical, project, technology, and digital services while shaping and safeguarding PETRONAS' growth and future positioning strategies through best-in-class project delivery, extensive research and development, leading-edge technical expertise, and novel digital solutions. PD&T serves as the engine that accelerates growth and ventures across PETRONAS, driving transformation by leveraging data as an asset, digital as an accelerator and technology as a differentiator. As PETRONAS' Centre of Excellence (CoE) and a solutions partner, PD&T has a vital role in driving PETRONAS' aspiration towards NZCE 2050 and all strategic goals through a well-established and expanding ecosystem of innovation.



Key Priorities and Results

Key Priorities

Delivering Projects Beyond OTOBOS

- Delivered projects ahead of schedule safely despite challenges caused by COVID-19 pandemic.
- Delivered more value to the group through cost reduction, operational efficiency, and cash generation.

Results

- PD&T managed projects had recorded over 37 million man-hours with a Full Time Equivalent of 12,600 personnel at work site and achieved zero fatality despite the increased HSE risk exposure mainly due to intensity and complexity of project related activities coupled with battling the COVID-19 situation.
- Projects delivered ahead of schedule:
 - Garagol Deniz West (GDW) first oil.
 - Kuala Lumpur International Airport Pipeline Project (KLIPP) Initial Acceptance.
 - NC3 condensate export pump modification Initial Acceptance.
 - Safeguarding Operations, Asset and Resilience (SOAR) Project completion.
- GDW revival in Turkmenistan achieved RM139 million cash generation.

Innovation Driven Operational Excellence

- Achieved progress on key technology projects.
- Pursued new revenue streams through technology and digital products to drive competitive advantage.
- Improved operational efficiency through technical solutions.

- Achieved site readiness and commercialisation of 25 key technology projects.
- Registered RM25 million in commercialisation revenue through the deployment of 17 technologies and 98 TechApps™ software.
- Enhanced commercial execution through market expansion, accelerated commercial readiness and implementation of bolder commercialisation methods.
- Deployed 52 technical and digital solutions to improve reliability and efficiency of plants and facilities.
- Established PETRONAS Drone Control Tower with the support of the Civil Aviation Authority of Malaysia (CAAM) to expedite approval for drone operations in line with increasing demand for drone services within the group.

Capitals Deployed:

Business Review

Key Priorities and Results

Key Priorities

Data-Driven Operational Excellence

- Enabled digital transformation to improve efficiency, enhance productivity and strengthen operational resilience.
- Increased the safety of offshore platforms via the Facilities of the Future programme utilising robotics and drone technologies.
- Improved workforce digital competency.
- Introduced new initiatives to accelerate innovation and transformation in technology and digitalisation.
- Increased resilience and automation through scalability.
- Leveraged Internet of Things (IoT) for remote monitoring of plants and facilities Groupwide.
- Established Project Delivery Digital Ecosystem (PDE) to ensure rigorous portfolio management and improved process efficiency.
- Established Construction-Based Engineering (CBE) to improve construction cost through Advanced Work Packaging (AWP) and Project Production Management (PPM) process improvements.

Capitals Deployed:   

Results

- Achieved RM818 million in cash generation, gained end-to-end value chain visibility and increased decision-making at the enterprise level via Alpha Series.
- Achieved the shortest pre-cooling time in 17 years, 10 hours faster, and 10 per cent reduction in carbon emissions via the STELLAR project.
- Enhanced operational efficiency by pushing digital-enabled efforts via NervCentre, gaining RM830 million via the ARIES project and RM28 million in cost savings via remote consulting to project teams.
- Achieved RM188 million in value creation, improved onshore pipeline monitoring and predictive analytics via Pipeline of the Future (PotF).
- IoT reduced HSSE risks, improved efficiency and productivity as well as pandemic/future-proofed assets.
- Improved Cybersecurity awareness where average phishing rates trended downwards between 2 per cent and 5 per cent from 8.8 per cent in 2020.
- Achieved 62 per cent of applications migrated to Cloud (ahead of targets) and are on target to have at least 90 per cent applications on Cloud by 2022.
- Upskilled 10,366 participants under the Citizen Analytics programme.
- Launched 16 PDE digital solutions that will be the Digital Backbone for project delivery and enabling Artificial Intelligence to assist decision making.
- Rolled out CBE to nine on-going projects with process improvements towards cost optimisation.

Growth Engine Acceleration

- Facilitated innovation of new solutions among industry players, focusing on long-term sustainability.
- Pursued new industry-wide collaborations to accelerate technology and digital transformation, and upskill talent.

Capitals Deployed:   

- Support enterprise growth and sustainability by cementing partnerships to drive value-added technology and innovation in the areas of:
 - Carbon capture and storage (CCS)
 - Specialty chemicals
 - Hydrogen
 - Renewables
 - Advanced Materials
 - Circular Economy

Business Review

Key Priorities and Results

Key Priorities

Capability Accelerator

- Bench strength measures of the organisation's technical workforce, succession planning and competency management efforts for Technical Authorities, Technical Professionals, Technical Trade Specialists and others.
- RESCISCO for Technical Executives, an initiative to develop empowered, enabled and agile talent to deliver business results.
- Certification of Competencies (CoC).
- PETRONAS Technical Trade Specialist (TTS).
- Digital Academy.
- Industry-academia collaborations.

Capitals Deployed:  

Results

- Bench strength of the organisation recorded that our technical workforce met top quartile requirements.
- RESCISCO received recognition by the Malaysia Productivity Corporation (MPC) bagging the regional Gold Award in Innovation and Productivity, and 2nd place at the national level. RESCISCO also enabled cost reduction while talents were better valued through systematic evaluation and recognition. Scale up implementation to other locations planned for the year.
- CoC tracking ensured license to operate and sustainability compliance while establishing closer collaborations with stakeholders including governing authorities to optimise operations.
- PETRONAS TTS, through the Technical Trade Specialist Symposium, encouraged replication of successful innovation, ideas, improvements to bring forth cost optimisation, cost avoidance and cost savings.
- Digital Academy takes an all-round approach to digitally upskill and reskill the PETRONAS workforce, the initiative also goes beyond the Group to benefit communities through efforts such as PETRONAS Digital Bootcamp during which participants were offered employment by partner organisations, and collaborations with tertiary institutions.
- On the Corporate Sustainability Responsibilities front, the Senior Vice President of PD&T was appointed by the Ministry of Higher Education to expand and strengthen industry-academia collaboration amid other human capital development efforts.

Sustainability

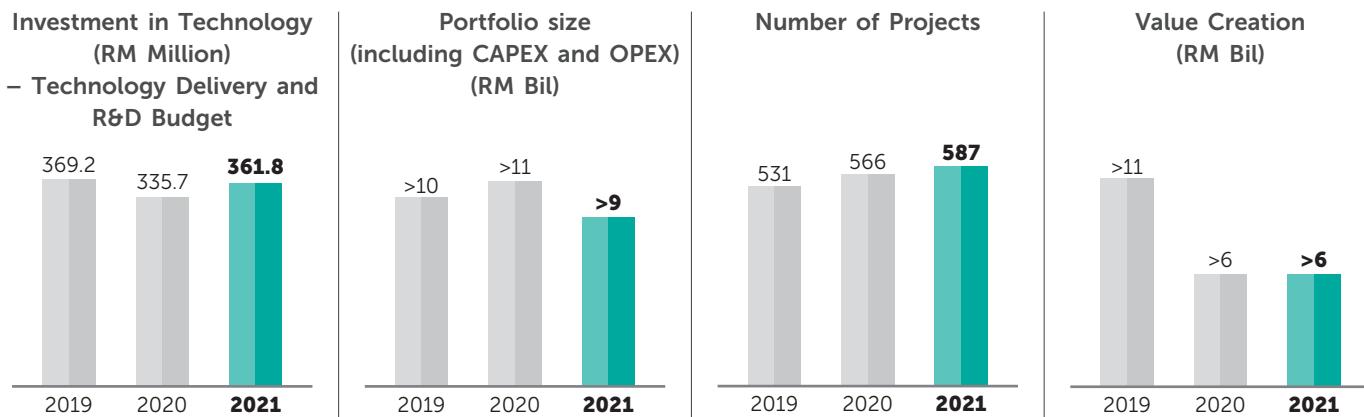
- Supported the nation to help those affected by natural disasters.
- Accelerated decarbonisation of existing PETRONAS assets.
- Produced sustainable fertiliser to increase energy efficiency and achieve carbon dioxide (CO₂) emission targets.
- Leveraged new technologies in high-risk environments to minimise HSSE risks and environmental footprint.

Capitals Deployed:   

- Completed first Integrated Multi-Site Optimisation Study across 14 sites under the Kerteh Side-wide Strategic Review (SSR).
- PETRONAS New Leadership Campus obtained Certificate of Partial Completion in December 2021, with the aim to be the first Green Certified building in PETRONAS.
- Completed plastic bitumen road paving under PETRONAS Research Sdn Bhd's Greenification Initiatives.
- Achieved a reduction of 6.4 per cent of GHG emissions in 2021 compared to 2020, in support of NZCE 2050.
- Fast-tracked decomposing process using biochemical compost technology.
- Helped clean up 35 homes of PETRONAS employees and families from local communities affected by floods.

Business Review

Performance Highlights and Achievements



Value Created for Stakeholders

Stakeholder	Expectations	Value Created
 Customers	<ul style="list-style-type: none"> Sustainable and innovative products and solutions. 	<ul style="list-style-type: none"> Collaborated with a spectrum of industry partners to deliver value-added digital innovations to support sustainability. Developed the most competitive green hydrogen production technology in its class using our own patented Proton Exchange Membrane (PEM) Electrolyser, putting PETRONAS at par with other hydrogen market leaders. Developed Bio-MEG technology to diversify our product offerings with bio-based and Circular Economy portfolios.
 Government and Regulators	<ul style="list-style-type: none"> Elevate industry capabilities and shape industry standards via multilateral knowledge sharing. Create opportunities to collaborate on the latest technologies for application in other industries and wider purposes. Pursue a strong partnership ecosystem to support growth in the hydrogen business. 	<ul style="list-style-type: none"> Strengthened regulatory collaborations to enhance market growth with, among others, Immigration Department of Malaysia, Fire and Rescue Department, Malaysian Communications and Multimedia Commission (MCMC), Department of Safety and Health (DOSH) and Department of Environment (DOE). Established Joint Industry Collaboration (JIC) for Advanced Work Packaging and Project Production Management with 27 companies. Established reputation as the leader in Decommissioning and Abandonment capability in the Southeast Asian region. Collaborated with the Civil Aviation Authority of Malaysia (CAAM) and Department of Survey and Mapping Malaysia (JUPEM) to obtain approval for the use of drone technology for pipeline and facility inspections as well as logistics. Collaborated with SIRIM Berhad to develop a solution providing data transparency to simplify approval and validation process of custody metering.
 Employees	<ul style="list-style-type: none"> Training and capability development opportunities. 	<ul style="list-style-type: none"> Contributed to myDigital aspirations to build a strong pipeline of digital-ready workforce for the nation through Digital Academy. Enhanced cybersecurity awareness among talent base.

Business Review

Risks and Opportunities

Risks	Opportunities	Actions Taken	Results
<ul style="list-style-type: none"> Prolonged COVID-19 pandemic may impact PD&T projects and service delivery. 	<ul style="list-style-type: none"> Leverage digitalisation and enhance technological innovation to achieve project and service delivery with pace. 	<ul style="list-style-type: none"> Implemented COVID-19 precautionary measures such as HSE checklist and Pandemic Preparedness and Response Team (PPRT) Guideline for PETRONAS groupwide. 	<ul style="list-style-type: none"> Successfully rolled out Green Bubble, Green Net and Strengthening Current Control Measures (SCCM) concept and enhanced Standard Operating Procedure (SOP) in Q1 2021 including vaccination requirements as per PPRT directive.
<ul style="list-style-type: none"> Untimely delivery of proven, competitive, and differentiated technology to deliver value via development and deployment may affect competitiveness for future investment. 	<ul style="list-style-type: none"> Realise opportunities to capture renewable and green technology via strategic partnerships with Global Technology Centres. 	<ul style="list-style-type: none"> Identified technology projects achieving major milestone towards Strategic Technology Objective (STO), to unlock the technology readiness. PETRONAS Research Centre Sdn Bhd (PRSB) is connected globally with our Global Technology Centres – Heriot Watt University, Imperial College London and Universiti Teknologi PETRONAS (UTP). Established technology agenda for Future Positioning (FP) and updated Competitive Edge (CE) technology programmes. 	<ul style="list-style-type: none"> A Suite of carbon capture, utilisation and storage (CCUS) technologies achieved commercial readiness, opening opportunities to monetise recoverable reserves in Malaysian waters and Southeast Asia. Achieved first drop for Bio-MEG plant. Bio-MEG technology is being scaled up to capture new markets in sustainable bio-derived products. Proton Exchange Membrane demonstrated low hydrogen production cost and progressing for business application in the region. Achieved commercial readiness for advanced material technology. Immersive Cooling Fluid prototype met target specification for Electric Vehicle (EV) Battery Thermal Management. Achieved critical milestones for thermal management in battery solid state technology. Ramped up technology commercialisation efforts with the establishment of Digital, Automation, Robotics Technology (DART) to pursue new revenue stream from Technology. Rolled out new personal and healthcare products in response to market opportunities. Identified technologies to future-proof PETRONAS and elevate its competitive edge.
<ul style="list-style-type: none"> Cyber threats could lead to breach of information and security resulting in business disruption. 	<ul style="list-style-type: none"> Leverage strategic collaboration in developing cyber awareness, cyber hygiene, and independent assurance to shape cyber security practices and behaviours in PETRONAS. 	<ul style="list-style-type: none"> Continuous improvement of enterprise cyber security resilience by enhancing cyber security preparedness in Information Technology (IT) and Operational Technology (OT) to proactively mitigate any prolonged effect of high impact incidents to business and operations. These include proactive efforts to secure Identity, Assets and Data that are monitored by the Cyber Security Operations Centre. Established a dedicated plan for Cyber Security Programme and Incident Response Procedure to all IT systems and OT sites. 	<ul style="list-style-type: none"> Completed the implementation and deployment as well as change management of the Cyber Security Enterprise Governance Framework for Malaysia and International Assets. Completed Cyber Security Programme. Incident Response Procedure has been rolled out to PETRONAS sites groupwide, and to all Malaysia OT Sites.

Business Review

Moving Forward

As PETRONAS' CoE, PD&T will continue its efforts to identify innovative solutions to maintain a competitive edge, leveraging its expertise in project delivery, technology, technical and digital solutions, and ensuring safe and efficient operations throughout the value chain.

In this regard, PD&T has charted a Five-Year Strategic Plan (2022-2026), which is aligned with the Group's Three-Pronged Growth Strategy, focusing on three key thrusts:

- Continuous safety, reliability, and efficiency improvements through distinctive digital and technology solutions.
- Pursue commercialisation opportunities for PD&T solutions to generate new revenue for the Group.

- Explore new focus areas to future-proof the business, and realise PETRONAS' Sustainability Agenda via:
 - Circular Economy, which aims to repurpose waste into new products
 - Advanced Materials to strengthen asset integrity, extend service life and reduce overall carbon footprint
 - Improved decarbonisation efforts by managing and reducing GHG emissions of assets
 - Driving renewables and supporting growth of hydrogen to fast-track the energy transition
 - Progress in production and utilisation of specialty chemicals beyond oil and gas, into everyday consumer products.

Moving forward, we will continue to pursue technology and digital advances throughout our value chain to ensure we meet the Group's business goals and achieve our NZCE 2050 aspiration.



Recharge

for A Better
Tomorrow



Our Sustainability Journey

Our progress to date on the sustainability front

- 170** Sustainability Governance
- 174** Safeguard the Environment
- 186** Positive Social Impact
- 218** Five-Year Sustainability Key Performance Data



Sustainability Governance

A robust governance system drives the successful execution of our sustainability ambitions. Spearheaded by the Board and Executive Leadership Team, we adopt a top-down approach to sustainability, clearly delineating roles and responsibilities for improved accountability and integrity. The Board plays an active role in the governance and oversight of sustainability matters, with ongoing efforts to embed sustainability into the Board's scopes. This is part of our continuous effort in strengthening sustainability governance for efficient decision-making and execution of sustainability-related matters.

This year, we appointed our first Vice President and Chief Sustainability Officer (CSO), who reports directly to the President and Group Chief Executive Officer (GCEO), to provide a dedicated focus on managing sustainability strategically in the company. We have also established a dedicated Sustainability Council, in line with the recent reorganisation of the Group. Chaired by the CSO, the Sustainability Council cascades decisions from the Board and Executive Leadership Team into implementation and deliberates bottom-up recommendations to the Executive Leadership Team and Board.

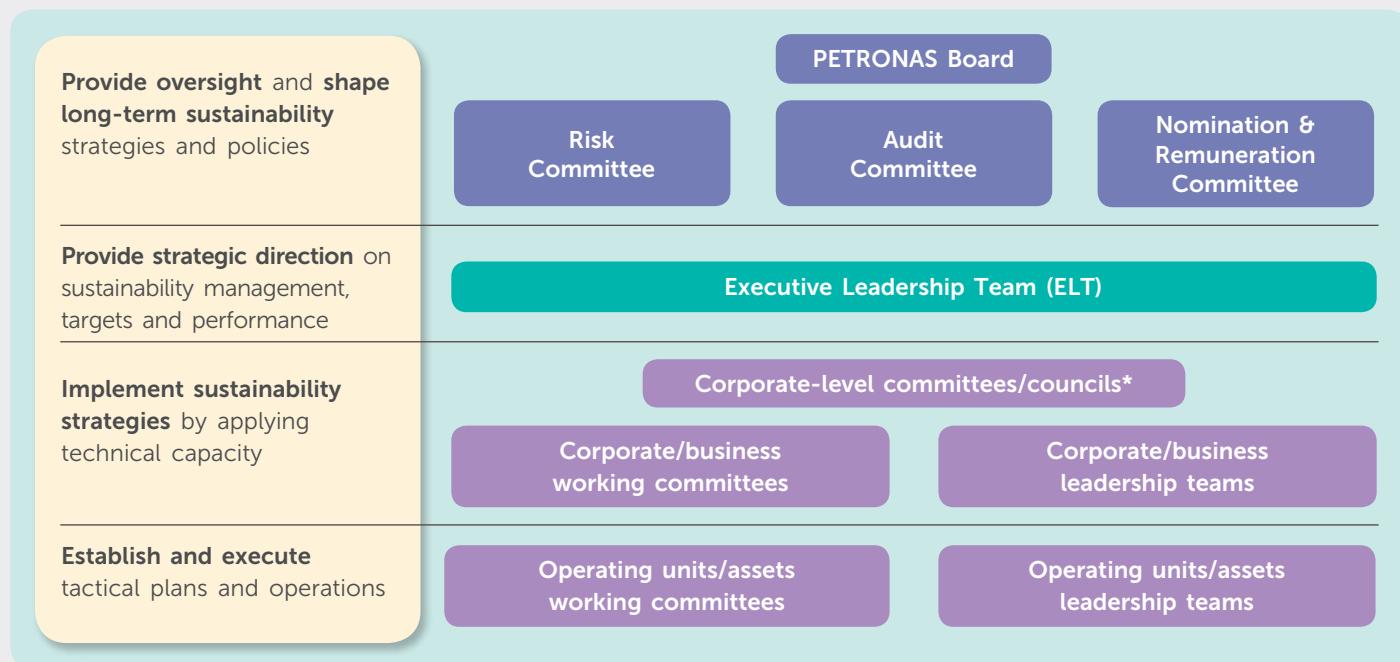
At the same time, the Executive Leadership Team receives periodic performance updates on key sustainability performance and progress across the Group either directly from the respective businesses or via the Sustainability Council. This enables sustainability issues to move up across all levels of the Group and allows the management team to maintain accountability for our sustainability targets.

A Future-Ready Board

Board members undergo various sustainability-related training and engagements to keep abreast of emerging matters:

- Sustainability discussions as part of the annual strategic review and planning cycle.
- Imperatives of Human Rights and Just Transition.
- Engagements with external experts. In 2021 topics included net zero carbon emission strategies and carbon markets.

PETRONAS' Sustainability Governance Structure

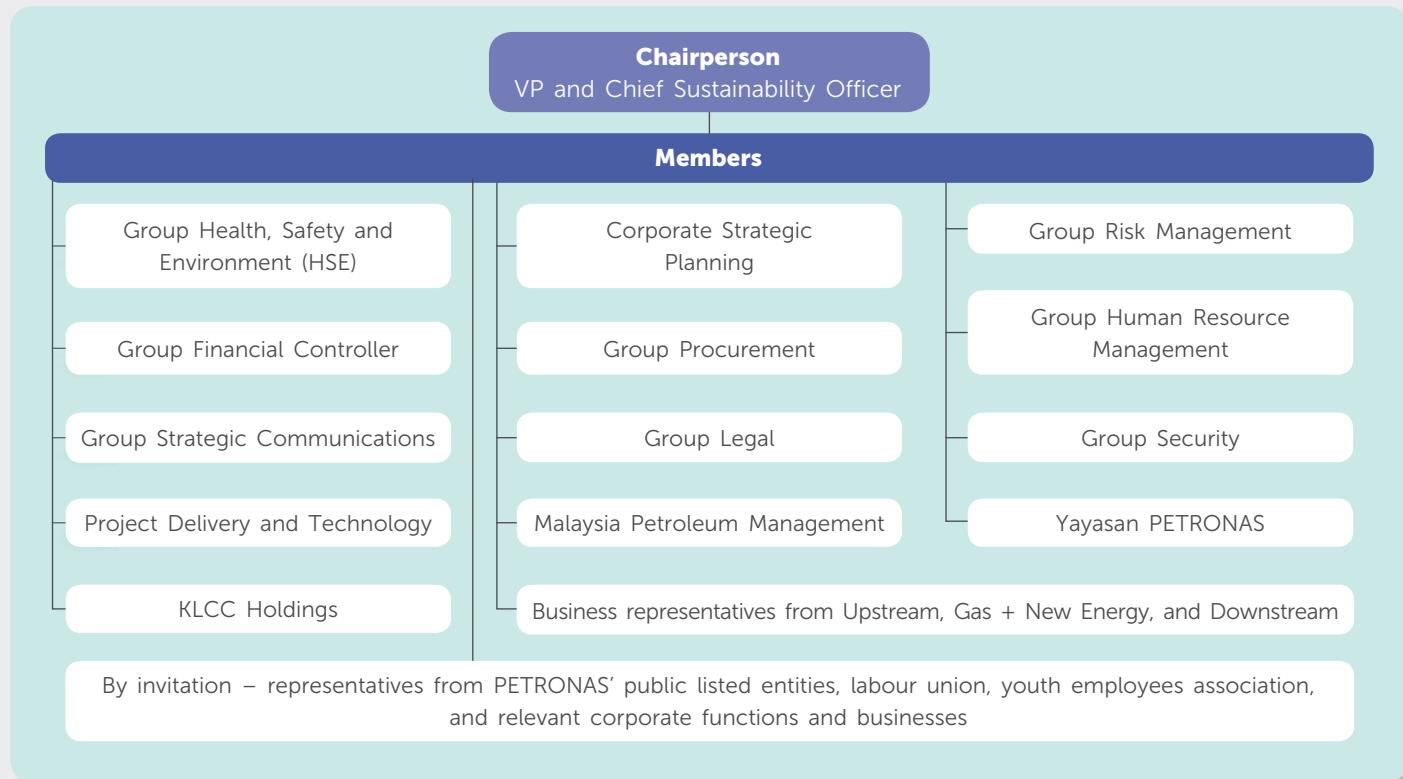


Note:

* Corporate-level committees/councils include the Sustainability Council.

Sustainability Governance

Sustainability Council Organisation Structure



Key discussions deliberated at Sustainability Council in 2021 include:

- Endorsement of material topics.
- Monitored progress toward PETRONAS 2024 Sustainability targets.
- Apprised on the plan in charting a credible approach to our net zero carbon emissions by 2050 (NZCE 2050) aspiration.
- Apprised on CCS project progress.
- Apprised on commitment towards World Economic Forum's Stakeholder Capitalism Metrics.
- Apprised on strategy in creating positive social impact through diversity and inclusion.
- Apprised on reputational issue analysis and Reputational Strength Index (RSI).

The implementation of our sustainability decisions is supported by other councils and committees:

- Security Risk and Oversight Committee.
- Health, Safety and Environment (HSE) Council.
- Diversity & Inclusion (D&I) Council.
- Whistleblowing/Central Complaint Management Committee.

Sustainability Governance

Memberships and Associations

We actively participate in professional associations, events and memberships with the aim to strengthen our sustainability efforts. Through these various platforms, we are able to exchange knowledge on best practices to drive the sustainability agenda within and outside of our operations. This is part of our commitment to nation-building of Malaysia and creating positive impact across industries and society.

Memberships

CEO Action Network (CAN)	CAN is a peer-to-peer network of CEOs and Board members focused on sustainability advocacy, capacity building, action and performance. CAN represents 56 leading businesses and more than 20 business sectors in Malaysia. Our Contribution: President and Group CEO of PETRONAS, Datuk Tengku Muhammad Taufik chairs the CAN. In 2021, CAN hosted a series of 14 roundtable discussions, bringing together corporate leaders from different industry sectors, public sectors and civil society to discuss the national agenda of net zero emissions for Malaysia. The roundtables foster collaboration and partnership among private-public sectors, and support policy advocacy through strategic discussions amongst the public sector, regulators, civil society, industry associations and businesses.
World Business Council for Sustainable Development (WBCSD)	A CEO-led community of over 200 of the world's leading businesses working collectively to accelerate the system transformations needed for a net zero, nature positive, and more equitable future. Our Contribution: We play an active role in WBCSD's work programme to shape business narratives and performance on sustainability. Our top management is actively engaged in WBCSD's workstreams and projects. Through WBCSD, we leverage thought leadership and collaboration with other global leaders to foster effective peer learning, enabling us to accelerate and scale up group-wide delivery of PETRONAS' sustainability agenda.
APEC Business Advisory Council (ABAC)	The private-sector arm of the Asia-Pacific Economic Cooperation (APEC) comprising high level officials from 21 member countries, dedicated to advising leaders and other APEC officials on issues of business interest. Our Contribution: Our President and Group CEO, Datuk Tengku Taufik is a member of ABAC. He co-chaired the Climate Change priority with Malcolm Johns from ABAC New Zealand, under the ABAC Sustainability Working Group (SWG) led by ABAC China in the first ABAC meeting in 2022. The co-chairs presented recommendations to APEC Leaders and advised APEC officials on business sector priorities and concerns.
Methane Guiding Principles (MGP)	An international multi-stakeholder partnership developed collaboratively by a coalition of industry and civil society organisations. It focuses on reducing methane emissions across the natural gas supply chain, from production to final consumption. Our Contribution: As a member, we work together with other signatories and supporting organisations to foster effective methane management, and create transparency in emissions reporting aligned with internationally recognised frameworks and standards.
Ipieca	Ipieca was founded in 1974 at the request of the United Nations (UN) Environment Programme and remains the industry's principal engagement channel with the UN particularly in the development or update of environment related international conventions. Our Contribution: As a member, PETRONAS is part of the collective energy industry to provide insights on key HSE and sustainability issues to global stakeholders. Additional participation in taskforces enables knowledge transfers including hands-on experience for subject matter experts and foresight to anticipate future regulations as many peers operate in highly regulated regimes such as on EU climate regulations. Beyond compliance, PETRONAS also benefits from the horizon scanning, knowledge sharing and guidance on the energy transition and other emerging trends.

Sustainability Governance

Pledges

World Bank's Zero Routine Flaring by 2030 (ZRF) Initiative	An initiative that commits governments and oil companies to end routine flaring no later than 2030, aiming to support cooperation between all relevant stakeholders so that solutions to gas flaring can be found through appropriate regulation, application of technologies, and financial arrangements.
Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)	<p>Our Contribution: We endorsed the global pledge on 4 November 2021 as part of our broader effort to strengthen transparency around our actions on climate change. This aligns with our aspiration to achieve NZCE 2050.</p>
World Economic Forum's Partnering Against Corruption Initiative (PACI)	<p>A framework for the type of information that companies should disclose to support investors, lenders, and insurance underwriters in appropriately assessing and pricing a specific set of risks, specifically risks related to climate change.</p> <p>Our Contribution: We acknowledge the importance of transparency on climate-related disclosures and expressed our public support for TCFD on 4 November 2021. We aim to commence our disclosure practice towards TCFD in 2023.</p>
World Economic Forum's Stakeholder Capitalism Metrics	<p>A principal CEO-led platform in the global anti-corruption arena, building on the pillars of public-private cooperation, responsible leadership and technological advances, serving as the leading business voice on anti-corruption and transparency.</p> <p>Our Contribution: PETRONAS became a signatory of PACI on 21 July 2021, joining 90 other signatories across different sectors worldwide. In doing so, we strengthen our zero tolerance on corruption in all its forms and join collective action initiatives to increase public trust in business, deliver fair markets and level the playing field by fighting corruption.</p> <p>The Stakeholder Capitalism Metrics (the Metrics) was launched in September 2020 by the International Business Council of the World Economic Forum. The Metrics is a disclosure framework that aims to strengthen the ability of companies and investors in benchmarking progress on sustainability matters, and to enhance transparency of sustainability disclosures.</p> <p>Our Contribution: Commenced our reporting practice towards the Metrics in 2021. A cross reference table on the Metrics is available on page 276.</p>

Engagements

ASEAN Energy Sector Methane Roundtable	A series of regional roundtables held to intensify collaboration on methane emissions management by leveraging collective capabilities, global best practices and insights.
	<p>Our Contribution: PETRONAS initiated and hosted the inaugural ASEAN Energy Sector Methane Roundtable in October 2021. We extended invitations to participants from key ASEAN energy players such as PTT, PERTAMINA and Shell, as well as international organisations, including Offshore Energies United Kingdom (OEUK), International Energy Agency (IEA), World Bank Group, United Nations Environment Programme (UNEP) and Methane Guiding Principles (MGP).</p>

Safeguard the Environment



We recognise the scientific consensus on climate change. As a responsible global energy company, we understand our crucial role in lowering carbon emissions towards limiting the rise in global temperatures to 1.5°C above pre-industrial levels, as per the Paris Agreement. We remain committed to achieving our net zero carbon emissions by 2050 (NZCE 2050) aspiration, strive to reduce our impact on climate change, minimise our environmental footprint and protect the natural environment.

Climate Change and Greenhouse Gas (GHG) Emissions

Why is it important?

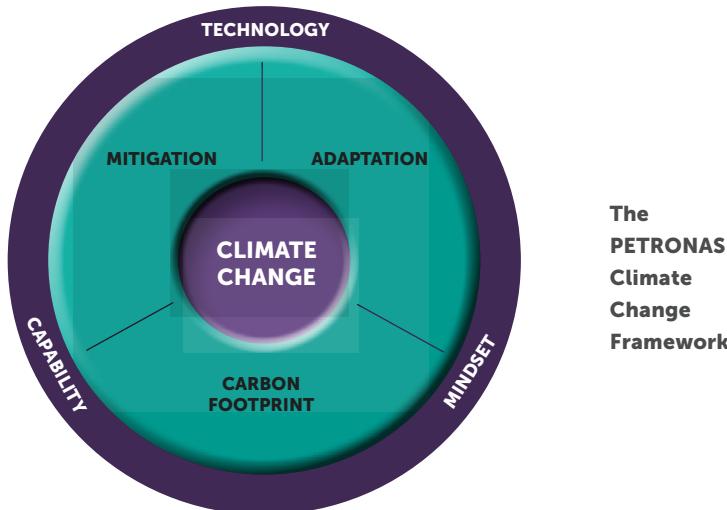
Our ability to reduce GHG emissions that contribute to climate change today will strengthen our future shared prosperity, societal well-being and business growth. Stakeholders are increasingly demanding scaled-up action on climate change, with the energy sector facing rising pressure to deliver. Given the complex nature of climate change, concerted efforts by governments, business and individuals are necessary to foster a transition to a sustainable future.

An inability to effectively minimise carbon emissions may lead to a loss of stakeholder trust in the energy sector. We also need to manage and prevent as far as possible the impact of extreme weather events on physical assets. Despite the challenges, business opportunities arise with the transition towards a low-carbon economy and bring possibilities to improve livelihoods and revitalise economies.

Safeguard the Environment

What is our position?

PETRONAS Carbon Commitments (PCC) were established in 2012 focusing on reducing flaring and venting, and improving energy efficiency. Subsequently the PCC have been enhanced with elements of carbon capture and storage (CCS), renewable energy, carbon offsets and carbon pricing.



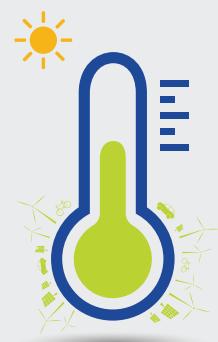
PETRONAS Carbon Commitments consist of three key areas:

Planning and Projects

- Zero continuous flaring and venting of hydrocarbons shall be incorporated into the design philosophy of all new facilities and projects.
- Malaysia Petroleum Management (MPM) to apply for country-level carbon dioxide (CO₂) emissions allowance in the planning process of high CO₂ field development.
- Upstream high CO₂ field development shall incorporate carbon capture and storage (CCS) technologies at the design stage.
- Carbon pricing shall be considered in project decision-making with the option of carbon offsets where economically feasible.

Operations

- Zero continuous venting of hydrocarbons for all existing facilities.
- Reduce continuous flaring of hydrocarbons for all existing facilities where operationally and economically feasible.
- Downstream and Gas + New Energy (G+NE) operating assets to meet and sustain top quartile energy performance.



Renewable Energy

- Renewable energy technologies are to be considered in all facilities and projects where operationally and economically feasible.

Our business development has increased focus on renewable energy, gas, LNG and hydrogen as these forms of energy will drive the energy transition towards a lower carbon economy and ensure the security of energy supply.

To increase our resilience in the energy transition, we work closely with our partners, suppliers and contractors throughout the supply chain. As part of our efforts to reduce methane emissions, we have joined other industry and non-industry members under the Methane Guiding Principles (MGP) initiative as a signatory member. The rising demand for clean energy has also prompted the move towards CCS development and hydrogen, as part of our strategy to reduce carbon from our assets and develop a carbon capture business.

We continue to leverage technology and digital solutions, namely the PETRONAS Environment and Social Performance Integrated and Centralised System (EPICS), to gain end-to-end visibility of our efforts to improve environmental performance throughout our value chain.

Safeguard the Environment

What did we do in 2021?

Climate Change Mitigation

• Operational Emissions

- Recorded total GHG emissions of 45.2 million tonnes of carbon dioxide equivalent (tCO₂e), further details can be found on page 218.
- GHG emissions reduction of 4.1 million tCO₂e per year.
- Upstream operations achieved a 27.3 per cent reduction in GHG intensity, mainly contributed by flaring and venting reduction.
- GHG emissions reduction in PETRONAS can be clustered into three main areas as below:
 - **Flare Reduction:** Achieved mainly in Upstream operations in Malaysia through flare gas recovery projects and improvements in compressor capacity
 - **Vent Reduction:** Occurred in Upstream operations in Malaysia, mainly from vent-to-flare conversion and vent recovery projects
 - **Energy Efficiency:** Achieved through operational excellence efforts such as optimisation of gas turbine operations and process optimisation initiatives, mainly from Downstream and G+NE businesses
- Endorsed the World Bank's Zero Routine Flaring by 2030 initiative, where we commit to end routine flaring of associated gas from our oil production.

• Methane Emissions Management

- Initiatives to reduce methane emissions were driven by the establishment of PETRONAS Carbon Commitments in 2012. Through flaring and venting reduction initiatives, we have reduced 0.38 million tonnes of methane since 2013.
- Established PETRONAS methane emissions quantification and reporting standard as well as a handbook for improving the completeness and transparency of methane emissions.
- Set up a dedicated task force to implement effective quantification and reduction of methane.
- Completed methane emissions baseline study in selected Upstream Malaysia offshore and onshore assets, using insights to improve methane emissions inventory.
- Engaged with internal and external stakeholders, including upstream service providers, to improve awareness, understanding and capabilities in methane emissions management. We also shared the latest developments in methane measurement and technologies to improve current practices.

• Improved Solutions

- Generated 2,321.2 MWh from our solar Photovoltaic (PV) systems at 11 sites, avoiding 1,352.8 tCO₂e.
- Upgraded PETRONAS Dynamic Diesel to meet Euro 5 standards at petrol stations nationwide, making it the widest and most accessible network of Euro 5 compliant diesel in Malaysia.
- Fully leveraged renewable energy at PETRONAS Lubricant International's Arexons car care and multipurpose lubricant plant in Cernusco, Italy, classified as a Zero Scope 2 GHG emissions operation.

• Low-Carbon Partnerships

- Collaborated with Abu Dhabi National Oil Company (ADNOC) and Masdar to pursue clean energy solutions by exploring joint participation in large scale solar and wind opportunities for utilities and commercial/industrial customers in Asia.
- Partnered with ENEOS Corporation to jointly develop, a competitive, clean hydrogen supply chain in Malaysia and Japan, as well as explore other hydrogen opportunities.

• Carbon Storage

- The identified CCS field for Kasawari Gas Field's CO₂ has completed subsurface maturation suited for CCS site, and Conceptual Engineering Design was approved in Q4 2021.
- In our efforts to build storage volume potential, we have identified 19 potential storage sites (6 saline aquifers and 13 depleted fields) to offer CCS as an option for carbon management solutions in Malaysia and regional industries. Given such intent, PETRONAS has adopted a collaborative approach with both oil and gas (O&G) and non O&G players to progress the CCS work further.

• E-mobility

- PETRONAS Dagangan Berhad (PDB) entered into a partnership with Mercedes-Benz to deploy EV chargers at PETRONAS stations along the North-South Expressway and part of the East Coast Expressway to enable end-to-end coverage of fast chargers.
- Introduced a new range of iona electric vehicle (EV) fluids, designed for Original Equipment Manufacturer (OEM) first-fill applications in November 2021.

Safeguard the Environment

Climate Adaptation

- Embarked on addressing the need for PETRONAS businesses and facilities to adapt to climate change by conducting a global high-level screening on the most vulnerable regions and countries in the world.
 - Established the PETRONAS ADAPT team with people from various disciplines; including Health, Safety and Environment (HSE); operations and maintenance; design and engineering; and crisis management teams.
 - Organised training programmes to close the knowledge gap in Climate Change Adaptation among PETRONAS staff. Carried out in the first half of 2021, the ultimate goal is to address the concerns about the physical impacts of climate change at a groupwide level. These programmes were conducted at eight PETRONAS operation sites – Bintulu and Miri in Sarawak, Johor, Kedah, Labuan, Melaka, Pahang and Terengganu.
- Conducted capacity building on the management of physical impacts of climate change as well as a high-level desktop vulnerability assessment across several sites in Malaysia.
- Developed a five-year Adaptation Activity Plan to facilitate our Adaptation needs and journey for the coming years.
- Conducted a workshop on climate change risks which focused on identified risks, and developed enterprise-level risk statements, aligned with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) to improve awareness on climate change risk and prepare for future TCFD disclosures.
- Conducted capacity building on the management of physical impacts of climate change, as well as a high-level desktop vulnerability assessment for several sites in Malaysia.

Partnerships and Collaborations

- Participated as speakers and panellists in several international conferences such as Sabah Climate Change International Conference (SCCIC) and Expo 2020 Dubai where we reaffirmed our pledge to reduce our carbon footprint.
- Organised the second Electric Vehicle Fluids Webinar, themed Accelerating Efficiency, Revolutionising e-mobility, which was attended by 150 participants comprising industry experts, OEM partners, academia, and suppliers worldwide.
- Commenced a series of stakeholder roundtable discussions in the Southeast Asia region to advocate for the importance of managing methane to deliver lower carbon energy.

What did we achieve?

GHG Emissions Reduction

- **6.4 per cent** reduction in GHG emissions to 45.2 million tCO₂e in 2021 from 48.3 million tCO₂e in 2020
- **32.4 per cent** reduction in methane emissions to 0.23 million tonnes of methane in 2021 from 0.34 million tonnes of methane in 2020
- **0.3 million tCO₂e** (8.8 MMscfd) reduction in flaring in 2021
- **3.6 million tCO₂e** (26.8 MMscfd) reduction in venting in 2021
- **0.2 million tCO₂e** reduction through energy efficiency initiatives
- **1,352.8 tCO₂e** avoided in Scope 2 GHG emissions due to renewable energy power generation of 2,321.2 MWh

Safeguard the Environment

Responsible Waste Management

Why is it important?

Waste generation presents a broader challenge that affects human health, livelihoods, the environment, and economic growth. Poor waste management can reap a variety of negative consequences to our stakeholders and business environment, such as air and water contamination, hygiene and health concerns. Limiting our waste and increasing circularity will reduce environmental footprints and operational costs.

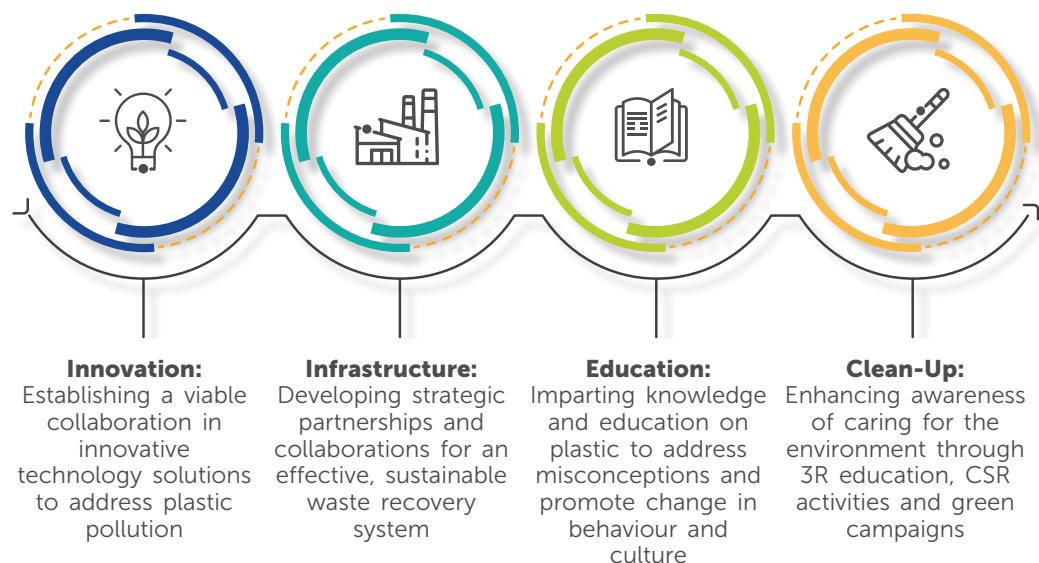
A major component of the global waste problem is plastic. The throwaway culture has resulted in the rapid disposal of single-use plastic, which may persist in the environment for hundreds of years. This presents significant environmental and health issues, as plastics can end up in oceans and food systems, affecting the entire ecosystem. To combat this problem while still providing the social benefits of plastic, we need to apply circular economy principles to transform into a New Plastics Economy (NPE). Through the NPE initiative, plastics never end up as waste. Instead, they re-enter the economy as valuable products, thus creating improved economic and environmental outcomes. By driving the nation's NPE, we continue to build our competitive advantage and resilience with the aim to drive the solutions to this global problem.

What is our position?

As a commitment to contributing towards United Nations' 12th Sustainable Development Goal – Responsible Consumption and Production, we have set the path towards waste reduction via the 3R (reuse, recycle and recover) practice. We implement plans and procedures on waste management at all PETRONAS operating sites. Activities producing waste are identified along with the type, quantity, frequency of generation, handling requirements as well as treatment and disposal methods. We also conduct periodic assurance on our waste management efforts while looking for ways to minimise waste generation. Furthermore, waste performance indicators are reported every month to a centralised reporting platform.

Meanwhile, through PETRONAS Chemicals Group Berhad (PCG), we aim to spearhead the nation's transition into NPE. This involves collaborating with the Malaysian authorities and relevant stakeholders through the Malaysia Sustainable Plastic Alliance (MaSPA), which complements the actions set out in the Malaysia Roadmap towards zero single-use plastics (2018-2030). Additionally, PCG explores ways to convert end-of-life plastic waste into pyrolysis oil, creating an end product of certified circular polymer resins. Based on this roadmap, we are targeting to recover 100 per cent of the plastic waste of our polymer production volume for the Malaysian market by 2030.

PETRONAS' four key workstreams of NPE:



Safeguard the Environment

What did we do in 2021?

Waste Management

- 124,884 metric tonnes of waste generated, a 36 per cent increase from 92,019 metric tonnes in 2020.
- Hazardous waste generated in 2021 increased to 59,228 metric tonnes, mainly from PETRONAS Energy Canada Ltd (PECL) drill cuttings (PECL contributed 43 per cent of total hazardous waste generated) that require disposal at secure landfills. As with other assets under PETRONAS, PECL is exploring waste minimisation options to reduce hazardous waste disposal.
- Conducted periodic assurance at our waste contractors' facilities to verify that all aspects of waste management conformed to established waste management procedures and regulatory frameworks. The findings of the assurance at waste contractors' facilities were tracked to closure and documented for our reference.
- Waste performance data are monitored by all PETRONAS Operating Units (OPUs) on a monthly basis.

New Plastics Economy

• Innovation

- Collaborated with Plastic Energy Ltd to develop a solution that turns non-recyclable plastic waste into crude naphtha and further processes it into polymers, which acts as feedstock for plastic production.
- Performed a feasibility study with Plastic Energy Ltd to construct a plastic waste to crude naphtha facility in Malaysia. The objective of the study is to bring the technology to Malaysia by turning low quality, mixed plastic waste from landfills into naphtha quality pyrolysis oil. The end product will be used as feedstock for polymer production, enabling PCG to offer certified circular polymers.
- Explored other innovative solutions based on the three focus areas:
 - ReDESIGN: Enhance the recyclability of plastic materials
 - ReGENERATE: Regenerate end-of-life plastics into valuable materials
 - ReNEWABLE: Develop renewable-based plastic materials
- Conducted a process trial of converting plastic waste into circular naphtha at a PETRONAS refinery in Melaka.

• Infrastructure

- Secured feedback supply for projects currently ongoing in collaboration with local recyclers.
- Initiated internal and external collaborations to improve the recovery of recyclable materials through our internal 3R programme involving PCG OPUs and other PETRONAS Business Units, such as PETRONAS Gas Berhad.

• Education

- Developed and distributed Plastics, Sustainability and You Education (PSYE) modules to schools in Malaysia, in collaboration with the Ministry of Education (MOE), Solid Waste Management and Public Cleansing Corporation (SWCorp) and Malaysian Plastics Manufacturers Association (MPMA).
- Held live webinar sessions on Pusat STEM Negara's social media channels for primary and secondary school students as well as teachers. We also conducted webinar sessions for:
 - Public and school students through *Karnival Sains Sabah Edition*, in collaboration with PETROSAINS and the Ministry of Science, Innovation and Technology Sabah
 - Employees of the Prime Minister's Office and its agencies
 - ASEAN polymer industry during the ASEAN Federation of Plastic Industries (AFPI) meeting and Asia Plastics Forum (APF) Conference in collaboration with MPMA. The participants were from 12 countries, namely Malaysia, Bangladesh, China, India, Indonesia, Japan, Myanmar, the Philippines, Singapore, Sri Lanka, Thailand and Vietnam.

• Clean-Up

- Conducted clean-up initiatives through our Be Green Programme, which encourages surrounding communities in our areas of operation to learn about the importance of preserving the environment through proper waste and plastics management.

Safeguard the Environment

What did we achieve?

Waste Management

- **49,561 metric tonnes** of waste recycled/recovered, which is equivalent to **40 per cent** of the total waste generated by the Group.
- A decrease of oil in water content to **452 metric tonnes** in 2021 was due to operational improvement.



New Plastics Economy



• Education

- Conducted nine webinar sessions nationwide, on **Plastics, Sustainability and You**, involving **130,000** teachers, students, government officers, industry players, the public and internal PETRONAS employees. The webinars aim to support NPE and educate the audience on sustainability and responsible plastics management.

Safeguard the Environment

Environmental Quality

Why is it important?

Our business is deeply connected to our planet's natural resources. As a responsible operator, we aim to minimise the impact of our operations on the surrounding environment. This means managing our freshwater withdrawal, air quality, potential spills and biodiversity conservation efforts to protect the environment.

What is our position?

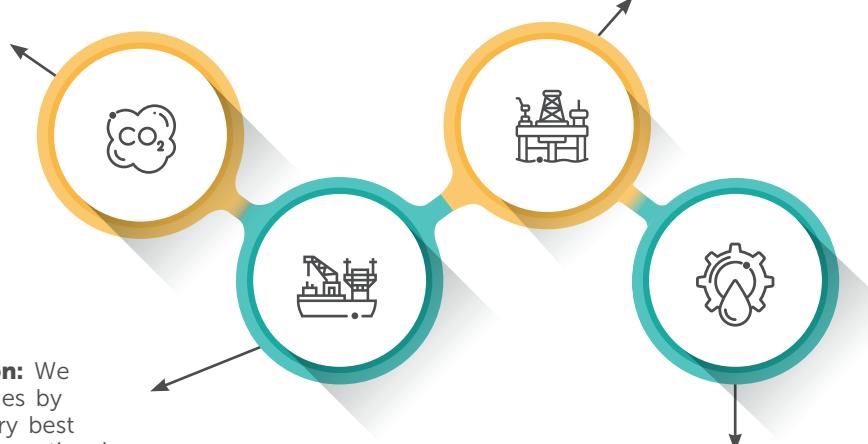
We integrate progressive environmental stewardship practices into our business practices and operations. We do this by placing a high priority on ensuring compliance with international standards, namely the International Finance Corporation (IFC) Performance Standards on Environment and Social Sustainability, and the World Bank Group Environmental, Health and Safety Guidelines (EHS Guidelines) as well as leveraging tools and databases such as the World Resource Institute's (WRI) Aqueduct Water Stress Atlas and the Integrated Biodiversity Assessment Tool (IBAT).

PETRONAS' Environmental Focus Areas

Air Emissions: Air emissions from our facilities are monitored, and risks are evaluated and addressed accordingly as part of our integrated air emissions management approach. To enhance data visibility, we developed an online monitoring platform that allows us to accelerate our response rate.

Our sulphur oxide (SO_x) and nitrogen oxide (NO_x) emissions are measured directly from continuous monitoring systems or periodic samplings. Measurement systems comply with host country requirements or in their absence, reference is made to international accepted standards.

Decommissioning: We ensure that the disposal of petroleum facilities adheres to the structured Decommissioning Option Assessment (DOA). We also work closely with the Department of Fisheries (DOF) to evaluate the feasibility of converting decommissioned oil and gas platforms into artificial reefs to maximise the lifetime of decommissioned structures and to contribute to marine biodiversity.



Oil Spills Prevention: We safeguard our facilities by incorporating industry best practices on spill prevention in the design of our facility, implementing scheduled inspection and maintenance programmes, and applying lessons learnt from spill incidents.

Water Management: We implement internal standards, policies and initiatives to optimise our freshwater withdrawal. Our water management focuses on three main pillars – conducting water accounting, understanding water availability, and increasing water use efficiency. Freshwater withdrawal in areas at risk of water stress is regularly tracked, with the water system operating at best-achieved levels. Wastewater discharge from our facilities are monitored, and risks are evaluated and addressed.

Safeguard the Environment

What did we do in 2021?

Water

Freshwater Withdrawal

- Continued to track the best-achieved freshwater use intensity for the top 13 freshwater users that were first identified in 2020.
- In 2021, PETRONAS' freshwater withdrawal increased by 11.1 million cubic meters, due to the inclusion of PETRONAS Refinery and Petrochemical Corporation Sdn Bhd (PRPC)'s Utilities and Facilities (UF) which is currently undergoing start-up. PRPC UF's freshwater withdrawal is 14 per cent of PETRONAS' total withdrawal volume.
- To ensure freshwater use is within design efficiency, water balance and internal procedures on water systems for PRPC UF have been established.

Wastewater Discharge

- Continued to monitor discharges from onshore and offshore installations.
- Continued to conduct water risk-based assessment updates for all our onshore and offshore platforms.

Air Emissions

- Continued to monitor emissions from all stationary emission sources.
- The decrease in sulphur oxide (SOx) emissions value by 47 per cent was attributable to the decommissioning of Engen Petroleum's refinery in Durban and operational improvement in PETRONAS Floating LNG (PFLNG).

Environmental Health

- Embarked on a voluntary, evidence-based management system for improved environmental health. This ensured safety and control measures were well integrated into our operations without impacting the environment and human health.
- Since 2018, we have been conducting baseline Human Health Risk Assessments (HHRA) at selected domestic operations to evaluate community exposure to chemicals in ambient air and groundwater.
- In 2021, we established new baseline HHRA for identified PETRONAS facilities at domestic and international locations.

Oil Spill Prevention

- Co-hosted with Malaysia's Department of Environment (DOE) a regional hybrid oil spill response exercise involving 17 agencies and three countries namely Malaysia, Indonesia, and Singapore.
- Conducted an Oil Spill Response Capability Assessment (OSRCA) for employees from various PETRONAS OPUs. The exercise aimed at helping participants:
 - Understand the core of oil spill management.
 - Conduct semi-quantitative oil spill risk assessments.
 - Identify appropriate response options to mitigate credible scenarios.
 - Compare the requirements against the available preparedness procedures and provide recommendations.

Decommissioning

Governance

- Strengthened relationships with the National Security Council via National Security Council – Malaysia Petroleum Management (MPM) Annual Engagement Session for upstream oil and gas activities. The National Security Council took no exception to the planned decommissioning projects to be executed as well as securing approvals for marine resources used.
- Engaged with Malaysia-Thailand Joint Authority (MTJA) on:
 - Decommissioning best practices and lessons learnt for the mutual benefit of both parties;
 - Developing the Ministerial Regulation for Offshore Installation Decommissioning Standards to strengthen MTJA's pre-decommissioning processes, which is expected to be ready towards the end of 2022.
- Actively contributed to the International Association of Oil and Gas Producers (IOGP) Decommissioning Committee which includes completion of IOGP Asset Retirement Obligation (ARO) White Paper and Habitat Retention Guide. PETRONAS was also appointed Co-Chair of IOGP's Asia Pacific (APAC) Decommissioning Sub-Committee to establish potential regional collaborations and region specific studies/projects.
- Collaborated with the Malaysian Oil and Gas Services Council (MOGSC), identifying four technologies that could potentially contribute to decommissioning cost compression efforts, and three companies interested to be involved in asset repurposing.

Safeguard the Environment

- Promoted Malaysia's decommissioning achievements and aspirations via the presentation, among others:
 - Decommissioning in Malaysia: Learning and Moving Forward from 2020** to around 300 global operators and service providers during Decom Week 2021, organised by Decom North Sea, United Kingdom.
 - Malaysia's Sustainable Decommissioning Framework** at the Oil & Gas UK (OGUK) Decommissioning Conference, attended by over 400 participants from across the globe.
- Signed the Decommissioning Side Agreement, a supplementary agreement to the Gumasut/Kakap - Geronggong/Jagus East Fields Unitisation Agreement, with the National Unitisation Secretariat (NUS) representing the Government of His Majesty The Sultan and Yang Di-Pertuan of Negara Brunei Darussalam.

What did we achieve?

Water

- Completed a detailed **water risk study** in Labuan, one of the locations projected to experience water stress by 2050.
- Actively participated in the **Ipieca Water Working Group** and developed Ipieca's guidance document, Review of Drought and Flood Risk Tools.

Decommissioning

Continuous efforts towards sustainable decommissioning of Malaysia's disused Upstream facilities:

- Finalised the **10-year** Master Reefing Plan (MRP) with Department of Fisheries (DoF), covering **11 offshore** structures and identified locations for Rigs-to-Reef off-the-coast of Peninsular Malaysia.
- Successfully decommissioned two pipelines and repurposed one major trunk line with an aggregated cost saving of **17 per cent**, amounting to **RM12.9 million**.
- Completed three pipeline decommissioning projects and **13 wells** plugged and abandoned, complying with local regulations and internal guidelines, which are aligned with established international guidelines and standards.

Environmental Health

- 14 existing** baseline and **7 new** baseline HHRAs for air emissions.
- 2 existing** baseline and **6 new** baseline HHRAs for groundwater.
- From the new baseline HHRAs, we have identified areas of improvement to reduce chemical exposures in air emissions and groundwater, going beyond regulatory compliance.

Oil Spill Prevention

- Led the establishment of the **National Oiled Wildlife Response Plan** for Malaysia, in alignment with Global Oiled Wildlife Response System (GOWRS) and Ipieca best practices and guidelines.
- The oil spill response exercise demonstrated the effective communication between Malaysia, Indonesia and Singapore.
- 13 employees** trained in competent Oil Spill Response Capability Assessment (OSRCA).

New Solutions

- Developed an analytical software, PETRONAS Reefing Viability Index (RVI), to be able to assess the viability of offshore sites as reefing locations.
- Conducted reefing study in collaboration with academia led by Universiti Teknologi PETRONAS (UTP), focusing on site-specific reefing engineering, development of a strategic plan for sustainable Rigs-to-Reef programme, as well as socio-economic impact assessment to local communities, industries and stakeholders.

Safeguard the Environment

Biodiversity

Why is it important?

Biodiversity is an intricate web that encompasses all species, habitats, ecosystems and ecological processes that helps sustain life and the natural environment. It is closely tied to the growth of our natural resources, source of food and medicine; critical elements which contribute to our health, well-being and the overall economy. That is why we need to strengthen efforts and drive systemic shifts to promote nature conservation, preserve ecosystems and protect natural habitats. Our inability to mitigate biodiversity loss will have irreversible consequences on the environment, humans and economic activity. Permanent destruction of natural capital will further aggravate other risks.

The Post-2020 Global Biodiversity Framework, Taskforce on Nature-related Financial Disclosures (TNFD) and national policies such as the Malaysia National Policy on Biological Diversity (NPBD) are developments that aim to reverse biodiversity loss. At PETRONAS, we recognise the significance of nature and biodiversity to our business and communities in areas where we operate.

What is our position?

We will continue to take holistic actions to minimise our impact on biodiversity, at the policy level and on the ground, to reverse biodiversity loss. Thus, we are shifting our approach from compliance-based to strategic positioning on nature and biodiversity.

At PETRONAS, we adhere to stringent impact assessment and reporting standards on Biodiversity and Ecosystem Services (BES) set by the Global Reporting Initiative (GRI) and World Economic Forum (WEF). To protect biodiversity and ecosystem services in the areas where we operate, we identify BES risks, leveraging on Environmental Impact Assessments (EIAs) and BES Risk Assessments (BESRA), using tools such as Integrated Biodiversity Assessment Tool (IBAT) and be guided by our internal guidelines, such as the PETRONAS Technical Guidelines (PTG) on BES Management and industry best practices from organisations such as Ipieca, International Union for Conservation of Nature (IUCN), International Association of Oil & Gas Producers (IOGP) and World Business Council for Sustainable Development (WBCSD).

In line with our NZCE 2050 aspiration, PETRONAS strives to demonstrate visible leadership on Malaysia's nature and biodiversity agenda and the countries in which we have a presence. We aim to restore, maintain and enhance biodiversity as we recognise that climate and biodiversity are intertwined issues that need to be addressed in tandem.

What did we do in 2021?

- In 2020 the BES Risk Profiling for PETRONAS domestic operations was completed, utilising the Integrated Biodiversity Assessment Tool (IBAT), information from Environmental Impact Assessment (EIA) and other published information. As a result of the risk profiling, 9 per cent of PETRONAS' domestic operations were categorised as "very high" to "high" risk for BES. For these operations, a more detailed risk assessment - BESRA will be conducted and a Biodiversity Action Plan (BAP) will be implemented. In 2021, BESRA was conducted for PDB's terminals in Pasir Gudang, Johor and Langkawi, Kedah.
- PETRONAS recognises the need to work with other members of the wider business community towards BES management. To this end, PETRONAS is actively involved as a member of the Interim Working Group (IWG) to establish the Malaysia platform for Business and Biodiversity (MPBB). The MPBB is envisaged as a space for the private sector to discuss, share and collaborate on issues related to biodiversity conservation and its mainstreaming, in particular to support the implementation of the Malaysia National Policy on Biological Diversity (NPBD).

- Embarked on a tree-planting programme involving local communities in 14 sites across 11 states, a collaboration between Group HSE (GHSE), Yayasan PETRONAS and Global Environment Centre (GEC). The target is to plant 50,000 trees by the first quarter of 2022. This is also in conjunction with our Walk4Trees programme and aligned with the Ministry of Energy and Natural Resources (KeTSA)'s 100 million Tree-Planting Campaign.
- Conducted the Biodiversity Tech Talk as part of the awareness building process for employees. KeTSA Minister delivered the keynote address in a virtual event while we presented a paper on Malaysia's experience in Rigs-to-Reef, together with two other papers by KeTSA and Tenaga Nasional Berhad (TNB).



Safeguard the Environment

What did we achieve?

- Obtained endorsement for **new biodiversity metrics** by the PETRONAS HSE Council in November 2021 and reporting to commence in 2023 in line with the WEF's Stakeholder Capitalism Metrics and the Global Reporting Initiative (GRI) standards.
- **Planted close to 40,000 trees** from **14 community nurseries** established to supply seedlings for the programme, generate income and develop capabilities in nursery management and tree planting monitoring for the identified local communities.
- Organised the Biodiversity Tech Talk which was attended by **550 employees** and KeTSA representatives.



Positive Social Impact

Health and Safety

Our approach to sustainability begins with our employees, suppliers, and the communities in which we have a presence. To deliver sustainable and responsible growth, we stepped up efforts to respond in ways that would make a meaningful difference.

Why is it important?

The health, safety and overall well-being of our employees and contractors is a key priority given the complex nature of our work. We are constantly looking for ways to improve our processes to create a safe working environment because this ensures our employees and contractors achieve their full potential, and our assets remain productive. In addition to protecting our employees, communities, and other stakeholders throughout our value chain, health and safety excellence also gives us the license to operate over the long term. Our ability to drive a safety culture builds our brand reputation and strengthens our position as a caring employer and partner in the industry. It also helps us attract and retain high-performing talents.

Despite our best efforts, we are deeply saddened by the news of casualties suffered in 2021, where two out of three casualty incidents were related to land transport. We held the Safety Stand Down groupwide to pay our respects, honour their lives, foster involvement and reiterate the importance of safety. Efforts on land transport enhancement have been intensified by implementing the Fatigue Remedy and Sleep Hygiene programme at targeted entities, upskilling heavy vehicle drivers on land transport safety, and specific development of land transport procedures for newly acquired businesses. We had also recorded 10 Tier 1 Process Safety Events (PSE) in 2021, a slight increase from nine incidents in the previous year. A Tier 1 Process Safety Event is a Loss of Primary Containment (LOPC) with the greatest consequence as defined by API 754, Process Safety Performance Indicators for the Refining and Petrochemical Industries. It is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials, from a process that results in one or more of the consequences as listed in the API 754. Through effective implementation of fire reduction intervention programmes including Fire Prevention and Mitigation Framework (FPMF), only one major fire incident was recorded out of the 10 Tier 1 PSE.

What is our position?

We view our people's overall safety, health, and well-being as a shared responsibility. To foster a Generative Health, Safety and Environmental (HSE) Culture, we have put in place a HSE policy, backed by a HSE Management System and Crisis and Incident Management System, all of which are aligned to the International Organisation for Standardisation's (ISO) 14001:2015/ISO 45000:2018.

To elevate Generative HSE Culture and enhance compliance, the HSE Accountability Behaviour and Reinforcement (HSE ABR) programme was rolled out groupwide to amplify and nurture Desired HSE Behaviours while simultaneously diminishing Undesired HSE Behaviours. In pursuing our annual goal of zero safety incidents and fatalities, we are constantly looking for ways to improve our processes and systems to make them safer through a structured assurance process focusing not only on existing operations but also on new business, which is enforced through a Post Acquisition Implementation Plan (PAIP).

Periodic exercises and drills are also conducted to ensure our emergency and crisis teams are equipped with the right competencies. Several other frameworks, namely Process Safety Loss of Primary Containment Reduction (PSLR) Framework, Fire Prevention and Mitigation Framework (FPMF), and the PETRONAS Contingency Planning Standard guidelines were also established to improve compliance levels. PETRONAS also leverages myHSSE, a one-stop digital solutions platform that presents challenges, insights, performance, emerging risks and other elements to help us mitigate risks.

What is our focus area?

Given the challenging environment caused by the COVID-19 pandemic, we continued to safeguard our employees and partners by focusing our efforts on mental health and wellness through programmes such as MIND-A-CARE, i-C4RE online, and myFriends. We intensified our effort by closely engaging with our partners, including suppliers and contractors, to strengthen grievance management and heighten HSE compliance in reducing incidents.

Efforts to sustain HSE performance were made through specific interventions focusing on culture, capability and competency, and compliance. Additionally, we continued to collaborate with relevant stakeholders to strengthen relations and nurture trust, including accelerating our readiness towards self-regulation, which has received endorsement from the Malaysian national authorities.

Positive Social Impact

Digital HSSE at PETRONAS

The myHSSE digital platform serves as our one-stop knowledge centre for all PETRONAS Health, Safety, Security and Environment (HSSE) matters.

By adopting a single information platform that houses all 18 systems of our HSSE digital solutions, each of which addresses different business pain points for 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 so that we can make proactive interventions. As we move towards our goal of realising predictive and even prescriptive HSSE analytics, we aspire for the Group HSSE endeavours to rise several notches higher.

- **SHIELD**
Stewardship, Health, Information and Environment Linked Database
A unified platform to manage the PETRONAS HSE database. It contains modules on Occupational Health (OH), Industrial Hygiene (IH) and Product Safety (PS).
- **SDS**
PETRONAS Safety Data Sheet
A search portal that provides valuable information on PETRONAS' products in terms of product composition, labelling for containers and transport, safe handling and storage, incident management and compliance with regulations.
- **myHealth**
myHealth
One-stop centre for Approved Medical Examiners (AME) and medical practitioners to manage medical records submission.
- **LegalEasy**
LegalEasy
A solution to create a specific entity's legal register and conduct compliance audits against the legal register or selected legislations, which is based on a set of audit questions.
- **FMS**
Fatigue Management System
A centralised system to track and monitor the Hours-of-Service Limit (HSL) for PETRONAS' employees and contractors.
- **ICMS**
Integrated Contractor Management System
A system to screen contractors and prevent blacklisted personnel from entering PETRONAS' premises.
- **IPSS**
Integrated Process Safety Solution
An integrated solution to optimise Process Safety work processes, provide governance oversight to minimise human error and ensure compliance, while providing valuable insights into risk management.
- **e-Learning**
HSSE e-Learning
A centralised digital platform that offers HSSE learning modules to employees.
- **UAUC**
Unsafe Act, Unsafe Condition
A centralised platform to report, track and provide analytics of Unsafe Act, Unsafe Condition and Safe Observation for PETRONAS groupwide.
- **CMIS**
Crisis Management Information System
A solution to minimise human actions by providing an assisted approach in managing a crisis through technology.
- **EPICS**
Environment and Social Performance Integrated and Centralised System
An integrated system that provides holistic environmental and social performance data management for compliance and sustainability reporting.
- **MARS**
Monitoring and Reporting System
An integrated and centralised system to report, record and monitor HSSE performance indicators for PETRONAS groupwide.
- **e-RGO**
Ergonomics Management System
An ergonomic self-assessment adjustment and case tool to reduce the risk of musculoskeletal disorders.
- **HIRA**
HSSE Integrated Risk Assessment
An integrated system to manage and perform HSSE-related risk assessments.
- **IM**
Incident Management
A system to report, record and track actions on groupwide HSSE incidents and grievances for PETRONAS.
- **AM**
Action Management
A centralised platform to record and track groupwide HSSE-related action items for PETRONAS.
- **HSE ABR**
HSE Accountability and Behaviour Reinforcement
A digital solution to manage both positive and constructive reinforcements.
- **PSRS**
PETRONAS Self-Regulation System
A centralised digital platform for Plant Management System (PMS) implementation. It provides a platform for PMS compliance monitoring and information management through standardising work processes, data monitoring and performance reporting.



Making Prescriptive Possible Because we care.

You will find specific instances of how some of PETRONAS' HSSE digital solutions are utilised throughout this Integrated Report. Just look for the myHSSE icon.

Positive Social Impact

What did we do in 2021?

Culture

At PETRONAS, we are working towards building a culture of Health and Safety as this will improve our processes, protect our employees and ensure our assets remain productive.

Change and Communication

- Increased the number of virtual trainings on Generative HSE Culture Leadership Programme (GCLP) targeting the Top Leaders, management of PETRONAS, Partners, Middle Managers, and frontliners.
- Connected leaders to Behaviour Series training programmes to help them understand human factors through Process Safety Essentials, Human Performance Improvement as well as HSE Accountability and Behaviour Reinforcement.
- Assessed PETRONAS Culture Maturity Survey (CMS) for domestic and international operations in 49 locations, which garnered more than 38,000 responses globally.
- Obtained endorsement for the National Occupational Safety and Health (OSH) Masterplan and Self-Regulation Framework through continuous engagements with the Department of Occupation, Safety and Health (DOSH) and Ministry of Human Resources Malaysia.

- Conducted risk assessments and implemented adequate controls and investigations on health-related incidents to protect our employees and communities from workplace health hazards.

Crisis and Incident Management

- Encouraged the learning culture across PETRONAS through six groupwide Failed Stories and Experience Sharing sessions.

Health

- Established a holistic mental health and well-being signature programme under the THINK RIGHT element of the MESTIfit4health initiative to:
 - address mental health issues and their risk factors at an early stage
 - promote mental resilience and psychological safety
 - manage mental health problems among employees and contractors.
- Strengthened Industrial Hygiene capabilities for non-HSE employees in specific focus areas, namely chemical management, hearing conservation, ergonomics, and COVID-19 controls via upskilling and communication programmes.



Positive Social Impact

- Conducted Walk4trees Challenge under the MOVE RIGHT element to plant 40,000 trees in 14 sites across 11 states. It is an element under the MESTIfit4health programme to drive active lifestyles and fulfil our responsibility towards the environment and community.
- Conducted eight Leaders Reach Out (LRO) sessions, led by PETRONAS President and Group CEO and the Executive Leadership Team (ELT), which provided a platform for open sharing and dialogues about mental health and wellness with the leaders. This was done to improve psychological safety and strengthen work culture through an empathetical approach by the leaders.

Safety Management

- Conducted 12 site assessments on Unsafe Act and Unsafe Condition (UAUC), implemented by Operating Plant Units (OPUs) and Project Sites, along with quarterly UAUC Implementation Working Group (IWG) engagements to enhance user experience.
- Implemented PETRONAS Contractor HSE Mentorship Programme, with commitment from the Senior Management of major contractors that subscribed to the programme, to improve the HSE system and culture with contractors.
- Introduced HSE Accountability and Behaviour Reinforcement (HSE ABR) to ensure a consistent approach and fairness across PETRONAS when recognising and rewarding Desired HSE Behaviour, including addressing Undesired HSE Behaviour.
- Improved Process Safety competencies and governance by benchmarking against industry standards and practices.

Compliance

We carry out various initiatives to improve our processes and address potential risks.

Crisis and Incident Management

- Collaborated with the Fire and Rescue Department of Malaysia (FRDM) to strengthen the regulatory compliance and governance as well as ensure business continuity.

Health

- Implemented an improved Food Poisoning Intervention plan across business units, OPUs and assets in collaboration with the Ministry of Health (MOH).
- Enhanced Fatigue Management System (FMS) at OPUs to prevent incidents, improve compliance based on PETRONAS requirements on fatigue management, and increase investment return.
- Strengthened Health Risk Management, focusing on engineering and digitalisation to improve compliance and prevent adverse health effects across the workforce (noise engineering in design, chemical management system and ergonomics management system).

Safety Management

- Established Operational Legal Areas Functional Checklist, a collaboration between GHSE and Group Legal.
- Conducted 12 Second Line Assurances and six HSE Due Diligence at selected businesses.
- Launched Organisation Management of Change (OMOC) digital modules to strengthen Integrated Process Safety Solutions to manage risks and ensure business continuity.
- Implemented a new practice of doing HSE induction for contractors' Senior Management across PETRONAS for companies awarded with significant contracts valued at RM500 million and above.

Self-Regulation

- Streamlined Generative HSE Culture to the Self-Regulation Culture and Behaviour Assessment in ensuring compliance with Plant Management System (PMS) requirements through Self-Regulation Programme.
- Conducted PMS Documentation Compliance Audit on PRefChem through collaboration with the Department of Occupation, Safety and Health (DOSH) in preparation for a start-up.
- Obtained endorsement for the Self-Regulation Framework through strategic taskforce collaboration and continuous engagement with DOSH and Ministry of Human Resources Malaysia in supporting the National OSH Masterplan.

Positive Social Impact

Capabilities and Competencies

A continuous effort to enhance employees' HSE capability development and growth, drive sustainable HSE capability programmes, and embed overall HSE values and appreciation amongst our stakeholders and the larger community.

- Build HSE Leaders of Tomorrow:
 - Conducted continuous talent competency development via certification training such as Tripod Beta Investigation Tool, Oil Spill Response, Marine Safety, Fire and Emergency Response, Industrial Hygiene, Approved Medical Examiners, and more.
 - Conducted HSE Talent Outlook exercise to anticipate and build the required green capabilities to support our green ventures and NZCE 2050 aspiration.
- Design sustainable capabilities building programmes.
 - Structured the HSE Engineer programme to sustainably provide a pipeline of technically equipped and operationally experienced HSE engineers to line operations.
- Enhanced Fire Hazards Management proficiency by sharing 33 technical papers and conducting five TechTalk webinar series.
- Optimised the execution of emergency exercises through utilisation of digital tools and systems through Hybrid Emergency Response Exercise (HERE).
- Collaborated with Regional Leaders and government agencies in strengthening Natural Disaster Contingency Plan (NDCP) through emergency response exercises.
- Strengthened incident management capability by enhancing groupwide Incident Investigation team leaders, reflective learning and root cause analysis facilitators.
- Strengthened Industrial Hygiene awareness, knowledge and capability by introducing industrial webinars (4), upskilling programmes (2), HSE culture talks (2), and industrial hygiene infographics which resulted in 1,889 views.

- Enhanced collaboration with government bodies via an MoU with Fire and Rescue Department of Malaysia (FDRM) to elevate technical competency and sharing of emerging technology in Fire Safety Systems and Firefighting.
- Collaborated with external stakeholders to improve quality and knowledge:
 - **Contractors:** Engaged with partners that assured the presence of competent contractors at the worksite, and provided learning opportunities such as focused mentorship and technical guidelines.
 - **Institutions of Higher Education:** Collaborated with higher education institutions to encourage knowledge exchange between academia and industry; enhanced Universiti Teknologi PETRONAS (UTP) HSE Introductory module; and instill HSE values as we develop an HSE-conscious workforce.
 - **Professional Bodies** – Partnered with the Centre for Chemical Process Safety (CCPS) and Institution of Chemical Engineers (IChemE) Safety Centre (ISC) to encourage knowledge sharing on Process Safety for PETRONAS and the industry.
- Adopt Digitalised HSE Learning:
 - Established a sustainable HSE e-Learning and Blended Learning approach (virtual webinar and group workshops) to promote HSE upskilling anytime, anywhere, while providing just-in-time HSE knowledge to our stakeholders.
 - Enhanced and digitalised HSE Test assessments, with new modules included, such as Sustainable Development, to embed HSE and sustainability values across our frontliners (PETRONAS non-Executive Technicians).
 - Launched Organisation Management of Change (OMOC) digital modules to strengthen Integrated Process Safety Solutions to manage risks and ensure business continuity.

Positive Social Impact

What did we achieve?

Culture

Change and Communication

- PETRONAS Culture Maturity Survey results ascended the culture ladder to **Proactive (4.03)** from **Calculative (3.98)** level, with visible leadership and HSE ownership driven within line functions.
- Accomplished participation of **more than 2,300** leaders/supervisors/frontliners and programme Coaches/Facilitators through Generative HSE Culture (GC) programmes for Top Leaders, Middle Managers, Rakan HSE and Partners in accelerating GC HSE journey.
 - 387 leaders** trained under Generative HSE Culture Leadership Programme (GCLP), including top leaders and middle managers across all business units.
 - Over **2,000 frontline** supervisors were upskilled with the relevant capabilities to accelerate our HSE journey.
- Transformed challenges into opportunities by creating more avenues in sharing behaviour series, demonstrating efforts for care and keeping people for business continuity.

Safety Management

- Reported **32,378 unique users** under the Unsafe Act and Unsafe Condition (UAUC) initiative, a **14 per cent** increase from the previous year, demonstrating higher safety culture awareness levels among employees and contractors.
- 10 Senior Management** of major contractors expressed commitment and subscribed to the PETRONAS Contractor HSE Mentorship Programme.
- Obtained commendable Process Safety Culture Maturity Score amongst PETRONAS employees based on HSE Culture Maturity Survey (**4 out of 5**).
- Established and rolled out the HSE Accountability and Behaviour Reinforcement (HSE ABR) Guideline. This Guideline was communicated through two e-learning modules and a series of groupwide communications, supported by the HSE ABR System.

Health

- 200 per cent** increase in the utilisation of PETRONAS Employee Assistance Programme (MyFriends) in 2021 compared to the previous three-year average (2018 – 2020), showing increased openness among employees to reach out to professionals to manage their problems.
- 74 per cent** improvement in resilience score among 840 participants involved in Individualised Coaching for Resilience Enhancement (i-C4RE).
- 15,023 employees** from PETRONAS global operations attended the eight Leaders Reach Out (LRO) sessions on mental health and well-being.
 - Received **4,045 comments** and feedback around four major areas – Wellness, Leadership, Working Arrangement and Employees Performance, leading to some immediate interventions such as subsidies for work from home expenses, individualised coaching programmes, and strict vaccination requirements for entry into work premises to manage COVID-19 risk.

Positive Social Impact

Compliance

Health

- **50 per cent** reduction in food poisoning cases in 2021 compared to a rolling five-year average (2016-2020).
- **Zero food poisoning** incidents involving in-house caterers.
- High Ministry of Health (MOH) Hygiene Standards among PETRONAS in-house caterers where **97 per cent** achieved MOH's Clean, Safe and Healthy (BeSS) certification and the remaining achieved Grade A Standard.
- **Zero** fatigue-related fatality and incident among OPUs applying Fatigue Management System.
 - Prevented **16,900** potential fatigued employees from entering **32** PETRONAS OPUs.
 - Achieved High compliance (**99.85 per cent**) for PETRONAS Technical Standard requirements on fatigue management among employees and contractors.
 - Reduction of **12.5 per cent** in fatigue management non-compliance frequency to 14,224 from 16,266 in 2020.
 - Saved **231,000 manhours** and **RM11.6 million** through the digitalisation of fatigue management, including automated checks on fatigue compliance at site, reduce administrative costs, and blocked entries of fatigue employees.
- Targeted noise reduction projects in several OPUs show significant noise reduction. Routine surveillance programme and close monitoring detected a few Occupationally-acquired Noise-Induced Hearing Loss (ONIHL) cases, and investigations were carried out to determine root causes and mitigate actions.
- **Zero cases** of over exposure to chemicals in 2021 and 2020.

Safety Management

- Improved compliance in managing organisational change as seen through increased Integrated Process Safety Solution (IPSS) utilisation rate.
- Through Safety Intervention Plans, we achieved:
 - **Aviation:** Sustained zero incidents.
 - **Maritime:** **20 per cent** reduction in Maritime Lost Time Injury incidents, with zero Fatal Accident Rate (FAR).
 - **Land Transport:** **17 per cent** reduction in Total Vehicle Accident Rate (TVAR) and **33 per cent** reduction in Vehicle Loss of Primary Containment (LOPC) recorded for Downstream.

Self-Regulation

- Facilitated Self-Regulation readiness for four endorsed OPUs through Structured Assurance and Culture Baseline Assessment.

Capabilities and Competencies

A progressive step towards Generative HSE capability building among our talents while impacting the larger community and society through our HSE capability efforts.

- Build HSE Leaders of Tomorrow:
 - Developed capability tools and framework for the development of Green and Clean Energy skillset.
 - Identified over **30 new** and emerging HSE skillsets to be developed for HSE professionals and established GHG Management as a new discipline.
- Designed sustainable capability building programmes:
 - Industrial Hygiene training resulted in:
 - o **16** trained professionals
 - o **23** Initial Ergo Trained Persons (ETPs)
 - o **21** Advanced ETPs.
 - Developed a sustainable pipeline of new HSE engineers for business and economic growth:
 - o **48** HSE engineers mobilised to line operations, with an accelerated HSE talent time-to-autonomy
 - Introduction of innovative learning infrastructure via digital and blended HSE learning resulting in:
 - o **7** HSE e-Learning modules shared to upskill all PETRONAS contractor personnel.
 - o **12** in-house HSE e-learning modules developed in 2021.
 - o Improved overall HSE competency level with a stronger HSE Technical Professional and competent person with Certificate of Competency (CoC) pool.
 - o Achieved **71 per cent** Process Cycle Efficiency through the digitalisation of the HSE Test process.
 - Collaboration with external stakeholders to improve quality and knowledge:
 - Enhanced quality of HSE course module by rolling out enhanced HSE Introductory module for all Universiti Teknologi PETRONAS (UTP) first-year students.

Positive Social Impact

COVID-19 Response

Throughout 2021, PETRONAS moved swiftly to provide our employees, customers, clients, communities and those across our supply chain with relevant support during this challenging period of the COVID-19 pandemic. With a strong focus on maintaining their health and safety, we reached out to assist those in need and create a lasting positive impact in the communities where we are present.



Activity

PETRONAS Pandemic Preparedness and Response Team (PPRT), the Directives, Standard Operating Procedures (SOPs) and Mitigation Measures

- Established the COVID-19 PPRT at Holding Company, Business and Operating Units both at Malaysia and international operations to manage the transmission and impact of COVID-19.
- Set up a COVID-19 One-Stop Centre on the PETRONAS Intranet which acts as the main platform of the latest information including all the directives, technical guidelines and general information to guide employees on COVID-19 management.
- Developed Incident Action Plans and SOPs across all levels of the Group.
- Launched the COVID-19 Digital Platform (e-Health Vaccination Tracking) for employees to update their vaccination status and other mitigation measures, backed by 85 technical guidelines and directives to improve business continuity and safeguard the health and safety of the workforce.
- Provided medical emergency support to employees and contractors during the peak period of COVID-19, enabling them to obtain necessary treatment including admission into PETRONAS' panel hospitals.

PETRONAS Vaccination Centres

- Established six onshore Industry Vaccination Centres or *Pusat Pemberian Vaksin Industri* (PPVIN) in Pengerang Integrated Complex (PIC), Johor; Malaysia Refining Company Sdn Bhd (MRCSB), Melaka; Bintulu and Miri, Sarawak; and Kerteh and Pulau Duyong Jetty Terminal (PDJT), Terengganu; to help reduce the nationwide daily infection rates.
- Distributed hygiene kits to all employees.
- Conducted the first-of-its-kind outreach programme by setting up five offshore vaccination centres.

Highlights

- No major interruptions recorded due to timely and effective SOPs as well as direction/guidance given by PPRT and management.
- Achieved RM700,000 in cost savings from these internally-developed digital platforms, with no data breaches.
- Achieved 100 per cent utilisation for COVID-19 Digital Platform as all employees updated their vaccination status.

- RM4.0 million contributed by the six PPVNs to support the National Immunisation Programme.
- A total of 99.6 per cent of PETRONAS employees have been fully vaccinated.
- Over 1,000 employees' dependents, community members and school-going children vaccinated at the PPVs.
- RM750,000 contributed to *Pusat Pemberian Vaksin* (PPV) in Perlis, Kedah, Perak and Selangor.

Positive Social Impact

Activity	Highlights
<p>Green Bubble Strategy and Green Net</p> <ul style="list-style-type: none"> Grouped different work areas as Green Bubbles to sustain business continuity throughout our operations, where personnel who entered these 'bubbles' are required to conduct COVID-19 testing. Established quarantine centres for employees from the Upstream and Gas operations at local hotel establishments to allow a smooth transition and changes in shifts. 	<ul style="list-style-type: none"> 33 assets worldwide implemented the Green Bubble Strategy and Green Net. Close to 100 per cent vaccination rates for the offshore ecosystem – Upstream, PFLNG, Malaysian Petroleum Management (MPM), Petroleum Arrangement Contractors (PACs), crew, with no major business disruptions.
<p>My Personnel e-Tracker (MyPeT)</p> <ul style="list-style-type: none"> Introduced a tracker for personnel to ensure minimal industry-wide disruptions across all operations and the value chain. MyPeT was designed to fill in the gaps for Upstream operations as the Malaysia's official MySejahtera app was only applicable for onshore locations. Monitored personnel movements, including contractors and subcontractors, from the embarkation point to their respective quarantine exit points. 	<ul style="list-style-type: none"> Ensured the safety of 10,000 offshore employees. Facilitated the process of contact tracing.
<p>Emergency Assistance and Financial Support</p> <ul style="list-style-type: none"> Extended financial support to vaccinated employees, and International Assignees and their families who were returning to Malaysia. Provided financial reimbursements to employees and families based in PETRONAS operations across 30 countries for vaccinations done at private hospitals and remote working options for those obtaining vaccinations in their home countries over two months. 	<ul style="list-style-type: none"> Provided 200 emergency/non-emergency assistance to COVID-19 infected employees via partnerships with the private medical sector.
<p>Government Relations</p> <ul style="list-style-type: none"> Collaborated with internal and external stakeholders, including the Ministry of Health (MOH), Ministry of International Trade and Industries (MITI), National Security Council (MKN), National Disaster Management Agency (NADMA), Department of Occupational Safety and Health (DOSH), PETRONAS contractors and joint-venture partners to further enhance our COVID-19 response. 	<ul style="list-style-type: none"> Pursued strong collaborations with the government, government agencies and state governments.

Positive Social Impact

Activity	Highlights
COVID-19 Disaster Relief <ul style="list-style-type: none"> Provided COVID-19 relief in the form of donations as well as necessary supplies to prevent, control and treat impacted communities located across our domestic and international assets (Azerbaijan, Brazil, Brunei, Canada, China, Egypt, Gabon, Gambia, India, Iraq, Italy, Myanmar, Mexico, South Sudan, Spain and Suriname). 	<ul style="list-style-type: none"> 1,507 hygiene kits distributed to frontliners and the community via collaborations with Resident Bintulu Office and Sebauh District Office, Sarawak respectively.
Supply Chain <ul style="list-style-type: none"> Continued to support and ease Oil and Gas, Services and Equipment (OGSE) vendors by facilitating access to financing under the Vendor Financing Programme. 	<ul style="list-style-type: none"> Facilitated the approval and disbursement of funds totaling RM1.37 billion to 243 applicants since its inception in 2018.
Split Work Arrangements <ul style="list-style-type: none"> Introduced PETRONAS Split Work Arrangement to encourage employees to be productive and thrive in any working environment. Flexible work options such as Compressed Work Week, Flexible Work Hour, Work from Home (WFH) arrangements, and also assistance allowance to set up a home office and connectivity fees were made available. 	<ul style="list-style-type: none"> Strengthened remote working arrangements by introducing New Ways of Working Assistance, Connectivity Assistance and shared Remote Working Best Practices.



Positive Social Impact

Security

Why is it important?

Given the dynamic, volatile and asset-heavy nature of the energy industry, we remain susceptible to security exposures which could impact our interests. Our extensive value chain is exposed to a range of security externalities, from protest and terrorism to crime, among others. Unpredictability and adversaries affecting our Manufactured Capital, such as onshore and offshore assets, including oil rigs, platforms and refineries, may result in loss or operational disruption, thus affecting our ability to deliver optimum business and stakeholder value. A strong and secured physical security landscape enables us to operate in a safe environment. It enables smooth operations and uninterrupted productivity of our infrastructure. More importantly, allowing our people to achieve their truest potential wherever we operate.

What is our position?

Safeguarding our people, information, property and operations wherever we operate remains our fundamental priority as a vital business enabler. Backed by our goal of positioning Group Security as a Centre of Excellence, we focus on widening and improving our security ecosystem, pushing boundaries to close security gaps by deploying a suite of physical and technological security solutions. At the same time, enhancing our protective monitoring and data analytics efforts to propel proactive readiness amidst fluid geopolitical environments.

To this end, we continuously fortify our physical security controls, supported by the right tools, practices and people. We are guided by laws and regulations of the countries in which we operate, including internal governance mechanisms such as the PETRONAS Security Policy, Security Management Systems (SeMS) and Mandatory



Minimum Security Standards (M2S2). To continuously enhance our robustness throughout the energy value chain, we also implement targeted initiatives such as elevating compliance levels with the M2S2 and uptake of security considerations, generating predictive security insights and pursuing remote crisis management measures, enhancing maritime security as well as paving the way for accelerated skills and capability development in the niche domain of physical security management. In addition to these, expanding the roles and coverage of our PETRONAS Auxiliary Police – our pool of skilled frontliners.

Value Creation of Hybrid Emergency Response Exercise (HERE):

Contribute to cost, and time savings by conducting virtual drills

Optimise overall response management by having virtual security engagements

Fortify security controls at PETRONAS assets globally

Strengthen security readiness through predictive inputs

Enhance capability, competency and knowledge through targeted initiatives and awareness programmes

What did we do in 2021?

Security Governance and Assurance

- Completed the Safeguarding Operations, Assets and Resilience (SOAR) Project across 214 assets, elevating compliance levels in line with PETRONAS' M2S2 standards.
- Deployed creative solutions to optimise manpower, as well as accelerated schedules and processes to maximise value creation.
- Identified seven technology-driven initiatives to drive security operational excellence.

Proactive Security Risk Management

- Improved security governance through four Security Crisis Management Guidelines (SCMG), namely Demonstration and Protest, Kidnapping, Piracy and Sea Robbery and Terrorism.
- Nurtured dedicated subject matter experts through relevant skills and competency development programmes in identified areas to shape a strong talent pool.
- Collaborated with PETRONAS Technical Training Sdn Bhd (PTTSB), to develop targeted security capabilities modules for the energy sector.
- Progressed on establishing a Security Academy to provide learning opportunities in areas vital to physical security.
- Completed Phase 1 of digital security systems integration for Malaysian operations. Phase 2 covering our international operations is planned for execution in 2022.

Positive Social Impact

Protective Security Monitoring

- Institutionalised real time monitoring for swifter security analysis and business decision making.
- Extended information on timely travel security insights to heighten employees' preparedness levels and shared security acumen via onboarding sessions to improve PETRONAS sponsored scholars' security mindfulness.
- Ensured uninterrupted business operations and provided 24/7 support to employees and contractors during the COVID-19 lockdowns.

PETRONAS' Security Frontliners

- Reviewed the roles of security frontliners and explored the potential of elevating in-house capabilities via the usage of drones and enhanced maritime security skills.
- Intensified patrolling of our assets in Malaysia, including offshore and unmanned platforms.
- Stepped up our ability to better address emerging security risks, among others deployed body worn cameras for a pilot project at the PETRONAS Twin Towers.
- Enhanced security during the various containment measures to protect PETRONAS' interests, locally and abroad.

Security Compliance Culture

- Enhanced Security Compliance culture groupwide, premised on the "Security is Everyone's Responsibility" philosophy, where collectively more than 25 security awareness programmes via webinars, engagements, articles, videos and infographics were conducted.
- Held the PETRONAS Security Month 2021 in July to increase awareness on the importance of robust security practices in delivering a reliable, uninterrupted energy supply. Organised forums, centered on topics such as security behaviours, scams, substance misuse and international security.
- Conducted multidisciplinary engagements with non-security practitioners to understand and address direct and indirect security exposures, including security governance stipulations from other parts of the business.
- Embarked on the Group Security's three-pronged strategy covering activities namely, an internal survey, targeted stakeholder engagements and a comparative benchmarking exercise where improvement findings were incorporated into the Five-year Group Security Blueprint.

Stakeholder Engagement

- Intensified stakeholder engagement, both locally and abroad. This included internal and external constituents, for example enforcement and government agencies in Malaysia. The engagements largely focused on areas such as potential room for collaborations to share on good security best practices and security and human rights, as well as security incident management to uphold uninterrupted security operations.
- Collaborated with the PETRONAS Pandemic Preparedness and Response Team (PPRT) to conduct special awareness sessions entitled Safeguarding our Frontliners – The Dynamics of Risks, Choices and Decisions amidst COVID-19 to curb transmission risk among our security frontliners and their family members.

What did we achieve in 2021?

Awarded Honourable Mention under the (Remote Resilience category) at the 2021 Duty of Care Awards.

Security Governance and Assurance

- **RM1 million** cost savings achieved through various negotiations of Price Agreement and fit-for-purpose security solutions.

Proactive Security Risk Management

- 30 PETRONAS Auxiliary Police personnel and executives from Group Security were honed as part of a Train the Trainer programme to realise the **Fit and Responsive** aspiration.

Security Protective Monitoring

- Successfully piloted an in-house real-time security monitoring to evaluate situational development in the countries where we operate.

Stakeholder Engagement

- **Four Quarterly** Security International Operations Conclaves conducted, involving security personnel and decision-makers from PETRONAS' global operations.
- Inaugural mass virtual engagement also held within the Group Security fraternity with holistic participation by all levels of staff, for example Group Security Townhall as well as virtual health and wellness programmes.

Positive Social Impact

Human Rights

Why is it important?

Our commitment to social performance is managing impacts arising from areas of our business while contributing to the society in a responsible, ethical and transparent manner, in accordance with recognised standards in compliance with applicable legislation. Our social performance framework governs how we manage impacts in the areas of environment, health, safety, socio-economic and culture.

Respecting human rights is a vital component of our Social Performance Framework and we have identified salient human rights issues material to PETRONAS in these areas of our business where we operate:

Labour and Working Conditions

- Forced or trafficked labour in contractors' and subcontractors' workforce.
- Child/minor labour.
- Condition of employment and work.
- Discrimination in hiring and contractual terms.
- Freedom of association and collective bargaining.
- Workers' health and safety.
- Workers' camp conditions.



Community Well-being

- Community health and safety.
- Access to natural resources for health, cultural needs and livelihood.
- Land acquisition and involuntary resettlement with/without economic displacement.
- Indigenous peoples.
- In-migration.

Supply Chain

- Contractor/supplier performance related to labour and working conditions, community well-being and security.

Responsible Security

- Use of force and conduct of third-party security.
- Human rights training for staff and third-party security.

What is our position?

Our Commitment

PETRONAS is committed to respecting human rights in areas of our operations, complying with its Code of Conduct and Business Ethics (CoBE) and all relevant legal requirements. Our responsibility is to uphold CoBE and ensure we comply with human rights principles and laws, embedding industry best practices throughout PETRONAS' Social Performance standards and guidelines, aligned with the United Nations Guiding Principles on Business and Human Rights (UNGPs). We apply integrated controls throughout PETRONAS' systems and processes including areas of risk management, procurement and supply chain, HSE, human resource management, business operations, legal and security.

Positive Social Impact

We are guided by the following standards, policies and guidelines:

United Nations Guiding Principles on Business and Human Rights (UNGPs)

PETRONAS Code of Conduct and Business Ethics (CoBE)

PETRONAS Human Rights Commitment

PETRONAS Contractors' Code of Conduct on Human Rights (CoCHR)

Health, Safety and Environment Policy

Anti-Bribery and Corruption Policy and Guidelines (ABC Manual)

Our human rights commitment applies to all employees of the Group of Companies, contractors, sub-contractors and any third parties within PETRONAS' premises or performing work and/or business for and on behalf of PETRONAS, in line with the PETRONAS Contractors' Code of Conduct on Human Rights (CoCHR).

Our Due Diligence

In ensuring we minimise risks to the communities where we operate, we are governed by our due diligence technical standards and guidelines pertaining to human rights: social risk assessment, human rights due diligence, indigenous peoples assessment, cultural heritage assessment, land acquisitions and involuntary resettlement, as well as grievance mechanism. These due diligence programmes are led by our Social Performance technical practitioners where potential human rights are identified, mitigated, tracked and monitored. Social Risk assessments are conducted periodically in accordance to project phases, during operational, decommissioning, as well as when there are significant changes in activities which may result in impact to community well-being, supply chain, security and labour and working conditions. Human Rights Due Diligence is also conducted for potential mergers and acquisitions.

Human rights is also fundamental to a just energy transition. The concept of Just Transition is to ensure that as we decarbonise, we also create social value and ensure progress for society that will offer better prospects for more people, with the notion of leaving no one behind. As part of Just Transition in realising our NZCE 2050 aspiration, the year 2021 saw PETRONAS strengthening our governance on our internal processes to establish Labour and Working Conditions (LWC) baseline by evaluating our compliance with labour and working conditions laws as an integral part of fulfilling our sustainability objectives.

Our work in advocating human rights in supply chain continues as per our reporting on page 203.

With our operations located in many countries around the world, local socio-political challenges can create complexity in managing human rights risks. Despite some challenges, PETRONAS strives to uphold our commitment to respect human rights and the UNGPs in compliance with CoBE and all other applicable requirements where we operate. More information on our efforts in building a sustainable energy

future in South Sudan is available in the Sustainability section of the PETRONAS FLOW magazine, in the September and December 2021 issues. The information is also featured on our corporate website.

As part of our ongoing efforts to reshape our portfolio and redeploy capital to our identified areas of growth, we have finalised our divestment in Myanmar. This was achieved after we conducted a social risk assessment and human rights due diligence for our operations there and also other sites. We have addressed matters identified from the assessment and due diligence by strengthening our engagements with key stakeholders as well as formalising a grievance management process. Good practices from other operations in Malaysia and Canada on engagements with communities with regards to human rights and consistent monitoring of gap closure plans, have been shared with other operations for mutual benefit.

Access to Remedy

PETRONAS provides access to remedy through its grievance mechanism (GM). It plays a critical role in opening channels for dialogue, problem-solving, investigation and providing a remedy where required. GM enables workers and other rights-holders to raise complaints freely, obtain effective and transparent solutions, and the pre-emptive action needed to avoid recurrence. Employees can submit grievances through their trade union representative, line manager and Human Resources representative for employment conditions complaints.

PETRONAS contractors must establish their own GM to address their workers' grievances. For example, in some of our operations, such as offshore platforms, chemical plants, and project sites under construction, we have designated personnel that manage HSE and social grievances by employees and contractors. There are also community liaison officers to address grievances from communities.

Our GM system allows us to monitor the number and type of formal individual or collective appeals received periodically. This helps us better understand the types of issues being raised, the effectiveness of our GM and methods to resolve issues that have been raised. The grievance data allows us to monitor salient problems and address root causes to prevent further grievances from being raised.

Positive Social Impact

What did we do in 2021?

Strengthened Engagements

- Continued to engage with officials from the Legal Affairs Division of the Prime Minister's Department and the Human Rights Commission of Malaysia (SUHAKAM).
- Shaped PETRONAS' leadership in business and human rights by participating in the National Business and Human Rights Forum as a speaker.
- Continued to engage with the Business Council for Sustainable Development (BCSD) Malaysia, participating in forums and discussions related to human rights.

Assessments

- Assessments of internal processes were conducted to establish a Labour and Working baseline based on the nine LWC Principles: freedom of labour, child labour, wages and benefits, working hours, grievance mechanism, non-discrimination, freedom of association, humane trademark as well as foreign and migrant workers.

The assessments of internal processes were conducted to our operations based on Labour and Working Condition Principles which has been mapped with legal requirements

Principles	Freedom of Labour	Child Labour	Wages & Benefits	Working Hours	Grievance Mechanism	Non-discrimination	Freedom of Association	Humane Treatment	Foreign & Migrant Workers
Downstream	✓	✓	✓	✓	✓	✓	✓	✓	✓
Upstream	✓	✓	✓	✓	✓	✓	✓	✓	✓
PD&T	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gas + New Energy	✓	✓	✓	✓	✓	✓	✓	✓	✓
KLCCH	✓	✓	✓	✓	✓	✓	✓	✓	✓
MISC	✓	✓	✓	✓	✓	✓	✓	✓	✓

Indicator	Remarks
Comply to the requirements	✓

Capability Enhancements

- Expanded pool of Social Performance practitioners to address human rights risks at Group, Business, and operational levels.
- Enhanced capability development on human rights management in LWC by conducting Technical Exchange sessions on Forced Labour and Masterclass sessions on Living Wage.
- Conducted a Technical Exchange on the National Action Plan on Forced Labour with the Ministry of Human Resources and SUHAKAM, rated effective by all participants.

Grievance Management

- Grievance mechanism module for employees:
 - 1,440 employees** completed Grievance Mechanism e-learning module.
 - 353** Grievance Focal, Community Liaison officers who have been upskilled via GM training and GM online system workshops.

Positive Social Impact

What did we achieve?

Strengthened Engagements

- Over 9,000** PETRONAS non-executive employees were covered by collective bargaining agreements. PETRONAS' collective bargaining agreements typically are for three years, with the latest renewed in 2021.
- More than **500 employees** attended the Technical Exchange session on Forced Labour and Masterclass session on Living Wage.

Assessments

- The assessment on our internal processes indicated no significant gaps in complying with requirements. We will continue to focus on capacity and awareness building, and engagements on labour and working conditions.

The assessment results show that PETRONAS' internal processes comply with the Labour and Working Conditions (LWC) legal requirements where we operate



Respondents	Responses received
Upstream	12
Downstream	13
G+NE	14
PD&T	22
MISC	6
KLCCH	3
Total	70

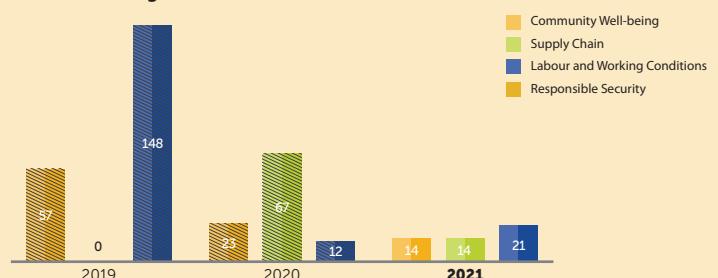
Capability Enhancements

- 68 per cent** of permanent employees completed the Human Rights Management e-learning module resulting in growing awareness on human rights management.
- 10 human rights training sessions were conducted for **1,415** (82 per cent) Auxiliary Police in 2021 resulting in upskilled security personnel in human rights legislation.

Grievance Management

- Received **49** grievances in 2021:
 - 21** grievances related to supply chain
 - 14** grievances on LWC
 - 14** grievances on community well-being.
- 98 per cent** of all grievances received were addressed accordingly, while lessons learnt from the issues raised have been identified to prevent future recurrence.

Grievances received from 2019-2021 According to Human Rights Elements in Business Context



Positive Social Impact

Supply Chain Management



Why is it important?

As a large organisation that relies on various products and services from external parties, it is essential to build supply chain resiliency. We ensure business continuity by managing our supply chain effectively, efficiently, and sustainably. This includes looking into the lifecycle of our products, protecting workers' rights throughout the supply chain, and ensuring the safety of our products and solutions to stakeholders. We do this because potential disruptions could impede operational efficiency, business continuity, financial performance and overall growth. To this end, our procurement practices are responsible, fair, ethical and transparent.

Given our long-standing experience in the oil and gas industry, we continuously collaborate with relevant industry players to drive socio-economic growth through our supply chain. Through our Vendor Development Programme (VDP), we promote the development of the Oil & Gas Services and Equipment (OGSE) industry, as well as Small and Medium Enterprises (SMEs), to build strong relationships and create more local entrepreneurs. Over the longer term, this creates a ripple effect in the communities around us as this maximises economic growth, creates more employment opportunities and improves their livelihoods.

What is our position?

Our approach to contractor management is taken from the Labour and Working Conditions (LWC) lens, and is part of the company's overall effort to address adherence to health, safety and environment (HSE) standards. Under the PETRONAS Contractors Code of Conduct on Human Rights (CoCHR), we require our contractors to respect internationally-recognised human rights and comply with PETRONAS Code of Conduct and Business Ethics (CoBE). PETRONAS expects our contractors and suppliers to adhere to LWC principles which are freedom of labour, prevention of child labour, wages and benefits, working hours, establish grievance mechanism, non-discrimination, freedom of association, humane treatment and foreign and migrant workers.

Our procurement system is supported by digital and analytic insights to deliver value to our stakeholders, thus shaping a resilient and ethical supply chain ecosystem. It is guided by the PETRONAS Procurement Standard, PETRONAS Anti-Bribery and Corruption Manual, and the PETRONAS Code of Conduct and Business Ethics (CoBE), ensuring our suppliers and contractors fulfil the requirements throughout the procurement process. Our supply sources are from various geographical locations. We aim to responsibly manage our supply chain by strengthening our digital solutions and continuously streamlining our procurement systems to create a more resilient supply chain ecosystem.

To improve our business practices, enhance productivity and optimise operations, we conduct capacity building and engagement initiatives for our suppliers and contractors. This is also in line with our high integrity standards as we have zero tolerance for malpractices and non-compliances. We also manage grievances via an integrated platform to monitor and manage cases. Meanwhile, in terms of product sustainability, we have established several initiatives to reduce our environmental footprint across our value chain as part of our net zero carbon emissions by 2050 (NZCE 2050) aspiration.

Positive Social Impact

What did we do in 2021?

Digital Procurement

- Implemented a cloud-based procurement integrated platform, covering Procure-to-Pay processes across PETRONAS' businesses.
- Established the Procurement Marketplace for low-value, high-volume material purchases.
- Infused analytics across our inventory management processes through Equipment Reliability-Based Stocking, leveraging on materials management and plant maintenance data.
- Improved surplus visibility across Petroleum Arrangement Contractors (PACs) through Surplus Marketplace.
- Conducted further improvements to the PETRONAS Licensing Management System (PLMS) to continuously enhance user experience.

Sustainable Supply Chain

- Addressed gaps in human rights risk management within the supply chain, which include a lack of understanding of human rights and formalised grievance management to address grievances of their contractors and suppliers.
- From 2018 to 2021, PETRONAS conducted the PETRONAS Contractors Code of Conduct on Human Rights (CoCHR) Self-Assessments with more than 6,000 registered contractors, out of which 4,600 are active contractors. 83 companies with more than 20,000 employees underwent the CoCHR Compliance Assessment.
- In 2021, 156 out of 298 contractors responded to the CoCHR Online Self-Assessment. We conducted dialogues with 22 identified contractors with elevated human rights risks.

About the Compliance Assessment

>6,000 registered contractors

4,600 active contractors

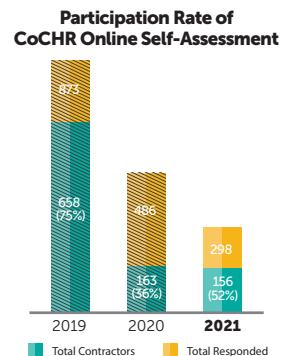
22 identified contractors with elevated human rights risks

Selection criteria:

- Value of Contract awarded (>RM1 million).
- High risk activity (high HSE risks, involvement of subcontractors).
- Services rendered in remote locations.
- Foreign and migrant workers participation in business.

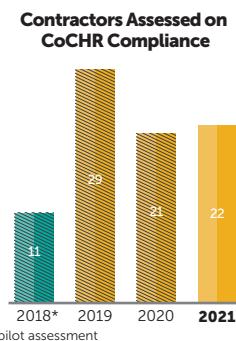
CoCHR Online Self-Assessment (active contracts)

- Online surveys were disseminated via collaboration with Licensing and Registration.
- Participation is voluntary, 977 out of 1,657 contractors responded.
- Based on the response received, some contractors were contacted for compliance assessment.



CoCHR Compliance Assessment (on-site: 2018-2019 and virtual: 2020-2021)

- 83 companies with more than 20,000 total workforce assessed.
- Assessments included:
 - Site walkabout (before the pandemic)
 - Interview with key personnel
 - Documents review



*pilot assessment

Ensuring Product Safety

- Improved raw material compliance management.
- Successfully expanded the Raw Material Information Request (RAWMIR) programme due diligence on conflict minerals groupwide in ensuring comprehensive raw materials HSE information being obtained from suppliers.

Positive Social Impact



Shaping Homegrown OGSE Players

- Contributed to national strategic initiatives by partnering with government agencies through various programmes:
 - JanaNiaga (JN) National Supply Chain Financing (NSCF) initiative, in collaboration with the Ministry of Finance and Export-Import Bank of Malaysia Berhad (EXIM Bank), to help alleviate issues related to cash flow.
 - Malaysia Short-term Employment Programme (MySTEP), in collaboration with the Ministry of Finance, Ministry of Entrepreneur Development and Cooperatives and Social Security Organisation (SOCSO) to drive apprentices and create more employment opportunities within the oil and gas industry.
- Coached 32 vendors via the Road to Bursa initiative to improve corporate governance standards and professionalism.
- Strategically collaborated with various industry players to assist vendors' capabilities and growth via several programmes, such as:
 - Sustaining Malaysia OGSE Circle (SMOC) to increase access to government funding and technical support.
 - Embracing New Energy (EMNE) Webinar Series, in collaboration with Sustainable Energy Development Authority (SEDA), government agencies and financial institutions (such as MIDF, CIMB, HSBC Bank Malaysia Berhad and Bank Muamalat).
 - Going Global Programme, in collaboration with the Ministry of External Trade Development Corporation (MATRADE).

What did we achieve?

Future-proof Digital Ecosystem

- Enabled three times shorter material ordering time through implementation of Procurement Marketplace.
- Optimised inventory level to less than one per cent leading to reduced working capital and non-moving stocks.
- Doubled the surplus utilisation rate across Petroleum Arrangement Contracts (PACs), generating more than RM500 million in value.

Sustainable Supply Chain

- Identified improvements in supply chain grievance management over the past two years (2019-2021) by guiding the contractors to comply with the nine Human Rights Principles outlined in the CoCHR, including freedom of labour and prevention of child labour.
- RM1.37 billion funds/loans approved to 243 applications under the Vendor Financing Programme since its inception in 2018.

Positive Social Impact

Product Stewardship

Why is it important?

Product Stewardship is an essential component at PETRONAS. It ensures we meet the demands for the delivery of safe, compliant, sustainable and innovative products and solutions that address market needs and industry trends. It is embedded under our research and development (R&D) and aligns with the United Nations Sustainable Development Goals (SDGs). We do this because we believe that it is our responsibility to ensure the highest health and safety standards are adhered to throughout our operations, public health is protected, and at the same time, business continuity is maintained. By adopting a Life Cycle Thinking approach during product development, we are able to create products and solutions that minimise our impact on the environment. Additionally, our listed subsidiary companies can provide greater disclosures for the Dow Jones Sustainability Index (DJSI) and FTSE4Good on all environmental impact categories required for products.



What is our position?

Comprehensive product stewardship assessments, namely, Raw Material Management, Life Cycle Assessment (LCA) and Product Safety Assessment are carried out to ensure that future product risks are adequately managed. We also constantly monitor our impact on the environment, ensure our packaging remains within regulatory boundaries, and communicate information on product hazards and risk management measures to stakeholders via our Product Safety Data Sheets (SDSs). We also leverage emerging technologies and innovation as this allows us to penetrate new markets, build customer loyalty and strengthen our position as a reputable solutions partner.

Our product safety assessments are carried out in line with the requirements of the PETRONAS Technology Management System (PTMS) and Strategic Approach to International Chemicals Management (SAICM), and Responsible Care Initiative. We are also guided by the Raw Material Information Request (RAWMIR) standards. This helps us identify the Substances of Very High Concern (SVHC) in our products and alleviate the use of Conflict Minerals. Additionally, data and information are also proactively shared with relevant stakeholders, as required by the Globally Harmonised System of Classification and Labelling of Chemicals. Meanwhile, LCAs are conducted according to international standards and best practices.

Positive Social Impact

What did we do in 2021?

Product Safety

- Completed product stewardship assessments, including the application-specific product safety tests, for all applicable product R&D projects.
- Appointed and trained product stewardship focal points for each research cluster.
- Obtained approval to establish an in-house toxicology laboratory to facilitate in-vitro ecotoxicity testing to support R&D activities.

What did we achieve?

Product Safety

- 6 PETRONAS ETRO** base oils series were successfully registered with NSF, under the H1 and HX-1 categories, which are lubricants and lubricant components respectively certified for incidental food contact.
- Assessed **MG3DF** and **MG3DF75**, which are synthetic base oils, for acute dermal irritation/corrosion hazard classification, through the Organisation for Economic Co-operation and Development (OECD) Test Guideline No 404 for Testing of Chemicals, improving the products' hazard classification. The results were used for the read-across assessment of **MG3DF90**.

Raw Material Management

- Conducted Raw Material Information Request (RAWMIR) assessments on selected PETRONAS Chemicals Group Berhad's (PCG) OPUs and oil field and production chemicals for domestic upstream assets.
- Introduction of new process to determine post consumer recyclable in packaging, Substances of Very High Concern (SVHC) in raw materials, and renewable sources from selected vendors.

Raw Material Management

- 7 Substances of Very High Concern** (SVHC) were identified via the RAWMIR initiative with plans to phase out/substitute these substances.
- Completed conflict mineral due diligence for 400 raw materials among more than 250 vendors with no use of conflict minerals in PETRONAS raw material supply chain identified.

Life Cycle Assessment

- Life Cycle Assessment (LCA) is a prominent method used for determining the environmental impacts occurring across the entire value chain of a product. In PETRONAS, LCA's are conducted adopting all the necessary standards (ISO 14040/44) and international best practices to support businesses address customer requests, augment marketability of products and enhance brand value. A total of 37 product LCAs were conducted this year supporting Upstream, Gas + New Energy and Downstream businesses.

Life Cycle Assessment

- Conducted a Life Cycle Assessment to help position **Hydrogen** from PC Ethylene as a low-carbon product and improve marketability. This was also externally verified by DNV.
- 5 Carbon Neutral LNG cargoes** successfully delivered to customers.

Positive Social Impact

Employee Welfare and Fair Remuneration

Why is it important?

We are committed to ensure fair employment, fair remuneration, and diversity best practices are carried out throughout our company and supply chain. We also provide our workforce with a competitive remuneration to attract and retain a quality talent pool. At the same time, we also look after their overall health and overall well-being as this helps ensure a healthy and productive workforce.

We also take pride in promoting a diverse and inclusive workforce, as this allows us to harness various skills and valuable experiences that promote an innovative culture and positively impact business growth. That is why it is important that we cultivate the right environment that allows them to thrive and at the same time, achieve their true potential.

What is our position?

At PETRONAS, we strive to nurture an inclusive workplace that values equal opportunities, diversity, talent, and overall employee well-being, and operate with a strong foundation of merit and equality, and our remuneration structure is anchored on a pay-for-job principle, irrespective of gender, age, nationality, ethnicity, or religion. We adopt differentiation in our total rewards strategy in creating the right environment that drives our diverse and changing workforce towards a high-performance culture.

We have established the PETRONAS Diversity and Inclusion (D&I) Council that oversees our efforts in four identified key areas, namely culture, multinationals, gender, and age; and a Wellness Steering Committee that oversees our efforts in safeguarding employees' mental well-being.

PETRONAS' D&I Focus Areas of Culture, Multinationals, Gender and Age



Differences in perspectives are respected and valued

Creating an environment where people feel safe and confident to speak up and put differing views across, to foster creativity and innovation.



Representation by diverse nationalities in leadership roles

Building and having qualified local nationals to fill the majority of decision-making positions in every country we operate in and having readily available local talents to take up leadership roles globally.



Women in senior leadership roles

Providing opportunities for representation by women in senior leadership positions. PETRONAS aims to establish a pervasive culture where women can thrive and progress with the Group, as we build a strong talent pool of qualified women.



Space for idea generation from young talent is enabled

Creating an innovative organisation where young talents feel involved, respected and connected, as well as inspired to contribute new ideas while encouraged to constantly explore new ways of doing things.

Positive Social Impact

What did we do in 2021?

Employee Benefits

- In addition to existing benefits covering Health and Well-Being, Time-Off and Special Paid Leave, Life Insurance coverage, and others in 2021, we provided:
 - Enhanced mental illness treatment provision that allow mental illness related treatment beyond two years.
 - FlexWear implementation that allows smart casual attire at office or work location.
 - COVID-19 immunisation benefits that provide special paid leave for vaccination, booster shot, and accompanying dependent children obtaining vaccination, as well as travel reimbursement.
 - Support employees' well-being with a Digital Employee Assistance Programme (EAP 2.0) for preventive mental health management, and i-C4RE for mental resilience development.
 - Provide financial and connectivity assistance allowance during remote working.
 - Benefits for Employees with Special Needs Children.

Employee Welfare

- MIND-A-CARE training programme was established by Group HSE, in collaboration with INSTEP, and Malaysian Psychiatric Association (MPA).
 - This mental health training programme aims to train PETRONAS employees to be certified MIND-A-CARE Ambassadors and equip them with the skills necessary to assist or refer affected colleagues for professional assistance through the company's Employee Assistance Programme (myFriends).
 - PETRONAS targets to train 1,000 MIND-A-CARE Ambassadors in the next three years.
- Established the first comprehensive Psychosocial Risk Assessment (PsyRA) tools to assess **Psychological Safety at Work**.
- Continued to create a wholesome employee relations experience for different talent segments via active participations in existing internal bodies within PETRONAS, such as PETRONAS Young Professionals Club, Association of Wives and Women Employees of PETRONAS (PETRONITA) and PETRONAS Sports & Recreation Club (KSRP).

- Introduced i-C4RE (Individualised Coaching for Resilience Enhancement), an interactive online programme that offers individualised coaching to enhance mental health resilience of employees. The e-learning course is designed to equip participants with mindsets and skills to:
 - Cope and thrive when faced with challenges or adversities.
 - Recover from failures and setbacks.
 - Manage their resilience and mental health.

Diversity and Inclusion

- A signatory to World Economic Forum's Stakeholder Capitalism Metrics.
- A member of the World Business Council for Sustainable Development (WBCSD) Business Commission to Tackle Inequality.
- Guest speaker at the Women's Global Leadership Conference in Energy 2021.
- Participated in 30 per cent Club talk during the International Women's Day **Men-Who-Pause**.
- Incorporated D&I as part of the long-term incentive plan (LTIP) for Top Management for 2022.
- Improved talent composition, with more employees consisting of different nationalities.
- Improved Senior Management composition in terms of gender and nationality.
- D&I Council 2021 met five times throughout the year to solidify the approach and improve D&I immersion.
- Conducted Brown Bag internal communications series on D&I to improve awareness and importance of D&I.
- Conducted various activities through PETRONAS Leading Women Network (PLWN), including:
 - Championed unconscious bias awareness, launched the **Bias Disruptors** Communication Campaign, and hosted quarterly inclusive talks with senior leaders and D&I advocates (male and female role models).
 - Commissioned PLWN D&I survey to address gender diversity.
 - Advocated industry-wide partnerships on gender diversity and inclusion.
 - Led and supported Malaysia's Women in Energy (MyWIE).
 - Collaborated with other oil and gas companies to support the industry (Baker Hughes Sustainability session, Malaysian Gas Association Women in Energy Transition).

Positive Social Impact

What did we achieve?

Employee Benefits

- Female employees **28 per cent** and male employees **72 per cent** who meet the stipulated eligibility criteria are entitled to parental leave.
- In 2021 a total of **2,179 employees** took parental leave:
 - Maternity leave: **90 consecutive days**
 - Paternity leave: **5 working days**.
- 96 per cent** of those who took parental leave, both male and female, returned to work.

Diversity and Inclusion

- Improved talent composition:
 - 28 per cent** female
 - More than 100** different nationalities
 - 41 per cent** aged **35** and below.
- Improved Senior Management (VP and above) composition which currently consists of **26 per cent** female and **74 per cent** male.
- Won the **LinkedIn Talent Award** – Diversity Champion (1,000 employee category).
- Elevated PETRONAS' reputation as a D&I advocate in the global energy arena through participation in various global forums.

Employee Welfare

- 900 employees** reached out to myFriends, which includes **811** digital coaching, **533** careline calls, and **246** counselling sessions for both work and non-work related issues.
- 1,856 employees** were briefed virtually on MIND-A-CARE to create awareness on mental health first aid.
 - Handbooks, pocket guides and self-reading awareness materials were made available through the myFriends page and accessible for all employees.
 - Successfully produced 19 certified MIND-A-CARE trainers in November 2021.

myFriends Employee Assistance Programme



- 840 participants** have enrolled in the i-C4RE programme (Individualised Coaching 4 Resilience Enhancement) through seven cohorts in 2021.
 - Overall, **74 per cent** of participants who completed the training modules showed improved resilience scores, and **25 per cent** of all participants demonstrated higher resilience scores.
- The holistic mental health and well-being signature programmes by PETRONAS have contributed to:
 - 70 per cent** improvement in Depression, Anxiety and Stress Scores
 - 50 per cent** improvement in body mass index (BMI) scores
 - 1,409 employees** participated in the Digital Healthy Lifestyle Coaching (DHLC), which exceeded our initial target of 1,000 participants.

Positive Social Impact

Talent and Education

Why is it important?

People are our greatest assets and investing in human capital development at all levels will enable a continuous and sustainable pipeline of a high-performing and skilled workforce. With the energy industry constantly evolving against a backdrop of ongoing uncertainty, our long-term growth and sustainability depend on our ability to innovate, be agile, and adapt to the changing business environment.

This is why it is important that we constantly retool our human capital by providing the right environment, opportunities, and experiences to encourage new skills, knowledge, and driven employees. Our aim is to enable our people with the right capabilities and tools to always thrive on the job and are future-ready to achieve their potential over the long term.

What is our position?

We focus our efforts on attracting, developing, deploying and retaining the best talents to deliver on the job and prepare them to steer future progress that meet stakeholders' expectations in an ever-changing business landscape. Our efforts are focused on five key areas that are also designed to contribute to a just energy transition:

Upskilling and Reskilling Existing Talents

We focus on upskilling and reskilling our people to deliver on our business strategies in the new energy landscape. This means heavily investing in our people to become a highly-skilled, innovative and agile workforce. We have been making progress over the years to enhance our capability development programmes in upskilling and reskilling our talents in critical areas, such as leadership, innovation and core skills.

Enhancing Our Employee Value Proposition to Attract and Retain the Best Talents

We continuously enhance our performance management in alignment with our strategic outcomes, focusing on performance and development, such as coaching talents to unlock their full potential. Our ongoing Human Capital transformation aims to redefine our talent experience towards an empowered, agile and enabled workforce. This transformation focuses on People (behaviour and mindset shift), Processes (simplified and principle-based), and Platforms (through analytics and artificial intelligence).

Agile Leadership

We continue to evolve our leadership styles to better respond to the ever-evolving environment and industry volatility. Key efforts include upskilling the leadership teams and employees with Agile methodology, promoting Agile practice in the right way and increasing Agile awareness across the organisation.

Innovation Engine

We are building a culture of innovation to drive new growth opportunities and generate new revenue potential by using a **think big, test small** experimental approach. This method will enable our people the tools and support to approach innovation through the customer lens, solutions, and business validation allowing them to explore non-traditional business areas and de-risk premature investments.

Creating and Maintaining the Right Environment for Our People to Thrive

Part of creating and maintaining the right environment is by embracing Diversity and Inclusion (D&I), which is vital for us to unlock or leverage the diverse strength of our talents. We continue to offer a wholesome employee relations experience for different segments of talents through various internal associations and bodies. The right environment would not be complete without the right organisational culture; hence continuous efforts were made to ensure the internalisation of the refreshed PETRONAS Cultural Beliefs (PCB) and its alignment to our organisation's objectives.

Positive Social Impact

While developing our internal talent capabilities, we continuously invest in developing future talents to meet our business and the industry's energy requirements. In driving Malaysia's energy sector, we invest in three key areas of education:



Sponsorship



Programmes



Infrastructure

What did we do in 2021?

Talent

- Invested in learning and development to build capabilities in leadership, innovation, and core skills to become a highly skilled, high-performing, innovative, and agile workforce.
- Enhanced our Employee Value Proposition to attract new and retain the best talents by strengthening our performance management in linking to business objectives with a focus on performance and development including coaching to ensure talents achieve their full potential.
- Reviewed and simplified our processes to be principle-based.
- Launched a new digital learning platform, myLearningX that offers personalisation and flexible learning options that allow talents to self-drive their own learning as and when they need to build their capabilities.
- Continued to maintain the right environment for our people to thrive through:
 - Groupwide engagements to further inculcate internal cultural beliefs
 - A more prominent agenda on Diversity & Inclusion.
- A core team was set up to promote the adoption of Agile tools and ensure more pervasive agile ways of working in the organisation.
- Commenced the pilot journey for Innovation Engine with the aim of building a sustainable innovation culture that enables the creation of new opportunities and revenue streams at pace across the organisation.

Education

- Continued to sponsor students' tertiary education via PETRONAS Education Sponsorship Programme (PESP) amounting to more than RM163 million.
- Sponsored deserving students to study at Universiti Teknologi PETRONAS (UTP) under the Tabung Amanah Zakat UTP (TAZU) amounting to RM3.9 million.
- Continued to provide both industrial and technical trainings such as Graduate Employability Enhancement Scheme (GEES), Vocational Institution Sponsorship & Training Assistance (VISTA) and internship placements.
- Continued to promote awareness and interest in Science, Technology, Engineering, and Mathematics (STEM) via Petrosains outlets and the Discover PETRONAS @ School (DPS) programme.
- Contributed to the construction of two MARA Junior Science Colleges (MRSRM) in Sabah and Sarawak, in collaboration with state governments and Majlis Amanah Rakyat (MARA) to promote STEM among students.
- Continued to offer learning opportunities to young talents in technical areas such as Nautical Studies and Marine Engineering at Akademi Laut Malaysia (ALAM), MISC, and Technical Energy Enrichment (TEP) at PETRONAS Petroleum Technology Institute (INSTEP).

Positive Social Impact

What did we achieve?

Talent

- More than **150 Top Leaders** were equipped to lead and navigate the business and the workforce towards achieving organisational goals anchored on PCB and Shared Values through several key programmes such as **Board Excellence, Ascend, and CEO 100 Days**.
- Top Leaders were also consistently engaged via **Top Leaders Dialogue sessions**, a platform to converse key enterprise topics while shaping the organisational culture.
- More than **300 Managers, Senior Managers, and General Managers attended key in-role leadership programmes** to ensure sustainable bench strength for succession.
- A pool of talents has been **upskilled to become catalysts for continuous improvement (CI), innovation, and Agile methodology** in the organisation to maximise operational cashflow and improve efficiency as well as to ideate, incubate, and scale new ideas and deliver customer-focused solutions at pace.
- myLearningX** platform:
 - More than 40,000** learners
 - nearly **1 million** accumulated interactions
 - nearly **400,000** learning hours completed
 - 4.2/5** average rating of learning platform by learners.
- Digital Academy was launched to upskill digital capabilities that includes Citizen Analytics and Digital Mastery. To date, **7,700 talents have been upskilled**.

- The Agile Coaching Enablement Programme was launched to build a pipeline of Agile practitioners to support Agile teams across PETRONAS.
- Commenced activities to codify Agile practices to ease and streamline Agile adoption.
- Agile Leadership topics** were discussed at both internal and external thought leadership programmes, for example Top Leaders Dialogue, Brownbag series, PETRONAS FutureTalks 2021, IFTDO India etc.
- Innovation Masterclass programme** commenced to upskill talents selected for the Innovation Engine pilot. The programme facilitated the ideation process which resulted in several bold ideas being selected for incubation to unlock the potential value of each idea. The programme will continue as a permanent fixture to rally more innovative ideas that could bring potential value to the organisation.
- Established the foundation to uplift innovation capabilities and create an ecosystem of innovators. Talents with various backgrounds and skills across PETRONAS, including **65 per cent** of PETRONAS' top leaders have been immersed with innovation methodologies through hands-on exposure.
- Successfully matured **3 growth opportunities** into new business ventures namely Circular Economy, Advanced Material, and Carbon Capture and Storage.

Education

- 302** individuals were sponsored under PESP.
- 1,462** deserving UTP students benefitted from the sponsorship by TAZU.
- 3,111** individuals benefitted from various programmes such as GEES, VISTA, and internship.
- Received **128,000** visitors at Petrosains outlets nationwide and **4,161** participants at Discover PETRONAS @ School (DPS).
- 325** students enrolled in Diploma in Nautical Studies and Diploma in Marine Engineering at ALAM, MISC and **35** enrolments in Technical Energy Enrichment Programme (TEP) at INSTEP.

Positive Social Impact

Community Engagement



Why is it important?

We are firm advocates for community empowerment, as we believe that the long-term success of our business is contingent on the support of the communities we serve. As a nation-building organisation, community development is essential to driving the nation forward and ensuring shared prosperity. Strong community engagement allows us to better understand and address issues faced by our communities. Therefore, we continue to drive and advance our community engagement programmes as it does not only make a difference in the lives of the people, but also deepens the trust levels. We focus on enriching lives and improving their quality and socio-economic outcomes as it allows us to unlock their potential and enable them to earn and help stimulate economic recovery. Our employees are also encouraged to take part in these initiatives as it gives them a sense of purpose and fulfilment.

Positive Social Impact

What is our position?

Our work with communities focuses on deepening relationships, building trust and enhancing our reputation as a caring corporate citizen. While the business divisions and other companies within the Group have their own community engagement programmes, a large part of the PETRONAS' Corporate Social Responsibility (CSR) programmes are driven by Yayasan PETRONAS (the Foundation), with the mission to deliver sustainable impact, improve the quality of life and socio-economic outcomes for communities throughout Malaysia based on three key pillars – Education, Community Well-being and Environment.



Yayasan PETRONAS is guided by the Constitution to manage and administer funds donated and ensure the funds are spent to further its objectives.

From educational programmes, employment, including food and care packages to providing necessary infrastructure, efforts were centred on transforming communities and improve their overall well-being. The Foundation also provided COVID-19 relief efforts for those in the B40 (bottom 40 per cent of the Malaysian household income) families and those affected by natural disasters with sustainable programmes. As result of our relentless groupwide efforts, we reached out to over 175,500 beneficiaries (inclusive of individuals, institutions, households, communities), investing up to RM62.4 million across all key programmes, including COVID-19 and flood relief efforts.



Positive Social Impact

What did we do in 2021?

Education

- Yayasan PETRONAS, in collaboration with the Ministry of Education, ramped up the implementation of *Program Duta Guru* (PDG), a nine-year programme to sustainably raise students' Higher Order Thinking Skills (HOTS) and interest and competency in Science, Technology, Engineering and Mathematics (STEM), by empowering 4,500 STEM teachers across Malaysia. Through PDG, Yayasan PETRONAS aims to develop 4,500 highly competent STEM teachers by 2028, impacting approximately 3.96 million students.
- In response to COVID-related school closures, Yayasan PETRONAS contributed 12,000 iPads equipped with one-year of data connectivity worth over RM30 million to marginalised students in 82 schools across Malaysia, as part of the nation's CERDIK initiative. The contribution aims to enable students to access online learning during school closures and future digital learning experiences when schools reopen.
- Continued to support efforts to raise student enrollment and participation in schools through the Back To School Programme that provided 21,000 underprivileged students with essential school supplies, thereby lessening the financial burden of B40 parents.
- Continued to support underperforming B40 SPM (the Malaysian Certificate of Education, a national examination taken by all fifth-form secondary school students in Malaysia) students in Kedah to improve their academic performance and assist in tertiary education progression through the empowerNCER Academic programme, in partnership with the Northern Corridor Implementation Authority (NCIA). In 2021, 750 participants sat for SPM 2020 while an additional 1,000 participants were onboarded to the programme in preparation for SPM 2021.



Community Well-being and Development

- Yayasan PETRONAS continues supporting B40 communities through its flagship *Memampangkan Ekonomi Asas Rakyat* (MEKAR) programme, together with its strategic and implementation partners, with the aim to increase the income level of more than 2,000 B40 communities across 12 districts in five states.
- MEKAR Phase 2 programmes in NCER and ECER focus on skills and entrepreneurship development benefiting

more than 1,900 participants, while MEKAR Phase 3 (Go-to-Market) in Kuala Nerus, Terengganu and Kapar, Selangor, focus in business acceleration to enhance the skills of its 105 participants and help them gain market access. Yayasan PETRONAS is also committed to continue its support for seven districts in Kedah and Perak, benefiting 1,400 beneficiaries through partnership with NCIA.

Positive Social Impact

- Apart from Skills and Entrepreneurship Development Programme, MEKAR Phase 1 focuses on the provision of basic needs such as water and electricity, that reflects in the two initiatives in Pitas, Sabah, and Kluang, Johor to ensure sustainable supply of clean water and electricity respectively benefiting about 1,000 members of the community in six villages.
- Yayasan PETRONAS also continues its support for cancer research for the Asian population and paediatric patients, by funding Cancer Research of Malaysia (CRM) and

Hospital Canselor Tuanku Mukhriz (HCTM). These grants will drive new research to address cancer more effectively, from prevention to detection and treatment.

- Yayasan PETRONAS has committed to improve the health and livelihood of the vulnerable members of B40 communities with health issues, including AIDS, Thalassemia and Paediatric complications through the support of MyLady and SHAPE Programme with Malaysia AIDS Foundation (MAF).

Environmental Awareness



- Supported environmental conservation via the PETRONAS Walk4Trees Challenge by planting trees at 14 sites across 11 states nationwide.
- We also supported biodiversity conservation and carbon-neutral programmes, such as rainforest conservation in Imbak Canyon, Sabah; marine biodiversity restoration in the Biodiversity, Environment and Conservation (BEACON) project in Sarawak; mangrove conservation and rehabilitation under PETRONAS Chemicals Group Berhad (PCG)'s ecoCare which has planted more than 20,000 mangrove trees across 14,000 square metres.



Positive Social Impact

Our Achievements

Education

750

SPM 2020 students supported through the empowerNCER Academic Programme.



21,000

primary schools from low-income households were provided with personal hygiene kits and schools supplies under the Back To School Programme.



292 active participants and 160 School Improvement Specialist Coaches (SISC+) from 142 districts as *Pembimbing Program Duta Guru* (PPDG) reached through PDG.



- * 92 per cent programme retention rate for Cohort 1, with Cohort 2 achieving over 96 per cent.
- * 9/10 average participant satisfaction scores across 2021.
- * 98 per cent of Pembimbing Duta Guru recognised positive developments highlighted among PDG participants.
- * 88 per cent of school principals recognised that PDG teachers have brought positive impact through pedagogical approaches.

130,000

teachers, students, government officials reached through the **Plastics, Sustainability & You** Module education webinar series to realign societal perceptions on plastics and effective waste management.



Contributed

12,000 devices worth a total of



RM30 million to enable students gain access to home-based teaching and learning (PdPR).

Community Well-Being and Development

Festive cheers were brought to more than **50,000 beneficiaries** from underprivileged B40 families during festive seasons under the *Sentuhan Kasih* Festive programme.

Under the *Memampangkan Ekonomi Asas Rakyat* (MEKAR) Programme, more than **2,000 families** gained access to sustainable economic growth opportunities in both urban and rural areas, with strong progress seen in empowerNCER (Phase 2) and MEKAR Kuala Nerus, Terengganu (Phase 3).

Key outcomes achieved:

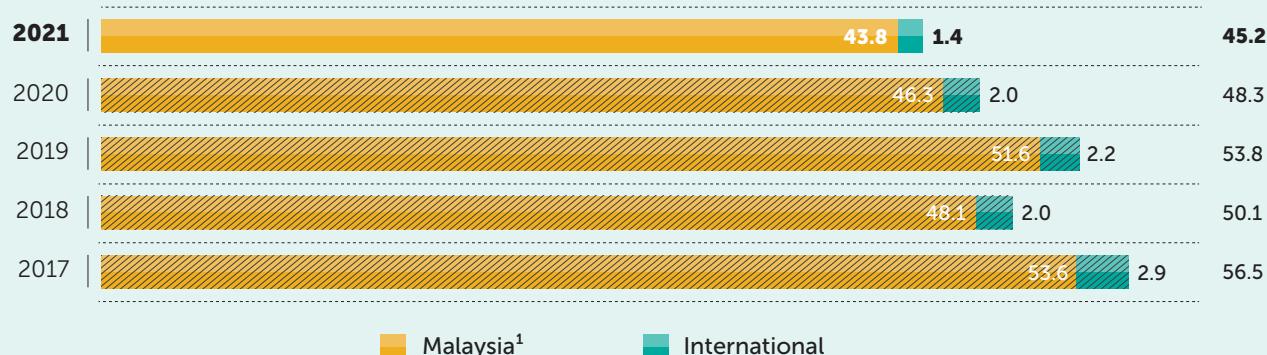
- empowerNCER Skills and Entrepreneurship Programme:
 - **78 per cent** of participants achieved the target set on increase in income.
 - **89 per cent** of participants obtained job placements.
 - **222** new jobs created.
- MEKAR Kuala Nerus, Terengganu Programme (Go-To-Market):
 - **77 per cent** have achieved their sales projection with 100 per cent turnover from their start-up phase.
 - **89 per cent** collaborated with the MEKAR alumni community in their business operations.
 - **89 per cent** incorporated their business as a legal enterprise.
 - **51 per cent** developed high-quality products and services that is ready for the market; and
 - **13 per cent** secured contracts to market and supply their products.

Five-Year Sustainability Key Performance Data

Greenhouse Gas Emissions

Total Greenhouse Gas (GHG) Emissions

(million tonnes of carbon dioxide equivalent (tCO₂e))



Note:

¹ GHG emissions data from PETRONAS Refinery and Petrochemical Corporation (PRPC) Utilities and Facilities (UF) is included since 2019, hence GHG emissions from Malaysia Operations has been restated for subsequent years.

GHG Emissions Breakdown by Scope and Gas

Key Performance Indicators	2017	2018	2019	2020	2021
Total GHG Emissions (million tCO ₂ e)	56.5	50.1	53.8	48.3	45.2
Scope 1 GHG Emissions (%)	98.9	98.7	98.9	99.1	99.7
Scope 2 GHG Emissions (%)	1.1	1.3	1.1	0.9	0.3
Carbon Dioxide (%)	73.0	80.2	80.6	82.0	86.9
Methane (%)	26.8	19.5	19.1	17.6	12.7
Other GHGs (%)	0.2	0.3	0.3	0.4	0.4
Hydrocarbon Gas Flared (million standard cubic feet per day (MMscfd)) ¹				70.9	103.1

Note:

¹ From Malaysia and international upstream operations only.

GHG Intensity¹

Key Performance Indicators	2017	2018	2019	2020	2021
GHG Intensity for Upstream (tCO ₂ e/kboe)	88.7	74.2	64.6	65.9	47.9
GHG Intensity for Refineries (tCO ₂ e/bbl)	0.017	0.018	0.018	0.019	0.018
GHG Intensity for Petrochemicals (tCO ₂ e/tonnes) ²	0.77	0.68	0.68	0.66	0.67

Note:

¹ All GHG intensity figures cover Malaysia operations only.

² Figures have been restated in alignment with the new internal emissions management guideline.

Five-Year Sustainability Key Performance Data

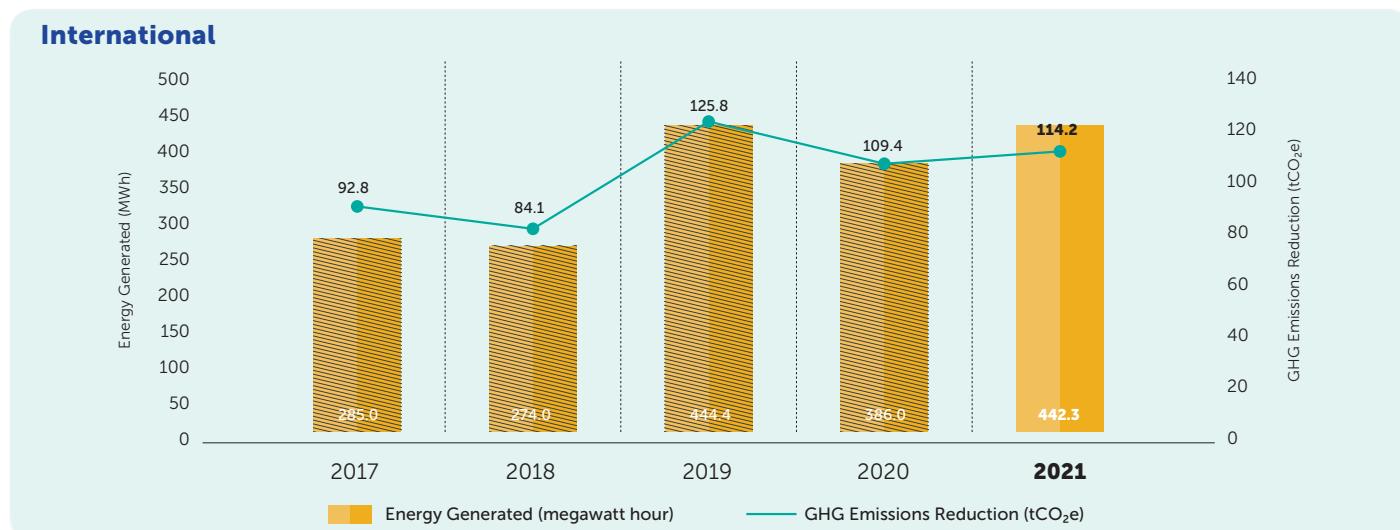
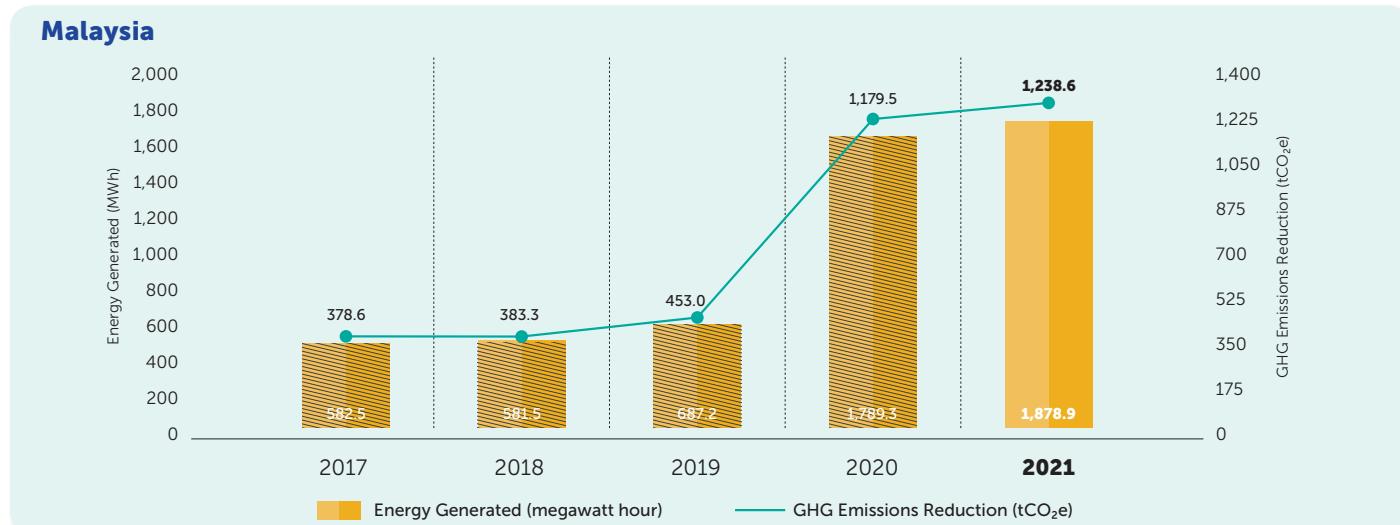
GHG Emissions Reduction

Key Performance Indicators	2017	2018	2019	2020	2021
Annual GHG Emissions Reduction (million tCO ₂ e)	2.9	1.5	1.2	0.6	4.1
Cumulative GHG Emissions Reduction (million tCO ₂ e per annum) ¹	10.1	11.6	12.8	13.4	17.5

Note:

¹ Since the establishment of PETRONAS Carbon Commitments in 2012, GHG emissions reduction has been recorded starting from 2013.

Solar PV Generation Reducing Scope 2 GHG Emissions



Cumulative Renewable Energy Installed Capacity

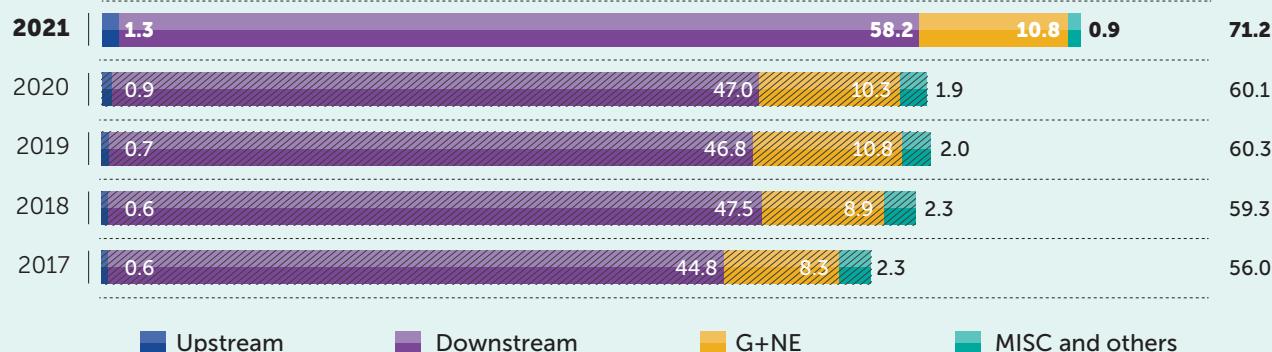
Key Performance Indicators	2017	2018	2019	2020	2021
Total Cumulative Renewable Energy Installed Capacity (megawatt)	10	10	10	644	851
Malaysia (megawatt)	10	10	10	19	29
International (megawatt)	n/a	n/a	n/a	625	822

Five-Year Sustainability Key Performance Data

Environment

Total Freshwater Withdrawal

(million cubic metres per year)



Key Performance Indicators	2017	2018	2019	2020	2021
Total Freshwater Withdrawal (million cubic metres per year)	56.0	59.3	60.3	60.1	71.2
Malaysia (million cubic metres per year)	52.6	56.4	56.8	56.8	70.2
International (million cubic metres per year)	3.4	2.9	3.6	3.3	1.0
Discharges to Water (metric tonnes of hydrocarbon)	591	715	648	532	452
Number of Hydrocarbons Spills into the Environment over One Barrel ¹ (Number of cases)	18	7	7	5	2
Total Sulphur Oxides Emissions (metric tonnes)	87,917	113,256	110,214	84,225	47,954
Total Nitrogen Oxides Emissions (metric tonnes)	159,498	151,519	148,446	138,035 ²	133,962
Total Hazardous Waste Disposed (metric tonnes)	19,755	34,688	42,121	33,349	59,228

Notes:

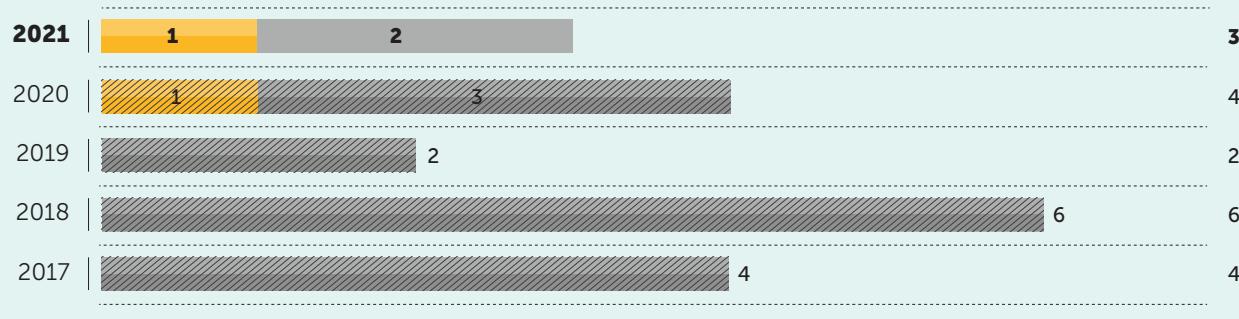
¹ One barrel is equivalent to 159 litres.

² Figure has been restated due to internal verification.

Safety

Number of Fatalities

(Number of cases)



Five-Year Sustainability Key Performance Data

Key Performance Indicators	2017	2018	2019	2020	2021
Total man-hours worked (million hours)	428	466	355	273	265
Employees (million hours)	138	130	133	120	118
Contractors (million hours)	290	336	222	153	147
Fatal Accident Rate (FAR) (Number per 100 million man-hours)	0.93	1.29	0.56	1.47	1.13
Employees (Number per 100 million man-hours)	0.00	0.00	0.00	0.84	0.84
Contractors (Number per 100 million man-hours)	1.38	1.79	0.90	1.96	1.36
Lost Time Injury Frequency (LTIF) (Number of cases per one million man-hours)	0.17	0.09	0.11	0.10	0.14
Employees (Number of cases per one million man-hours)	0.18	0.12	0.08	0.09	0.10
Contractors (Number of cases per one million man-hours)	0.16	0.08	0.12	0.11	0.17
Total Reportable Case Frequency (TRCF) (Number of cases per one million man-hours)	0.51 ¹	0.38	0.34 ¹	0.29 ¹	0.42
Employees (Number of cases per one million man-hours)	0.37	0.32	0.28	0.27	0.29
Contractors (Number of cases per one million man-hours)	0.58	0.41	0.37	0.31	0.53
Total Recordable Occupational Illness Frequency (TROIF) (Number of cases per one million man-hours – employees)	0.08	0.22	0.23 ²	0.39 ²	0.24

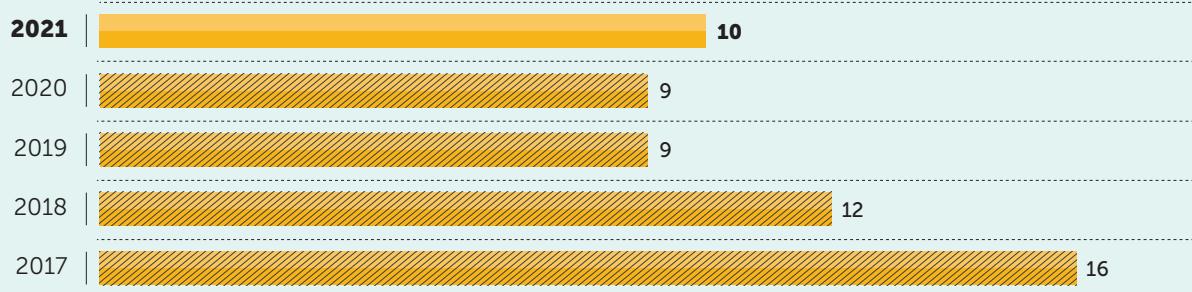
Notes:

¹ The updated TRCF numbers for 2017, 2019 and 2020 are due to internal data validation and exclusion of third parties.

² The updated TROIF numbers for 2019 and 2020 are due to internal data validation.

Number of Tier 1 Process Safety Events

(Number of cases)



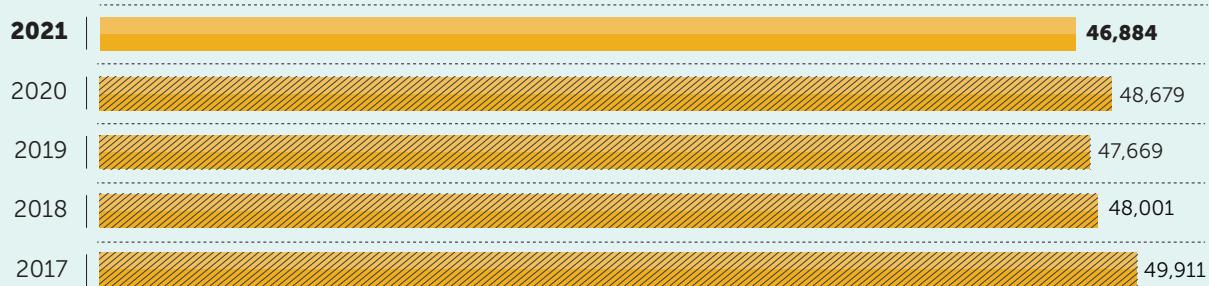
Note:

A Tier 1 Process Safety Event is a Loss of Primary Containment (LOPC) with the greatest consequence as defined by API 754, Process Safety Performance Indicators for the Refining and Petrochemical Industries. It is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials, from a process that results in one or more of the consequences as listed in the API 754. There is a restatement of figures following review of incidents of 2017-2020, in accordance with API 754.

Five-Year Sustainability Key Performance Data

Employees

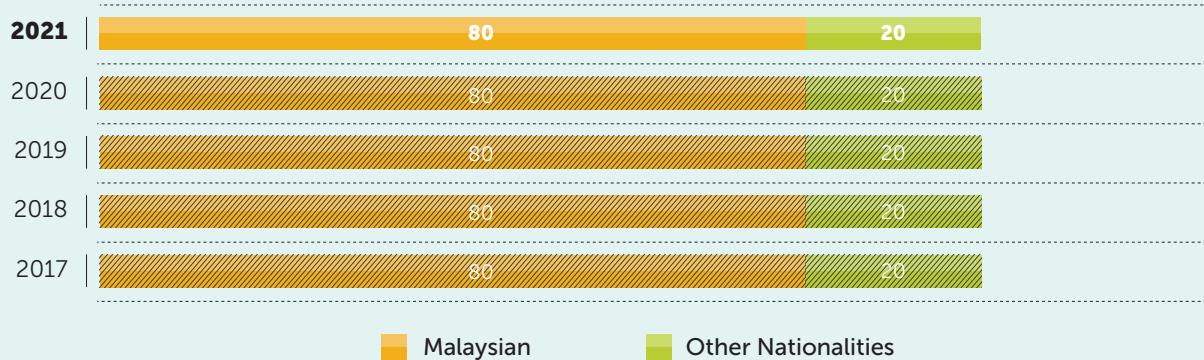
Total Number of Employees



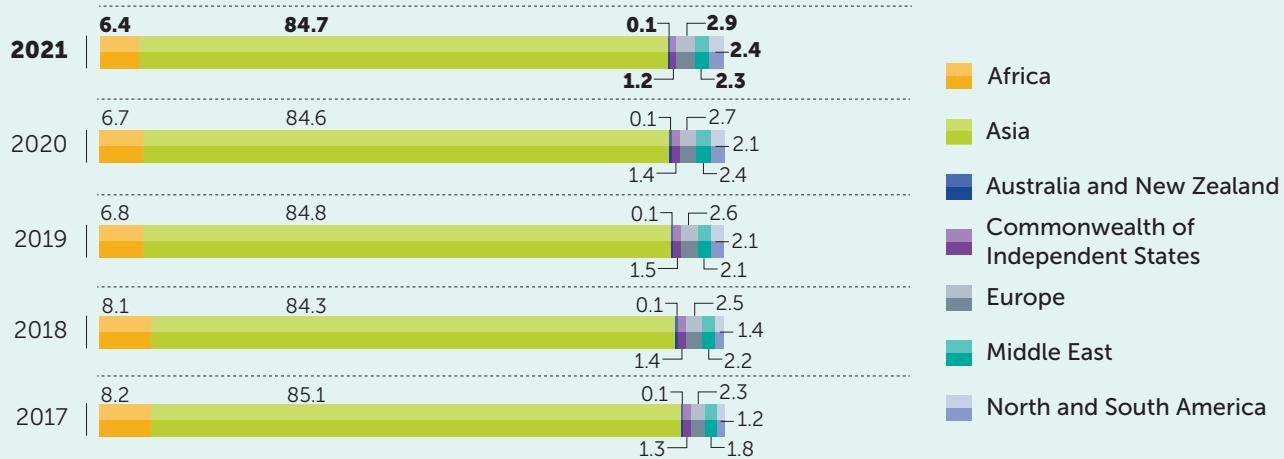
Note:

Decrease in 2021 due to higher attrition from contract expiry and voluntary employee separation exercise, and reduction of recruitment activities in line with business requirements.

Breakdown of Employees by Nationality (%)



Breakdown of Employees by Region (%)



Five-Year Sustainability Key Performance Data

Employees

Key Performance Indicators	2017	2018	2019	2020	2021
Employment Type (%)					
Permanent	85	87	88	86	87
Contract	15	13	12	14	13
Age Group (%)					
Above 35	46	49	52	53	59
Below 35	54	51	48	47	41
Total Number of Union Members ¹	8,796	9,949	8,420	8,476	8,353

Note:

¹ Covers registered unions in Malaysia-based entities (excluding MISC Group).

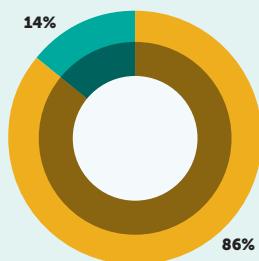
Gender Diversity

Key Performance Indicators	2017	2018	2019	2020	2021
Breakdown of Employees by Gender (%)					
Female	28	27	27	28	28
Male	72	73	73	72	72
Senior Management (%)					
Female	11	11	15	19	26
Male	89	89	85	81	74
Management Committee (%)					
Female	12	12	11	22	22
Male	88	88	89	78	78
Board of Directors (%)					
Female	21	20	14	25	30
Male	79	80	86	75	70
Female in Technical Position (%)	14	13	14	14	14

New Hires

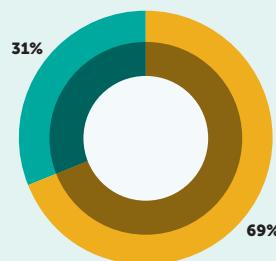
Key Performance Indicators	2017	2018	2019	2020	2021
Total Number of New Hires (Core businesses in Malaysia)	2,409	2,512	3,498	2,160	2,172
Malaysian	1,982	2,098	2,989	2,003	1,982
Non-Malaysian	427	414	509	157	190

Total Number of New Hires in 2021 by Nationality



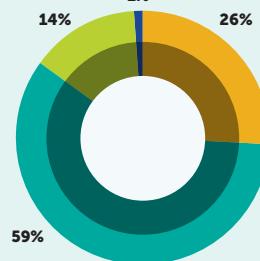
■ Malaysian ■ Non-Malaysian

Total Number of New Hires in 2021 by Age



■ 35 years old and below
■ Above 35 years old

Total Number of New Hires in 2021 by Job Level



■ Non-Executive ■ Executive
■ Middle Manager ■ Senior Management

Note:

Scope/coverage represents 93 per cent of PETRONAS Group of Companies.

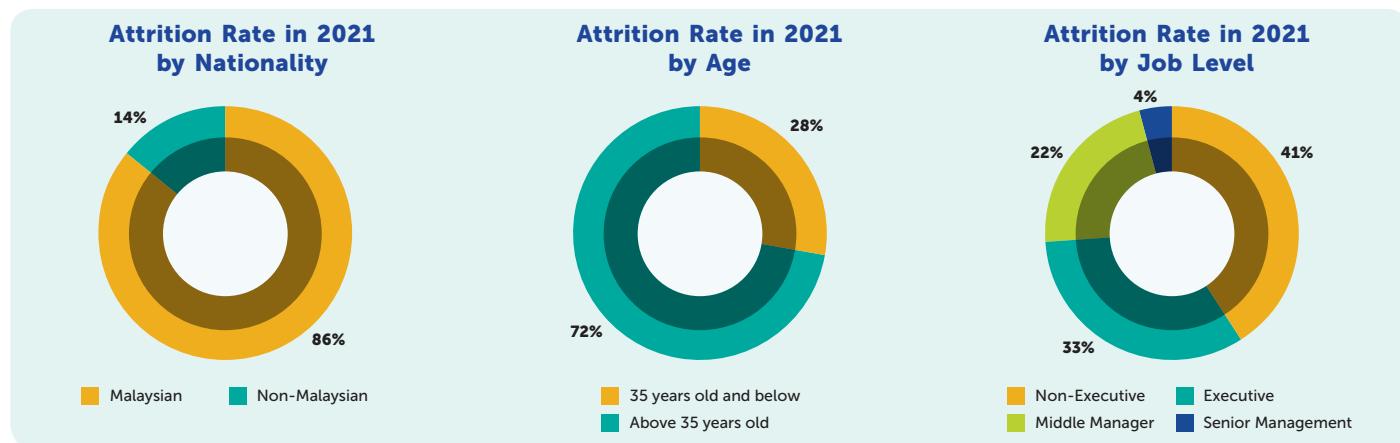
Five-Year Sustainability Key Performance Data

Employee Attrition Rate

Key Performance Indicators	2017	2018	2019	2020	2021
Employee Attrition Rate (%)	5.8	6.5	5.5	4.9	8.4
Female	6.8	7.3	1.8	1.3	2.8
Male	5.4	6.2	3.7	3.6	5.7

Notes:

Higher percentage in 2021 resulted from contract expiries and voluntary employee separation exercise.



Notes:

Scope/coverage represents 93 per cent of PETRONAS Group of Companies.

Talent and Education

Key Performance Indicators	2017	2018	2019	2020	2021
Training days per employee	7	7	7	5	4
Training investment per employee (RM)	3,353	6,649	6,543	3,588	2,386
Average total hours of training per employee (person hours)	56	52.8	53.6	36	30

Note:

Reduction from pre COVID-19 due to travel and physical attendance restrictions.

Average Total Hours of Training per Employee in 2021 by Gender



Average Total Hours of Training per Employee in 2021 by Job Level



Five-Year Sustainability Key Performance Data

Number of Groupwide Technical Expertise

Key Performance Indicators	2017	2018	2019	2020	2021
Technical Authorities (TA)	499	577	340	501	601
Technical Professionals (TP)	860	941	1,028	1,173	1,281
Technical Trade Specialists (TTS)	206	225	240	259	262

Key Performance Indicators	2017	2018	2019	2020	2021
Number of PETRONAS Scholars Recruited	337	262	206	219	220
Recruited by PETRONAS (%)	48	63	67	61	66
Recruited by Others (%)	52	37	33	39	34
Number of Scholarships Awarded to Malaysians	387	329	399	370	302
International Universities (%)	45	49	46	25	34
Malaysian Universities (%)	55	51	54	75	66
Number of Scholarships Awarded to Non-Malaysians at Universiti Teknologi PETRONAS	118	88	78	42	41

Human Rights

Key Performance Indicators	2017	2018	2019	2020	2021
Security personnel trained in human rights policies or procedures	n/a	210	161	913	1,415

Fair Employment

Key Performance Indicators	2017	2018	2019	2020	2021
Employees taking parental leave (Number of employees)	n/a	n/a	n/a	n/a	2,179

Notes:

- Parental leave covers maternity and paternity leave only.
- Scope/coverage represents 81 per cent of PETRONAS Group of Companies.

Recharge

to Safeguard
Good Practices



Commitment to Governance

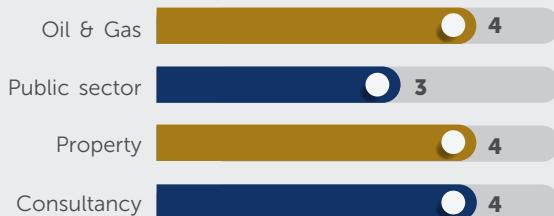
**The PETRONAS Leadership Team
and our commitment to good
corporate governance**

-
- 228** Board Composition
 - 229** Profile of Board of Directors
 - 239** Profile of Company Secretaries
 - 241** Profile of Executive Leadership Team
 - 245** Corporate Governance at PETRONAS

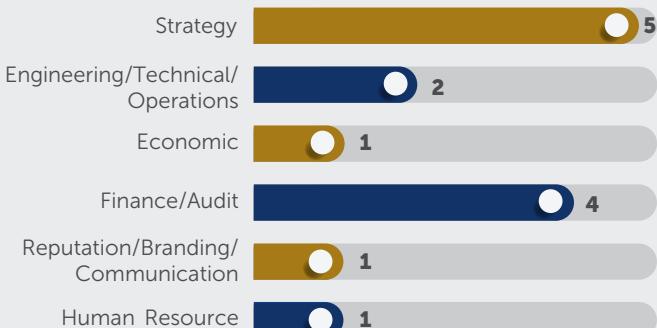


Board Composition

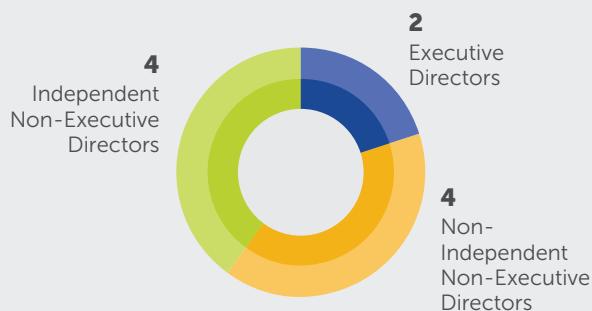
Experience



Skills



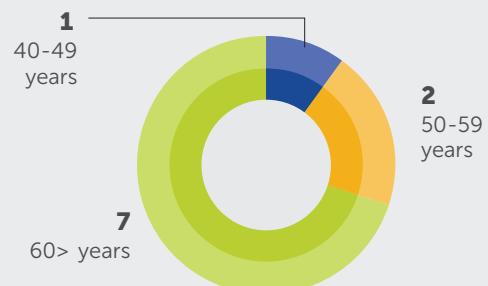
Board at a Glance



Gender



Age Diversity

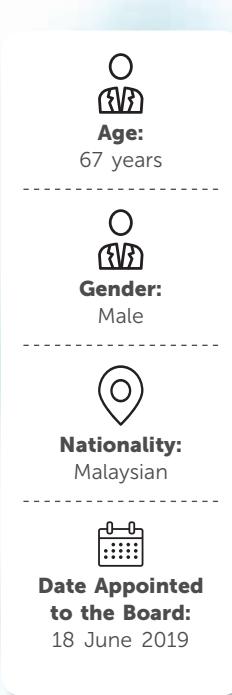


Tenure



Profile of Board of Directors

As of 28 February 2022



Tan Sri Dato' Seri Mohd Bakke Salleh

Non-Independent Non-Executive Director/Chairman



Academic/Professional Qualifications

- Fellow of Institute of Chartered Accountants in England and Wales
- Member of the Malaysian Institute of Accountants
- Bachelor of Science (Economics), London School of Economics, United Kingdom



Past Appointments/Experiences

Held key positions in a number of Government-linked companies and local corporations:

- Chairman, Telekom Malaysia Berhad
- Chairman, Federal Land Development Authority (FELDA)
- Group President and Chief Executive Officer, Felda Global Ventures Holdings Berhad
- Group Managing Director, Felda Holdings Berhad
- Chairman, Yayasan FELDA
- Executive Deputy Chairman and Managing Director, Sime Darby Plantation Berhad
- President and Group Chief Executive, Sime Darby Berhad

- Council Member of Yayasan Sime Darby
- Chairman, Malaysian Palm Oil Board
- Chairman, Bank Islam Malaysia Berhad
- Non-Executive Director, Eastern & Oriental Berhad
- Group Managing Director and Chief Executive Officer, Lembaga Tabung Haji
- Director, Property Division of Pengurusan Danaharta Nasional Berhad
- Managing Director, Syarikat Perumahan Pegawai Kerajaan Sdn Berhad
- Group General Manager, Island & Peninsular Berhad
- Pro Chancellor of Universiti Putra Malaysia



Other Current Appointments

- Chairman, Yayasan PETRONAS
- Honorary Council Member of Malaysian Palm Oils Associations (MPOA)

Board Committee:

Chairman of Committee
 Member of Committee

AC

Member of Audit Committee

RC

Member of Risk Committee

NRC

Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Datuk Tengku Muhammad Taufik

Executive Director, President and Group Chief Executive Officer

- Academic/Professional Qualifications**
- Fellow of the Institute of Chartered Accountants in England and Wales
 - Member of the Malaysian Institute of Accountants
 - Bachelor of Arts (Honours) (Finance and Accounting), University of Strathclyde, United Kingdom

- Chief Financial Officer for two public listed companies, responsible for financial and management reporting, merger and acquisition activities, as well as developing and implementing key stakeholder engagement strategies
- Director, MISC Berhad
- Director, KLCC Property Holdings Berhad

Past Appointments/Experiences

- Experienced in strategic planning, finance, and business strategy development with a focus on the oil and gas and energy industry
- Areas of expertise include developing and steering key business strategies, organisational transformation, and financial and risk management
- Advocate of a just and responsible energy transition by promoting regional partnerships to shape policy and catalyst innovation
- Executive Vice President and Group Chief Financial Officer, PETRONAS
- Partner at PricewaterhouseCoopers (PwC) Malaysia

Other Current Appointments

- Chairman of National Trust Fund
- Chairman of Audit Committee for East Coast Economic Region Development Council (ECERDC) and Northern Corridor Implementation Authority (NCIA)
- Chairman of CEO Action Network
- Member of World Economic Forum (WEF) Industry Action Group and WEF Oil and Gas Governors Forum
- Council Member of World Business Council for Sustainability Development (WBCSD)
- Member of Asia-Pacific Economic Cooperation (APEC) Business Advisory Council (ABAC)
- Member of National Employment Council (NEC)
- Council Member of ECERDC and NCIA
- Member of Board of Trustees of the Merdeka Award Trust
- Member of the Board of various PETRONAS companies
- Pro-Chancellor of Universiti Teknologi PETRONAS (UTP)

Board Committee:

Chairman of Committee
Member of Committee

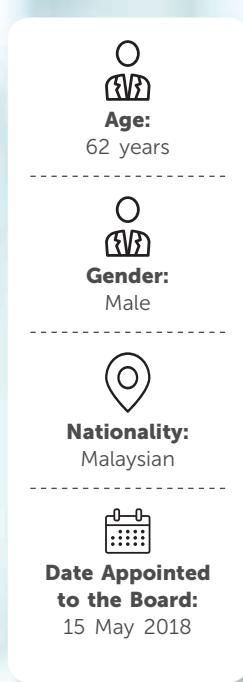
AC Member of Audit Committee

RC Member of Risk Committee

NRC Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Ainul Azhar Ainul Jamal

Independent Non-Executive Director

AC NRC



Academic/Professional Qualifications

- Advanced Finance, IMD Lausanne, Switzerland
- Emerging Leaders Program, Daniel Business School, University of Denver, Colorado, United States of America
- Bachelor of Electrical Engineering, University of Sussex, United Kingdom



Past Appointments/Experiences

- Joined Schlumberger Limited in 1984. Spent over 32 years with Schlumberger with vast experience in oilfield services and technologies. Held various key positions around the world including:
 - Managing Director for Malaysia, Brunei, Philippines and Singapore
 - Reservoir Group HR Director
 - Treasurer of Schlumberger Foundation
 - Vice President Global Accounts
 - Chairman for Asia Pacific

- Held directorships at several private companies and was an Independent Non-Executive Director as well as Chairman of the Risk Committee at a public listed company in Malaysia.



Other Current Appointments

- Chairman of Audit Committee, PETRONAS
- Member of Nomination and Remuneration Committee, PETRONAS
- Member of the Student Development Advisory Council, Universiti Teknologi PETRONAS, Malaysia

Board Committee:

Chairman of Committee
Member of Committee

AC

Member of Audit Committee

RC

Member of Risk Committee

NRC

Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Dato' Razali Mohd Yusof

Independent Non-Executive Director

NRC

Academic/Professional Qualifications

- Master of Science (Engineering Management), University of Missouri, United States of America
- Bachelor of Science (Mining Engineering), University of Missouri, United States of America
- Diploma in Petroleum and Natural Gas Engineering, University of Technology, Malaysia

Past Appointments/Experiences

- Held several key roles in private and multinational companies in Malaysia:
 - Managing Director/Shareholder, Datasonic Group Berhad
 - Managing Director, Sarku Engineering Services Sdn Bhd
 - Chairman, OMNI Petromaritime Sdn Bhd
 - Director, Marine & General Berhad
 - Project Engineer/Project Manager, Pahang Investment & Industrial Co. Ltd
 - Operations Contract Engineer and Underwater Operations Engineer, Sarawak Shell Berhad

Other Current Appointments

- Chairman of Nomination and Remuneration Committee, PETRONAS
- Director, Intralink Properties Sdn Bhd
- Director, Urban Terrace Sdn Bhd
- Director, Bagus Tioman Sdn Bhd

Board Committee:

Chairman of Committee
 Member of Committee

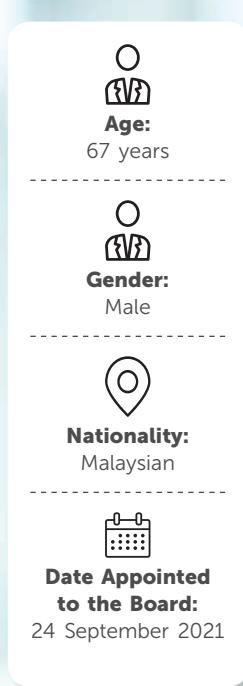
AC Member of Audit Committee

RC Member of Risk Committee

NRC Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Thayaparan S. Sangarapillai

Independent Non-Executive Director

RC AC



Academic/Professional Qualifications

- Fellow of the Institute of Chartered Accountants in England & Wales
- Member of the Malaysian Institute of Certified Public Accountants
- Chartered Accountant, Malaysian Institute of Accountants



Past Appointments/Experiences

- Possessed strong audit and business advisory background.
- His extensive experience and wide-ranging expertise spans over 35 years in areas that include financial reporting, internal controls and Initial Public Offerings.
- Began his career with PricewaterhouseCoopers (PwC) in Kuala Lumpur in 1983 and retired as a Senior Partner in 2015.



Other Current Appointments

- Chairman of Risk Committee, PETRONAS
- Member of the Audit Committee, PETRONAS
- Director/Chairman, the Audit Committee of Axiata Group Berhad and its subsidiary
- Director, Celcom Axiata
- Chairman, Robi Axiata
- Director, Sime Darby Berhad
- Chairman of Audit Committee and Member of Risk Committee, Sime Darby Berhad
- Director, AIG (Malaysia) Berhad
- Chairman of Audit Committee and Risk Committee, AIG (Malaysia) Berhad

Board Committee:

Chairman of Committee
 Member of Committee

AC

Member of Audit Committee

RC

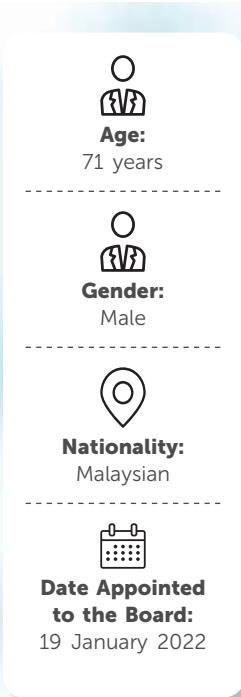
Member of Risk Committee

NRC

Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Datuk KY Mustafa

Non-Independent Non-Executive Director



Academic/Professional Qualifications

- Bachelor of Arts in Anthropology and Sociology from the University of Malaya



Past Appointments/Experiences

- Served the Sabah State Government for 33 years from 1974 to the year 2007
- Permanent Secretary to the Ministry of Infrastructure in 1996
- State Secretary to the State Government of Sabah in 2000 and held the position until his retirement in 2007
- Head of the State Public Service and Secretary to the State Cabinet
- Member of the Royal Commission of Inquiry on Immigrants in Sabah from 2012 to May 2014



Other Current Appointments

- Chairman of the State Sabah Public Service Commission
- Director, Suria Capital Holdings Berhad
- Director, Sabah Ports Sdn Bhd
- Director, Sawit Kinabalu Sdn Bhd
- Director, Borneo Samudera Sdn Bhd

Board Committee:

Chairman of Committee
Member of Committee



Member of Audit Committee



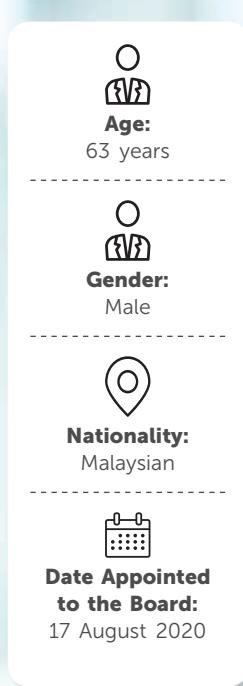
Member of Risk Committee



Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



YB Dato Haji Ibrahim Haji Bakri

Non-Independent Non-Executive Director

RC



Academic/Professional Qualifications

- A Barrister-at-Law and a member of Lincoln's Inn
- Honours Degree in Law



Past Appointments/Experiences

- Served as City Councillor and active in social welfare and charitable organisations
- Former Executive Chairman/Shareholder, Hubline Berhad
- Director/Shareholder, Gegasan Abadi Properties Sdn Bhd
- Chairman/Shareholder, Warisan Kenyalang Sdn Bhd
- Chairman/Shareholder, IBZ Corporation Sdn Bhd
- Chairman, Layang-Layang Aerospace Sdn Bhd
- Managing Director, Gegasan Sdn Bhd
- Commission Member of Registrar of Companies Malaysia (Companies Commission of Malaysia)



Other Current Appointments

- Chairman, Daya Builders Sdn Bhd, a Government Linked Company
- Chairman/Shareholder, Supreme Consolidated Resources Berhad
- Chairman, Redpyne Sdn Bhd
- Chairman/Shareholder, IBA Holdings Sdn Bhd
- Chairman, Lestari Asiabina Sdn Bhd
- Chairman/Shareholder of two newspapers, the New Sarawak Tribune and Suara Sarawak
- Member of Risk Committee, PETRONAS

Board Committee:

Chairman of Committee
 Member of Committee

AC

Member of Audit Committee

RC

Member of Risk Committee

NRC

Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Zakiah Jaafar

Non-Independent Non-Executive Director

AC RC



Academic/Professional Qualifications

- Premier Executive in Advanced Development Programme, Razak School of Government, Canberra, Australia
- Advanced Management and Leadership Programme, University of Oxford, United Kingdom
- Postgraduate Diploma in Public Administration, National Institute of Public Administration (INTAN), Malaysia
- Master of Social Science (Economics), University of Birmingham, United Kingdom
- Bachelor of Science (Honours) (Economics), University of Warwick, United Kingdom

- Former Deputy Secretary General (Macro) of the Ministry of Economic Affairs (MEA), responsible for the preparation of medium- and long-term macroeconomic framework for the Malaysian economy and also oversees the policy directions for the manufacturing and services sectors; science, technology and innovation; environment economics as well as knowledge-based economy



Past Appointments/Experiences

- Former Deputy Secretary General (Investment) for the Ministry of Finance, Malaysia, responsible for coordinating, monitoring and updating policies, regulations, Acts and strategies to government investment companies, statutory bodies, public assets and strategic public investments



Other Current Appointments

- Member of Audit Committee, PETRONAS
- Member of Risk Committee, PETRONAS
- Deputy Secretary General (Policy) for the Ministry of Finance, Malaysia
- Director, Pengurusan Aset Air Berhad
- Director, Employees Provident Fund
- Director, Bintulu Port Holdings Berhad

Board Committee:

Chairman of Committee
Member of Committee

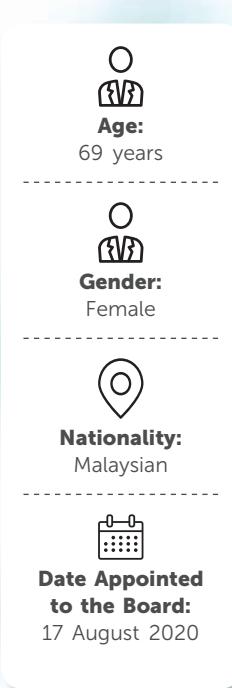
AC Member of Audit Committee

RC Member of Risk Committee

NRC Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Tan Sri Zaharah Ibrahim

Independent Non-Executive Director

AC NRC



Academic/Professional Qualifications

- Bachelor of Laws (Honours) (LL.B), University Malaya



Past Appointments/Experiences

- Held key positions in the Judicial and Legal Services and the Judiciary in Malaysia:
 - Chief Judge of Malaya
 - Federal Court Judge, Federal Court, Putrajaya
 - Court of Appeal Judge, Court of Appeal, Putrajaya
 - High Court Judge, High Court of Malaya (Shah Alam and Kuala Lumpur)
 - Judicial Commissioner, High Court of Malaya (Kuala Lumpur and Shah Alam)
 - State Legal Advisor, Selangor
 - Parliamentary Draftsman, Attorney General's Chambers of Malaysia
 - Director, Intellectual Property Division, Ministry of Domestic Trade and Consumer Affairs
 - Magistrate in Melaka
- Chairman, Prasarana Malaysia Berhad



Other Current Appointments

- Member of Audit Committee, PETRONAS
- Member of Nomination and Remuneration Committee, PETRONAS

Board Committee:

Chairman of Committee
 Member of Committee

AC

Member of Audit Committee

RC

Member of Risk Committee

NRC

Member of Nomination and Remuneration Committee

Profile of Board of Directors

As of 28 February 2022



Liza Mustapha

Executive Director, Executive Vice President & Group Chief Financial Officer



Academic/Professional Qualifications

- Fellow of the Association of Chartered Certified Accountants (FCCA)
- Advance Management Program at Harvard Business School, United States of America
- Member of the Malaysian Institute of Accountants
- Bachelor of Science Degree in Economics, majoring in Accounting and Finance from The London School of Economics and Political Science, University of London



Past Appointments/Experiences

- Vice President, Group Procurement, Project Delivery and Technology, PETRONAS
- Chief Financial Officer, Upstream Business, PETRONAS
- Chief Financial Officer, PETRONAS Gas Berhad
- Head, Group Financial Control Department, PETRONAS
- Head, PETRONAS Group Treasury, where she led the centralisation of PETRONAS' treasury management.
- Finance Executive, PETRONAS Carigali Sdn Bhd



Other Current Appointments

- Chairman, Energas Insurance (L) Ltd
- Director, MISC Berhad
- Director, KLCC Property Holdings Berhad
- Director, KLCC REIT Management Sdn Bhd
- Director, PETRONAS Carigali Sdn Bhd
- Director, PETRONAS International Corporation Ltd

Board Committee:

Chairman of Committee
Member of Committee



Member of Audit Committee



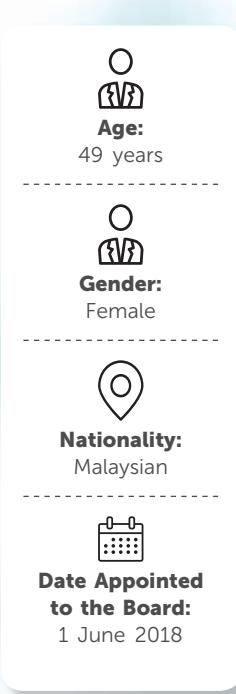
Member of Risk Committee



Member of Nomination and Remuneration Committee

Profile of Company Secretaries

As of 28 February 2022



Intan Shafinas (Tuty) Hussain

Company Secretary



Academic/Professional Qualifications

- Certificate in Legal Practice, Legal Profession Qualifying Board, Malaysia
- Bachelor of Laws (Honours), University of Leicester, United Kingdom
- Graduate Diploma in Law, University of Western Australia, Australia
- Licensed Company Secretary



Other Current Appointments

- Head, Group Secretarial and Board Governance, PETRONAS
- Director, Malaysian Jet Services Sdn Bhd



Past Appointments/Experiences

- Joined PETRONAS in 2001 and has over 21 years of extensive experience in legal, corporate governance and company secretarial matters
- Previously served as the Joint Company Secretary of PETRONAS Gas Berhad and Head of Legal of PETRONAS Gas Berhad
- Other portfolios held include Legal Counsel of Legal Corporate Services, PETRONAS Chemicals Group Berhad, Corporate Services and Technology as well as Petrochemical Business of PETRONAS

Profile of Company Secretaries

As of 28 February 2022



Nur Ashikin Khalid

Company Secretary



Academic/Professional Qualifications

- Master of Laws in Legal Aspects of Marine Affairs, University of Wales, Cardiff, United Kingdom
- Bachelor of Laws (Honours), University of Wales, Cardiff, United Kingdom
- Licensed Company Secretary



Past Appointments/Experiences

- Joined PETRONAS in 1996 and served in various positions in PETRONAS with exposure in various fields of law
- Previously served as Head of Legal and Company Secretary of PETRONAS Dagangan Berhad
- Other portfolios held include Head of Legal for the MLNG Group of Companies, Legal Counsel for PETRONAS Gas Berhad and Head of Gas Management in Legal Upstream, Group Legal
- Areas of expertise include company law, company secretarial and corporate governance

Profile of Executive Leadership Team

As of 28 February 2022

 <p>Datuk Tengku Muhammad Taufik President and Group Chief Executive Officer</p>	<p>We believe that sustained value creation is built on ethical leadership. The calibre of our leadership across our business is embodied in the commitment, experience and diversity of our Executive Leadership Team (ELT).</p>
 <p>Adnan Zainol Abidin Chief Operating Officer and Executive Vice President and Chief Executive Officer, Gas Business</p>	 <p>Liza Mustapha Executive Vice President and Group Chief Financial Officer</p>
 <p>Adif Zulkifli Executive Vice President and CEO Upstream</p>	 <p>Datuk Sazali Hamzah Executive Vice President and CEO Downstream</p>
 <p>Mazuin Ismail Senior Vice President, Corporate Strategy</p>	 <p>Razman Hashim Senior Vice President and Group General Counsel, Group Legal</p>
 <p>Bacho Pilong Senior Vice President, Project Delivery and Technology</p>	 <p>Farehana Hanapiah Senior Vice President, Group Human Resource Management</p>

Profile of Executive Leadership Team

As of 28 February 2022

1 Datuk Tengku Muhammad Taufik

President and Group Chief Executive Officer

Age/Gender/Nationality:
48/Male/Malaysian

Date Appointed:
15 October 2018

Academic/Professional Qualifications:

- Fellow of the Institute of Chartered Accountants in England and Wales
- Member of the Malaysian Institute of Accountants
- Bachelor of Arts (Honours) (Finance and Accounting), University of Strathclyde, United Kingdom

Past Appointments/Experiences:

- Accumulated more than 20 years of experience in the fields of finance and business investment
- Experienced in strategic planning, investment valuations, developing entry strategies for businesses and structuring fit-for-purpose funding requirements
- Areas of expertise include financial reporting, project analysis, feasibility reviews, capital projects structuring and risk management, with primary focus on the oil and gas industry
- Executive Vice President and Group Chief Financial Officer, PETRONAS
- Partner at PricewaterhouseCoopers (PwC) Malaysia
- Chief Financial Officer for two public listed companies, responsible for financial and management reporting, merger and acquisition activities, as well as developing and implementing key stakeholder engagement strategies
- Member of the Board of MISC Berhad
- Director, KLCC Property Holdings Berhad

Other Current Appointments:

- Chairman of Audit Committee for East Coast Economic Region Development Council (ECERDC) and Northern Corridor Implementation Authority (NCIA)
- Chairman of National Trust Fund
- Council Member of ECERDC and NCIA
- Member of Asia-Pacific Economic Cooperation (APEC) Business Advisory Council (ABAC)
- Member of Board of Trustees of the Merdeka Award Trust
- Member of National Employment Council (NEC)
- Member of the Board of various PETRONAS companies
- Member of World Economic Forum (WEF) Industry Action Group and WEF Oil and Gas Governors Forum
- Chairman of CEO Action Network

2 Adnan Zainol Abidin

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

Age/Gender/Nationality:
60/Male/Malaysian

Date Appointed:
1 February 2022

Academic/Professional Qualifications:

- Bachelor of Science in Chemical Engineering, University of Leeds, United Kingdom

Past Appointments/Experiences:

- Joined PETRONAS in 1984
- Possesses more than 38 years of experience in the oil and gas industry
- Other key positions currently held within the Group:
 - Chairman, PETRONAS Gas Berhad
 - Chairman, Malaysia LNG Sdn Bhd
 - Chairman, Malaysia LNG Dua Sdn Bhd
 - Chairman, Malaysia LNG Tiga Sdn Bhd
 - Chairman, Malaysia LNG 9 Sdn Bhd
 - Chairman, PETRONAS LNG Sdn Bhd
 - Chairman, PETRONAS Canada LNG Limited
 - Director, PETRONAS Carigali Sdn Bhd
 - Director, PETRONAS International Corporation Ltd
 - Director, LNG Canada Development Inc
- Other key positions previously held within the Group:
 - Executive Vice President, Gas + New Energy
 - Senior Vice President, Project Delivery and Technology
 - Vice President, LNG Assets
 - Vice President, Global LNG Projects

Other Current Appointments:

- Co-Chairman, Self Regulation Policy Directive Council

3 Liza Mustapha

Executive Vice President and Group Chief Financial Officer

Age/Gender/Nationality:
51/Female/Malaysian

Date Appointed:
1 July 2020

Academic/Professional Qualifications:

- Fellow of the Association of Chartered Certified Accountants (FCCA)
- Advance Management Program at Harvard Business School, United States of America
- Member of the Malaysian Institute of Accountants
- Bachelor of Science Degree in Economics, majoring in Accounting and Finance from The London School of Economics and Political Science, University of London

Past Appointments/Experiences:

- Joined PETRONAS in 1995
- Has more than 25 years of experience in PETRONAS covering finance at business and corporate
- Other key positions currently held within the Group:
 - Chairman, Energas Insurance (L) Ltd.
 - Director, KLCC Property Holdings Berhad (KLCCP)
 - Director, KLCC REIT Management Sdn Bhd (KLCCRM)
 - Director, MISC Berhad
 - Director, PETRONAS Carigali Sdn Bhd
 - Director, PETRONAS International Corporation Ltd
- Other key positions previously held within the Group:
 - Vice President, Group Procurement
 - Group Financial Controller
 - Chief Financial Officer, Upstream Business
 - Senior General Manager, Group Treasury
 - Chief Financial Officer, PETRONAS Gas Berhad

Other Current Appointments:

- Member of Board Audit Committee, MISC Berhad
- Member of Audit Committees of KLCCP and KLCCRM
- Member of Nomination and Remuneration Committees of KLCCP and KLCCRM
- Treasurer of Malaysian Petroleum Club

Profile of Executive Leadership Team

As of 28 February 2022

4 Adif Zulkifli

Executive Vice President and Chief Executive Officer, Upstream

Age/Gender/Nationality:
51/Male/Malaysian

Date Appointed:
1 April 2019

Academic/Professional Qualifications:

- Master of Business Administration, Kellogg School of Management, Northwestern University
- Bachelor of Science (Honours) in Petroleum Engineering, Colorado School of Mines

Past Appointments/Experiences:

- Joined PETRONAS in 1993
- Has almost 30 years of experience in the oil and gas industry in the fields of petroleum engineering, operations, strategic planning, corporate transformation, petroleum economics, mergers and acquisitions, and business development
- Other key positions currently held within the Group:
 - Chairman, PETRONAS Energy Canada Ltd
 - Director, PETRONAS Carigali Sdn Bhd
 - Director, PETRONAS International Corporation Ltd
 - Trustee of the Abandonment Cess Fund
- Other key positions previously held within the Group:
 - Chairman, PETRONAS Gas Berhad
 - Chairman, PETRONAS Research Fund
 - Executive Vice President, Gas + New Energy
 - Senior Vice President, Development and Production Upstream Business
 - Senior Vice President, Corporate Strategy
 - Vice President, Malaysia Petroleum Management
 - Head, Strategy and New Ventures Division in Exploration & Production Business

Other Current Appointments:

- Chairman of the Society of Petroleum Engineers, Asia Pacific Advisory Council
- Vice Chairman of International Petroleum Technology Conference Board of Directors
- Executive Committee Co-Chair of International Petroleum Technology Conference 2021 (Kuala Lumpur)
- Advisory Committee Member of the Offshore Technology Conference Asia (Kuala Lumpur) 2022

5 Datuk Sazali Hamzah

Executive Vice President and Chief Executive Officer, Downstream

Age/Gender/Nationality:
55/Male/Malaysian

Date Appointed:
1 January 2022

Academic/Professional Qualifications:

- Chartered Fellow of the Institution of Chemical Engineers (IChemE)
- Bachelor of Chemicals Engineering, Lamar University, United States of America
- Advanced Management Programme, The Wharton School, University of Pennsylvania, United States of America
- Senior Management Programme, London Business School, London, United Kingdom

Past Appointments/Experiences:

- Joined PETRONAS in 1990
- Has 32 years of experience in the oil and gas industry in the fields of petroleum refining, petrochemicals, technical and engineering services and project delivery.
- Other key positions currently held within the Group:
 - Chairman, Pengerang Refining Company Sdn Bhd
 - Chairman, Pengerang Petrochemical Company Sdn Bhd
 - Director, PETRONAS Chemicals Group Berhad
 - Director, PETRONAS Refinery and Petrochemicals Corporation Sdn Bhd
 - Director, PETRONAS Carigali Sdn Bhd
 - Director, PETRONAS International Corporation Ltd
- Other key positions previously held within the Group:
 - Senior Vice President and Managing Director/Chief Executive Officer, PETRONAS Chemicals Group Berhad
 - Managing Director and Chief Executive Officer, Malaysia Refining Company Sdn Bhd
 - Managing Director and Chief Executive Officer, PETRONAS Technical Sdn Bhd
 - Head, Group Project Management and Delivery, PETRONAS
 - Head, PETRONAS Group Technical Services
 - Various senior management positions in the refinery and petrochemical business within PETRONAS

Other Current Appointments:

- Member of the International Advisory Panel for C-THRU Research Project

6 Mazuin Ismail

Senior Vice President, Corporate Strategy

Age/Gender/Nationality:
54/Male/Malaysian

Date Appointed:
16 April 2016

Academic/Professional Qualifications:

- Master of Business Administration (Advance), University of Adelaide, Australia
- Bachelor of Science (Civil and Structural Engineering), University of Bradford, United Kingdom

Past Appointments/Experiences:

- Joined PETRONAS in 1991
- Has 30 years of experience in PETRONAS covering project execution and engineering, internal audit, governance, and business development. He had also held leadership roles in petroleum management, strategic planning and change management
- Other key positions currently held within the Group:
 - Chairman, PETRONAS Digital Sdn Bhd
 - Chairman, Petroleum Research Fund
 - Chairman, International Conference and Exhibition Professionals (ICEP)
 - Director, Malaysian Industry-Government Group for High Technology (MIGHT)
 - Director, Institute of Technology PETRONAS Sdn Bhd
 - Director, PETRONAS Carigali Sdn Bhd
 - Director, PETRONAS International Corporation Ltd
 - Director, PTV International Ventures Ltd
- Other key positions previously held within the Group:
 - Senior Vice President of Project Delivery and Technology
 - Vice President of Technical Global (PETRONAS)

Other Current Appointments:

- Nil

Profile of Executive Leadership Team

As of 28 February 2022

7 Razman Hashim

Senior Vice President and Group General Counsel, Group Legal

Age/Gender/Nationality:

48/Male/Malaysian

Date Appointed:

1 July 2021

Academic/Professional Qualifications:

- Bachelor of Laws and Shariah from International Islamic University Malaysia
- Licensed Company Secretary

Past Appointments/Experiences:

- Joined PETRONAS in 1998
- Has more than 24 years of experience in the legal and secretarial fields.
- Other key positions previously held within the Group:
 - Head of Legal Upstream, PETRONAS
 - General Counsel, Legal Upstream International, Legal Upstream
 - Company secretary to PETRONAS Carigali Sdn Bhd and PETRONAS International Corporation Ltd
 - Directors of various entities within Upstream business
 - Member of Joint Management Committee of Garraf Operations, Iraq

Other Current Appointments:

- CEO, Kulliyah, Ahmad Ibrahim Kulliyah of Laws, International Islamic University Malaysia

8 Bacho Pilong @ Pelu

Senior Vice President, Project Delivery and Technology

Age/Gender/Nationality:

57/Male/Malaysian

Date Appointed:

1 August 2021

Academic/Professional Qualifications:

- Bachelor of Chemical Engineering from Cockrell School of Engineering, University of Texas, Austin, United States of America
- Senior Management Development Program, INSEAD, Singapore
- Advanced Management Program, AMP 65, The Wharton School, University of Pennsylvania

Past Appointments/Experiences:

- Joined PETRONAS in 1992
- Has more than 31 years of experience in the oil and gas industry
- Other key positions currently held within the Group:
 - Chairman, PETRONAS Research Sdn Bhd
 - Chairman, PETRONAS Technical Services Sdn Bhd
 - Chairman, Institute of Technology PETRONAS Sdn Bhd
 - Director, PETRONAS LNG 9 Sdn Bhd
 - Director, UTP FutureTech Sdn Bhd
 - Board of Trustees, Dana Asy-Syakirin
- Other key positions previously held within the Group:
 - VP Malaysia Assets, Upstream
 - VP International Assets, Upstream
 - SGM, Petroleum Operations Management, Malaysia Petroleum Management, Upstream
 - Head, Special Projects, Corporate Strategic Planning
 - President, Sudd Petroleum Operating Company
 - President, White Nile Petroleum Operating Company
 - General Manager, Exploration & Production, Greater Nile Petroleum Operating Company
 - GM, PETRONAS Carigali Sdn Bhd
 - Sarawak Operations

Other Current Appointments:

- Nil

9 Farehana Hanapiah

Senior Vice President, Group Human Resource Management

Age/Gender/Nationality:

54/Female/Malaysian

Date Appointed:

1 January 2020

Academic/Professional Qualifications:

- Bachelor of Commerce and Administration (Accountancy), Victoria University of Wellington, New Zealand
- Advanced Management Programme, Harvard Business School

Past Appointments/Experiences:

- Joined PETRONAS in 1990
- Has more than 31 years of experience in corporate functions
- Other key positions currently held within the Group:
 - Chairman, PETRONAS Management Training Sdn Bhd
 - Chairman, PETRONAS Technical Training Sdn Bhd
 - Chairman, Dana Asy-Syakirin
 - Chairman, PETRONAS Lubricants International Sdn Bhd's Nomination and Remuneration Committee
 - Director, Institute of Technology PETRONAS Sdn Bhd
 - Director, PETRONAS Digital Sdn Bhd
 - Director, PETRONAS Lubricants International Sdn Bhd
- Other key positions previously held within the Group:
 - General Manager, Group Strategic Planning
 - Head, Commercial Development & JV Formation of Petronas Refinery & Petrochemical Corp
 - Head, Human Capital Expertise, Group HRM
 - Head, Human Capital Management, Group HRM
 - Chief Executive Officer, PETRONAS Management Training Sdn Bhd

Other Current Appointments:

- Council Member of the Global CHRO Council – The Conference Board

Corporate Governance at PETRONAS

Board Governance and Structure

"In 2021, PETRONAS had demonstrated resilient performance amidst the difficult global business environment. The significant economic contraction triggered by COVID-19 has been a real test of corporate governance in practice across organisations around the world. At PETRONAS, the focus has consistently been to apply the best practice of corporate governance principles throughout the Group. In building a sustainable business, the Board is cognisant of its accountability to the shareholders and various stakeholders of PETRONAS. To this end, the Board resolutely ensures that it demonstrates effective leadership and promotes unequivocally high ethical standards in its decision-making process."

PETRONAS is led by a Board whose Directors are collectively responsible for creating and delivering long-term sustainable value for the business. A key responsibility of the Board is to balance the interests of the Group and our stakeholders including employees and the wider communities we serve. Our governance structure ensures role clarity by clearly delineating roles and areas of accountability and recognises the independent roles and duties required to effectively govern the Company. The governance structure aims to promote strategic alignment across the Group whilst facilitating efficient decision-making at all levels.

GOVERNANCE STRUCTURE

BOARD OF DIRECTORS

Non-Executive Chairman

- Leads the Board and ensures it operates effectively
- Maintains a culture of openness and debate

Independent Non-Executive Directors

- Provide independent judgment, external perspective and objectivity to the Board's deliberation
- Contribute to deliberations and discussions with a broad range of experience and expertise

President and Group Chief Executive

- Day-to-day management of the business and implementation of policies, strategies and decisions approved by the Board

AC

Audit Committee

Assists the Board in fulfilling its oversight functions in relation to the Company's internal controls and financial reporting to safeguard PETRONAS' assets. The Committee provides the Board with quality and reliability assurance of the financial information reported by the Company, while promoting efficiency and good governance practices.

NRC

Nomination and Remuneration Committee

Responsible for assessing the performance of the Board, as well as identifying and nominating new Directors. The Committee also supports the Board on the implementation of a succession plan for the Board, President and GCEO, and Top Management as well as Top Management's appointments/renewals. The Committee recommends to the Board the remuneration policy for the Non-Executive Directors and Top Management.

The Committee also reviews the annual President and GCEO's Performance Scorecard for the year.

RC

Risk Committee

Responsible for the review of principal risks, and oversees the adequacy and effectiveness of the risk assessment and risk management system for the PETRONAS Group. The Committee also reviews and recommends to the Board the appropriate corporate governance policies and procedures in accordance with good governance standards and best practices.

For more information about the Audit Committee, please refer to page 252.

For more information about the Nomination and Remuneration Committee, please refer to page 253.

For more information about the Risk Committee, please refer to page 254.

President and Group CEO

Executive Leadership Team

The ELT was established to assist the President and GCEO in managing the business affairs of the Company and is responsible for providing a holistic approach to all business strategies as well as high impact and high value investments including mergers and acquisitions. The ELT has Focused ELT Meetings to discuss specific matters which include HSSE, Technology and People Development.

Corporate Governance at PETRONAS

Board Leadership

The Board provides effective stewardship and is responsible for the Group's strategic direction and control of the Company. The Board exercises this control by way of a governance framework, effective delegation, risk management and a system of assurances regarding financial reporting and internal controls. The Board is accountable to its shareholders and towards a wider range of stakeholders such as employees, suppliers, community and the Government.

Each Director has the duty to act in good faith and in the best interest of the Company. In discharging its roles and duties effectively, the Board is guided by the Board Charter, a document which sets out the authority, responsibilities and operations of the Board.

The differing roles of the Chairman and the President and Group Chief Executive Officer (President and GCEO) are acknowledged and set out in the Board Charter. The Chairman of the Board is not a member of any of the Board Committees.

The Board exercises collective oversight at all times. In delegating its authority to the Board Committees, the Board does not abdicate its responsibilities. The Board further ensures that such delegation does not hinder or reduce the Board's ability to discharge its functions. In this regard, the Board clearly sets out the division of responsibilities in the respective Terms of Reference (TOR) of the Board Committees.

Together with Management, the Board upholds good corporate governance culture within the Company by ensuring ethical leadership, prudent and professional behaviour in the conduct of its business and in all aspects of its operations.

How the Board Functions

The Board meets regularly, and additional meetings are arranged as and when circumstances dictate. Each meeting is conducted in accordance with a formal and structured agenda and Board papers are circulated on time to ensure that Directors are well-informed and that debates and decisions are constructive and robust.

Access to Board papers by the Board members is carried out online through a collaborative software, with the aim of enhancing the efficiency of the Board process. Going digital allows the Directors to access, read and review the Board papers, as well as enabling the Board members to confer with each other and with the Company Secretaries, electronically. Board Papers and presentations by the Management to the Board are prepared and delivered in a manner that ensures clarity and provide sufficient understanding of the subject matter.

During 2021, the Board met on 24 occasions of which almost all meetings were conducted virtually. Although the quorum for the Board meeting is two, majority of the Board meetings were attended by all Directors. Whilst a decision of the Board only requires a majority of votes of the Directors, all decisions were made on consensus basis.

Each Director has full access to the services of the Company Secretaries, who play an advisory role to the Board by providing guidance on corporate governance, ethical business practices, compliance to the Company's Constitution, policies and procedures and the relevant regulatory requirements, guidelines and legislation.

The Board may from time to time and if deemed appropriate, consider and approve urgent matters via Directors' circular resolution. All circular resolutions passed by the Board are tabled at the next Board meeting for notation.

The Board practises active and open discussions at its meetings so as to ensure that opportunities are given to all Directors to participate and contribute to the decision-making process. Robust discussions and vigorous deliberations at the Board meetings ensure that the process of effective and healthy dialogue is achieved.

The respective Chairmen of the Audit Committee, Nomination and Remuneration Committee, and Risk Committee provide regular updates to the Board subsequent to the proceedings of their respective Committee meetings.

All proceedings of Board meetings are duly minuted and signed. Minutes of each Board meeting accurately reflect the deliberations and decisions of the Board, including any dissenting views and if any Director had abstained from voting or deliberating on a particular matter. Minutes of the Board meetings are properly kept by the Company Secretary.

Matters Reserved for the Board

The Board has an approved and documented schedule of matters reserved for its decision as follows:

1. **Strategy and Management** – Strategy, policies, annual budgets and major investment decisions which include capital projects, mergers and acquisitions, and funding requirements.
2. **Financial, Governance and Risk** – Financial reporting and control, and risk management.
3. **Corporate Matters** – Reputation and stakeholder management, Health, Safety, Security and Environment (HSSE), Board and Board Committees' memberships, and Directors' remuneration and succession planning.

Corporate Governance at PETRONAS

Board Roles and Attendance

Chairman

- ⦿ Responsible for the effective running of the Board and ensures that the Board plays a full and constructive role in the development and determination of the Company and the Group's strategy and overall commercial objectives.
- ⦿ Leads the Board in setting the values and ethical standards of the Company.
- ⦿ Promotes the highest standards of integrity and corporate governance at the Board level.

President and GCEO

- ⦿ Responsible for all executive management matters affecting the Company and/or the Group and leads the Executive Leadership Team.
- ⦿ Responsible for developing and recommending the long-term strategy and vision for the Company and/or the Group.
- ⦿ Fosters a corporate culture that promotes ethical practices, encourages individual integrity and the fulfilment of the Company's corporate social responsibilities.
- ⦿ Champions the Company's values and behaviours across the whole Group.

Non-Executive Directors

- ⦿ Provide alternative insights and constructively challenge proposals to ensure all relevant matters are objectively considered by the Board.
- ⦿ Oversight on the performance of the Management and monitors the delivery of Group strategy within the risk and control environment set by the Board.
- ⦿ Bring independent judgment and scrutiny to the decisions taken by the Board.

Company Secretary

- ⦿ Facilitates the effective operation of the Board and ensures that the Directors receive accurate, timely and clear information to enable them to discharge their responsibilities.
- ⦿ Provides support and advice to the Board in respect of governance matters and ethical business practices.

Corporate Governance at PETRONAS

Attendance at Meetings

The prolonged COVID-19 pandemic continued to affect the Board's ability to hold physical Board meetings. Nonetheless, the Board had successfully navigated the crisis during the year under review by conducting most of its meetings virtually. The Directors' commitment to carry out their duties and responsibilities is affirmed by their attendance at the Board meetings held as set out below. A total of twenty-four Board meetings were held during the year under review.

The number of meetings of the Board and Board Committees during the year ended 31 December 2021, together with a record of the attendance is detailed in the table below:

Directors as at 28 February 2022	Board	Audit Committee	Nomination and Remuneration Committee	Risk Committee
Tan Sri Dato' Seri Mohd Bakke Salleh Chairman/Non-Independent Non-Executive Director	23/24*	3/3	–	4/4
Datuk Tengku Muhammad Taufik Executive Director/President and Group Chief Executive Officer	24/24	–	–	–
Zakiah Jaafar Non-Independent Non-Executive Director	21/24	5/6	–	5/7
Dato Haji Ibrahim Haji Baki Non-Independent Non-Executive Director	22/24	–	–	6/7
Tan Sri Zaharah Ibrahim Independent Non-Executive Director	24/24	6/6	8/8	–
Dato' Razali Mohd Yusof Independent Non-Executive Director	24/24	–	8/8	–
Ainul Azhar Ainul Jamal Independent Non-Executive Director	24/24	6/6	8/8	–
Liza Mustapha Executive Director/Group Chief Financial Officer (Appointed w.e.f 1.6.2021)	16/16	–	–	–
Thayaparan S. Sangarapillai Independent Non-Executive Director (Appointed w.e.f 4.9.2021)	8/8	2/2	–	2/2
Datuk KY Mustafa Non-Independent Non-Executive Director (Appointed w.e.f 19.1.2022)	–	–	–	–

* Tan Sri Dato' Seri Mohd Bakke Salleh was excused from attending a Special Board meeting in 2021 which was held for the purpose of appointing him as Chairman of the Board.

Director who has retired in 2021	Board	Audit Committee	Nomination and Remuneration Committee	Risk Committee
Tan Sri Ahmad Nizam Salleh (Retired w.e.f 1.8.2021)	12/12	–	–	–

Corporate Governance at PETRONAS

Board Balance and Effectiveness

Board Balance and Composition

As at the date of this report, the Board of Directors of PETRONAS comprises ten members; the Non-Executive Chairman, two Executive Directors and seven Non-Executive Directors (NEDs), out of which four are Independent Non-Executive Directors (INEDs). The biographical details of the Directors are set out on pages 229 to 238.

The size and composition of the Board is fundamental to its success in providing strong and effective leadership. The presence of Non-Executive Directors ensures that no individual or small group of Directors are able to dominate the decision-making process and that the interests of shareholders and stakeholders are protected.

During the year under review, the Board saw some changes and new appointments to its composition.

In view of the retirement of Tan Sri Ahmad Nizam Salleh effective 1 August 2021, Tan Sri Dato' Seri Mohd Bakke Salleh was appointed as the new Chairman of PETRONAS effective 1 August 2021. With this appointment, Tan Sri Dato' Seri Mohd Bakke's status has been re-designated as Non-Independent Non-Executive Director (NINED).

The Board wishes to record its appreciation and gratitude to Tan Sri Ahmad Nizam Salleh during his tenure as Chairman of the Board.

The Board also welcomed Thayaparan S. Sangarapillai as an INED and Datuk KY Mustafa as a NINED on the PETRONAS Board effective 24 September 2021 and 19 January 2022, respectively.

The current composition of the Board has a blend of skills, experience and knowledge enabling them to provide effective oversight, strategic guidance and constructive challenge, review and deliberation on the Management's proposals.

The NRC is responsible for reviewing the composition of the Board and assessing whether the balance of skills, experience, knowledge and independence is appropriate to enable the Board to operate effectively.

Diversity

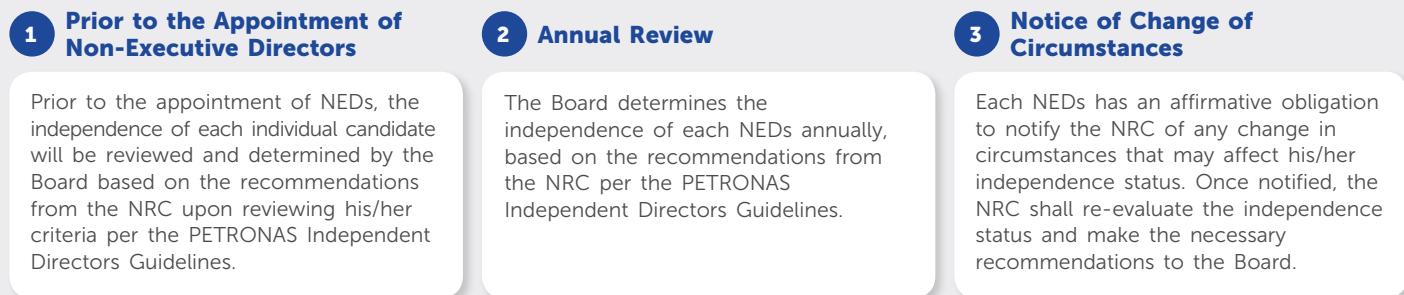
The Board recognises the importance of diversity and the value it brings to the PETRONAS Group. Diversity promotes the inclusion of different perspectives, raising the standards of good practice in Board leadership and enhancement of valuable insights in business judgment. Diversity is also important to ensure the Company remains relevant, resilient and sustainable in the rapidly transforming and evolving business environment.

Whilst it is important to promote diversity, the normal selection criteria of a Director based on an effective blend of competencies, skills, experience and knowledge in areas identified by the Board remains a priority so as not to compromise the effectiveness in carrying out the Board's functions and duties. The Board is committed to ensure that its composition not only reflects diversity but will also have the right mix of skills and balance to contribute to the achievement of the Company's goals and objectives.

Corporate Governance at PETRONAS

Board Independence

The Board assesses the independence of its NEDs annually. The independence assessment takes into account whether the NEDs have demonstrated an independent state of mind and objective judgment in their deliberations and decision-making process. The assessment on the independence of the NEDs may be undertaken in the following circumstances:



The INEDs have been appointed for their specific experience and expertise and are independent of management and free from any business or other relationship which could materially interfere with the exercise of their independent judgement. NEDs may serve on the boards of other companies provided this does not involve a conflict of interest and that the appointment does not restrict their ability to discharge their duties to PETRONAS in any way.

In line with the exemplary practices of corporate governance, the Board has adopted a tenure policy whereby an INED's total tenure on the Board is capped at nine years. As at the date of this Statement, none of the INEDs has served the Board more than nine years.

Conflict of Interest

In ensuring transparency and integrity of the decision-making process as well as to prevent any conflict of interest, a declaration of interest by Directors is a fixed agenda item at the start of every Board meeting. A Director who has direct or indirect interest in a transaction shall recuse himself/herself when required and abstain from deliberations and voting to allow unbiased and free discussions and decision-making. Disclosure of the nature and extent of the Directors' interest and abstention from decision-making proceedings are recorded in the minutes of the Board meetings. The Principles of Directorship for the PETRONAS Group was established to govern the way Directors conduct themselves in a conflict of interest situation, which corresponds with the Companies Act 2016 and the Code of Conduct and Business Ethics (CoBE) of the Company.

The Directors are also required to declare their interests annually, in line with the requirements on the disclosure of Director's interests in the Company's Audited Financial Statements.

Board Remuneration Policy

Given the highly competitive market, PETRONAS designed a robust fee structure to attract, retain and appropriately compensate the diverse and internationally experienced NEDs. The fee framework is illustrated below:



Corporate Governance at PETRONAS

Board Onboarding and Professional Development Programme

The Board recognises the importance of ensuring that new Directors have a complete introduction to the business so that they are able to make a full and meaningful contribution to the Board. To that end, the Board has adopted a comprehensive and extensive onboarding programme for new Directors, including meetings with key senior leadership team, bespoke training on relevant regulatory and legal obligations and onboard procedures and processes.

Directors will have full access to roundtable discussions, seminars and other events, covering topics relevant to the Group and their roles. The Company provides Directors with the necessary resources to update their knowledge and capabilities throughout the year.

A suite of development programmes, known as the PETRONAS Board Excellence tailor-made to the requirements of Directors across the Group, has been in place since 2016 to chart the Directors' development plans in a structured manner.

Suite		PETRONAS BOARD EXCELLENCE (PBE)							
Solution	Onboarding	Foundational*		Advanced			Continuous Education	Conference	
Programme	Onboarding Programme for New Directors	Essentials for Directorship	Rising Above 2	Best Practices for Board Excellence (Advanced 1)	Effective Strategy for Stakeholder Management (Advanced 2)	Round Table	Updates on trends	Directors Conference	Audit Committee Forum
Continuous Programme	E-Learning (5 Critical Legal Areas, Code of Conduct, Anti Corruption, Data Privacy)					Board Assessment (Observation, Interview and Digital)			

* The Foundational programmes only apply to the directors who are employees of the PETRONAS Group, thus, the PETRONAS Directors, upon their onboarding, will attend the Advanced programmes of the PBE.

Board Evaluation

The Board, through the NRC, endeavours to conduct annual performance evaluation of the Board and its Committees, facilitated by the Company Secretary. Evaluation results are reported to the NRC. Individual Director's evaluation results are made available to the NRC Chairman and reported directly to the Chairman of the Board. The Chairman of the Board will then conduct feedback sessions through peer-to-peer meetings.

Corporate Governance at PETRONAS

Board Commitment to Sustainability

The Board acknowledges that the well-being of the employees, customers, suppliers and other stakeholders as well as the environment and the society at large is central to sustaining our long-term performance and continued relevance. Careful consideration of the needs of a broader universe of stakeholders ultimately drives value for the shareholders.

The heightened materiality of sustainability to the business requires the Board to factor in these sustainability components, risks and opportunities into its strategies at all times. The Board being the highest authority in sustainability governance, takes full responsibility in the establishment of the Company's sustainability agenda and road map.

The full report on Sustainability Governance is found on pages 170-173 of this Report.

Board Committees

Audit Committee

AC

- ⦿ **Ainul Azhar Ainul Jamal** – *Chairman*
- ⦿ **Tan Sri Zaharah Ibrahim**
- ⦿ **Zakiah Jaafar**

- ⦿ **Thayaparan S. Sangarapillai**
(Appointed w.e.f. 24.9.2021)
- ⦿ **Tan Sri Dato' Seri Mohd Bakke Salleh**
(Resigned w.e.f. 24.9.2021)

The AC continued to play a key role in assisting the Board in fulfilling its oversight responsibilities in ensuring the effectiveness of financial reporting, systems of internal control and the internal and external audit functions.

The AC discharges its responsibilities through its scheduled meetings during the year in accordance with its fixed agenda which covers the matters under the purview of the AC. The AC met 6 times in 2021.

For more information about the AC's attendance, please refer to page 248.

Key Matters in 2021

Financial

During the year under review, the AC reviewed the quarterly financial results and the financial performance of business segments and of the PETRONAS Group, and also its report for the financial year ended 31 December 2021 to ensure that they were prepared in compliance with the relevant regulatory requirements and guidelines.

The AC also reviewed the effects of the application of accounting judgments and estimates on impairment assessment and provision for decommissioning, dismantling, removal and restoration (DDRR).

Corporate Governance at PETRONAS

Internal Control and Audit Activities

The AC deliberated and endorsed internal audit reports which included opinions on the adequacy and effectiveness of governance and internal controls, audit findings' root causes and implications and the recommended corrective actions to be undertaken by the Management. The internal audit exercises include audit on the following key areas (but not limited to):

- ⦿ Business and operational activities are carried out effectively and efficiently.
- ⦿ Delivery of selected ongoing projects focusing on project management activities, reliability of reporting and compliance to the applicable regulatory and procedural requirements.
- ⦿ Efficiency and effectiveness of operations management, the existence of internal controls and safety management as well as accuracy, reliability and timely reporting on selected domestic and international assets.
- ⦿ Efficiency and effectiveness of selected ongoing initiatives within the Group.

- ⦿ Audit review on the commercial trading and marketing activities of key accounts within the various businesses in Malaysia and selected international offices.
- ⦿ Audit review on shareholders of selected joint venture companies.
- ⦿ Applicable policies, procedures, laws and regulations are complied with.

The AC also reviewed and endorsed the comprehensiveness of the Annual Audit Plans developed based on the enterprise business risks, strategies, audit history results and stakeholder feedback, overall performance of Group Internal Audit and audit operations and enhancement and clarity of Audit Rating. Updates on Agreed Corrective Actions arising from audit assignments are also reviewed on a quarterly basis to ensure the proposed audit activities are carried out as per emerging and relevant risks as well as business strategies.

The AC together with the external auditors, reviewed the results of the statutory audit and the audit report. The AC also reviewed the proposed fees for the statutory audits and limited review fees for PETRONAS and selected subsidiaries.

Nomination and Remuneration Committee

NRC

- ⦿ Dato' Razali Mohd Yusof – Chairman
- ⦿ Ainul Azhar Ainul Jamal

⦿ Tan Sri Zaharah Ibrahim

The NRC carries duties and responsibilities in relation to the nomination and remuneration matters with strict adherence to the principles of good corporate governance.

The NRC is responsible in assisting the Board in ensuring that the Board and Board Committees retain an appropriate structure, size, balance of skills and experience, as well as independence and diversity required to meet PETRONAS' strategic objectives. The NRC is also responsible to review, prior to the Board's approval, the appointments and succession planning of PETRONAS' Top Management.

The NRC discharges its responsibilities through its scheduled meetings during the year in accordance with its fixed agenda which covers the matters under the purview of the NRC. The NRC met 8 times in 2021.

For more information about the NRC's attendance, please refer to pages 248.

Corporate Governance at PETRONAS

Key Matters in 2021

- ⦿ The NRC reviewed and made recommendations to the Board on the status of independence of the Non-Executive Directors ("NEDs") of PETRONAS in line with the requirements of the PETRONAS Independent Directors Guidelines on the annual review of independence of the NEDs.
- ⦿ The NRC reviewed PETRONAS' Top Management appointments, contract renewals and contract cessations, as well as succession planning and development opportunities.
- ⦿ During the year under review, the NRC had reviewed and endorsed the establishment of a Chief Operating Officer (COO) position and the assignment of the role to the existing Executive Vice President, Gas + New Energy Business, as well as the establishment of a succession plan for the President and Group CEO. In addition, the NRC had also endorsed the appointment of the Chief Sustainability Officer to orchestrate PETRONAS' roadmap for PETRONAS' net zero carbon emissions by 2050 aspiration.
- ⦿ The NRC reviewed and endorsed the enhanced guidelines based on pay-for-job principle for the appointment of Top Management (which includes appointment to higher position) and management of employment contracts.
- ⦿ The NRC reviewed and endorsed the establishment of Top Management Performance Measurement ("TMPM") and enhancement of Top Management Incentive Plan i.e. Short-Term and Long-Term Incentive Plans to encourage desired leadership behaviours to successfully deliver PETRONAS' long-term ambition, which includes the incorporation of the ESG weightage of 20 per cent into the Top Management's Long-Term Incentive Plan.
- ⦿ The NRC also reviewed and endorsed the establishment of the 2021 President and Group CEO's Performance Measurement to balance between Perform and Transform objectives with emphasis on enterprise outcomes and promote desired behaviours.

Risk Committee

RC

- ⦿ **Thayaparan S. Sangarapillai** – Chairman
(Appointed w.e.f. 24.9.2021)
- ⦿ **Dato Hj. Ibrahim Hj. Baki**

- ⦿ **Zakiah Jaafar**
- ⦿ **Tan Sri Dato' Seri Mohd Bakke Salleh**
(Resigned w.e.f. 24.9.2021)

The RC supports the Board in reviewing principal risks, oversees the adequacy and effectiveness of risk assessment and risk management system for PETRONAS Group. The Committee also deliberates on risk mitigation strategies and measures, review investment proposals that are significant from the risk perspective as well as monitor the activities on integrity-related initiatives for the PETRONAS Group.

The RC discharges its responsibilities through its scheduled meetings during the year in accordance with its fixed agenda which covers the matters under the purview of the RC. The RC met 7 times in 2021.

For more information about the RC's attendance, please refer to page 248.

Key Matters in 2021

- ⦿ The Committee assisted the Board in deliberating the PETRONAS Group's Corporate Risk Profile and Risk Appetite on a quarterly basis. Additionally, revisions to Risk Appetite were recommended by the Committee and approved by the Board for adoption in line with the requirement of the business objectives and strategies.
- ⦿ The Committee also played its oversight role in reviewing risks related to strategic and high impact business matters such as investment decisions for key projects during the year.
- ⦿ The Committee appraised the performances and activities of Group Integrity on a quarterly basis and was also updated on the progress of the Group's integrity and governance programmes.
- ⦿ The Committee also reviewed the report and activities of the Company's Portfolio Commodity Hedging programmes on a quarterly basis.

Corporate Governance at PETRONAS

Compliance

PETRONAS has consistently championed compliance culture guided by the principles of its Shared Values and Statement of Purpose. Based on these principles, the compliance culture in the 5 Critical Legal Areas (5CLAs) is inculcated among PETRONAS employees through the embedment of a robust compliance programme, coordinated and managed by Group Legal via the Legal Compliance Framework (LCF). The components of LCF which include the 5 Key Compliance Areas (5KCAs) are our key focus in strengthening the compliance culture, supported with consistent messaging from the PETRONAS Board and Management.

5 Key Compliance Areas



In operationalising and ensuring global and groupwide compliance, the compliance management team is structured to serve the business sectors at headquarters, with regional offices in Asia Pacific, Europe, Middle East and Americas to cover all countries PETRONAS operates in. Through a risk based and "adopt-or-adapt" approach, the regional compliance management offices support the implementation of Group positions and enterprise controls, and conduct compliance programme and activities that adhere to and are in line with local laws and regulations. Frequent meetings and discussions are held to ensure alignment of compliance practices and that regional activities are connected and communicated regularly with the headquarter.

Corporate Governance at PETRONAS

1

Governance and Risk Assessment

PETRONAS establishes various governance documents such as policies, standards, guidelines, frameworks and procedures which are the foundation for carrying out internal controls in relation to the 5CLAs. The relevant governance documents are continuously enhanced and improved throughout the year, and required to be adopted and implemented by PETRONAS entities across the Group.

Governance Documents for 5CLAs

Ethics and Integrity

- PETRONAS Code of Conduct and Business Ethics
- PETRONAS Anti-Bribery and Corruption Manual
- PETRONAS Whistleblowing Policy
- PETRONAS Raid Protocol
- PETRONAS Human Rights Commitment

Data Privacy

- PETRONAS Corporate Privacy Policy
- PETRONAS Master Guidelines to the PETRONAS Corporate Privacy Policy
- PETRONAS Data Protection Impact Assessment Guidelines
- PETRONAS Personal Data Breach Protocol

Sanctions and Export Controls

- PETRONAS Economic Sanctions and Export Control Policy & Guidelines
- PETRONAS Sanctions Breach Protocol

Competition

- PETRONAS Competition Law Guidelines
- PETRONAS Competition Law Compliance Protocols:
 - Merger and Acquisition Transactions Protocol
 - Meetings and Information Sharing Protocol

2

Training and Awareness

PETRONAS continues to deliver enterprise or customised training and awareness programmes for its employees and Directors to ensure firm understanding of the 5CLAs through various digital and communication platforms. Online courses, webinars and virtual trainings were the primary methods used in light of the prolonged COVID-19 pandemic. These methods have enabled PETRONAS to accelerate the training completion by all PETRONAS employees as part of its continuous efforts to instill the 5CLAs compliance culture across PETRONAS Group. Throughout 2021, more than 90 per cent of PETRONAS employees group wide had completed the 5CLAs online courses.

3

Due Diligence and Contractual Obligations

PETRONAS manages its third-party risks through PETRONAS Third Party Risk Management (TPRM), a robust due diligence process to safeguard PETRONAS Group from any exposure to the 5CLAs in the event of misconduct by third parties (e.g. partners, contractors, vendors, suppliers, distributors, agents).

PETRONAS TPRM, which applies to all businesses, enable PETRONAS to detect possible red-flags of potential third parties prior to any formal engagement or during the business relationship with such third parties, and to provide the necessary mitigation or contractual safeguard against any risks of legal, financial or reputational damage that may be caused toward PETRONAS.

Corporate Governance at PETRONAS

4

Business Practice

PETRONAS reviews its policies and guidelines on a regular basis and endeavours to ensure these policies and guidelines are effectively updated and in line with any changes in the 5CLAs. This review is undertaken for continuous improvements and putting in place pre-emptive measures to safeguard PETRONAS from breaching the 5CLAs.

a) Enhancement to PETRONAS Group Privacy Notice

The PETRONAS Group Privacy Notice is intended to clearly inform individuals on how PETRONAS collects and processes personal data. The enhancement of the PETRONAS Group Privacy Notice includes the expansion of categories of personal data collected and processed by PETRONAS Group, adding specific sections on processing a minor's personal data and information for data subject in the UK and the EU on the lawful basis for processing personal data as required under General Data Protection Regulation (GDPR).

b) Enhancement to the PETRONAS Competition Law Guidelines

The PETRONAS Competition Law Guidelines was established to outline the main competition law principles applicable in all jurisdictions where PETRONAS Group operates to build the compliance culture, hence ensuring that all employees strictly comply with these rules in their day-to-day business. However, with the continuous evolution in the competition/anti-trust laws, an enhancement of the PETRONAS Competition Law Guidelines is essential in making sure it remains relevant and applicable to PETRONAS operations in Malaysia and globally. The revised guidelines include relevant scenarios leveraging from practical business experiences to guide PETRONAS employees when dealing with actual or potential competition issues.

c) Establishment of PETRONAS Data Protection Impact Assessment Guidelines

The PETRONAS Data Protection Impact Assessment (DPIA) Guidelines is a high-level universal guideline designed to ensure the necessary data protection controls are incorporated in the identified processes for the purpose of compliance with the PETRONAS Corporate Privacy Policy and local data protection legislation.

d) Establishment of PETRONAS Personal Data Breach Protocol

Personal data protection laws continue to evolve in Malaysia and other countries. It is expected that more countries will enact or revise their data privacy laws to require notification to data privacy authorities and the individuals affected in the event of a personal data breach. Thus, the Personal Data Breach Protocol was established with the objective of providing a high-level process flow in the event of a potential or actual breach of personal data to expedite effective action to prevent or minimise any adverse implications to PETRONAS Group.

e) Establishment of PETRONAS Sanctions Breach Protocol

PETRONAS Group may encounter situations or issues involving sanctions due to its operations in various jurisdictions. Some of these situations require swift action in a particular manner consistent with the applicable laws and PETRONAS governance processes. In light of this, the Sanctions Breach Protocol was established with the objective of providing specific actions to be taken in an efficient and effective manner, if any of these situations occur.

f) Enhancement to PETRONAS Third Party Risk Management

As part of the continuous improvement to manage PETRONAS' third-party risks, the KYC Questions and compliance clauses on the 5CLAs in the TPRM are further revised and strengthened based on the experience of in-house counsels in dealing with various third parties and compliance issues. A simplified KYC Questions document and compliance clauses were also established for third parties under special categories that pose a lower risk to PETRONAS.

Corporate Governance at PETRONAS

5

Monitoring and Assurance

PETRONAS ascertains the effectiveness of control established through rigorous monitoring and assurance activities. The control oversight and monitoring of the 5CLAs' compliance are achieved through a structured compliance assessment undertaken by PETRONAS entities annually in accordance with the PETRONAS Integrated Assurance Program. In addition to the compliance assessment, the on-going evaluations by Group Legal and periodic reviews and audits by Internal Audit enable the effective identification, assessment and necessary intervention action to address potential areas of non-compliances and unsound practices, as well as the identification of new or existing controls to be developed or enhanced to continuously improve the legal compliance posture of PETRONAS Group.

PETRONAS Commitment to Integrity

PETRONAS adopts zero tolerance to any forms of bribery and corruption. The PETRONAS CoBE, PETRONAS Anti-Bribery and Corruption Manual and PETRONAS Whistleblowing Policy are in place to guide PETRONAS employees and third parties when dealing with potential or actual bribery and corruption situations in the course of their day-to-day activities. These governance documents form part of the controls established under the PETRONAS Integrity Compliance Framework (PICF). PICF is the overarching framework in shaping integrity and compliance posture and propagation of integrity and business ethics within PETRONAS Group.

The programmes planned and developed under PICF are coordinated and monitored by the PETRONAS Integrity Awareness Committee (PIAC) to ensure that they are implemented in an effective, integrated, and structured manner. In 2021, the composition of PIAC members were expanded to include key representatives from Corporate Centre and Business Divisions across PETRONAS Group to enhance ownership and accountability as well as to ensure direct and effective implementation of ethics and integrity controls and initiatives within PETRONAS Group.

With heightened expectation for organisations to elevate integrity and transparency in all dealings, and PETRONAS' own demonstrated commitment and leadership in the ethics and compliance sphere, PETRONAS has further strengthened its presence by becoming a member of Partnering Against Corruption Initiative (PACI), a group under World Economic Forum (WEF). PACI serves as a platform for PETRONAS to continuously strive to enhance its knowledge and capability building by collaborating with other reputable members from other oil and gas companies and cross-industry community and participating in various experts' discussion and sharing of best practices.

With this participation in PACI, PETRONAS will be able to enhance its visibility and branding as an organisation that upholds strong corporate governance with robust anti-corruption programmes and promotes PETRONAS' visibility in upholding good corporate governance and ethical business practices.

PETRONAS Whistleblowing Policy and Procedures

The PETRONAS Whistleblowing Policy and procedures are available on PETRONAS' corporate website:

 <https://www.petronas.com/whistleblowing>

* All disclosures will be treated in the strictest confidence

Corporate Governance at PETRONAS

Sustainability Governance

Board Commitment to Sustainability

The Board acknowledges that the well-being of the employees, customers, suppliers and other stakeholders as well as the environment and the society at large is central to sustaining PETRONAS' long-term performance and continued relevance. The Board is mandated to provide direction for PETRONAS and its Group in steering the delivery of its goals and targets while adapting to long-term structural changes in the energy industry that are to a large extent driven by sustainability-related themes.

The heightened materiality of sustainability to the business demands the Board and the Management to intensify efforts in making sustainability central to PETRONAS' strategy and priorities, as well as creating the structure that enables, formal oversight to sustainability by the Board. Being the highest authority in sustainability governance, the Board takes full responsibility in institutionalising the Company's sustainability agenda, road map and initiatives.

The full report on Sustainability Governance is found on pages 170-173 of this Report.

Recharge

for Resilience



PETRONAS



Financial Review and Other Information

**An overview of our
financial performance and
other relevant details**

- 262** Group Financial Results and Position
- 262** Analysis of Financial Results
- 269** Analysis of Financial Position
- 271** Analysis of Cash Flow
- 274** Five-Year Key Financial Indicators
- 276** Appendix
- 279** Glossary of Terms



Group Financial Results and Position

Analysis of Financial Results

Consolidated Statement of Profit or Loss and Other Comprehensive Income or Loss

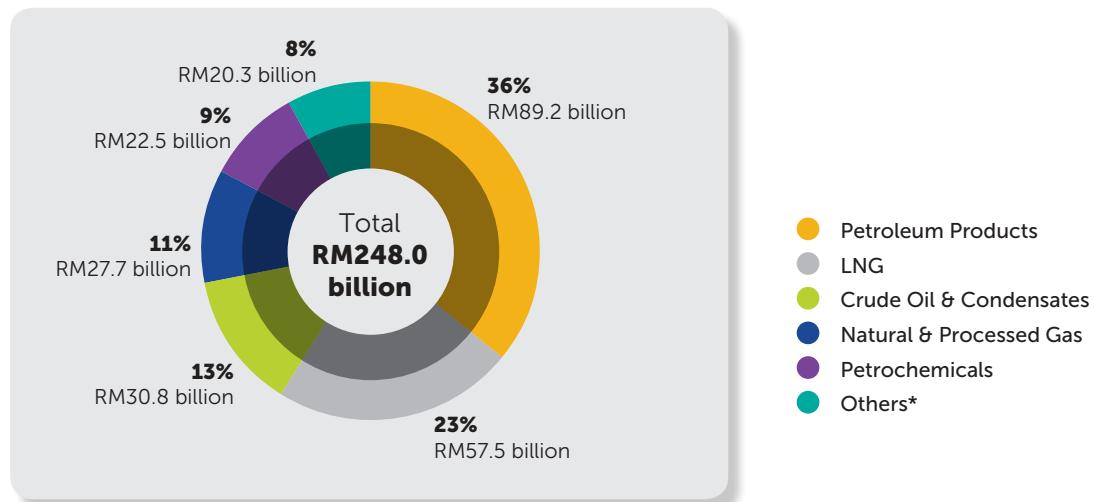
	Financial Year ended 31 December	
In RM million	2021	2020
Revenue	247,962	178,741
Cost of revenue	(158,646)	(134,958)
Gross profit	89,316	43,783
Selling and distribution expenses	(9,423)	(8,174)
Administration expenses	(11,536)	(9,675)
Net impairment write-back/(losses) ¹	2,307	(32,681)
Other expenses	(3,136)	(5,871)
Other income	4,904	4,102
Operating profit/(loss)	72,432	(8,516)
Financing costs	(5,069)	(4,133)
Share of profit after tax and non-controlling interests of equity accounted associates and joint ventures	1,882	328
Profit/(Loss) before taxation	69,245	(12,321)
Tax expense	(20,645)	(8,708)
PROFIT/(LOSS) FOR THE YEAR	48,600	(21,029)
Other comprehensive income/(loss)		
<i>Items that will not be reclassified subsequently to profit or loss</i>		
Net changes in fair value of equity investments at fair value through other comprehensive income (OCI)	639	13
<i>Items that may be reclassified subsequently to profit or loss</i>		
Net movements from exchange differences	3,533	(452)
Cash flow hedge	(174)	(1,447)
Others	170	28
Total other comprehensive income/(loss) for the year	4,168	(1,858)
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR	52,768	(22,887)
Profit/(Loss) attributable to:		
Shareholders of the Company	41,792	(23,851)
Non-controlling interests	6,808	2,822
PROFIT/(LOSS) FOR THE YEAR	48,600	(21,029)
Total comprehensive income/(loss) attributable to:		
Shareholders of the Company	45,010	(25,019)
Non-controlling interests	7,758	2,132
TOTAL COMPREHENSIVE INCOME/(LOSS) FOR THE YEAR	52,768	(22,887)

¹ Includes certain amount relating to loss on remeasurement of finance lease receivables and write-off of assets.

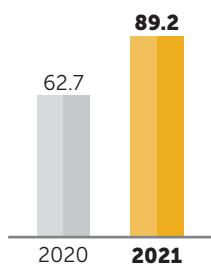
Group Financial Results and Position

Revenue by Products

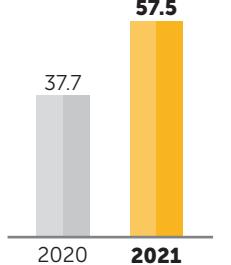
The Group's total revenue was RM248.0 billion, primarily contributed by petroleum products and LNG which accounted for 36 per cent and 23 per cent of revenue, respectively.



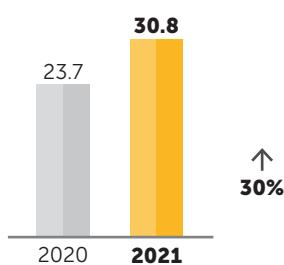
Petroleum Products
(RM billion)



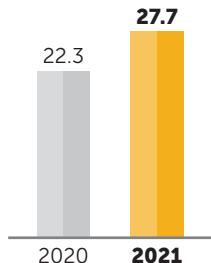
LNG
(RM billion)



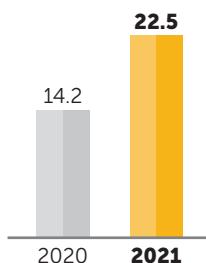
Crude Oil & Condensates
(RM billion)



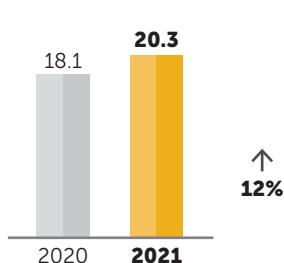
Natural and Processed Gas
(RM billion)



Petrochemicals
(RM billion)



Others*
(RM billion)

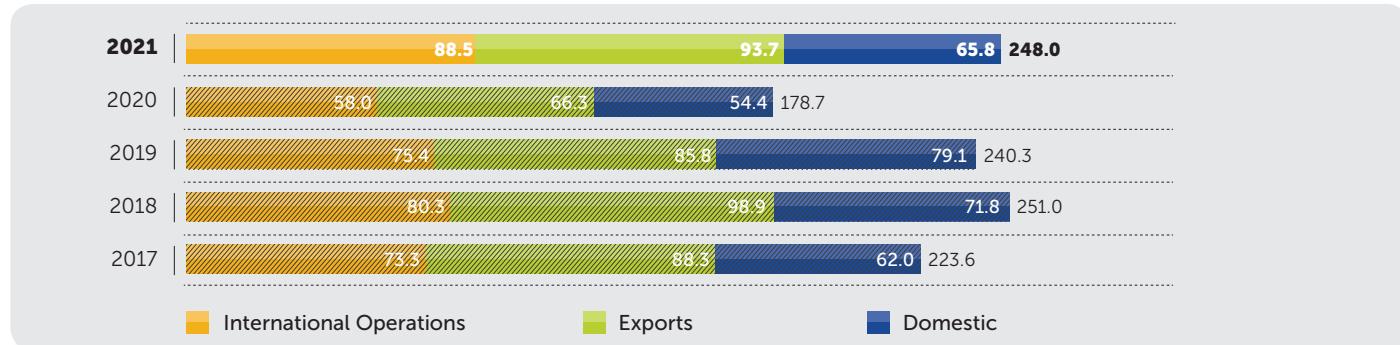


* Others mainly comprise Maritime and Logistics, Services and Property.

Group Financial Results and Position

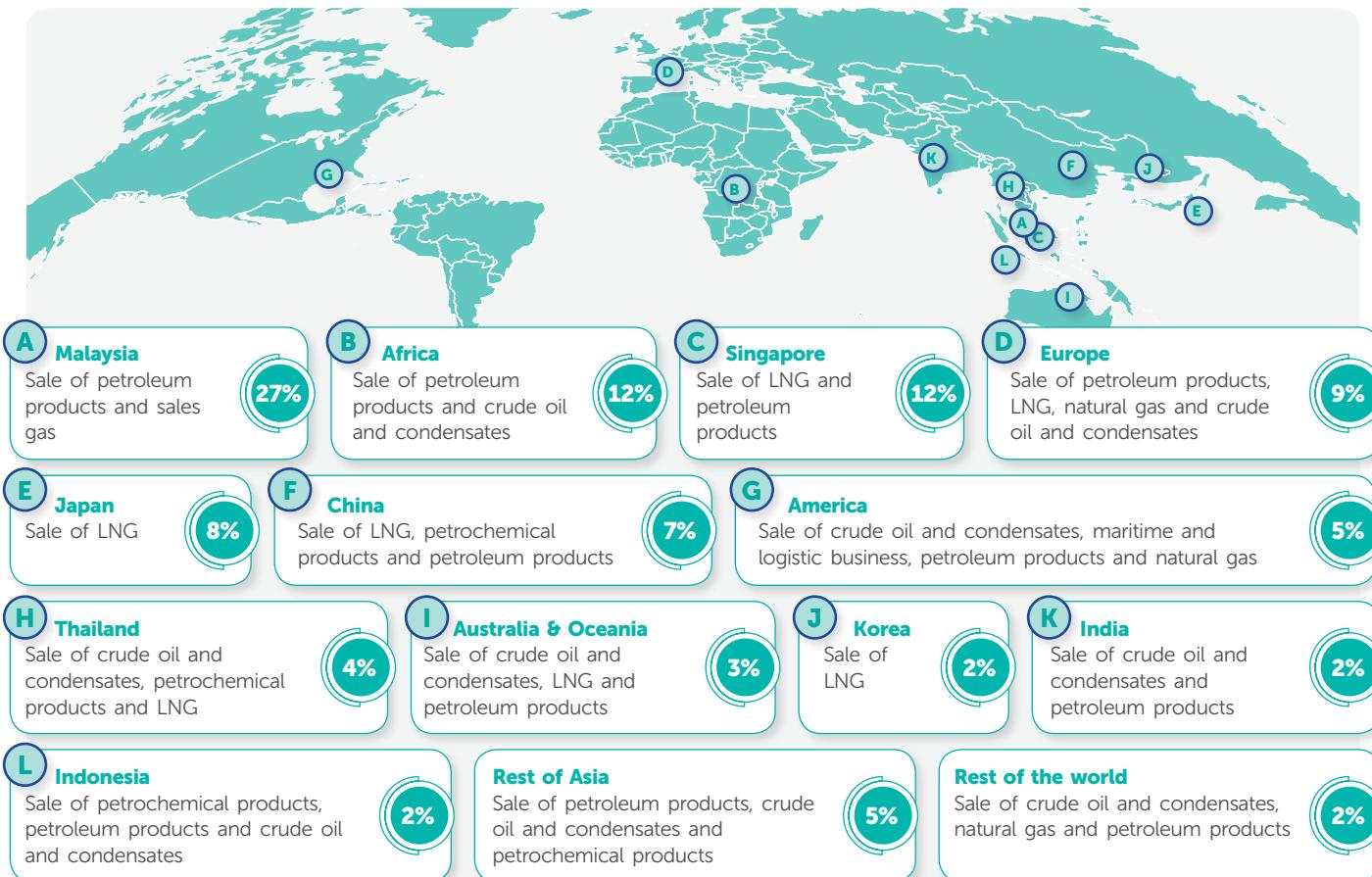
Revenue by Geographical Trade

(RM billion)



- The Group recorded higher revenue for all categories of its geographical trade in 2021 as a result of significantly higher product prices.
- Revenue from exports at RM93.7 billion remained as the major contributor to the Group's revenue, which accounted for 38 per cent of total Group revenue. The exports revenue recorded during the year was 41 per cent higher as compared to 2020 mainly attributed to higher sales volumes and upward trending of key benchmark prices for major products.
- Meanwhile, international operations revenue which accounted for 36 per cent of the Group's total revenue recorded an increase of 53 per cent as compared to FY2020, also resulted from higher sales volume following improvement of travel restrictions as well as upward trending of key benchmark prices.
- Domestic operations recorded an increase of 21 per cent during the year primarily attributed to higher key benchmark prices for major products, mainly petroleum and petrochemical products.

Revenue by Geographical Segments



Group Financial Results and Position

Group Cost

Group cost stood at RM204.4 billion, a slight increase against last year by RM0.2 billion, mainly due to higher price-sensitive expense items by RM35.7 billion.

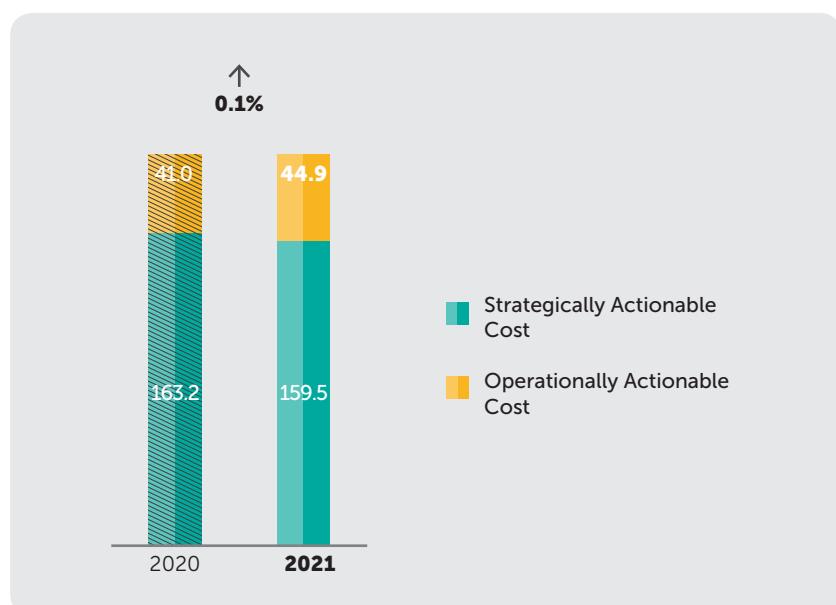
PETRONAS Group

Total Cost Analysis Breakdown

Revenue (in RM billion)	248.0	178.7	Variance FY2021 vs FY2020
In RM billion	FY2021	FY2020	
Strategically Actionable Costs	159.5	163.2	(3.7)
Product costs	86.8	63.6	23.2
Tax Expenses, Sales Tax & Duties and Cash Payments	33.5	21.0	12.5
Price-Sensitive Expense Items	120.3	84.6	35.7
Depreciation, Amortisation, Write-Off & Write-Down	34.6	36.0	(1.4)
Net Impairment on Assets	0.2	35.2	(35.0)
Others (Forex, Finance Cost, etc)	4.4	7.4	(3.0)
Operationally Actionable Costs	44.9	41.0	3.9
Production and transportation expense, purchase services, materials & supplies	26.8	23.9	2.9
Others (HR cost, rental, leases, utilities, G&A etc)	18.1	17.1	1.0
TOTAL GROUP COSTS	204.4	204.2	0.2
Group Cost to Revenue Ratio (%)	82%	114%	

Operating Costs

(RM billion)

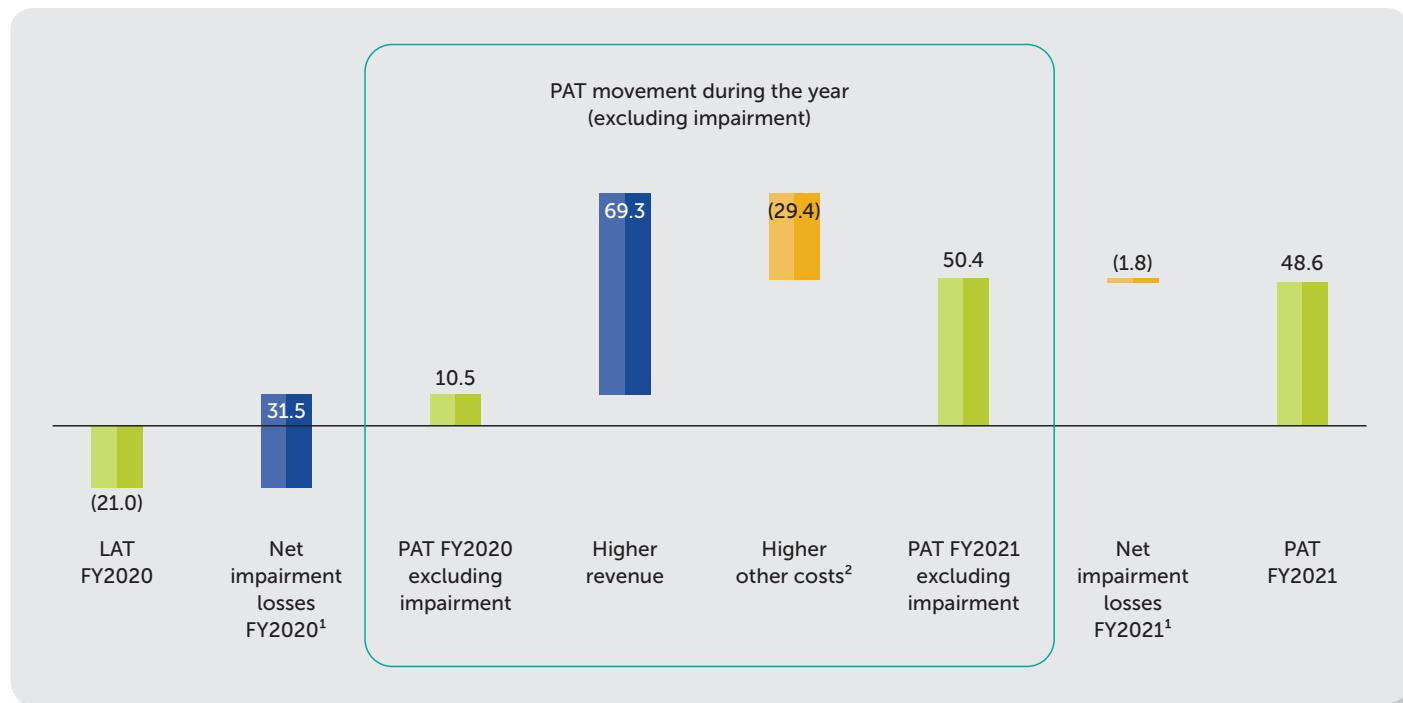


The Group recorded a slight increase of operating cost by 0.1 per cent despite an increase of revenue by 39 per cent. This resulted in a lower Group Cost to Revenue ratio by 32 per cent aligned with the rigorous measures to reduce costs.

Group Financial Results and Position

Profit/(Loss) After Tax

(RM billion)



¹ Includes write-off of exploration expenditure under intangible assets, loss on remeasurement of finance lease receivables and provision for contracts exposure and net of deferred tax

² Other costs mainly comprise of lower product costs

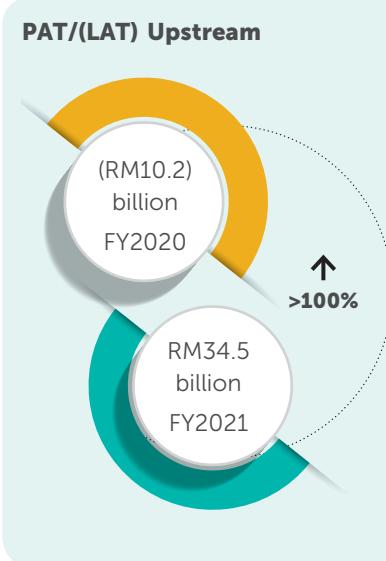
Excluding impairment, PETRONAS Group recorded PAT of RM50.4 billion for the year ended 2021, an increase of more than 100 per cent compared to RM10.5 billion in FY2020 mainly contributed by higher revenue realised, partially offset by slightly higher cost.

During the year, minimal net impairment on assets reported by PETRONAS as compared to last year was consistent with most oil majors following rising oil prices and growing demand recovery.

Group Financial Results and Position

Segment Earnings

The Group operates three core business segments, namely Upstream, Gas + New Energy and Downstream. Corporate and Others, which complements our core businesses, comprising primarily logistic and maritime segment; property segment and central treasury; as well as project delivery and technology function.



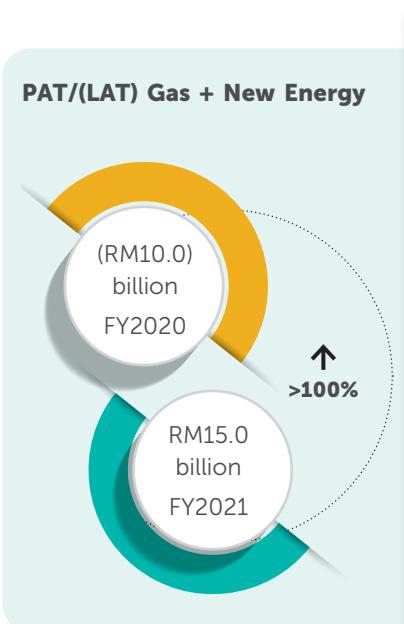
Upstream

During the year, the Upstream segment recorded a PAT of RM34.5 billion as compared to LAT of RM10.2 billion for the same period in 2020 primarily driven by higher revenue and net impairment write-back as compared to net impairment losses reported in the prior year. This was partially offset by higher taxation as well as product costs and cash payments in line with higher prices.

The increase in Upstream revenue was mainly attributable to higher average realised prices for crude oil and condensates and natural gas as well as higher natural gas sales volume.

Total daily production average of 2,275 thousand barrels of oil equivalent (boe) per day in 2021, increased from 2,209 thousand boe per day in 2020 and was mainly due to higher crude oil production from international operations coupled with higher natural gas production contributed by stronger demand for both Malaysia and international operations.

Further details on Upstream's operational performance can be found on pages 136-140.



Gas + New Energy

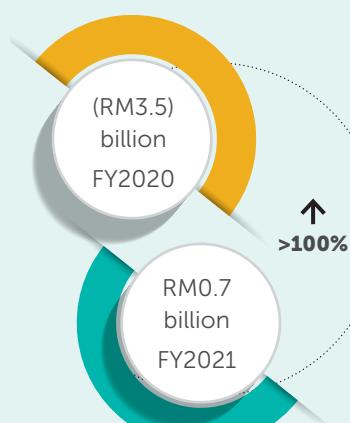
Gas + New Energy recorded a PAT of RM15.0 billion in contrast to a LAT of RM10.0 billion in corresponding year mainly contributed by higher revenue coupled with lower impairment losses on assets partially offset by higher product costs.

Higher sales gas performance for the year compared to the same period last year, contributed by higher demand from the power sector. PETRONAS has also secured up to 697 million standard cubic feet per day (MMscfd) of natural gas supply deals from new and existing customers.

More information on Gas + New Energy's operational performance is available on pages 144-151.

Group Financial Results and Position

PAT/(LAT) Downstream



Downstream

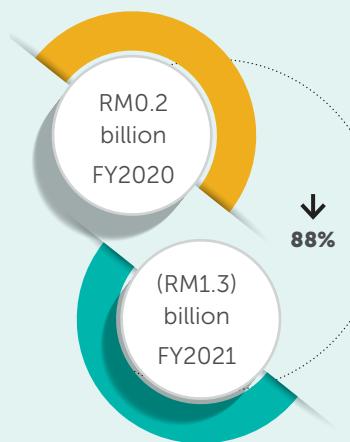
The Downstream business also recorded a PAT of RM0.7 billion against a LAT of RM3.5 billion in the previous year, higher by RM4.2 billion mainly contributed by improved petrochemicals and refining margins, and offset by higher impairment losses on assets.

During the year, Downstream business recorded stable operations with Overall Equipment Effectiveness (OEE) sustained at 93.3 per cent, on the back of strong asset reliability.

Petroleum products sales volume was 262.4 million barrels, higher by 0.6 million barrels following increased trading activities. Crude oil sales volume was 109.7 million barrels, lower by 27.7 million barrels mainly due to lower marketing volume. Petrochemical products sales volume was comparable at 8.2 million metric tonnes.

More information on Downstream's operational performance is available on pages 152-159.

PAT/(LAT) Corporate and Others



Corporate and Others

Our Corporate and Others business recorded a LAT of RM1.3 billion, as compared to FY2020's PAT of RM0.2 billion.

Loss recorded in 2021 was mainly due to higher operating expenditure partially cushioned by lower impairment losses and favourable foreign exchange gain due to the strengthening of the US Dollar against the Ringgit.

MISC Berhad (MISC) and KLCC Property Holdings Berhad (KLCCP) were the two major contributors to this segment. MISC recorded a PAT of RM1.7 billion during the year, mainly from the deliveries of Very Large Ethane Carriers (VLECs), Dynamic Positioning Shuttle Tankers (DPSTs) and construction profit for FPSO Project in Brazil. KLCCP's PAT increased to RM0.5 billion as compared to RM0.4 billion in the previous year mainly due to lower operating expenses incurred coupled with lower tax expense.

Further information is provided in MISC's and KLCCP's 2021 annual reports.

Group Financial Results and Position

Analysis of Financial Position

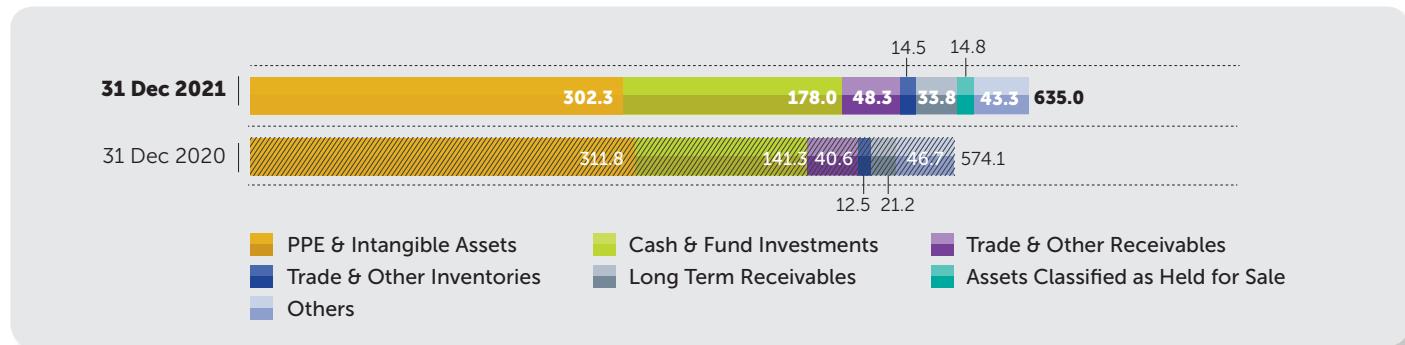
Consolidated Statement of Financial Positions

In RM Mil	As at 31.12.2021	As at 31.12.2020
ASSETS		
Property, plant and equipment	282,898	291,717
Investment properties and land held for development	13,167	13,454
Investments in associates and joint ventures	9,229	12,599
Intangible assets	19,394	20,044
Long-term receivables	33,751	21,232
Fund and other investments	2,955	1,009
Deferred tax assets	20,983	20,622
TOTAL NON-CURRENT ASSETS	382,377	380,677
Trade and other inventories	14,477	12,491
Trade and other receivables	48,324	40,583
Fund and other investments	10,479	9,779
Cash and cash equivalents	164,556	130,523
	237,836	193,376
Assets classified as held for sale	14,791	18
TOTAL CURRENT ASSETS	252,627	193,394
TOTAL ASSETS	635,004	574,071
EQUITY		
Share capital	100	100
Reserves	350,756	330,521
Total equity attributable to shareholders of the Company	350,856	330,621
Non-controlling interests	53,484	50,413
TOTAL EQUITY	404,340	381,034
LIABILITIES		
Borrowings	86,619	76,808
Deferred tax liabilities	9,543	8,455
Other long-term liabilities and provisions	50,620	51,056
TOTAL NON-CURRENT LIABILITIES	146,782	136,319
Trade and other payables	51,825	43,728
Borrowings	21,212	11,421
Taxation	6,913	1,569
	79,950	56,718
Liabilities classified as held for sale	3,932	–
TOTAL CURRENT LIABILITIES	83,882	56,718
TOTAL LIABILITIES	230,664	193,037
TOTAL EQUITY AND LIABILITIES	635,004	574,071

Group Financial Results and Position

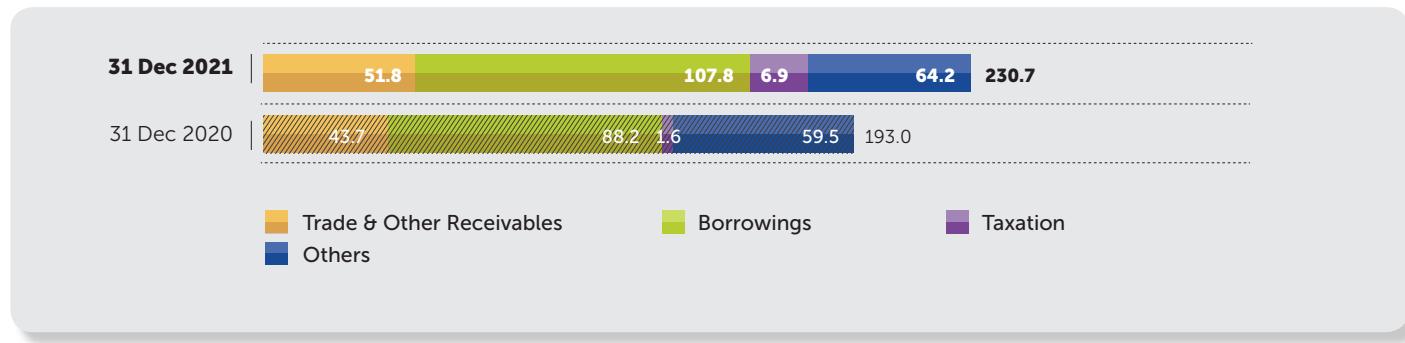
Total Assets

(RM billion)



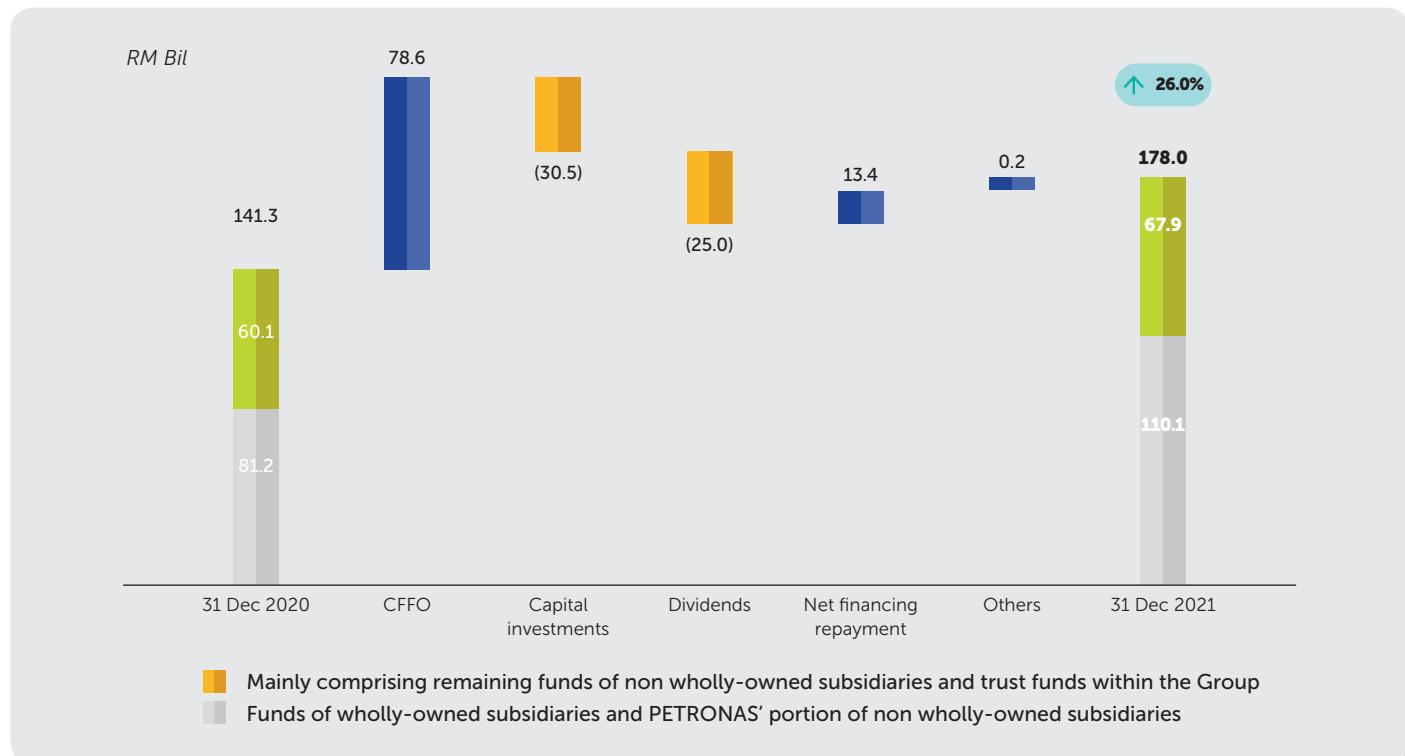
Total Liabilities

(RM billion)



Movement in Cash and Fund Investments

(RM billion)



Group Financial Results and Position

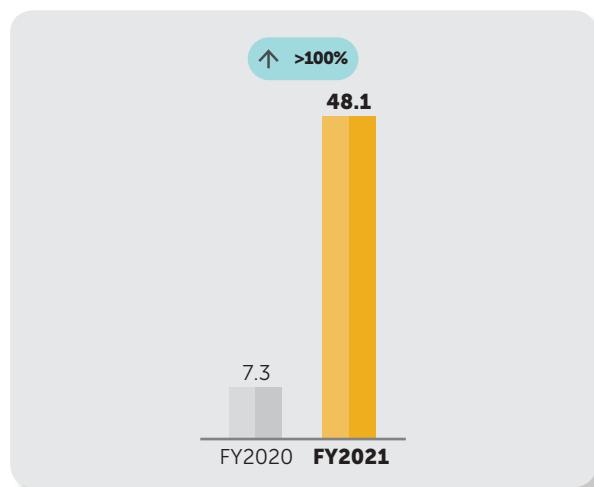
Analysis of Cash Flow

Consolidated Statement of Cash Flows

	Financial Year ended 31 December	
In RM Mil	2021	2020
Cash flows from operating activities		
Profit/(Loss) before taxation	69,245	(12,321)
Adjustments for non-cash items	32,655	69,840
Net changes in working capital	(8,813)	(4,197)
Cash generated from operations	93,087	53,322
Interest expenses paid	(3,584)	(2,689)
Interest income	2,998	4,838
Taxation paid, net of refund	(13,904)	(14,726)
Net cash generated from operating activities	78,597	40,745
Cash flows from investing activities	(29,504)	(32,914)
Cash flows from financing activities	(16,056)	(17,467)
Net increase/(decrease) in cash and cash equivalents	33,037	(9,636)
Decrease/(Increase) in cash and cash equivalents restricted	304	(322)
Net foreign exchange differences	1,692	(1,752)
Cash and cash equivalents at beginning of the year	128,141	139,851
Cash and cash equivalents at end of the year	163,174	128,141
Cash and cash equivalents		
Cash and bank balances and deposits	164,556	130,523
Bank overdrafts	(2)	(698)
Less: Cash and cash equivalents restricted	(1,380)	(1,684)
	163,174	128,141

Free Cash Flow Analysis

(RM billion)



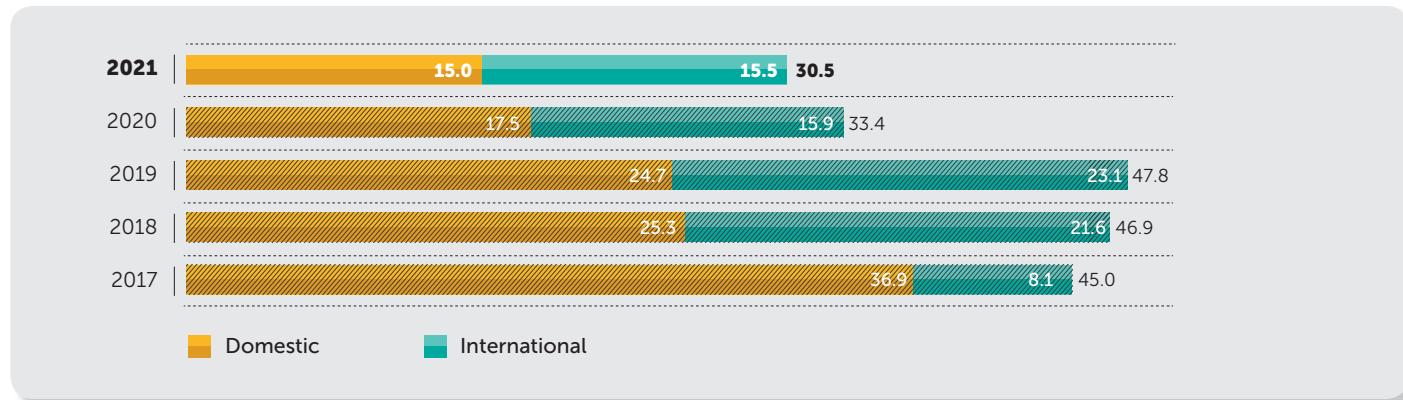
The Group generated free cash flow of RM48.1 billion during the year, increasing by RM40.8 billion or more than 100 per cent as compared to RM7.3 billion in 2020 mainly due to increased funds from operations in line with increase in profits. This was partially offset by lower interest income received from funds and other investments following lower overall interest.

Group Financial Results and Position

Capital Investments

Domestic and International Capital Investments Breakdown

(RM billion)

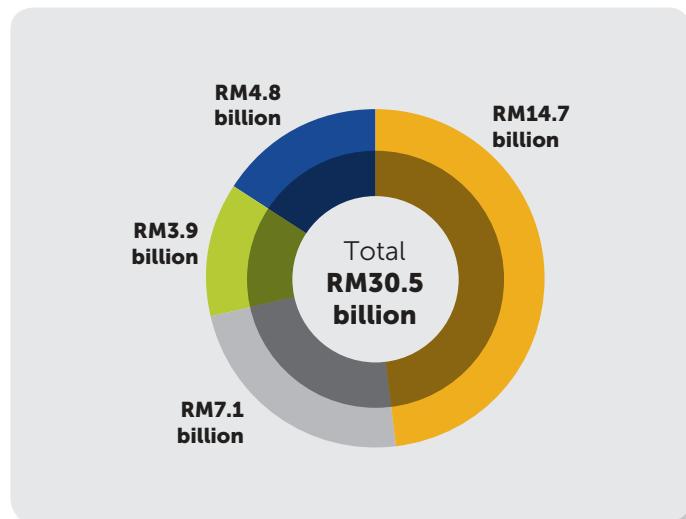


* The figure has been restated to include cost of acquisition of subsidiaries and investment in associates and joint ventures.

During the year, while we continued investing, many projects were affected by the prolonged movement restriction order, coupled with supply chain interruptions. Both our domestic and international projects, experienced delays and deferments, resulting in lower overall CAPEX spent during the year, which is RM30.5 billion and lower by RM2.9 billion, compared with RM33.4 billion in FY2020. Notwithstanding, close to RM1.0 billion was spent on Stepping Out, mainly on the renewables energy space.

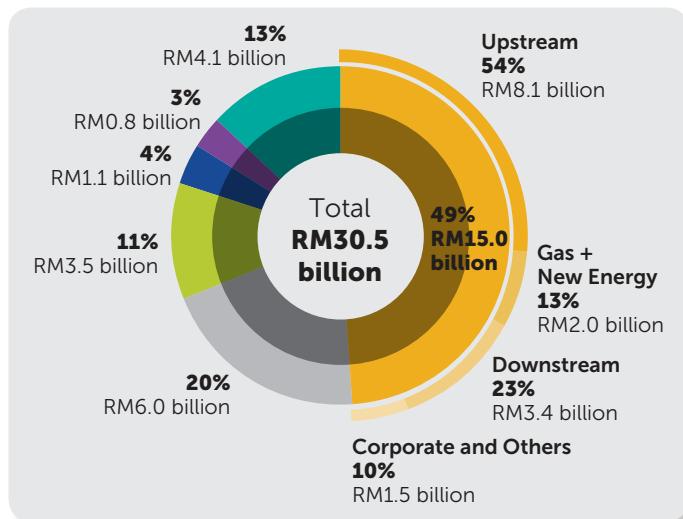
Segment Capital Investments

Capital investments by Business Segments in FY2021



- Upstream
- Gas + New Energy
- Downstream
- Corporate & Others

Capital Investments by Geographical Segment FY2021



- Malaysia
- Canada
- USA
- Iraq
- Argentina
- Rest of the World

Group Financial Results and Position

Capital Investments

Segment Capital Investments

Aligned with PETRONAS' Three-Pronged Growth Strategy, we continue to strengthen our core-business and pursue growth, by upholding strict capital discipline. We intensified our capital allocation exercise, to ensure sufficient allocation for our core cash-generating assets, and increased allocation for investments in growth or, what we call Step-Outs. Over the next five years, starting from 2022, we have allocated about circa 20 per cent of total planned CAPEX, for Step-Outs.

Upstream

- Capital investment for the Upstream business accounted for 48 per cent of the Group's total capital investment with a total spending of RM14.7 billion, an increase of RM0.3 billion as compared to the preceding year which reflected the Group's deliberate action to strengthen our core-business and pursue growth despite the prolonged movement restriction orders.
- The capital investments for 2021 were predominantly spent in exploration, development and production activities aimed at sustaining and growing production in Malaysia and international operations.
- About RM8.1 billion or 54 per cent of Upstream total capital investment was spent mainly for development of new fields. Amongst others, key projects in Malaysia include Kasawari Gas Field Development, Bakau Gas Field Development, Limbayong Gas Field Development and Pegaga Gas Field Development.
- Meanwhile, a total of RM6.6 billion was allocated towards international portfolio investments; key countries include Argentina, Azerbaijan, Canada and Iraq. The highlights of the investments include Upstream acquisition of 10 per cent participating interests in North Montney Joint Venture (NMJV) from Japan Petroleum Exploration Co Ltd (JAPEX) and Argentina La Amarga Chica mainly drilling activities.

Gas + New Energy

- Gas + New Energy accounted for 23 per cent of the Group's total capital investment and incurred a total spending of RM7.1 billion in FY2021.
- Capital investments for FY2021 were predominantly spent on international ventures particularly for the LNG project in Canada.
- Meanwhile, New Energy investments closer to home under PETRONAS New Energy includes solar panel installation at Universiti Teknologi PETRONAS (UTP), Perak, Institute Teknologi Petroleum PETRONAS (INSTEP) in Terengganu and Pengerang Integrated Complex in Johor.

Downstream

- The Downstream business utilised capital investment of RM3.9 billion during the year or 13 per cent of the Group's overall capital investment allocation.
- The spending made during the year was mainly allocated towards operational project as well as turnaround activities from PCG, PDB and MRC. Other investments were mainly related to Pengerang Integrated Complex (PIC) which is targeted to be operationalised in 2022.

Corporate and Others

- Businesses under Corporate and Others spent RM4.8 billion during the year which was lower by RM1.6 billion as compared to 2020 with MISC accounting for 73 per cent of the total spending.
- During the year, MISC's significant investments were mainly from the deliveries of five units of Very Large Ethane Carriers (VLEC) of RM1.5 billion and petroleum newbuild vessels of RM1.4 billion, in which MISC contributed to PAT of RM1.7 billion.

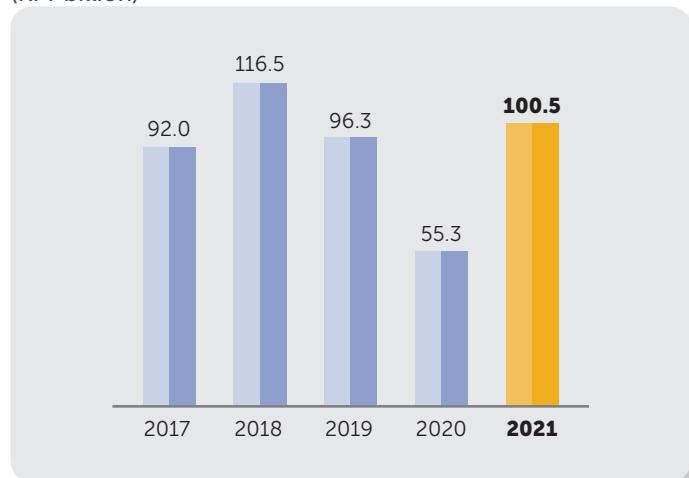
Group Financial Results and Position

Five-Year Key Financial Indicators

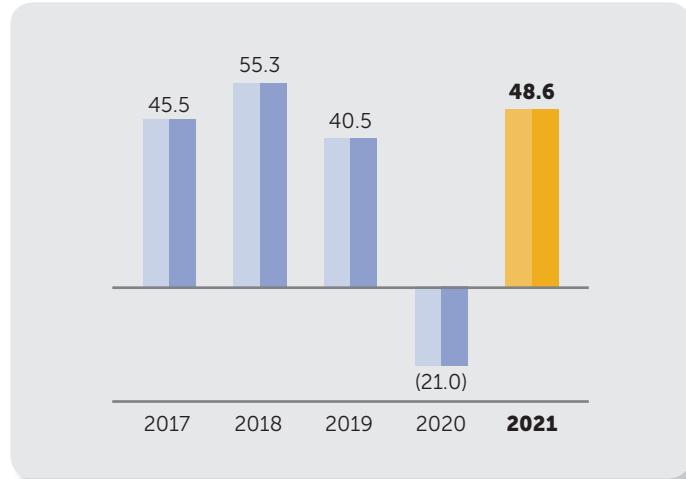
Revenue
(RM billion)



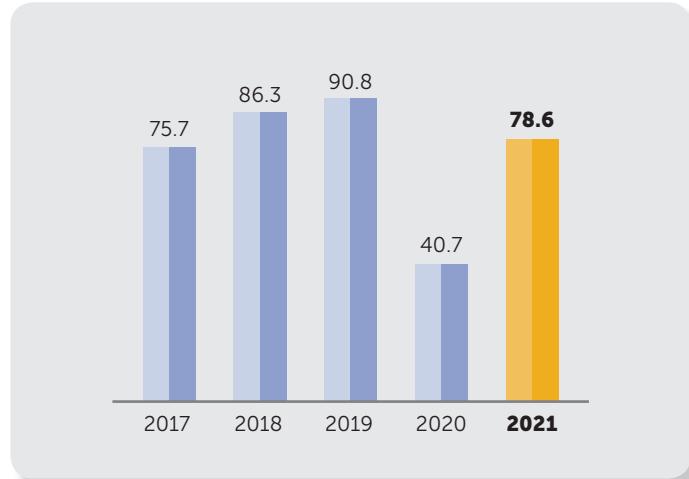
EBITDA
(RM billion)



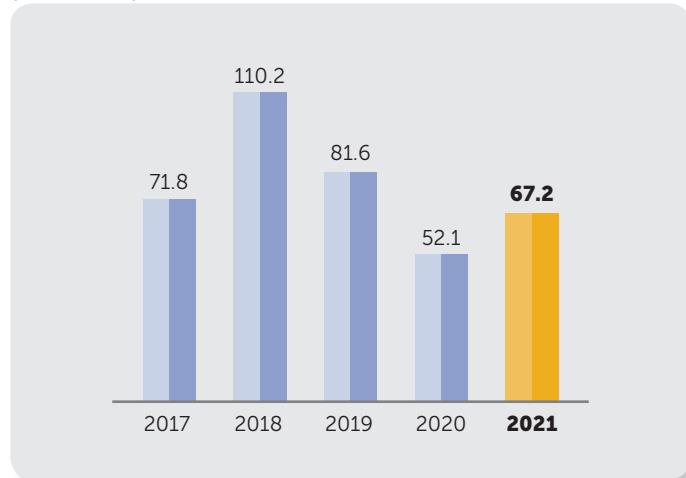
Profit/(Loss) After Tax
(RM billion)



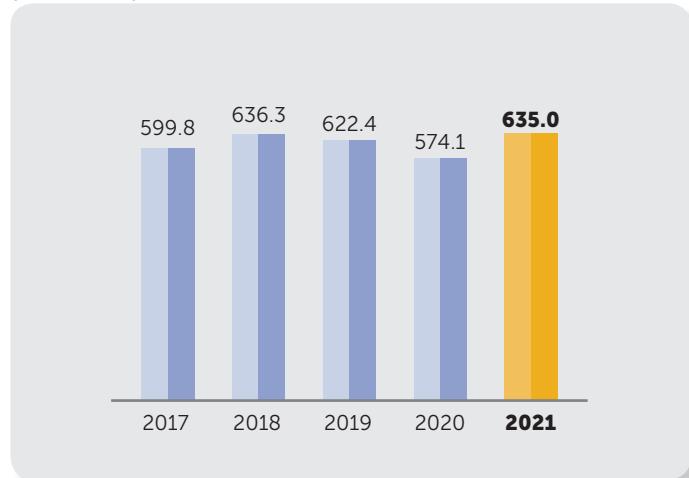
Cash Flows from Operations (CFFO)
(RM billion)



Net Cash Position
(RM billion)

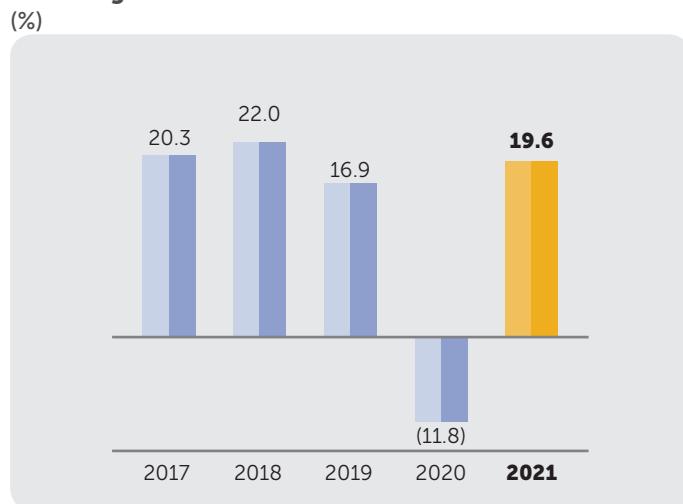


Total Assets
(RM billion)

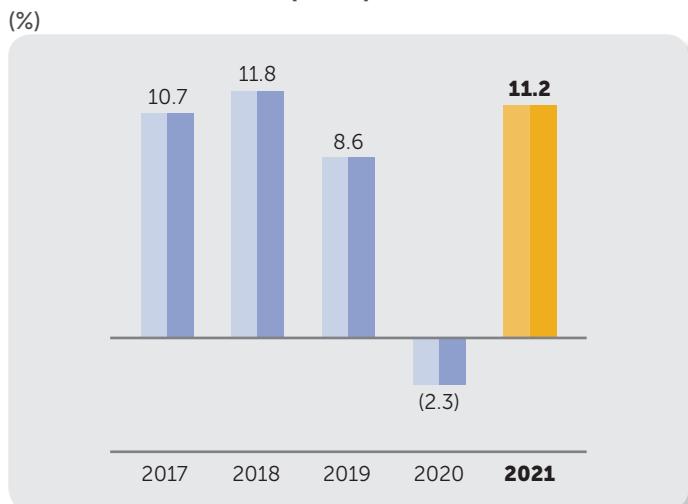


Group Financial Results and Position

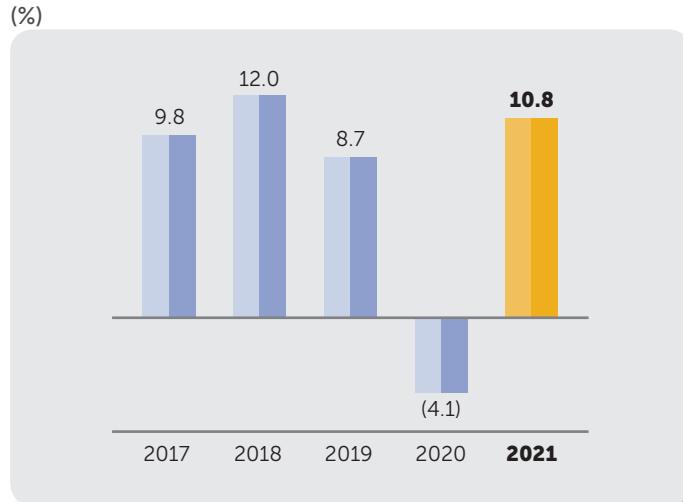
PAT Margin (%)



Return on Total Assets (ROTA) (%)



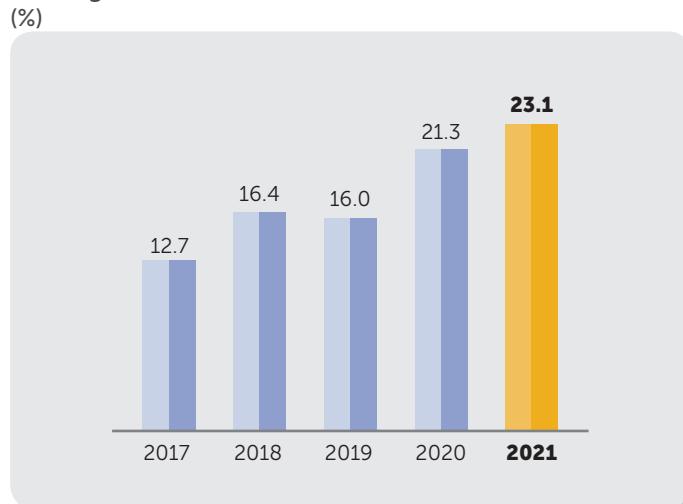
Return on Average Capital Employed (ROACE) (%)



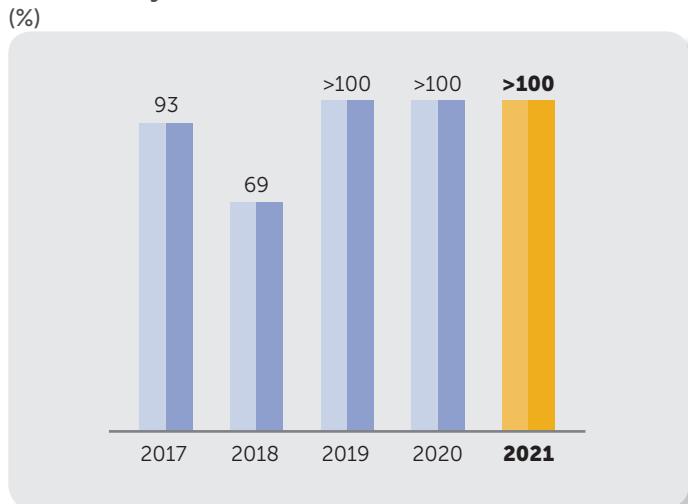
Debt/Assets Ratio (x)



Gearing Ratio*



Dividend Payout Ratio (%)



* Gearing ratio is calculated as adjusted total debt (total debt including financial guarantees) divided by adjusted total equity (total equity plus deferred tax liabilities and minus capitalised interest) and adjusted total debt. Gearing ratio for corresponding period has been restated to conform with this formula.

Appendix

Non-Financial Content Index

The results of our Materiality Assessment helped determine the non-financial topics covered in this report. This index includes references to the World Economic Forum's Stakeholder Capitalism Metrics, the Global Reporting Initiative Standards (2021) and the Ipieca/API/IOGP Sustainability reporting guidance for oil and gas industry. The guidelines are available at weforum.org, globalreporting.org and ipieca.org.

Content	WEF	GRI	Ipieca	Page
Our Sustainability Agenda	Setting purpose		GOV-1, CCE-1, CCE-2	04-05
What's Inside				
About This Report		2-1, 2-2, 2-3, 2-5, 2-14		08-09
PETRONAS in 2021				
Our Shared Values Cultural Beliefs	Setting purpose		GOV-1	14
Competitive Advantage	Setting purpose		GOV-1	15
Key Highlights				
Financial Highlights				
Business Highlights				
Sustainability Highlights				
Awards and Recognitions				
Event and Conference Highlights				
Business Snapshots				
Our Integrated Value Chain		2-6	CCE-3	30-31
PETRONAS Around the World		2-1		32-33
Corporate Structure				
Key Messages				
Letter from the Chairman	Anti-corruption, Protected ethics advice and reporting mechanisms	2-22		48-55
Letter from the President and Group Chief Executive Officer	Anti-corruption, Protected ethics advice and reporting mechanisms	2-22		56-61
Letter from the Executive Vice President and Group Chief Financial Officer	Economic contribution	203-1	GOV-4	62-67
Letter from the Vice President and Chief Sustainability Officer	Anti-corruption, Protected ethics advice and reporting mechanisms			69-73

Appendix

Content	WEF	GRI	Ipieca	Page
Value We Create				
Our Integrated Approach to Value Creation	Setting purpose		GOV-1	76-77
Our Key Capitals	Setting purpose		GOV-1	78-79
Value Creation Model	Setting purpose, Economic contribution, Financial investment contribution		GOV-1	80-81
Performance by Capital				
Engaging with Stakeholders	Material issues impacting stakeholders	2-29	SOC-6, SOC-9	88-95
Because We Care				
Strategic Progress				
The World In 2021				
Material Topics	Material issues impacting stakeholders		CCE-1, CCE-3	108-116
Risks Linked to Creating Value	Integrating risk and opportunity into business process		CCE-1	117-131
Strategic Performance Review				
Business Review				
Upstream	Financial investment contribution			
Gas + New Energy	Financial investment contribution			
Downstream	Financial investment contribution			
Project Delivery and Technology	Total R&D expenses			
Our Sustainability Journey				
Sustainability Governance	Anti-corruption, Protected ethics advice and reporting mechanisms TCFD implementation	2-12, 2-17, 2-28	GOV-1, CCE-1	170-173
Safeguard the Environment				
Climate Change and GHG Emissions	Greenhouse gas (GHG) emissions, TCFD implementation		GOV-2, CCE-1, CCE-2, CCE-3, CCE-5, CCE-7	174-177
Responsible Waste Management		306-1, 306-2, 306-3, 306-4	GOV-2, ENV-7	178-179
Environmental Quality	Water consumption and withdrawal in water-stressed areas	303-1, 303-2	GOV-2, ENV-1, ENV-2, ENV-6, ENV-8	180-183
Biodiversity	Land use and ecological sensitivity	304-1	GOV-2, ENV-3	184-185

Appendix

Content	WEF	GRI	Ipieca	Page
Positive Social Impact				
Health and Safety	Health and safety	403-1, 403-2, 403-4, 403-5, 403-6	GOV-2, SHS-1, SHS-2, SHS-3, SHS-4, SHS-6	186-192
COVID-19 Response	Economic contribution	403-6, 203-1	GOV-2, SHS-2	193-195
Security			GOV-2, SHS-7	196-197
Human Rights	Risk for incidents of child, forced or compulsory labour	2-23, 2-25, 2-30	GOV-2, SOC-1, SOC-2, SOC-3, SOC-4, SOC-8, SOC-12	198-201
Supply Chain Management	Risk for incidents of child, forced or compulsory labour	2-23, 414-2	GOV-2, SOC-2, SOC-14	202-204
Product Stewardship			GOV-2, SHS-5	205-206
Employee Welfare and Fair Remuneration	Pay equality, Diversity and inclusion	403-6	GOV-2, SOC-5	207-209
Talent and Education	Training provided, Economic contribution	404-2	GOV-2, SOC-7	210-212
Community Engagement	Economic contribution	203-1, 203-2	SOC-9, SOC-13	213-217
Five-Year Sustainability Key Performance Data	Greenhouse gas (GHG) emissions, Water consumption and withdrawal in water-stressed areas, Diversity and inclusion, Health and safety, Training provided, Absolute number and rate of employment	2-4, 2-7, 2-8, 305-1, 305-2, 305-4, 305-5, 305-7, 306-5, 303-3, 306-3, 403-9, 403-10, 401-1, 401-3, 404-1, 405-1, 410-1	CCE-4, CCE-7, ENV-1, ENV-2, ENV-5, ENV-6, ENV-7, SHS-3, SHS-6, SOC-3, SOC-5, SOC-6, SOC-7, SOC-15	218-225
Commitment to Governance				
Board Composition	Governance body composition	405-1	GOV-1	228
Profile of Board of Directors	Governance body composition	2-9, 2-11		229-238
Profile of Company Secretaries	Governance body composition			
Profile of Executive Leadership Team	Governance body composition			
Corporate Governance at PETRONAS	Anti-corruption, Protected ethics advice and reporting mechanisms	2-9, 2-10, 2-15, 2-20, 2-26, 205-2	GOV-1, GOV-3	245-259
Group Financial Results and Position				
Analysis of Financial Results		201-1		
Analysis of Financial Position	Economic contribution, Financial investment contribution, Total tax paid			262-275
Analysis of Cash Flow				
Five-Year Financial Indicators				

Glossary of Terms

Abbreviation	Full Term/Definition	Abbreviation	Full Term/Definition
2C	Contingent Resources	ESG	Environmental, social and governance
2P	Petroleum Reserves	EV	Electric Vehicle
3R	Reduce, reuse, recycle	FAR	Fatal Accident Rate
AC	Audit Committee	FID	Final Investment Decision
ASEAN	Association of Southeast Asian Nations	FLNG	Floating Liquefied Natural Gas
B40	Bottom 40 per cent of income earners	FY	Financial Year
bbl	Barrel	GCEO	Group Chief Executive Officer
bboe	Billion barrel of oil equivalent	G+NE	Gas + New Energy
BCM	Business Continuity Management	GEES	Graduate Employment Enhancement Scheme
BCP	Business Continuity Plan	GHG	Greenhouse gas
BES	Biodiversity and Ecosystem Services	GRI	Global Reporting Initiative
Bio-MEG	Bio-Monoethylene Glycols	GW	Gigawatt
Board	Board of Directors	HERE	Hybrid Emergency Response Exercise
boe	Barrel of oil equivalent	HOTS	Higher Order Thinking Skills
C3	Corporate Command Centre	HRM	Human Resource Management
CAPEX	Capital Expenditure	HSE	Health, Safety and Environment
CCS	Carbon capture and storage	HSSE	Health, Safety, Security and Environment
CFO	Chief Financial Officer	IFRS	International Financial Reporting Standards
CFFO	Cash Flows from Operations	IIRC	International Integrated Reporting Council
CIMS	Crisis and Incident Management System	INED	Independent Non-Executive Director
CM	Crisis Management	INSTEP	Institut Teknologi Petroleum PETRONAS
CO ₂	Carbon dioxide	ISO	International Organisation for Standardisation
CoBE	Code of Conduct and Business Ethics	JTC	Joint Technical Committee
CoCHR	Contractors Code of Conduct on Human Rights	kboe	Kilo barrels of oil equivalent
CoE	Centre of Excellence	kg	Kilogramme
COP26	United Nations Climate Change Conference	LAT	Loss After Tax
COVID-19	2019 novel coronavirus (or 2019-nCoV)	LBV	LNG bunkering vessel
CSO	Chief Sustainability Officer	LCA	Life Cycle Assessment
CSR	Corporate Social Responsibility	LNG	Liquefied Natural Gas
CERDIK	An initiative fully funded by Government Linked Companies (GLCs), Government Linked Investment Companies (GLICs), and the private sector. Announced in the Budget 2021, it provides digital access including distribution of laptops, tablet computers, data connectivity, and an e-learning platform to B40 students	LOPC	Loss of Primary Containment
D&I	Diversity and Inclusion	LTIF	Lost Time Injury Frequency
DOSH	Department of Occupational Safety and Health	LTIP	Long-term incentive plan
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation	MBR	Malaysia Bid Round
ELT	Executive Leadership Team	MEKAR	Memampangkan Ekonomi Asas Rakyat
ERM	Enterprise Risk Management	MCO	Movement Control Order
		MFRS	Malaysian Financial Reporting Standards
		mmBtu	Million British thermal units
		MMscfd	Million standard cubic feet per day
		MMT	Million metric tonnes
		MOH	Ministry of Health

Glossary of Terms

Abbreviation	Full Term/Definition
MPM	Malaysia Petroleum Management
mtpa	Metric tonnes per annum
MW	Megawatt
MWh	Megawatt-hour
MyPet	My Personnel e-Tracker
NADMA	National Disaster Management Agency
NCIA	Northern Corridor Implementation Authority
NEDs	Non-Executive Directors
NGOs	Non-government organisations
NINED	Non-Independent Non-Executive Director
NZCE 2050	Net zero carbon emissions by 2050
O&G	Oil and gas
OEE	Overall Equipment Effectiveness
OEM	Original Equipment Manufacturer
OGSE	Oil & Gas, Services and Equipment
OPEC+	Organisation of the Petroleum Exporting Countries Plus
OPEX	Operating Expenditure
OPU	Operating Unit
PAC	Petroleum Arrangement Contract
PAT	Profit after tax
PCB	PETRONAS Cultural Beliefs
PCC	PETRONAS Carbon Commitments
PCG	PETRONAS Chemicals Group Berhad
PD&T	Project Delivery and Technology
PDB	PETRONAS Dagangan Berhad
PDR	Product Delivery Reliability
PESP	PETRONAS Education Sponsorship Programme
PETRONAS Group	Petroliam Nasional Berhad (PETRONAS) and its subsidiaries
PIC	Pengerang Integrated Complex
PGB	PETRONAS Gas Berhad
PGU	Peninsular Gas Utilisation
PLC	PETRONAS LNG Complex
PLI	PETRONAS Lubricants International
PPRT	Pandemic Preparedness and Response Team
PPV	Pusat Pemberian Vaksin
PPVIN	Pusat Pemberian Vaksin Industri
PRPC	PETRONAS Refinery and Petrochemicals Corporation Sdn Bhd
PSC	Production Sharing Contract

Abbreviation	Full Term/Definition
PV	Photovoltaic
R&D	Research and Development
RC	Risk Committee
RMC	Risk Management Committee
RM	Ringgit Malaysia
ROVR	An innovative service which allows for a seamless and safe refuelling experience for both the commercial and everyday drivers, beyond conventional petrol stations
SAF	Sustainable aviation fuel
SDG	Sustainable Development Goal
SEED.Lab	Social Enterprise Education Lab
SME	Small and Medium Enterprise
STEM	Science, Technology, Engineering and Mathematics
SOP	Standard Operating Procedure
TCFD	Task Force on Climate-related Financial Disclosures
tCO ₂ e	Tonnes (t) of carbon dioxide (CO ₂) equivalent
The Board	Petroliam Nasional Berhad (PETRONAS) Board of Directors
The Group	Petroliam Nasional Berhad (PETRONAS) and its subsidiaries
tpa	Tonnes per annum
TRCF	Total Reportable Case Frequency
TROI	Total Recordable Occupational Illness Frequency
UK	United Kingdom
UN	United Nations
UNGPs	United Nations Guiding Principles on Business and Human Rights
UPC	Unit Production Cost
USA	United States of America
USD	US dollar
UTP	Universiti Teknologi PETRONAS
VDP	Vendor Development Programme
VISTA	Vocational Institution Sponsorship and Training Assistance
VPS	Virtual Pipeline System
WBCSD	World Business Council for Sustainable Development
WEF	World Economic Forum
WFH	Work from home