

PETRONAS GAS BERHAD
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PETRONAS

CATALYSING GROWTH *SHAPING TOMORROW*

SUSTAINABILITY REPORT 2024

BASIS OF THIS REPORT

CATALYSING GROWTH SHAPING TOMORROW

The cover design encapsulates "Catalysing Growth" through dynamic layers of vibrant green converging at the centre, symbolising PETRONAS Gas Berhad (PGB)'s interconnected operations working in harmony to drive impactful energy solutions.

At the heart of the design, a central droplet signifies PGB's catalytic role in transforming resources into energy, fueling industries and economic progress. The bold green hues reinforce sustainability, reflecting PGB's commitment to responsible growth and operational excellence.

This visual concept highlights PGB's ability to integrate seamlessly, innovate continuously, and deliver efficient energy solutions, positioning it as a key enabler in Malaysia's evolving energy landscape.



Scan Me

To learn more about PGB, including our business activities, processes and presence, please refer to pages 4-24 of our Integrated Report 2024. Scan the QR code to download.



In keeping our stakeholders apprised of our progress, we are proud to present our 2024 Sustainability Report ("Report"). This Report provides a comprehensive overview of our concerted efforts to align economic ambitions with industry-leading ESG practices across our operations. The Report forms part of a broader reporting suite that also includes our Integrated Report 2024, as outlined below.

INTEGRATED REPORT (IR)

Serving as our flagship publication for all stakeholders, the Integrated Report provides a comprehensive view of both our financial and non-financial performance, illustrating how we generate and distribute value.

SUSTAINABILITY REPORT (SR)

Focusing on our ESG-driven initiatives, the Sustainability Report highlights our commitment to responsible governance, delivering sustainable growth, safeguarding the environment, and ensuring positive social impacts, underscoring how these efforts position our business for long-term success.

As Malaysia's leading gas infrastructure and centralised utilities company, we are dedicated in striking a careful balance between upholding operational excellence, driving long-term value creation, and managing our business sustainably.

Our operations significantly impact a wide range of stakeholders—employees, suppliers, business partners, local communities, and the nation at large. Simultaneously, our ability to thrive hinges on adapting to a rapidly evolving landscape of rigorous sustainability regulations and rising expectations from both investors and consumers.

Amidst a transformative landscape, it is imperative for us to integrate robust environmental, social, and governance (ESG) practices into every aspect of our operations and strategy. By doing so, we reinforce our commitment to responsible participation in the global energy transition and ensure we continue to foster sustainable progress across the value chain.

SCOPE AND BOUNDARY OF REPORTING

Unless otherwise stated, this Report covers the period from 1 January 2024 to 31 December 2024 (FY2024). The disclosures provided cover our principal business activities, encompassing our business segments, subsidiaries and joint venture operations, and is tailored to meet the information needs of our investors. Additionally, this Report showcases our efforts to generate value for a range of key stakeholders, such as employees, customers, government agencies and authorities, suppliers, and local communities.

NAVIGATION ICONS

Key Stakeholder Group

- Investors and Funding Institutions
- Suppliers and Vendors
- Communities
- Non-Governmental Organisation
- Employees and Unions
- Media
- Business Partners
- Government Agencies and Authorities
- Customers

RESTATEMENTS OF INFORMATION

Certain performance data for 2022 and 2023 have been restated in this Report to ensure consistency in calculation methodologies or due to a revised interpretation of relevant data requirements.

REPORTING FRAMEWORKS

This Report is prepared in alignment with both national and international sustainability reporting standards, ensuring transparency, comprehensiveness, and relevance for our stakeholders.

- Global Reporting Initiative (GRI) Universal Standards 2021
- Sustainability Accounting Standards Board (SASB)
- Bursa Malaysia Securities Berhad (Bursa Malaysia)
- Sustainability Reporting Guide (3rd Edition)
- FTSE4Good Bursa Malaysia Index's ESG Indicators
- International Petroleum Industry Environmental Conservation Association (IPIECA) Sustainability Reporting
- Guidance for the Oil and Gas Industry (4th Edition, 2020)
- United Nations Sustainable Development Goals (UNSDGs)
- Task Force on Climate-related Financial Disclosures (TCFD) Recommendations
- International Sustainability Standards Board's (ISSB) International Financial Reporting Standards (IFRS) S1 and S2

Having fully addressed TCFD recommendations, we have further adopted the disclosure requirements of IFRS S2 Climate-Related Disclosures where feasible. We remain committed to continuously enhancing the quality of our climate-related disclosures as we progress in our sustainability journey.

BOARD APPROVAL

The Board of Directors acknowledges its responsibility to ensure the accuracy and integrity of this Report. In their judgment, this Report provides a true reflection of our sustainability performance and addresses the material issues affecting both our operations and the wider industries in which we operate.

OUR REPORTING PRINCIPLES

This Report captures our sustainability performance for 2024 across our operational footprint. To ensure that our reported material topics remain aligned with emerging sustainability trends, risks, and the industry landscape, we undertake a comprehensive review of multiple information sources—ranging from governmental acts, regulations, and guidelines to media reports, PETRONAS policies and guidelines, peer benchmarking analyses, internal audit findings, surveys, and enterprise risk documents. We also integrate insights and feedback from our stakeholders, enabling us to clearly identify, prioritise, and address material sustainability matters in line with our broader business strategies.

As part of our commitment to continual improvement, we closely monitor our sustainability initiatives and regularly refine both the scope and depth of our disclosures to enhance transparency and accountability year after year. In 2024, we expanded our GHG Emissions reporting to include Scope 3 emissions from Business Travel (Category 6) and Employee Commuting (Category 7).

INDEPENDENT ASSURANCE

We have continued to engage SIRIM QAS International Sdn. Bhd. to provide independent assurance for the contents of this Report. The full assurance statement can be found on pages 152-153.

FEEDBACK

We greatly appreciate and welcome your thoughts and feedback on this Report, which may be directed to:

PETRONAS Gas Berhad
Level 50, Tower 1
PETRONAS Twin Towers
Kuala Lumpur City Centre
50088 Kuala Lumpur, Malaysia

Attention to Sustainability Reporting Team
or email to pgbstratcomms@petronas.com

Material Matters

- | | | | | |
|--|--|---|--|--|
|  Sustainable Value Creation |  Ensuring Water Security |  Talent Management |  Community Engagement |  Equal Opportunity, Diversity and Inclusion |
|  Climate Change Management |  Biodiversity Impacts |  Human Rights |  Business Ethics and Transparency | |
|  Environmental Management |  Occupational Safety and Health |  Supplier Social Impacts |  Cybersecurity and Data Privacy | |

INSIDE THIS REPORT



Page 4
Messages from Leadership
 Insights on our sustainability vision, strategic direction, and commitment to delivering long-term value.



Page 16
Our Sustainability Approach
 A closer look at how we embed sustainability across our strategies and practices.

Guided by our vision of catalysing sustainable growth and shaping a better tomorrow, each section provides insights into how we are enhancing value for stakeholders, advancing our sustainability efforts, and strengthening our position in the industry.

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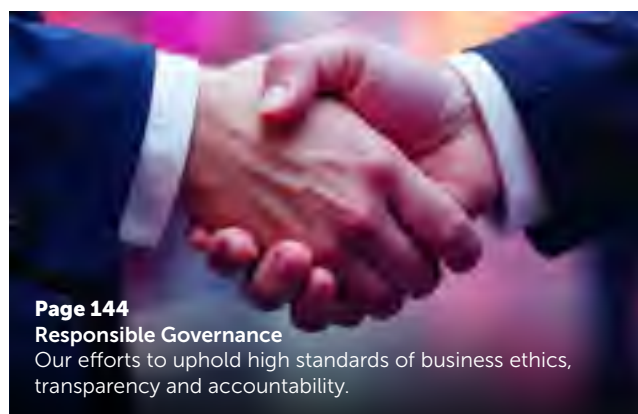
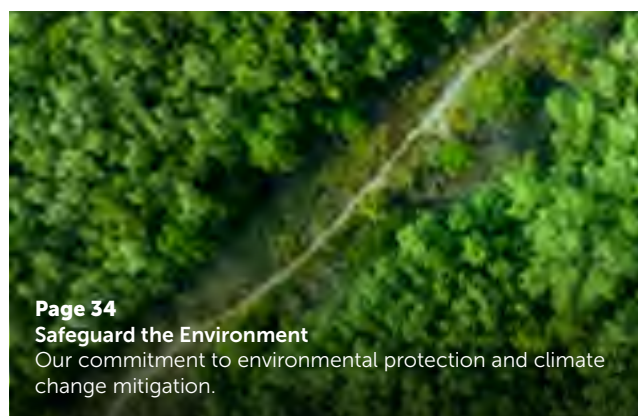
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FOREWORD BY THE CHAIRMAN OF THE BOARD SUSTAINABILITY AND RISK COMMITTEE

EMBRACING OUR ROLE IN A SHIFTING ENERGY LANDSCAPE

DATUK YEOW KIAN CHAI

Chairman, Board Sustainability and Risk Committee



**DEAR VALUED
STAKEHOLDERS,**



As sustainability concerns place the energy sector in the global spotlight, PGB is committed to facilitate Malaysia's transition to a sustainable energy future.

It is my privilege, as Chairman of the Board Sustainability and Risk Committee (BSRC), to present this foreword for PGB's Sustainability Report 2024. Through this report, we share updates on the evolving energy landscape and PGB's strategic responses to mitigate risks, seize opportunities and ensure enduring value creation for all stakeholders.

BOARD SUSTAINABILITY UPSKILLING SESSIONS DURING 2024

FOREWORD BY THE CHAIRMAN OF THE BOARD SUSTAINABILITY AND RISK COMMITTEE

EMBRACING OUR ROLE IN A SHIFTING ENERGY LANDSCAPE

Malaysia’s demand for gas is expected to rise as the nation transitions away from coal and addresses the energy trilemma of affordability, sustainability, and security. This positions PGB as a key player with the vital duty of providing cleaner and more reliable energy across the country.

This transition requires a careful balance, as we identify and mitigate sustainability and climate-related risks while strategically pursuing growth opportunities that diversify our operations and fortify the long-term resilience of our business. At the same time, we acknowledge the growing expectations of our stakeholders and the nation, who look to us to drive sustainability and climate action across the energy sector.

Fulfilling this role requires us to remain closely aligned with the evolving energy landscape, adapting with agility while proactively addressing the rising expectations of regulators, customers, investors, and the broader public. By actively embracing our position in this changing business and operational environment, we are positioning ourselves as the catalyst in Malaysia’s energy transition.



Gas Processing Kertih

We embrace our integral role to provide clean and reliable energy amidst Malaysia’s energy transition.

RESPONDING WITH AGILITY TO REGULATORY AND INDUSTRY TRENDS

PGB operates at the forefront of a rapidly changing regulatory environment, where each year brings stricter requirements and an increasing focus on transparency in sustainability disclosures. Recent developments include the National Sustainability Reporting Framework (NSRF), mandated greenhouse gas (GHG) assurance statements, and unfolding Bursa Malaysia reporting requirements, such as Scope 3 Category 6 and 7 disclosures and the forthcoming International Financial Reporting Standards (IFRS) S1 and S2 standards.

We remain cognizant of new regulations and frameworks emerging in the near future, including the Taskforce on Nature-related Financial Disclosures (TNFD) framework and Bursa Malaysia’s impending requirements for additional Scope 3 category disclosures. Simultaneously, the Malaysian government is advancing its climate action agenda, highlighted by the Ministry of Finance’s announcement during Budget2025 of plans to introduce a carbon tax for the iron, steel, and energy industries by 2026. The introduction of the National Climate Change Policy (NCCP) 2.0 is also expected to play a pivotal role in establishing formalised governance structures and allocating resources to drive meaningful climate action in Malaysia.

These regulatory and policy developments are facilitating industry-wide progress by intertwining sustainability with competitive advantage. Customers and investors are increasingly prioritising businesses with robust ESG practices and sustainable products, while financial institutions adopt stringent sustainability investment frameworks that link funding decisions to clear ESG progress and commitments.

1

Global and National Sustainability Insights

Our growth is aligned with carbon reduction and energy security agendas

Refer to page 6

2

GHG Emissions and Carbon Regulations

New assessments have been introduced to gauge our carbon tax exposure

Refer to page 46

3

Scope 3 Emissions and Disclosures

Our emissions data now includes Scope 3 emissions for Category 6 and Category 7

Refer to page 56

FOREWORD BY THE CHAIRMAN OF THE BOARD SUSTAINABILITY AND RISK COMMITTEE

As a publicly listed company, PGB places the highest priority on addressing stakeholder expectations regarding sustainability. Our proactive approach to staying ahead of regulatory changes continues to ensure our relevance and strengthen our position as a sustainability leader. As a testament to this commitment, we successfully completed addressing Bursa Malaysia’s mandated TCFD Recommendations ahead of schedule, positioning us to seamlessly comply with upcoming IFRS S1 and S2 standards. Additionally, we have initiated strategic preparations for the impending carbon tax, with Carbon Footprint Assessment (CFA) procedures commencing in July 2024 to evaluate carbon risk exposure across all capital growth projects.

Concurrently, we are aligning our approach to growth projects with national policies on carbon reduction and energy security to bolster our long-term value creation prospects. Our focus is on expanding our core gas and utilities business, including infrastructure investments, to support future demand, while diversifying into green revenue streams through innovative step-out projects.

In this vein, we are actively collaborating with industry stakeholders and local authorities to advance green initiatives. For instance, we conducted a feasibility study for a mini-hydro plant in collaboration with Terengganu’s Menteri Besar Incorporated (MBI), exploring renewable energy solutions to address electricity supply challenges, particularly in remote areas. Meanwhile, our collaboration with PETRONAS and other key stakeholders on carbon abatement strategies will also support our long-term viability and growth ambitions, enabling us to make our gas energy greener while unlocking potential cost-saving or revenue generating opportunities from captured carbon.

ELEVATING GOVERNANCE TO PROGRESS OUR SUSTAINABILITY AGENDA

To foster an agile, robust and collaborative sustainability governance ecosystem, we are continuously refining and maturing our governance framework and structure. Past milestones include the introduction of a new Sustainability Blueprint and the establishment of a Sustainability Working Committee (SWC) in 2023, alongside integrating sustainability parameters into our management systems.

In 2024, we further sharpened our focus on sustainability governance to enable more precise and impactful decision-making at the leadership level. This led to the renaming of the Risk and Compliance Committee (RCC) to the Sustainability and Risk Committee (SRC) and the Board Risk Committee to the Board Sustainability and Risk Committee (BSRC), with revisions made to the Terms of Reference (TOR) for the BSRC and the SWC.

The updated TORs place greater emphasis on sustainability management and ensure Board members remain well-informed on internal and external developments through quarterly engagements with sustainability teams.

Additionally, three (3) dedicated sustainability upskilling sessions were conducted for the Board and Leadership Team (LT) over the past year, which served to equip them with relevant vital knowledge and the confidence to integrate sustainability into every facet of our governance and strategy.

BOARD SUSTAINABILITY UPSKILLING SESSIONS IN 2024

▶ Global and National Sustainability Insights

External stakeholders, including Permodalan Nasional Berhad (PNB), ERM, KPMG, and PwC, provided insights into the global and national sustainability landscape and stakeholder expectations. This session helped the Board identify key focus areas for PGB’s priorities.

▶ GHG Emissions and Carbon Regulations

Representatives from PETRONAS Group educated the Board on GHG emissions, followed by a session with the Ministry of Natural Resources and Environmental Sustainability (NRES) on Malaysia’s future carbon regulations. This equipped the Board to steer business decisions with a clear understanding of carbon risk exposure and potential opportunities.

▶ Scope 3 Emissions and Disclosures

Experts from PETRONAS Group’s Corporate Sustainability Office conducted a deep dive on Scope 3 emissions as PGB commenced its Scope 3 disclosures, starting with the two (2) mandated categories by Bursa Malaysia (Categories 6 and 7).



Segamat Operation Centre

FOREWORD BY THE CHAIRMAN OF THE BOARD SUSTAINABILITY AND RISK COMMITTEE

RECOGNISING AND ADDRESSING RISKS

Our key sustainability risks lie in ensuring conformance to evolving sustainability requirements and stakeholder expectations while understanding and addressing our exposure to both physical and transitional climate risks over various time horizons.

Physical risk assessments evaluate key assets on exposure to seven (7) major climate hazards, with six (6) assets having been assessed to date. As a continuation of our previous assessment in 2021, a validation exercise was completed for one (1) asset in 2024 to ensure accuracy and relevancy. Meanwhile, transition risk assessments are conducted in alignment with TCFD recommendations and focus on critical areas such as policy changes, legal obligations, and technological shifts, helping us adapt to the changing regulatory and operational landscape.

These risk assessment processes have been enhanced to ensure effective integration into our broader Enterprise Risk Management (ERM) Framework. Our approach includes context setting, risk assessment, and risk treatment, with a strong emphasis on governance and continuous monitoring. Moreover, risks are assessed across short (1-5 years), medium (5-15 years), and long-term (beyond 15 years) horizons, with a particular focus on understanding their potential financial implications.

As we identify and deepen our understanding of sustainability and climate-risk exposure, key risks are prioritised and integrated into PGB's Enterprise Risk Profile. This process ensures that risks are thoroughly deliberated and addressed by relevant management committees, with regular updates reported quarterly to the Board, thereby fostering focused accountability and ensuring the effective implementation of mitigation plans.

DRIVING OUR SUSTAINABILITY AGENDA FORWARD

Guided by our Sustainability Blueprint, we have progressively advanced planned initiatives supporting our long-term sustainability agenda, including key ambitions such as achieving Net Zero by 2050. Over the past two (2) years, we have completed a total of 28 blueprint initiatives, with 13 accomplished in the last 12 months alone.

Recognising the dynamic nature of the sustainability landscape, we are continuously working to ensure the ongoing validity of our Sustainability Blueprint. This will ensure our efforts remain aligned with evolving priorities and inform the development of new initiatives that effectively address emerging stakeholder requirements and expectations.



Regasification Terminal Pengerang, Johor

2024 Highlights Across Our Four (4) Sustainability Lenses

Under our **Sustainable Value Creation** lens, we have significantly grown our pipeline of new projects aligned with key focus areas, such as expanding along the gas value chain. A notable highlight was receiving a Letter of Notification from the government for the development of an additional 100MW gas power plant in Kimanis, Sabah, increasing PGB's current power generation capacity in the state.

Under the **Safeguard the Environment** lens, we embarked on the disclosure of material Scope 3 emissions, Categories 6 and 7 (Business Travel and Employee Commuting). We also developed the PGB Water Reduction and Management Roadmap and completed a baseline assessment for waste management, setting the stage for enhanced implementation of 4R (Reduce, Reuse, Recycle and Recover) activities.

Within the **Positive Social Impact** lens, we launched a comprehensive labour management programme and formalised our commitment to ethical practices and continuous improvement of our human rights management through a new Human Rights Policy. In collaboration with Yayasan Hijau Malaysia (YHM), we launched a new flagship program to develop solar-powered community centres.

Under the **Responsible Governance** lens, we successfully executed our TCFD Roadmap to address all TCFD recommendations ahead of regulatory deadlines, bolstering our understanding of climate-related risks and positioning PGB favourably to drive compliance with emerging IFRS S1 and S2 reporting standards.

FOREWORD BY THE CHAIRMAN OF THE BOARD SUSTAINABILITY AND RISK COMMITTEE

PROGRESSING OUR SUSTAINABILITY REPORTING

Advancing our sustainability reporting remains a central focus to ensure regulatory compliance, keep stakeholders informed of our progress, and maintain strong performance on sustainability indices. As previously highlighted, we have completed addressing all TCFD Recommendations as per mandated by Bursa Malaysia and are now prioritising closing the gaps for IFRS standards set to take effect next year. We will conduct a comprehensive reassessment of our sustainability material matters in 2025, ensuring our reporting reflects the latest regulatory developments and stakeholder expectations.

Through these concerted efforts to enhance our sustainability performance and reporting, we have driven significant improvements to our sustainability index ratings. Our FTSE4Good rating, which rose from 3.5 in 2022 to 4.1 in 2023, has now reached 4.7 in 2024. This remarkable progress reflects the collective dedication of our leadership, sustainability team and working committee, who have worked tirelessly to elevate our ESG performance and expand our disclosures to meet the highest industry standards.

ACHIEVING MILESTONE SUSTAINABILITY AWARDS

In 2024, our steadfast commitment towards sustainability goals and comprehensive reporting practices were recognised by the broader industry through notable first-time wins in prestigious awards:

- Gold Award at the 2024 Edge Malaysia ESG Awards for PLCs**
 PGB earned the Gold Award in utilities category, underscoring the significant investments and efforts we have made to implement sustainable strategies across our operations. This award celebrates Malaysia’s top performers in ESG excellence, reaffirming our position as a leader in this space.
- Notable wins in illustrious reporting awards**
 Achieved the Gold Award in the Integrated Annual Report & ESG Category at the Annual Reporting Awards 2024 and the Silver Award at the Australasian Reporting Awards 2024. These awards validate our dedication to completeness and transparency in keeping stakeholders informed about our strategies and performance.



NAVIGATING CHALLENGES TO SHAPE A SUSTAINABLE TOMORROW

Moving forward, PGB remains steadfast in its commitment to evolving alongside global and national standards, reporting frameworks, and stakeholder expectations. However, as Malaysia’s sustainability regulations and ecosystems continue to develop, we acknowledge the complexities of navigating this evolving landscape. Aligning internal strategies with external expectations, while ensuring a positive business outlook and healthy shareholder returns remain a central focus of our organisation.

To achieve this alignment, clear business directions and mandates from our Board of Directors are essential in guiding the adaptation of our business activities. Equally important is ensuring that our internal capabilities are equipped to implement these mandates and achieve our sustainability objectives effectively.

We are deeply invested in enhancing our team’s ESG expertise through targeted upskilling programmes such as Sustainability Board Trainings, PGB Sustainability Roadshows, and specialised sessions on Carbon Footprint Assessment and Social Risk Assessment. As sustainability becomes increasingly institutionalised in our business operations, the continual enhancement of our leadership and management competencies will empower us to drive the implementation and execution of our sustainability agenda with greater focus and efficiency.

FOREWORD BY THE CHAIRMAN OF THE BOARD SUSTAINABILITY AND RISK COMMITTEE

In parallel, our inclusion of Carbon Footprint Assessment to our suite of sustainability assessments for all new projects will enable us to thoroughly evaluate our risks and carbon tax exposure across our diverse growth and expansion initiatives. This will ensure our strategies effectively address sustainability risks while delivering sustainable value for our business and stakeholders.

Ultimately, our aspiration is to remain as Malaysia's leading gas infrastructure and centralised utilities company, standing out for our commitment to our sustainability practices and targets.

As we foster collaboration with and harness efforts of all stakeholders, proactively address risks, strengthen internal capabilities, and align our business with the global energy transition, I am confident that PGB will continue to lead responsibly in shaping a sustainable future for all.

ACKNOWLEDGEMENTS

In closing, I would like to extend my deepest gratitude to everyone whose dedication and expertise have been instrumental in advancing PGB's sustainability journey. Our Board members have provided invaluable oversight and strategic direction, ensuring our sustainability initiatives align with our long-term vision. The PGB Leadership Team has offered decisive management steer and critical decision-making to drive the execution of our objectives.

At the forefront, our Sustainability Team, led by the Head of Sustainability, has demonstrated exceptional commitment in spearheading sustainability strategies and performance. The Sustainability Working Committee (SWC) members have been steadfast in overseeing the implementation of the PGB Sustainability Blueprint and related initiatives, while our front-liners and asset focal points have ensured the seamless execution of these efforts at the site level. We also deeply appreciate the contributions of our investors and key stakeholders, including PETRONAS, NRES, Kumpulan Wang Simpanan Pekerja (KWSP), Kumpulan Wang Persaraan (Diperbadankan) (KWAP), PNB and Bank Negara Malaysia (BNM), whose insights and collaboration have enriched our sustainability agenda.

As we address the challenges of the energy trilemma and evolving stakeholder expectations, PGB remains committed to staying relevant, agile, and resilient, adapting swiftly and effectively to the shifting global energy landscape.

DATUK YEOW KIAN CHAI

Chairman, Board Sustainability and Risk Committee



MANAGING DIRECTOR/CHIEF EXECUTIVE OFFICER'S STATEMENT

A PURPOSE-DRIVEN APPROACH TO ADVANCING OUR SUSTAINABILITY LEADERSHIP

ABDUL AZIZ OTHMAN

Managing Director/Chief Executive Officer

DEAR VALUED STAKEHOLDERS,



As a leader in Malaysia's energy industry, we operate in a rapidly evolving landscape shaped by rising stakeholder expectations, increasing regulatory requirements, and the ongoing energy transition. To navigate these shifts effectively, we adopt a strategic and informed approach to sustainability, ensuring that every aspect of our business aligns with long-term value creation.



MANAGING DIRECTOR/CHIEF EXECUTIVE OFFICER'S STATEMENT



Our strategic growth remains focused on expanding our infrastructure and strengthening our position across the natural gas value chain, ensuring our operations remain resilient, relevant, and aligned with evolving national and regional priorities for energy security and stability.

SUSTAINABLE VALUE CREATION: GROWTH ALIGNED WITH THE FUTURE OF ENERGY

Malaysia and ASEAN region have established key policies and roadmaps to accelerate climate action, enhance energy security, and support an equitable transition. These collective efforts are reshaping the industry, reinforcing the role of gas as a vital transition fuel.

In response, we have placed strategic focus on expanding our infrastructure and strengthening our position across the natural gas value chain, ensuring our operations remain resilient, relevant, and aligned with evolving national and regional priorities. As Malaysia transitions towards a low-carbon economy, PGB will play a critical role in ensuring energy security, maintaining the stability and reliability of supply while supporting the gradual shift to cleaner energy sources.

Beyond sustaining our existing contracts through operational excellence and reliability, we are actively identifying new low-carbon and green opportunities that will reinforce our business sustainability.

Concurrently, Carbon Footprint Assessments (CFA) and exposure analyses are being embedded into our decision-making process, equipping us with the data and insights needed to make business decisions that take climate related financial risks, such as carbon taxation, into account.

SAFEGUARD THE ENVIRONMENT: PROTECTING NATURE, SECURING OUR FUTURE

Environmental responsibility is a core pillar of our sustainability blueprint, ensuring that we not only comply with regulations but also enhance business resilience in the face of climate change. By optimising resource use, managing emissions, and minimising operational waste, we safeguard ecosystems while reinforcing our long-term competitiveness in a transitioning energy landscape.

Beyond protecting the environment, strong climate action enhances our position as a preferred energy provider, increasing our attractiveness to investors and key stakeholders who prioritise sustainability. To drive this agenda forward, we continue to integrate sustainability governance and risk management at the highest levels, with dedicated leadership committees ensuring that climate-related considerations are fully integrated into corporate strategy.

To future-proof our business, we have strengthened our climate risk assessment capabilities, leveraging globally recognised frameworks to evaluate both physical and transitional risks. This proactive approach supports our preparedness for new sustainability reporting requirements, including ISSB's IFRS S1 and S2, the TNFD Framework, and expanded Scope 3 disclosures. Additionally, we are investing in AI, digital tools, and smart monitoring systems to manage environmental performance with greater precision, enabling us to drive greater energy and resource efficiencies while supporting greater transparency within our disclosures.



MANAGING DIRECTOR/CHIEF EXECUTIVE OFFICER'S STATEMENT

POSITIVE SOCIAL IMPACT: EMPOWERING PEOPLE AND SUPPLY CHAINS TO DRIVE PROGRESS

Our long-term success is directly linked to the well-being of our employees, suppliers, and the communities in which we operate. By investing in their growth and development, we create a shared value ecosystem that supports our business while driving broader societal progress.

This strategic focus goes beyond nurturing our own people to empowering those across our value chain. While we place emphasis on developing talents and cultivating a strong leadership pipeline within PGB, we are also strengthening support for suppliers through targeted partnerships, spurring their adoption of sustainability principles to drive collective progress and long-term resilience.

The PETRONAS Supplier Support Programme (PSSP) exemplifies this commitment, consolidating engagement efforts with vendors to embed ESG best practices across procurement. Through capacity-building initiatives undertaken with United Nations Global Compact Network Malaysia & Brunei (UNGCMYB), a dedicated ESG disclosure platform developed with Bursa Malaysia, and enhanced access to sustainable financing via bank collaborations, we are helping suppliers advance their own decarbonisation efforts. This approach not only strengthens the sustainability of our supply chain but also contributes to our nation's NZCE 2050 ambition.

By supporting people and communities, we also create opportunities to drive progress across other sustainability lenses. Our collaboration with Yayasan Hijau Malaysia to develop solar-powered community centres underscores this synergy—enhancing social well-being while simultaneously promoting renewable energy adoption and reducing environmental impact.



Gas Processing and Utilities - GP

RESPONSIBLE GOVERNANCE: DOING THINGS THE RIGHT WAY

Achieving the ambitions of our sustainability blueprint and making meaningful progress toward our long-term goals relies on a strong, ethical, and informed leadership team that upholds the highest standards of integrity.

Key priorities remain on ensuring full compliance with legal and regulatory expectations, enhancing transparency and accountability, and staying ahead of the evolving sustainability landscape. A testament to this commitment is our swift addressing of all TCFD recommendations a year ahead of Bursa Malaysia's mandated timeline, demonstrating our preparedness to swiftly adapt to new standards and frameworks.

We continuously measure our progress through key sustainability indices and industry recognition. It is a matter of great pride that we attained a FTSE4Good ESG Score of 4.7 out of 5 in our FY2024 assessment, placing PGB in the 98th percentile (top three (3)) within the Utilities ICB Supersector. This significant improvement from our FY2023 assessment score of 4.1 reflects our strong commitment to sustainability, responsibility and transparency in meeting stakeholder expectations. Further reinforcing our leadership in sustainable business practices, we were honoured with a Gold Award in the Utilities Sector at the EDGE Malaysia ESG Awards 2024, a milestone that underscores our commitment to driving ESG excellence within our industry.



Our improved FTSE4Good score and our first Gold Award at the EDGE Malaysia ESG Awards 2024 reflect our agility in meeting evolving expectations and strengthening our sustainability disclosures.

MANAGING DIRECTOR/CHIEF EXECUTIVE OFFICER'S STATEMENT

ACKNOWLEDGEMENTS

By adopting robust and well-informed strategies to advance our efforts across all four (4) sustainability lenses, we remain committed to delivering long-term value while navigating the challenges and opportunities of the energy transition.

The industry recognition we receive reinforces our progress, affirming that we are moving in the right direction. I am confident that the initiatives we have implemented to drive sustainability and climate action will continue to yield positive and lasting outcomes in the years ahead.

Through responsible governance, environmental stewardship, and social empowerment, we continue to strengthen our capacity to build a sustainable and resilient future for our business and stakeholders.

ABDUL AZIZ OTHMAN

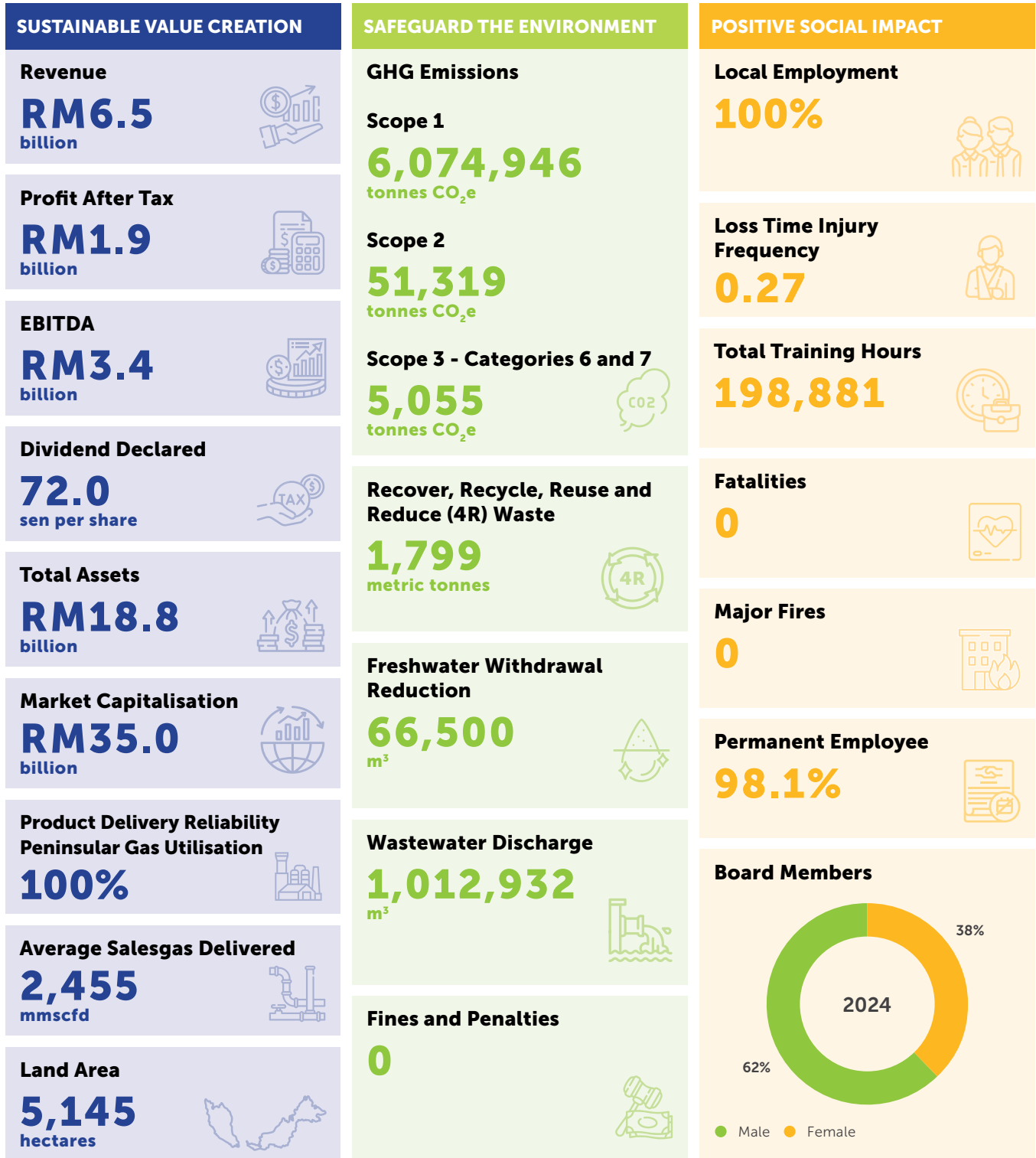
Managing Director/Chief Executive Officer



Gas Processing and Utilities - GP

SUSTAINABILITY SCORECARD

We have made firm progress across our sustainability agenda in 2024, underscoring our continued pursuit of excellence in delivering holistic, sustainable value for our business, stakeholders, society and the environment.



PG Please refer to the Sustainable Value Creation section on pages 28-33 of this report.

PG Please refer to the Safeguard The Environment section on pages 34-89 of this report.

PG Please refer to the Positive Social Impact section on pages 90-143 of this report.

RECOGNISED FOR EXCELLENCE

RESPONSIBLE GOVERNANCE

The EDGE Malaysia ESG Awards 2024



GOLD

Proudly received the **Gold Award** in the Utilities Sector category in 2024. This milestone reflects our commitment to adapting swiftly to emerging ESG requirements and meeting stakeholders' disclosure expectations.

Task Force on Climate-Related Financial Disclosure (TCFD) Compliance

Addressed all TCFD recommendations a year ahead of Bursa Malaysia's timeline, preparing for International Sustainability Standards Board (ISSB) adoption.

FTSE4Good Rating



Environmental, Social, and Governance (ESG) disclosures contributed to an **increase in FTSE4Good** rating from 4.1 in 2023 to **4.7** in 2024.

Reporting Awards



Achieved the **Gold Award** in the Integrated Annual Report and ESG Category at the Annual Reporting Awards 2024 and the **Silver Award** at the Australasian Reporting Awards 2024.

Bloomberg ESG Score

5.31



Improved ESG score from 4.37 in 2023 to **5.31** in 2024, surpassing the industry media.

AWARDS AND RECOGNITION

The comprehensive list of external awards earned by each of our business segments and our corporate team in 2024 is detailed below.

Gas Processing

National Council for Occupational Safety and Health Award 2024

- Warehouse Management Category - Tanjung Sulong Export Terminal (TSET)

Regasification

MSOSH Awards 2024

- Third consecutive Grand Award - Regasification Terminal Sungai Udang (RGTSU) and Regasification Terminal Pengerang (RGTP)

British Safety Council Award 2024

- Health and Safety Transformation Award - RGTP

RoSPA Health and Safety Award 2024

- Silver Award - RGTP

Gas Transportation

MSOSH Awards 2024

- Grand Award - Shah Alam Regional Office and Guron Regional Office
- Gold Merit Award - Segamat Operation Centre
- High Achiever Award - Guron Regional Office

British Safety Council Award 2024

- Finalist Team of The Year Award - Pasir Gudang Regional Office

RoSPA Health and Safety Award 2024

- Gold Award - Kuantan Regional Office

Asian Experience Awards 2024

- Malaysia Product Experience of The Year in the Oil & Gas category



Please refer to the Responsible Governance section on pages 144-151 of this report.

SUSTAINABILITY GOVERNANCE

RESPONSIBLY SHAPING A SUSTAINABLE TOMORROW

As a national energy industry leader operating within a rapidly evolving landscape where sustainability concerns are increasingly prioritised by stakeholders, we have continually strengthened and expanded our sustainability approach to maintain our position at the forefront of this critical transition.

This section outlines the governance structure that drives our sustainability commitments and ambitions, our overarching sustainability strategies and management systems, the sustainability blueprint guiding our efforts, the material matters shaping our focus, and the expectations and concerns of key stakeholders influencing our sustainability approach.

STRENGTHENING GOVERNANCE FOR CLIMATE RESILIENCE

Our evolving sustainability governance framework ensures that sustainability considerations are seamlessly integrated into our strategies, decision-making processes, and daily operations. This integration supports the Group's pursuit of excellence and drives progress towards the ambitions and objectives within our G5dot5 Strategic Agenda and Sustainability Blueprint.

To effectively manage climate-related risks, we have established a comprehensive governance framework that systematically identifies, assesses, and manages these risks. The results of climate change risk assessments are mapped and escalated into PGB's Enterprise Risk Profile (ERP), where relevant, and reported quarterly to the Sustainability Risk Committee (SRC) and the Board Sustainability Risk Committee (BSRC).



The **BSRC**, previously known as the Board Risk Committee, was renamed in February 2024 to focus on climate-related risk issues, ensuring these are integrated into the broader business strategy. Its responsibilities were updated in the Terms of Reference (TOR) to provide greater clarity on sustainability-related responsibilities, including monitoring progress against climate-related targets and incorporating climate risks and opportunities into reviews of policies, business strategies, risk management, and expenditure.

The **SRC**, formerly known as the Risk and Compliance Committee (RCC), was renamed in January 2024. It plays a critical role in providing oversight and assurance on risk management to the Board. Its key responsibilities include reviewing all aspects of the climate risk management framework, evaluating the adequacy of PGB's climate risk management strategies and policies, and offering guidance on the implementation and institutionalisation of climate risk management practices.

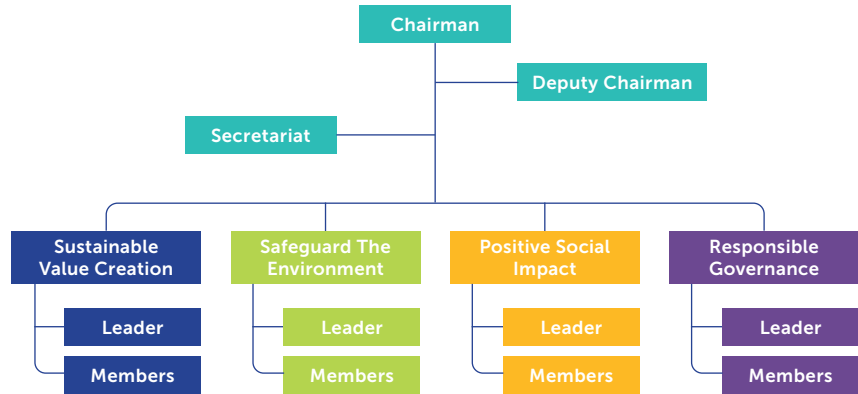
The dual oversight provided by the SRC and BSRC ensures that the management of climate-related risks is guided by top leadership and effectively incorporated into overarching, multi-disciplinary company-wide business strategies.

Guided by the Head of HSSE and Sustainability Department, the **SWC** comprises leaders and members from all four (4) sustainability lenses. This committee plays a pivotal role in embedding sustainability across PGB's value creation, growth ambitions, and operations through its quarterly meetings. Recent revisions to the SWC's TOR have introduced enhancements that empower lens leaders, roles held by working-level personnel, with accountability for the performance of their respective lenses. The updated TOR includes details on the SWC's fixed agenda and quorum requirements, as well as provisions for the periodic review and reassessment of material matters.

SUSTAINABILITY GOVERNANCE



PGB Sustainability Working Committee Structure



SUSTAINABILITY GOVERNANCE STRUCTURE

The Board’s leadership and oversight of all sustainability matters are reinforced by

Board Sustainability Risk Committee (BSRC)

Sustainability and Risk Committee (SRC)

Sustainability Working Committee (SWC)

Chairman	<ul style="list-style-type: none"> Develop and determine the most effective approach for integrating sustainability into PGB’s business strategy, including resource allocation, stakeholder communication, and setting timelines and schedules Plan and oversee the implementation of all sustainability commitments Chair committee meetings and provide strategic direction for PGB’s sustainable development initiatives Fulfil PGB’s sustainability milestones and objectives
Deputy Chairman	<ul style="list-style-type: none"> Assume the Chairman’s responsibilities in their absence or when the position is vacant Collaborate with the Chairman and other members to guide PGB’s sustainable development initiatives Support the achievement of PGB’s sustainability milestones and objectives
Secretariat	<ul style="list-style-type: none"> Coordinate SWC activities based on discussions and decisions made during SWC meetings Arrange logistical requirements for SWC activities Document all agreed action items and next steps to share with SWC members Track the implementation of agreed actions assigned to designated parties
Lens Leader	<ul style="list-style-type: none"> Integrate sustainability practices into business operations Perform gap analyses and implement measures to address identified gaps Coordinate with relevant stakeholders as needed Ensure the availability of adequate resources to support team responsibilities Achieve and uphold metrics and objectives within their respective sustainability lens
Lens Member	<ul style="list-style-type: none"> Assist the Lens Leader in integrating specific sustainability practices within the assets Act as a change agent within the asset or department Identify gaps and recommend appropriate measures to address them at the asset or department level Support the Lens Leader in engaging with relevant stakeholders when necessary

This platform facilitates cohesive deliberation and oversight of our Sustainability Blueprint and annual development and performance. The SWC drives our frameworks and strategies, oversees the effective implementation of blueprint initiatives, and ensures adherence and alignment with key regulatory and national policies and roadmaps, such as the National Energy Transition Roadmap (NETR) and National Climate Change Policy 2.0 (NCCP 2.0).

SUSTAINABILITY GOVERNANCE

INTEGRATION INTO DECISION-MAKING PROCESSES

By strengthening our governance practices for climate resilience, we ensure that climate-related risks are effectively managed and integrated into our overall business strategy, supporting our commitment to sustainability and long-term value creation. Climate risk considerations have been incorporated into the Risk Assessment Decision Making (RADM) process, ensuring these risks are evaluated in all major business decisions.

 Please refer to our *Climate Risk Management Framework* on page 48 of this report.

LINKING LEADERSHIP COMPENSATION TO CLIMATE ACTION

To drive the effective execution of PGB’s Sustainability Agenda, sustainability Key Performance Indicators (KPIs) and targets have been integrated into the remuneration of the MD/CEO, Leadership Team, and senior executives. These KPIs are aligned with key annual objectives and goals and are cascaded throughout the organisation, including through common or team KPIs.

- **MD/CEO and Leadership Team:** Scorecards now incorporate targets for greenhouse gas (GHG) reduction and the Sustainability Blueprint, ensuring a unified commitment across the organisation. Progress on GHG reduction is monitored monthly at PGB Leadership Team meetings and quarterly at Board Meetings, reinforcing accountability at every level.
- **Senior Executives:** Climate performance is integrated into their annual KPIs, with achieving the Group’s GHG reduction targets as a key focus area.

By linking leadership compensation to climate objectives, we foster collective accountability, strengthen efforts to mitigate climate risks, and enhance our ability to achieve sustainability goals.

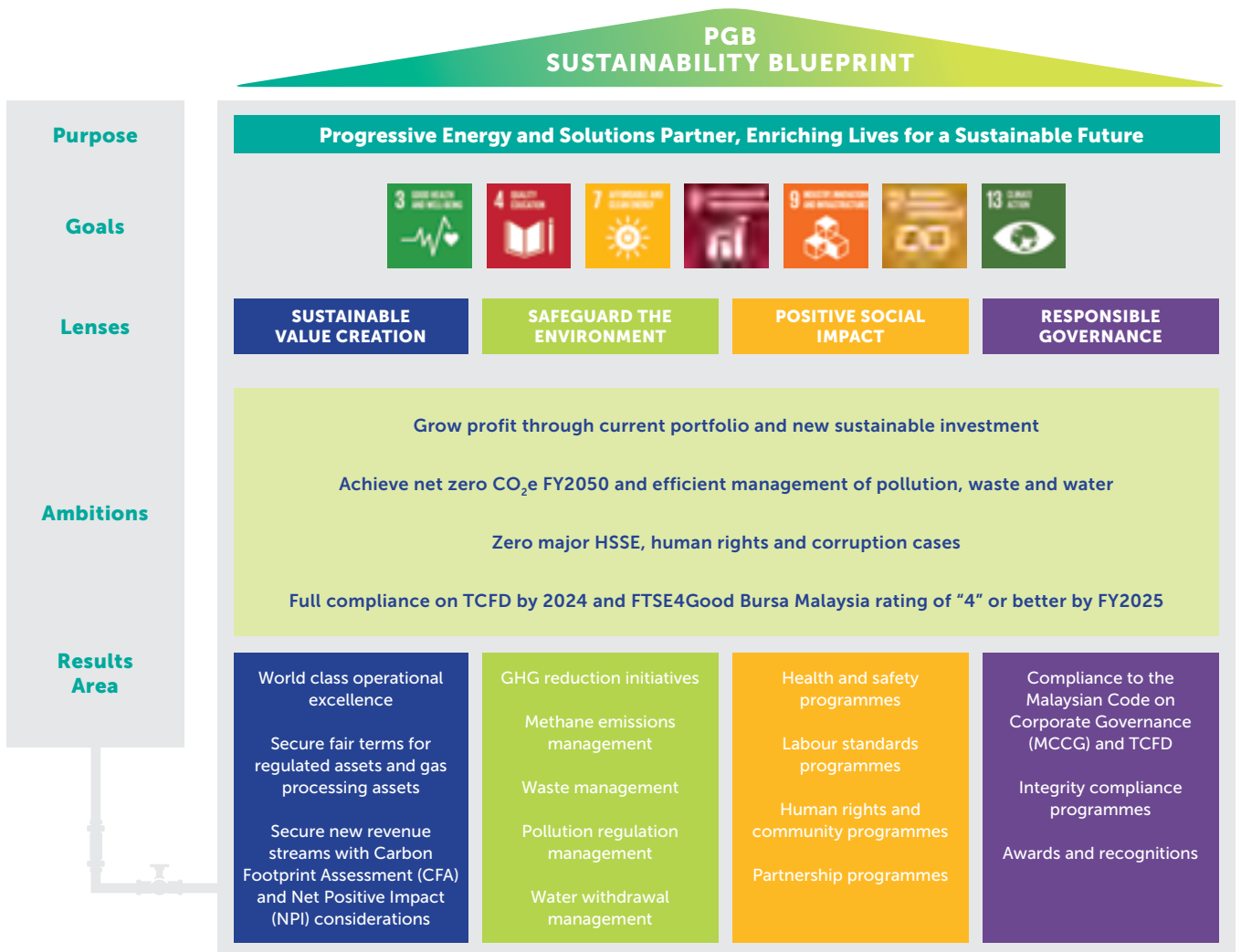
INTEGRATING SUSTAINABILITY INTO OUR MANAGEMENT SYSTEMS

Our commitment to operational and project excellence, being integral in our sustainability approach, is driven by safe, reliable, and sustainable practices underpinned by our Operational Excellence Management System (OEMS), which adheres to global standards such as ISO 45001:2018 Occupational Health and Safety Management System (OHSMS) and ISO 14001:2015 Environmental Management System (EMS).

Since introducing Sustainability as the 15th element (S15) of the OEMS in 2022, it has been incorporated into the annual Management System Review (MSR) from 2023 onwards. Insights from the MSR contribute to the continuous improvement of this element, reinforcing the integration of sustainability across all facets of our business.

In its second year of MSR, we have refined performance measurements for 2024 and proposed additional metrics for 2025, including a new indicator of carbon footprint assessment. We have activated the S15 element at the departmental level, expanding beyond its current application at the business and division levels, to ensure sufficient resources are available for implementation across the organisation.

SUSTAINABILITY BLUEPRINT



Our Sustainability Blueprint ensures that sustainable practices are embedded in all areas of the organisation, driving forward economic, environmental, social, and governance objectives, while tracking progress through specific initiatives and results areas in each lens.

Since its approval in March 2023, we have successfully completed our approved blueprint initiatives over the past two (2) years, contributing to a significant improvement in our FTSE4Good score and earning PGB industry recognition at The EDGE ESG Awards 2024.

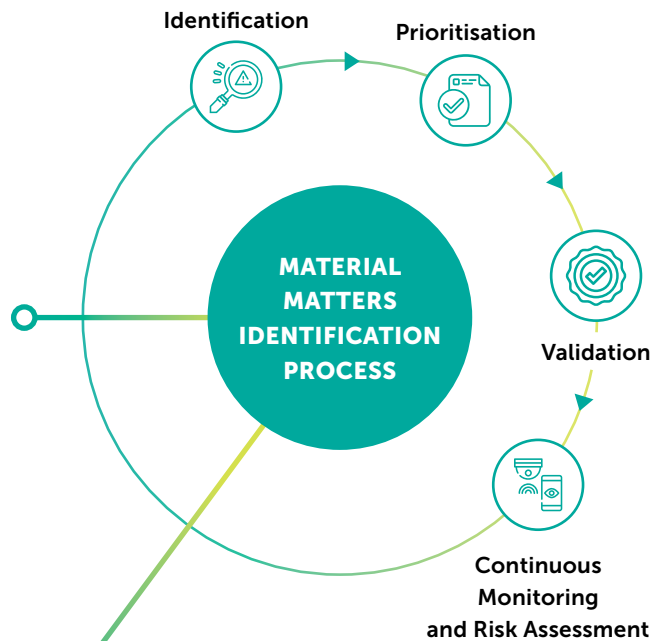
OUR BLUEPRINT AND ITS INITIATIVES ARE GUIDED BY THE FOLLOWING STANDARDS AND FRAMEWORKS

- UNSDGs with a focus on SDG 3, SDG 4, SDG 7, SDG 8, SDG 9, SDG 12 and SDG 13
- PETRONAS’ Statement of Purpose: “A Progressive Energy and Solutions Partner, Enriching Lives for a Sustainable Future”
- GHG Protocol and OGMP 2.0 Framework
- PETRONAS’ NZCE 2050 Pathway
- PETRONAS’ Sustainability Agenda
- Standards of Global ESG Rating Agencies

DETERMINING OUR MATERIAL MATTERS

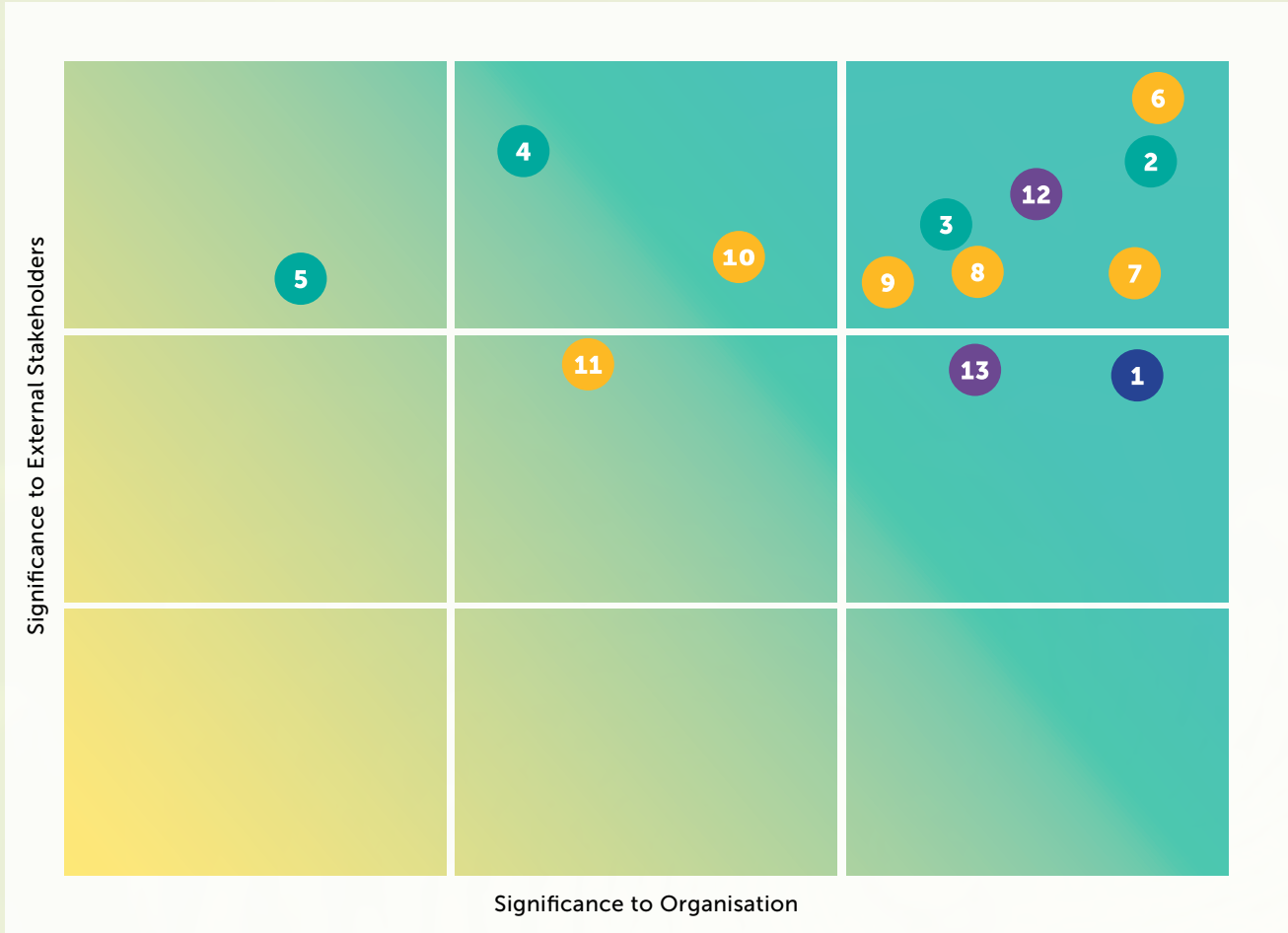
Our key sustainability matters significantly influence our ability to uphold operational and managerial excellence, drive impactful growth, and advance our ESG performance. These priorities are identified through regular materiality assessments conducted every two (2) years. The findings are presented across sustainability governance platforms and submitted for approval by the Board. Once endorsed, these matters receive strategic direction from the Board and Leadership Team, forming the foundation for Group-wide strategies, initiatives, and action plans.

In 2024, we conducted a validation exercise to reaffirm the relevance of our material matters, confirming that all identified issues remain pertinent with no changes required. A full assessment will be undertaken in 2025, demonstrating our commitment to continuously monitor evolving stakeholder expectations and industry trends while ensuring proactive responses to the most critical issues impacting our stakeholders and businesses.



IDENTIFICATION	PRIORITISATION	VALIDATION	CONTINUOUS MONITORING AND RISK ASSESSMENT
<p>Material matters are identified through a combination of in-house desktop analysis, comprehensive research and gathering of feedback. This involves assessing the business environment, operational factors, and resource dependencies, while considering financial, reputational, operational, environmental, social, strategic and legislative factors. Based on the matters identified, we deliberate potential risks and opportunities across the scope of each of these factors.</p>	<p>Material matters are ranked according to their importance to business operations and stakeholder interests. These rankings are used to create the Material Matters Matrix.</p>	<p>The prioritised list of material matters is reviewed and validated by the management team.</p>	<p>Once integrated into our strategy, the performance and risk elements related to each material matter are continuously monitored and benchmarked through key performance indicators and focus areas cascaded from the leadership team.</p>

DETERMINING OUR MATERIAL MATTERS



ECONOMIC

- 1 Sustainable Value Creation

ENVIRONMENT

- 2 Mitigating Climate Change
- 3 Environmental Management
- 4 Ensuring Water Security
- 5 Biodiversity Impacts

SOCIAL

- 6 Occupational Safety and Health
- 7 Talent Management
- 8 Human Rights
- 9 Supplier Social Impacts
- 10 Equal Opportunity, Diversity and Inclusion
- 11 Community Engagement





GOVERNANCE

- 12 Business Ethics and Transparency
- 13 Cybersecurity and Data Privacy















DETERMINING OUR MATERIAL MATTERS

RISKS AND OPPORTUNITIES RELATED TO OUR MATERIAL MATTERS

As part of our approach to managing material matters, we actively monitor the risks and opportunities associated with each topic, enabling us to implement targeted strategies and drive progress in identified actionable areas.




MATERIAL MATTERS	RISK DESCRIPTION	MITIGATION OPPORTUNITIES	
SUSTAINABLE VALUE CREATION 	<ul style="list-style-type: none"> Difficulty in securing and delivering growth projects effectively Unsustainable profitability from non-regulated businesses like utilities Challenges in achieving fair tariffs for regulated businesses 	<ul style="list-style-type: none"> Explore growth opportunities in core and adjacent domains Expand into non-regulated businesses such as utilities, power, and ancillary services to enhance value Explore low-carbon and green opportunities outside of our traditional gas and utilities businesses 	
MITIGATING CLIMATE CHANGE 	<ul style="list-style-type: none"> Continuous emissions from activities like combustion, flaring, and venting Inefficient energy use Failure to adapt to climate change 	<ul style="list-style-type: none"> Enhance operational energy efficiency Implement renewable energy solutions Utilise carbon abatement technologies and energy optimisation strategies such as harnessing cold energy or converting waste to resources/energy 	
ENVIRONMENTAL MANAGEMENT 	<ul style="list-style-type: none"> Reputational and operational risks from breaches of environmental laws, regulations, or licensing conditions 	<ul style="list-style-type: none"> Improve facility performance while ensuring strict compliance with environmental regulations 	
ENSURING WATER SECURITY 	<ul style="list-style-type: none"> Fines and penalties for failing to meet regulatory requirements Overuse of water leading to negative impacts on waterways 	<ul style="list-style-type: none"> Implement water conservation initiatives Uphold effective wastewater management practices 	
BIODIVERSITY IMPACTS 	<ul style="list-style-type: none"> Irreversible damage to natural habitats Legal and reputational impacts from incidents 	<ul style="list-style-type: none"> Conduct biodiversity and ecological risk assessments for all new projects and operations 	
OCCUPATIONAL SAFETY AND HEALTH 	<ul style="list-style-type: none"> Unsustainable Health, Safety, Security and Environment (HSSE) performance affecting business, operations, and reputation 	<ul style="list-style-type: none"> Foster a safety-oriented culture by enforcing behaviour commitment from employees Implement strict health and safety standards across all operations 	

DETERMINING OUR MATERIAL MATTERS

MATERIAL MATTERS	RISK DESCRIPTION	MITIGATION OPPORTUNITIES	
TALENT MANAGEMENT 	<ul style="list-style-type: none"> Lack of sufficient skilled talent to drive sustainable value creation and growth 	<ul style="list-style-type: none"> Develop structured capability-building programmes for core and growth-related skill requirements 	
HUMAN RIGHTS 	<ul style="list-style-type: none"> Unethical hiring practices, such as forced labour within the supply chain, damaging our reputation 	<ul style="list-style-type: none"> Ensure compliance with ethical hiring procedures across all involved parties 	
SUPPLIER SOCIAL IMPACTS 	<ul style="list-style-type: none"> Inefficient manpower management affecting business and operations Reputational damage due to environmental, human rights, or regulatory violations by suppliers 	<ul style="list-style-type: none"> Create opportunities within the supply chain to support surrounding communities Enhance suppliers' capabilities in enhancing sustainability performance 	
EQUAL OPPORTUNITY, DIVERSITY AND INCLUSION 	<ul style="list-style-type: none"> Suboptimal or non-progressive workplace practices affecting business operations 	<ul style="list-style-type: none"> Promote progressive workplace practices and encourage diversity of thought 	
COMMUNITY ENGAGEMENT 	<ul style="list-style-type: none"> Negative impacts arising from community engagements Failure to create desired impact or meet public expectations 	<ul style="list-style-type: none"> Invest consistently in long-term education, community well-being, development, and environmental initiatives 	
BUSINESS ETHICS AND TRANSPARENCY 	<ul style="list-style-type: none"> Misconduct, corruption, unethical business practices and failure to uphold integrity in operations damaging our reputation 	<ul style="list-style-type: none"> Conduct employee training on core corporate values and expected business conduct 	
CYBERSECURITY AND DATA PRIVACY 	<ul style="list-style-type: none"> Challenges in keeping up with evolving cybersecurity and data privacy risks System failures and data breaches caused by inadequate cybersecurity disrupting business operations and eroding customer trust 	<ul style="list-style-type: none"> Adopt advanced threat protection measures across all business units Conduct 24/7 network monitoring through PETRONAS' Centralised Security Operation Centre 	

ENGAGING OUR STAKEHOLDERS

Acknowledging that our stakeholders have diverse interests and expectations shaped by the ways our business activities impact them, we are dedicated to fostering regular and meaningful dialogues to understand and address their needs. We ensure our stakeholders remain informed about our sustainability initiatives, goals, and achievements by maintaining open communication channels. This engagement allows us to gain valuable insights into their perspectives, needs, and concerns, which in turn help refine our sustainability strategy and enhance our overall efforts. This section provides an overview of why and how we engage with our key stakeholders, along with our responses to their concerns and areas of interest.

	WHY WE ENGAGE	WHAT WE OFFER
INVESTORS AND FUNDING INSTITUTIONS 	<ul style="list-style-type: none"> Enhance financing opportunities Liquidity of our shares Foster open communication with investors for better business understanding Maintain transparency with stakeholders 	<ul style="list-style-type: none"> Stable investment with steady share prices and low volatility Alignment of business activities with strategic goals Integration of sustainability and governance into practices Ability to sustain attractive shareholder returns
	A One-on-one meetings A Emails/Letters/Surveys	Q Analyst briefings
CUSTOMERS 	<ul style="list-style-type: none"> Present a superior offering that reflects operational and commercial excellence Extend contracts Secure new contracts Foster and maintain good business relationships 	<ul style="list-style-type: none"> Reliable product delivery at a competitive cost Quality product offerings Commitment to product delivery reliability and conformance to specifications
	W One-on-one meetings Q Customer visits Y Industry conferences, forums and events	
BUSINESS PARTNERS, SUPPLIERS AND VENDORS 	<ul style="list-style-type: none"> Foster resilient relationships through communication and collaboration Preserve delivery of goods and services aligned with PETRONAS and PGB values 	<ul style="list-style-type: none"> Collaborating on joint initiatives for mutual benefit Opportunities and partnerships to support the growth of suppliers' businesses
	W One-on-one meetings Q Board meetings M Management committee meetings W Toolbox sessions W HSSE contractor improvement programme Q Project sponsor meetings	

Channels and Frequency





ENGAGING OUR STAKEHOLDERS

Our engagement approach is tailored to each stakeholder group, ensuring the use of appropriate channels and methods. These interactions allow us to share updates on our activities, outcomes, and strategic direction while seeking feedback on their concerns, priorities, and evolving expectations.

The table below outlines our key stakeholders and the customised engagement frameworks we employ to foster meaningful dialogue and collaboration.

KEY CONCERNS	OUR RESPONSE
<ul style="list-style-type: none"> • Progress on growth initiatives • Sustainability practices and disclosures • Consistency of shareholder returns • Shift in focus from oil and gas sectors due to environmental concerns 	<ul style="list-style-type: none"> • Clear disclosures on strategies and growth initiatives • Quarterly results announcements and analyst briefings • Consistent stakeholder engagement • Prompt response to shareholder queries • Highlighting efforts in reports, presentations, and website
<p>Q Website (for analyst briefings only) Y Site visits Y Investor conferences and roadshows Y Annual General Meeting</p> <ul style="list-style-type: none"> • Delivery of high-quality products and services in a timely manner • Competitive product offerings 	<ul style="list-style-type: none"> • Strengthened integration across the value chain to enhance reliability and ensure Product Delivery Reliability (PDR) • Expanded customer-focused solutions for both product offerings and pricing • Boosted customer interactions through increased engagements and visits • Enhanced marketing efforts and outreach initiatives
<p>Y Annual customer experience survey</p> <ul style="list-style-type: none"> • ESG regulations and requirements from potential partners • Vice versa, wherein we may require certain ESG compliance thresholds from potential partners • Ensuring fair and seamless business transactions 	<ul style="list-style-type: none"> • Established partner selection criteria to ensure strategic fit • Utilising PETRONAS Group Procurement and Financial Services' policies and procedures for efficiency and transparency • Strengthening engagements to maintain a reliable supply chain
<p>Y Strategic dialogues, conferences, forums and events</p>	<p>Y Contractor engagements and clinics</p>

ENGAGING OUR STAKEHOLDERS

	WHY WE ENGAGE	WHAT WE OFFER
EMPLOYEES AND UNIONS 	<ul style="list-style-type: none"> • Foster a positive ecosystem and encourage employees to contribute to business strategies and goals • Identify skill gaps to nurture future talent • Inspire collaboration among employees and management • Maintain strong relationships with union representatives to ensure industrial harmony 	<ul style="list-style-type: none"> • A supportive environment promoting sustainability and psychological safety • Opportunities for learning, development, and growth • Opportunities for meaningful contributions towards personal fulfilment and strategic business goals
	M Engagement with employees M Intranet and internet newsletters	
GOVERNMENT AGENCIES AND AUTHORITIES 	<ul style="list-style-type: none"> • Promote our support for government initiatives such as the NETR, NCCP 2.0 etc. • Serve as a partner in shaping the gas and power industry's direction in Malaysia 	<ul style="list-style-type: none"> • Extensive gas delivery network in Peninsular Malaysia • Lower-carbon natural gas power plant • Safe, efficient and reliable operations across all facilities • Upholding licenses in core regulated businesses such as pipeline and regasification terminals • Understanding of the latest requirements and regulations
	Q Engagement programmes Y Consultative sessions	
COMMUNITIES AND NON-GOVERNMENTAL ORGANISATION (NGO) 	<ul style="list-style-type: none"> • Enhance community understanding of PGB's business and operations • Maintain a positive corporate image 	<ul style="list-style-type: none"> • Education and social support • Environmental protection and biodiversity preservation
	M Regular employee engagements M Intranet and internet newsletters M Progress meetings	
MEDIA 	<ul style="list-style-type: none"> • Support their role as a key communication link between the business and stakeholders • Collaborate with Media to distribute vital information affecting corporate reputation and branding 	<ul style="list-style-type: none"> • Transparent sharing of information • Regular interaction with PGB spokespersons
	Q Press releases on quarterly performance Y Press releases on key business updates	

Channels and Frequency

ENGAGING OUR STAKEHOLDERS

KEY CONCERNS

- Employee physical and mental well-being
- Inclusive and conducive working environment
- Skill development and capability building
- Maintaining industrial harmony

OUR RESPONSE

- Structured programmes to address physical, mental and financial well-being
- Communication programmes to encourage diversity and inclusion
- Structured development programmes focusing on technical, functional, and leadership skills
- Collaboration with union representatives for seamless Human Resources policy to understand and conclude negotiation on collective agreement
- Employee engagement remains a priority, with 51 activities and programmes in 2024 to foster a conducive work environment and culture

Q Union engagements and activities

- Gas supply security and reliability
- Economic impacts on consumers
- Compliance with regulations and commitment to ESG standards
- Health and safety of operations and their surrounding impact
- Business practices that uphold integrity and ethics
- Timely public disclosures on sustainability such as TCFD, IFRS and TNFD

- Formal and informal engagements
- Joint emergency response exercises
- Familiarisation visits to PGB facilities
- Regular reporting to government agencies

- Health and safety of PGB operations and their impact on surrounding areas
- Need for education and social support
- Protection of the environment and biodiversity

- Implementation of social impact initiatives in education, community well-being, and environmental areas
- Programmes such as Powering Knowledge (education), Uplifting Lives (well-being), and Planting Tomorrow (environment)
- Sponsorships and donations
- Outreach activities to build favourable relationships with communities

A Email correspondence and texts Q Union engagements and activities

- Business performance
- Environmental management and sustainability efforts
- New innovation and technology advancements

- Foster open and transparent communication with Media
- Provide timely responses to Media inquiries on business developments
- Organise activities to share updates and maintain positive rapport

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Relevant UNSDGs



SUSTAINABLE VALUE CREATION

Our focus on sustainable value creation ensures that our operations and growth initiatives continue to generate strong financial returns for our business and shareholders. In an evolving energy landscape, unlocking growth in alignment with national and regional energy security and sustainability goals is essential. By incorporating Carbon Footprint Assessments (CFA) and carbon cost exposure into our decision-making, we are driving responsible expansion and building a greener, low-carbon portfolio that secures the long-term relevance of our business.



SUSTAINABLE VALUE CREATION



WHY IT MATTERS

Our transition to the Sustainable Value Creation (SVC) model in 2023 has ushered in a new growth phase for PGB. This enhanced approach embeds sustainability as a core element of our strategic direction to drive sustainable growth and navigate emerging risks and leverage opportunities amidst an evolving energy landscape.

By aligning our strategic agenda with national energy and decarbonisation policies and roadmaps, we strengthen our growth potential in the national market and secure our position as the nation's preferred energy provider.

OUR APPROACH

Robust Governance to Ensure Progress and Accountability

To ensure the effective progression of our sustainable value creation strategies we are guided by sound governance practices and maintain robust-top level oversight through Board meetings, PGB Leadership Team meetings and Investment Steering Committee meetings.

Simultaneously, we uphold accountability through transparent disclosures to our stakeholders through various stakeholder engagement events and our financial reporting. Our reporting adheres to regulatory frameworks such as:

Financial Reporting Standards

- Malaysian Financial Reporting Standards (MFRS)
- International Financial Reporting Standards (IFRS)





Regulatory Frameworks

- Gas Supply Act (Amended) 2016
- Incentive Based Regulations (IBR)
- Third-Party Access Framework

SUSTAINABLE VALUE CREATION

Preserving Essential Long-Term Agreements

Our long-term agreements form the backbone of our business, safeguarding our value creation efforts from the uncertainties of volatile market dynamics. By maintaining operational excellence, ensuring reliable service delivery and fulfilling contractual obligations, we can sustain our financial performance and retain the capacity to invest in business growth.

<p>Gas Processing Agreement</p> <p>Parties: PETRONAS and PGB Expiry: 31 December 2033</p> 	<p>Gas Transportation Agreement</p> <p>Parties: PEGT and PGB Expiry: 31 December 2033</p> 
<p>Terminal Use Agreement (RGTP)</p> <p>Parties: PEGT and PLNG2 Expiry: 1 November 2042</p> 	<p>Terminal Use Agreement (RGTSU)</p> <p>Parties: PEGT and RGTSU Expiry: 21 June 2033</p> 

Managing a Diverse Growth Portfolio

Building on the foundation of our long-term contracts, we have adopted a multi-faceted approach to managing our growth portfolio. This includes expanding our existing infrastructure and capacity, such as the upcoming developments of new gas power plants, while pursuing step out projects in green and low-carbon ventures such as our installation of a new air separation unit to harness cold energy.

<p>PROJECT COMPLETED IN 2024</p>	<ul style="list-style-type: none"> • Our new 42 km lateral gas pipeline to Pulau Indah, Selangor commenced gas supply to the Pulau Indah Power Plant in July 2024
<p>ONGOING PROJECTS</p>	<ul style="list-style-type: none"> • The new gas compressor in Kluang, Johor is scheduled to commence operations in 2025 • A new Floating Storage Unit (FSU) of Liquefied Natural Gas (LNG) at Pengerang, Johor is scheduled to commence operations in the second half of 2025 • The installation of a new Air Separation Unit (ASU) to harness cold energy at Pengerang, Johor is expected to be commissioned by end of 2026 • A 52 MW power plant in Sipitang, Sabah is expected to be commissioned in November 2026
<p>PROJECTS ACHIEVED FID IN 2024</p>	<ul style="list-style-type: none"> • Development of a new compressor station in Jeram, Selangor • Development of a 100MW gas power plant in Kimanis, Sabah • Development of a 120MW gas power plant in the Federal Territory of Labuan¹

Note:
¹ Received Initial Letter of Notification (LON) from Ministry of Energy Transition and Water Transformation

SUSTAINABLE VALUE CREATION

The Impact of Our New Projects

The three (3) new projects that achieved Final Investment Decision (FID) in 2024 were carefully selected to deliver meaningful impacts both to our bottom line as well as to the broader society. By expanding our infrastructure and diversifying along the gas value chain, we are supporting energy security while positioning gas as a key transitional fuel in alignment with national policies such as the 12th Malaysia Plan, National Energy Policy (NEP) and National Energy Transition Roadmap (NETR).

▶ New Jeram Compressor Station

The addition of the New Jeram Compressor Station will serve to enhance our gas transmission capabilities. This addition will enable PGB to reliably service the rising demand for energy in Peninsular Malaysia, while strengthening our position as a key player in Malaysia's energy infrastructure and supporting long-term revenue growth. The FID of the project was achieved in March 2024, with commissioning targeted for September 2026.

▶ New 100MW Power Plant in Kimanis, Sabah

In August 2024, PGB received the Letter of Notification to construct, own and operate a new 100MW power plant in Kimanis, Sabah. The power plant, with operations expected to commence in 2026, will expand PGB's existing portfolio in power generation and the Sabah energy market. In addition to strengthening our future revenue base, it is also part of a larger 700MW capacity project approved by the Sabah government under the Sabah Energy Roadmap and Master Plan 2040, aligning our growth with national development goals.

▶ New 120MW Power Plant in Labuan

We have also received an Initial Letter of Notification for the development of a 120MW gas power plant in Labuan which will also support Sabah and Labuan's long-term energy ambitions.



Gas Processing and Utilities - GP

Carbon Footprint Assessment (CFA)

CFA are a key initiative that strengthens the integration of environmental and social considerations within our value generation processes, enabling us to prioritise sustainable investments through a data-driven approach. In 2023, we began implementing CFAs across projects based while equipping employees with the necessary skills to conduct the assessments. With enhanced competencies from the PGB CFA Leader Certification Pathway introduced in 2024, we can now calculate carbon exposure across projects with greater accuracy, allowing for more informed decision-making.

Our assessment framework is further strengthened by the introduction of an internal carbon price of USD 5 per tonne of carbon dioxide equivalent, which helps evaluate carbon cost exposure, factoring in potential carbon taxes and abatement initiatives. The results of CFAs and carbon cost exposure assessments are integrated into financial investment decisions, guiding PGB towards building a greener, low-carbon portfolio.

Additionally, the CFA framework provides guidelines for adopting best available technology to minimise emissions and ensures that project designs align with our carbon commitments, such as zero routine venting and flaring. This structured approach keeps us on track to achieving our Net Zero Carbon Emissions (NZCE) 2050 aspirations.

Building on our progress, we conducted CFAs for two (2) new power plant projects in 2024, in addition to the two (2) assessments completed in 2023. The findings from these studies will ensure that these developments are approached in the most responsible and financially viable manner, reinforcing our commitment to sustainable value creation.

Low-Carbon Projects

As a leading player in Malaysia's energy industry, PGB remains committed to supporting the country's decarbonisation efforts. Our ongoing initiatives focus on further exploring carbon capture, utilisation, and storage (CCUS) solutions, as well as energy storage systems. These efforts support our commitment to reducing emissions as we work towards achieving our NZCE 2050 target.

Simultaneously, we are actively engaging with key stakeholders and national policymakers to cultivate a more enabling industry ecosystem that will enhance the viability and financial feasibility of future green energy projects.

SUSTAINABLE VALUE CREATION

Aligning Future Plans with National Objectives

As Malaysia advances sustainability through policies driving a low-carbon economy and environmental resilience, we see opportunities to grow our value creation while meeting the nation’s energy needs and ensuring energy security. To this end, we have aligned our growth strategies with key national policies and roadmaps that recognise natural gas as the optimal transition fuel, ensuring energy security as the nation advances its energy transition journey.

▶ **12th Malaysia Plan and National Budget 2024**

In line with decarbonisation and energy transition priorities under these frameworks, we are supporting natural gas infrastructure expansion while managing our carbon emissions in accordance with PGB NZCE 2050 pathway.

▶ **National Energy Policy (NEP) 2022-2040**

With this policy highlighting natural gas as a cleaner, reliable energy source amid coal phase-out efforts, we foresee opportunities to expand our gas processing, transportation, and regasification assets to meet growing demand.

▶ **Malaysian National Energy Transition Roadmap (NETR)**

We are actively diversifying our portfolio with initiatives in CCS, CCU, cold energy harnessing, solar and energy storage systems to align with this roadmap.

By collaborating with the government to drive a fair energy transition and decarbonise our operations, we reinforce our role as a dependable contributor to national energy security and seek to establish strategic partnerships for mutual growth.

Engaging Stakeholders to Drive Collaboration

Fostering collaborative relationships with stakeholders is essential to sustaining positive outcomes from our value creation initiatives. This involves proactive and strategic engagement with ministries, authorities and policymakers to ensure alignment with our long-term objectives. Our engagement involves our active participation in government-led sustainability initiatives and local council engagements, in addition to collaborating with NGOs to leverage on their established platforms to maximise the impact of our sustainability programs.

2024 STAKEHOLDER MANAGEMENT EVENTS SUPPORTING SVC



Energy Commission Sabah (ECoS) Visit to RGTP and RGTSU

In August, ECoS visited RGTP and RGTSU to learn about the terminals' operations and capacity. The visit included tours highlighting key technological systems and safety controls, giving ECoS insights into the critical infrastructure that supports Sabah’s energy needs.

Engagement with Transport Ministry on Low-Carbon Fuel

Also in August, PGB’s MD/CEO presented a feasibility study to Malaysia’s Minister of Transport, YB Loke Siew Fook on developing eMethanol as an alternative marine fuel. We will further collaborate with the Ministry to secure backing from the International Maritime Organisation for this low-carbon energy initiative towards decarbonizing the shipping industry.



Kimanis Power Plant (Dua) Groundbreaking

In November, Sabah Chief Minister YAB Datuk Seri Hajiji Noor officiated the groundbreaking of the 100MW Kimanis Power Plant (Dua). The project seeks to boost participation from Sabah-based vendors and suppliers, and will create 400 jobs during construction, with 60 to 70 permanent roles upon completion.

Engagement with Institutional Shareholders

In 2024, PGB’s leadership strengthened relationships with key institutional investors, including Employees Provident Fund (EPF) and Kumpulan Wang Persaraan (Diperbadankan) (KWAP), through effective communication of business development and sustainability initiatives. The PGB Board also participated in PNB’s Sustainability Engagement, supporting their efforts to integrate sustainability into strategic decision-makings.

SUSTAINABLE VALUE CREATION

OUR PERFORMANCE

Our efforts to increase the economic value we generate and distribute each year underscores our commitment to sustainable value creation.

Direct Economic Value Generated and Distributed (RM million)

	2022	2023	2024
Direct Economic Value Generated			
Revenue	6,160.2	6,445.4	6,538.2
Other Income ¹	35.2	230.1	228.9
Economic Value Distributed			
Operating Costs (including materials, products and facilities purchased)	2,457.0	2,639.6	2,659.6
Employee Wages and Benefits	416.8	493.4	552.7
Payments to Providers of Capital	1,735.6	1,506.1	1,512.0
Payments to Government by Country	511.4	441.3	352.8
Community Investments	-	5.2	5.7
Economic Value Retained	1,074.6	1,589.9	1,684.3

Local Recruitment Efforts and Minimum Wage Compliance

We also strive to create sustainable value by uplifting the nation's socio-economic fabric. Through inclusive recruitment practices that support local communities, we are proud to report that 100% of our Senior Management² employees were hired locally³. Additionally, we maintain full compliance with government-mandated minimum wage requirements.

Notes:

¹ Comprises net other income, financing costs and contribution from joint ventures and associate

² Senior Management encompasses our Senior Managers, General Managers, Senior General Managers and MD/CEO

³ Local is defined as Malaysia

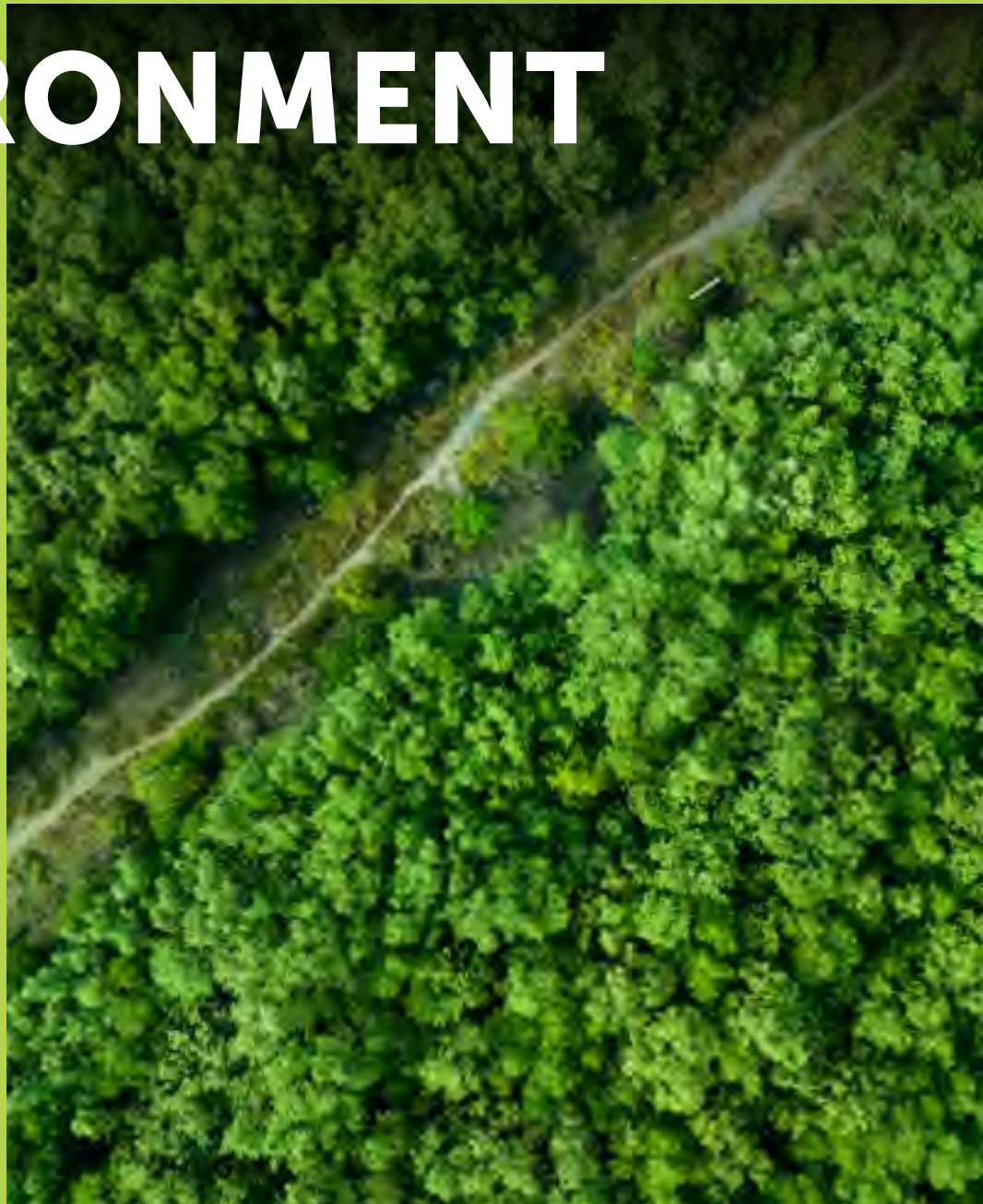
Energy Management	35
Climate Change Management	42
Pollution Management	59
Waste Management	68
Water Management	76
Biodiversity Management	82

Relevant UNSDGs



SAFEGUARD THE ENVIRONMENT

Guided by our Net Zero Emissions by 2050 pathway, we are continuously enhancing our GHG disclosures while driving carbon abatement and energy management solutions to accelerate progress towards carbon neutrality. At the same time, we prioritise circularity through strong recycling practices, safeguard the protection of biodiversity and natural ecosystems, and responsibly manage our pollutants, waste, and water to ensure our operations coexist sustainably with the natural environment.



SAFEGUARD THE ENVIRONMENT

ENERGY MANAGEMENT



WHY IT MATTERS

As a growing player in the energy industry, we recognise the importance of responsible energy management in addressing climate change and advancing towards a sustainable future. Within the context of our business operations, responsible energy use also plays a significant role in our drive for operational excellence, cost optimisation and minimising our carbon footprint.

By implementing comprehensive governance frameworks, leveraging advanced technologies, and maintaining rigorous oversight throughout the energy lifecycle, we strive to optimise energy consumption. While the world continues its pursuit of sustainable renewable energy security, careful stewardship of potentially finite energy resources remains a key priority.

OUR APPROACH

Driving an Energy-conscious Culture Through Robust Energy Management

We are dedicated to fostering an energy-conscious corporate culture, placing energy conservation and GHG emissions reduction at the core of our operational and sustainability strategies. By embracing cutting-edge technologies and refined processes, we continuously strive to achieve greater efficiency and material energy savings.

Our efforts are anchored by the implementation of a robust Energy and Loss Management System (ELMS), which provides a structured framework for systematically enhancing energy efficiency. This is in line with Malaysian regulatory requirements (Energy Efficiency and Conservation Act), which highlight the importance of developing and implementing an Energy Management System, including detailed monitoring of energy consumption. Through diligent energy management and oversight, we identify opportunities to optimise energy utilisation.

SAFEGUARD THE ENVIRONMENT

Energy Management

Adopting Scenario Modelling for Enhanced Energy Efficiency

To elevate our energy efficiency, we have adopted scenario modelling approach to foresee and analyse energy loads across different operational modes. This approach provides valuable insights that enable us to optimise processes and enhance overall energy efficiency. By simulating various operating conditions, our teams can make informed decisions to implement variable operating modes for optimisation.

In the Gas Processing segment, scenario modelling allows us to switch between sales gas maximisation and liquid hydrocarbon maximisation based on the prevailing operating environment. Similarly, in Utilities, we optimise power exports via the New Electricity Dispatch Arrangements (NEDA) by leveraging a real-time optimiser system to analyse grid conditions and cost parameters. During periods of minimal energy demand, we can adjust the number of cogeneration units in operation to further enhance efficiency.

Scenario modelling has proven instrumental in identifying inefficiencies, minimising waste, streamlining operations, and highlighting areas for improvement. Most notably, it supports our efforts to reduce internal gas consumption, contributing to lowering our operating costs and GHG emissions in alignment with our sustainability objectives.

An Established Energy Roadmap

We have developed an Energy Commitment and Roadmap to guide energy management and meet energy-related responsibilities and performance targets within our Gas Processing and Utilities (GPU) and Gas Transportation and Regasification (GTR) divisions.

This roadmap outlines a five-year Energy Index (EI) target, a detailed list of initiatives, and the projected energy savings for each initiative. To ensure effective implementation, each division has established an Energy Working Committee tasked with providing strategic guidance, monitoring progress, and ensuring milestones are achieved within the set timeframes.



Gas Processing and Utilities - GP

SAFEGUARD THE ENVIRONMENT

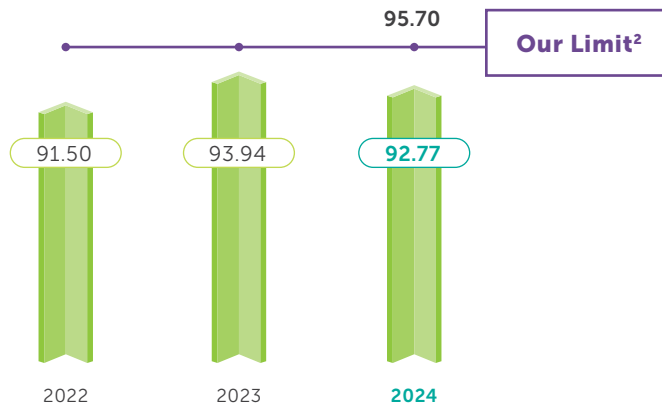
Energy Management

OUR PERFORMANCE

ENERGY MANAGEMENT AT PGB

Energy Index Performance

A primary objective for energy management at PGB is to consistently achieve a top performance Energy Index (EI)¹ with this target cemented in our Strategic Agenda blueprint to drive operational excellence. To do so, we adhere to three (3) core practices: optimising maintenance processes to minimise energy use, implementing efficient energy consumption controls, and identifying designs that maximise efficiency. In 2024, our targeted initiatives to optimise energy consumption led to an improvement in our EI performance, surpassing both our set limit and our 2024 achievements. This was notably driven by the successful implementation of additional operational controls.



Notes:

- ¹ EI is defined as the ratio of the actual energy performance of the plant to the energy performance that the plant was designed for. It is a comparison of the Actual Specific Energy Consumption (Actual SEC) of the plant with the Specific Energy Consumption calculated during the original design of the plant (Design SEC).
- ² Based on the Design SEC, we have established upper EI limits to monitor energy utilisation efficiency. A lower EI score compared to the limit indicates better energy efficiency.

Power Production Capacity by Energy Type

Energy Type	Total Electricity Generation Capacity (MW) ¹	Total Steam Generation Capacity ² (MT/hour) ³
Natural Gas	400	1,312
Solar	0.254	Not Available

Notes:

- ¹ Megawatt
- ² Total steam generation capacity from COGEN
- ³ Metric tonne per hour

SAFEGUARD THE ENVIRONMENT

Energy Management

Power Production by Energy Type (MWh)

Energy Type (MWh) ¹	2022	2023	2024
Fuel Gas	2,293,163	2,123,530	2,265,000
Solar	235	250	294
Imported Electricity	98,750	97,872	111,052
Green Electricity Tariff	0	3,200	7,496
Nuclear	0	0	0
Coal	0	0	0
Oil	0	0	0
CCGT	0	0	0
Biomass	0	0	0
Hydro	0	0	0
Geothermal	0	0	0
Wind	0	0	0
Other Renewables	0	0	0
Overall Renewables ¹	0	0	0
Total	2,392,148	2,224,852	2,383,842

Note:

¹ PGB's only renewable energy source is solar, as outlined in the table

Energy Consumption (GJ/year) (million)

	2022	2023	2024
GPU (GJ/year) (million)	61.30	57.71	59.18
GTR (GJ/year) (million)	4.13	4.36	4.28
Total (GJ/year) (million)	65.43	62.07	63.46
Total (MW)¹	18,175,000²	17,127,778²	17,630,556

In 2024, GTR achieved lower energy consumption as compared to 2023, attributed to operating at a higher send-out capacity, which enabled more efficient operations.

Notes:

¹ Megawatt-hour

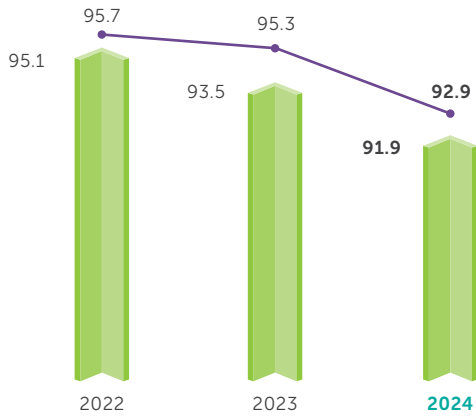
² Data for 2022 and 2023 have been revised due to a standardisation of our data calculation approach

SAFEGUARD THE ENVIRONMENT

Energy Management

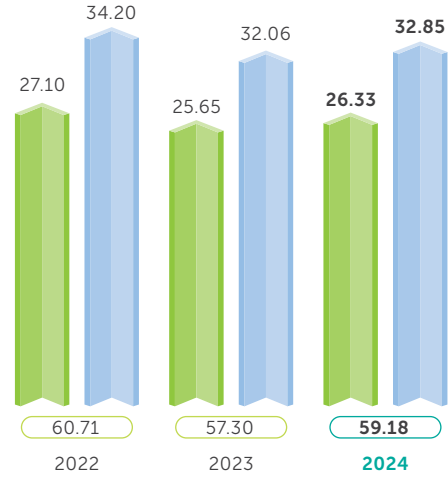
ENERGY MANAGEMENT AT GPU

GPU Energy Index Performance



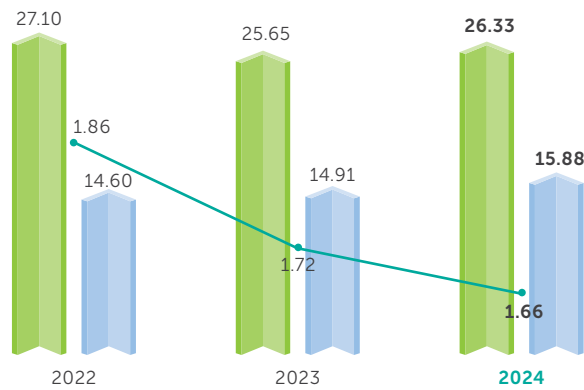
● Actual ● Limit

GPU Energy Consumption



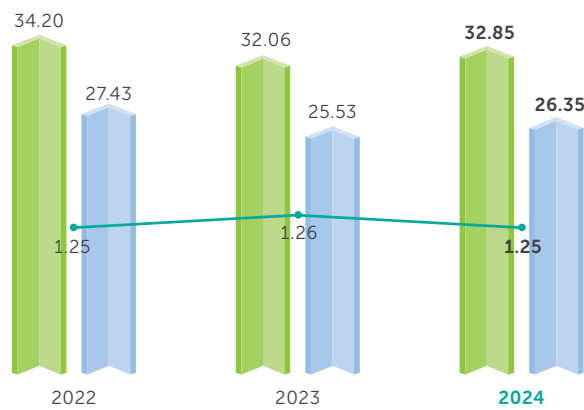
● GP ● UT

GP Specific Energy Consumption



● Energy (GJ/year) (million) ● Production (ton/year) (million) ● SEC (GJ/MT)

UT Specific Energy Consumption



● Energy (GJ/year) (million) ● Production (GJ/year) (million) ● SEC (GJ/GJ)

SAFEGUARD THE ENVIRONMENT

Energy Management

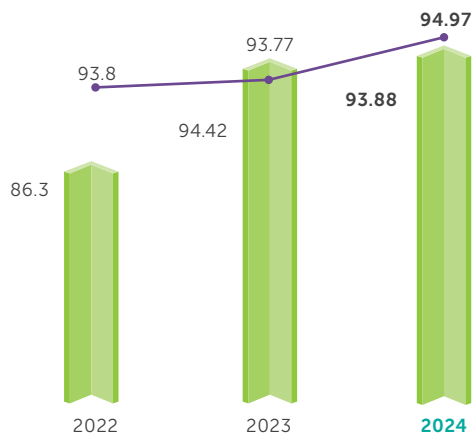
GPU Energy Consumption Initiative

► **Commissioning of UG Utility Optimiser**

Utilities Gebeng successfully commissioned the Utility Optimiser, an automated model that utilises first-principle mass and energy balance to optimise energy consumption during normal plant operations. It also helps regulate power exports to the national grid based on System Marginal Price (SMP) movements, resulting in an energy reduction of 51,608 GJ, equivalent to 2.6 ktCO₂e in 2024, with the potential to achieve up to 3.8 ktCO₂e per year. This project was also recognised at the PETRONAS Making Impossible Possible Awards and Convention (MIPAC 2024), winning the 'Best Efficiency' award.

ENERGY MANAGEMENT AT GTR

GTR Energy Index Performance



● Actual ● Limit

In 2024, GTR's Energy Index (EI) increased compared to 2023, driven by heightened production activities. Nevertheless, we successfully achieved a result within our target as negative offsets caused by flaring and venting events were counterbalanced by a positive offset from operating efficiently at high production levels close to nameplate capacity.

SAFEGUARD THE ENVIRONMENT

Energy Management

GTR Energy Consumption

Energy Consumption (GJ/year)	2022	2023	2024
RGTSU	392,999.50	382,803.04	408,365.02
RGTP	154,014.99	170,227.02	178,933.99
GT	3,582,218.45	3,810,882.21	3,688,198.13
Total	4,129,232.94	4,363,912.27	4,275,497.14

Our 2024 energy consumption was lower compared to 2023 due to our ability to operate efficiently at higher production levels close to nameplate capacity.

GT Specific Energy Consumption

	2022	2023	2024
Energy (GJ/year) (million)	3.58	3.81	3.69
Production (MT/year) (million)	11.21	12.03	12.50
SEC (GJ/MT)	0.32	0.32	0.30

RGT Specific Energy Consumption

	2022	2023	2024
Energy (GJ/year) (million)	0.55	0.55	0.59
Production (MT/year) (million)	2.58	2.49	3.04
SEC (GJ/MT)	0.21	0.22	0.19

GTR Energy Consumption Initiative

► Adoption of Gas Transmission Optimisation (GTOP)

The GTOP system optimises compressor setpoints to enhance operational efficiency while maintaining product quality in terms of volume and pressure. This enables us to improve Internal Gas Consumption (IGC) across Peninsular Gas Utilisation (PGU) and the Segamat Operations Center. The initiative led to an Energy saving of 61,836 GJ equivalent to GHG reduction of 3,250 tCO₂e per year in 2024.

SAFEGUARD THE ENVIRONMENT

CLIMATE CHANGE MANAGEMENT

WHY IT MATTERS

As a business reliant on natural resources like air and water, minimising harm to these vital ecosystems has long been an intrinsic part of our responsible business practices to ensure long-term business resilience. Managing greenhouse gas (GHG) emissions is a critical priority for PGB, as it strengthens our competitiveness by demonstrating our ability to govern responsibly and operate our facilities optimally, while unlocking opportunities to expand into lower-carbon-intensive ventures.

By embedding these practices into our operations, we ensure our alignment with evolving expectations and rising ESG standards from regulators, investors, and other key stakeholders, further reinforcing our position as a preferred industry player.



OUR APPROACH

Driven by our Group-wide Net Zero Journey

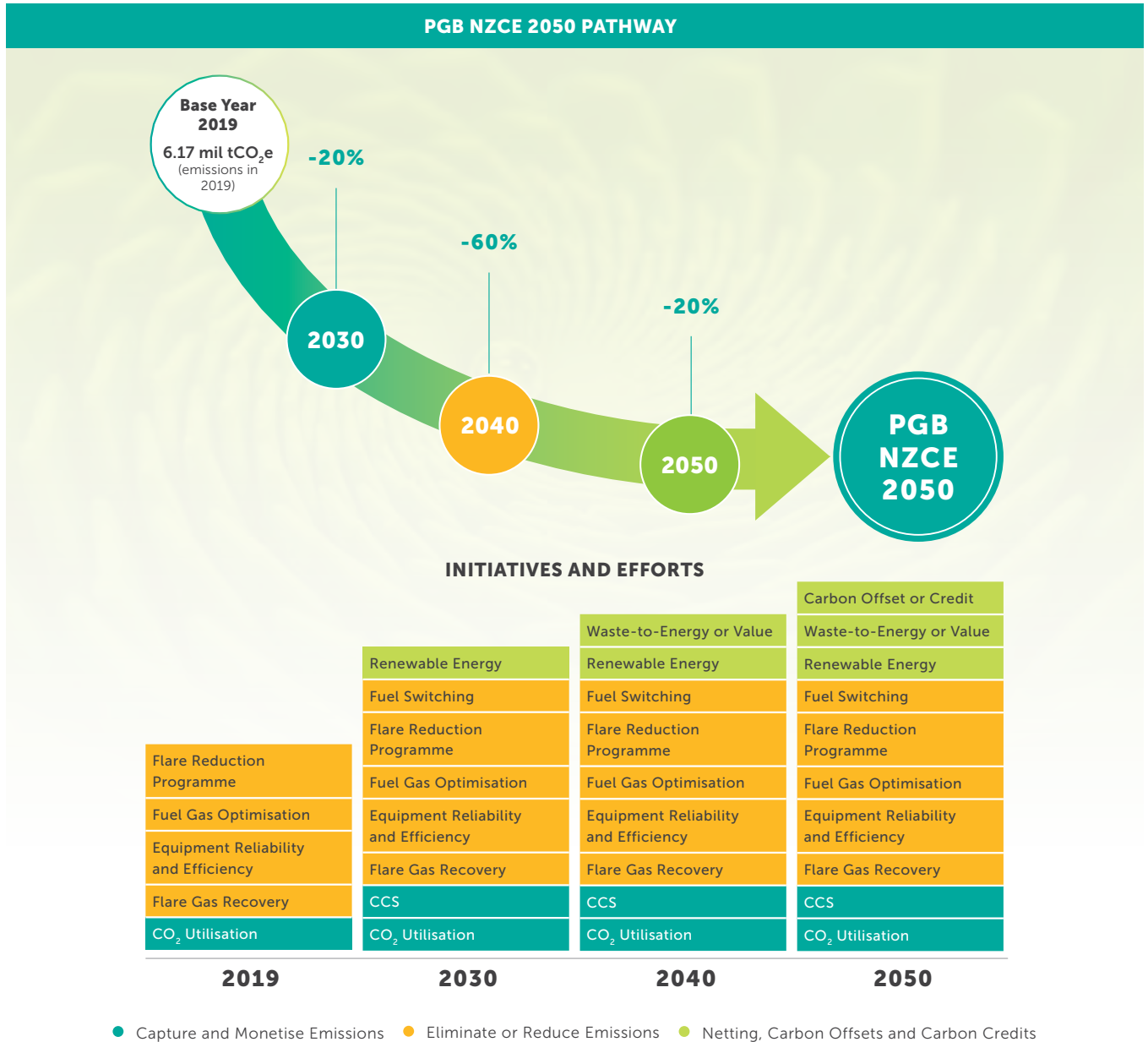
Our pledge to reduce GHG emissions is anchored in our Net Zero Carbon Emissions by 2050 (NZCE 2050) pathway, which aims to establish us as a carbon-neutral organisation by 2050. We have outlined targets and strategies across the following various time horizons, and established the PGB NZCE 2050 pathway towards attaining this goal.

SHORT-TERM 1-5 YEARS (BY 2030)	MEDIUM-TERM 5-15 YEARS (BY 2040)	LONG-TERM BEYOND 15 YEARS (BY 2050)
Short-term goals are essential for sustaining strategies to drive GHG emissions reductions across our operations, while enabling swift adaptation to increasing gas demand, evolving regulations, market dynamics and stakeholder expectations.	Medium-term objectives ensure we grow in alignment with industry trends, national policies, and global targets, ensuring our gas infrastructure and operations support energy security and reliability while being as green as possible.	Long-term aspirations support our transformation towards achieving NZCE by 2050, driving the implementation of comprehensive risk mitigation and abatement measures as our business transitions to lower-carbon business opportunities.

SAFEGUARD THE ENVIRONMENT

Climate Change Management

These strategies include reducing or eliminating emissions, capturing and monetising emissions, and potentially leveraging carbon offsets or credits. Our roadmap to achieving this critical goal is detailed in the PGB NZCE 2050 pathway illustrated below.



ESTABLISHING BASELINE EMISSIONS



Our journey to Net Zero commenced with establishing the baseline year for our Scope 1 and Scope 2 emissions in 2019. 2019 was selected due to the introduction of a new organisational boundary for NZCE 2050 and serves as a representative year preceding the COVID-19 pandemic, which significantly impacted business-as-usual operations.

In 2019, our Scope 1 and 2 baseline GHG emissions were recorded at 6.17 million tCO₂e. Our baseline Methane emissions were recorded at 157,937 tCO₂e.

SAFEGUARD THE ENVIRONMENT

Climate Change Management

SETTING TARGETS

To achieve our net zero carbon emissions target for 100% of operationally controlled Scope 1 and 2 emissions, we have established short- and medium-term interim targets to track our progress:



SHORT-TERM

Achieve a **20% reduction** in emissions by 2030 compared to the 2019 baseline.



MEDIUM-TERM

Achieve an **80% reduction** in emissions by 2040 compared to the 2019 baseline.

This pathway is based on anticipated GHG emissions reductions through carbon reduction, utilisation, and offset initiatives within our portfolio. Both short-term and medium-term targets are expressed as percentage reductions from the baseline year rather than absolute figures, allowing for clear visualisation and assessment of progress against the base year.

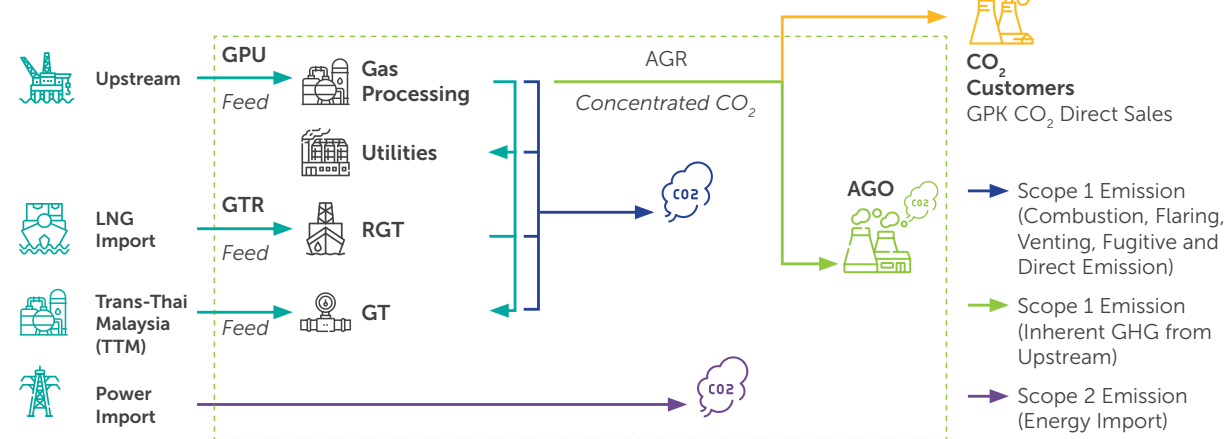
SELECTING BOUNDARIES AND APPROACH

We employ a systematic approach to quantifying our carbon footprint by defining clear boundaries, identifying sources, and verifying GHG emissions measurements. Adopting the operational control method for GHG emissions consolidation, we account for 100% of emissions from facilities under our operational control, namely our LPG terminal and gas processing facilities, Tanjung Sulong Export Terminal (TSET), Gas Processing Keroh (GPK), Gas Processing Santong (GPS) and our utilities facilities, Utilities Keroh (UK) and Utilities Gebeng (UG), our regasification terminals, Regas Terminal Sungai Udang (RGTSU) and Regas Terminal Pengerang (RGTP), our gas transportation facilities.

- Gas Processing Plant
- Compressor Station
- Utilities Plant
- Tanjung Sulong Export Terminal
- Offshore LNG Regasification Terminal
- Onshore LNG Regasification Terminal



PGB GHG Emissions - Operational Boundaries



SAFEGUARD THE ENVIRONMENT

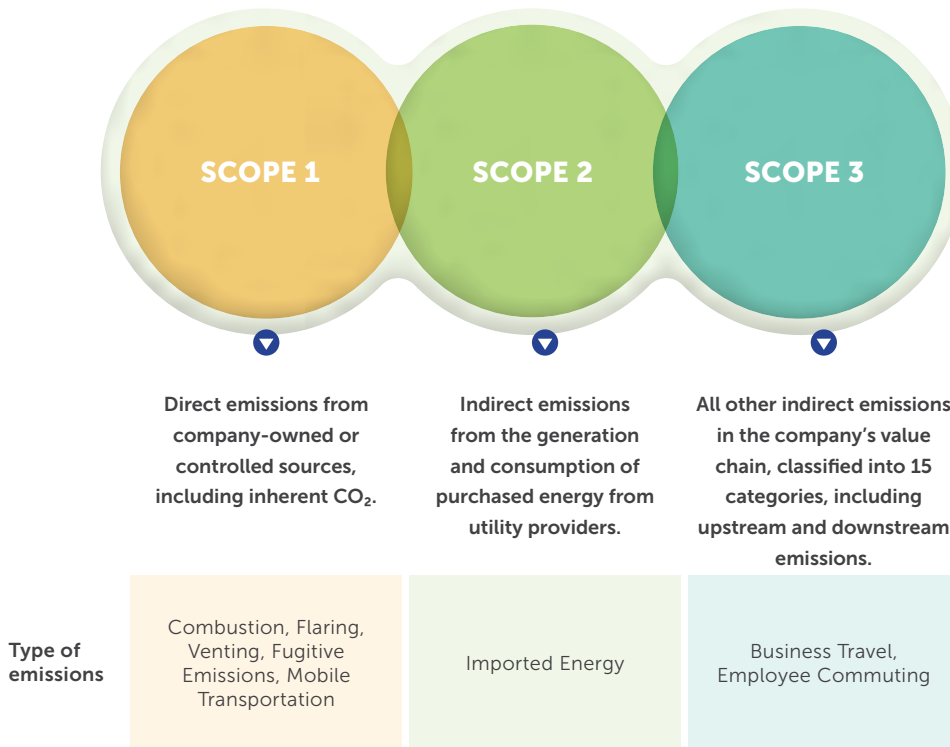
Climate Change Management



MONITORING AND DISCLOSING OUR EMISSIONS

Across these facilities, we have conducted essential measurements and developed a comprehensive emissions inventory encompassing inherent CO₂ emissions in feedgas, combustion, venting, flaring, fugitive emissions, and purchased energy.

To quantify and report emissions, we adhere to the GHG Protocol Corporate Standard¹ methodologies, covering the following scopes:



Currently, we monitor and disclose emissions for Scope 1 and Scope 2, along with Scope 3 emissions for Category 6 (business travel) and Category 7 (employee commuting). In 2025, we will conduct a materiality assessment for all Scope 3 categories to provide more focus in our strategy of addressing Scope 3 emissions.

We continue to prioritise the improvement of our emissions monitoring and management to support systematic reductions and advance towards NZCE 2050. To enable this, we have adopted iCON, a GHG accounting and simulation application that facilitates enhanced data collection automation and real-time emissions monitoring. Our alignment with UNEP's Oil & Gas Methane Partnership 2.0 (OGMP 2.0) Level 4 Methane reporting has led to more accurate measurements of methane emissions. As a result, methane emissions have been observed at relatively lower levels, reflecting the results of our various GHG reduction efforts. Armed with a comprehensive view of our emissions inventory, we are empowered to strengthen our abatement efforts and ensure greater reliability, accuracy, and transparency in our disclosures.

To validate our efforts, we engaged Lloyd's Register Quality Assurance (LRQA) to conduct a third-party GHG accounting verification for a sample of our assets, specifically Gas Processing Kertih and Regas Terminal Sungai Udang, in 2024. This verification further enhances the credibility of our emissions data and strengthens regulatory compliance.

Source:

¹ Developed by the World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD)

SAFEGUARD THE ENVIRONMENT

Climate Change Management

Alignment with National and Global Climate Change Public Policies, Regulations and Frameworks

In ensuring the success of GHG reduction efforts towards materialising our PGB NZCE Pathway, PGB is committed to align with climate change public policies, regulations, global frameworks, and other relevant mandates. This reflects our awareness that climate action and emissions reduction are collective global responsibilities, requiring active contributions from all stakeholders to achieve meaningful progress. Given the dynamic nature of the regulatory environment surrounding, PGB adopts a vigilant and agile approach to public policies. We firmly believe that robust climate change regulations are essential for PLCs, as they set clear expectations and guidelines while holding all parties accountable, thereby driving collective climate action to achieve national targets.

Our approach emphasises close collaboration with the government and relevant bodies to stay updated on developments and contribute our expertise to policy formulation.

▶ **World Bank’s Zero Routine Flaring (ZRF) by 2030 Initiative**

We support PETRONAS Group’s commitment to the ZRF Initiative, where governments, companies, associations, and development institutions pledge to eliminate routine flaring by 2030.

▶ **Methane Guiding Principles (MGP)**

We remain aligned with PETRONAS’s commitment to the MGP, which supports the Global Methane Pledge launched at COP26. This pledge aims to reduce global methane emissions by at least 30% from 2020 levels.

▶ **United Nations Environment Programme (UNEP) Oil and Gas Methane Partnership 2.0 (OGMP 2.0)**

We support PETRONAS’s commitment to OGMP 2.0 in delivering the Global Methane Pledge.

▶ **Oil and Gas Decarbonisation Charter**

We are aligned with PETRONAS’s commitment to the Oil and Gas Decarbonisation Charter, a joint industry commitment launched at COP28 in December 2023.

▶ **GHG Protocol: A Corporate Accounting and Reporting Standard (2013)**

We adhere to the GHG Protocol for emissions accounting and reporting, ensuring transparency and consistency.

▶ **Transition from Task Force on Climate-related Financial Disclosures (TCFD) to International Financial Reporting Standards (IFRS) S1 and S2**

Having fully addressed all TCFD recommendations, we are further aligning with upcoming IFRS S2 requirements to enhance the quality of our climate-related disclosures as we advance our sustainability journey. We are committed to fully comply with the disclosure requirements of IFRS S1 and S2 by 2027 as per mandated by Bursa Malaysia.

▶ **World Business Council for Sustainable Development (WBCSD)**

Through PETRONAS Group’s membership in WBCSD, PGB leverages sustainability best practices shared by member organisations.

▶ **Energy Efficiency and Conservation Act (EECA) 2024**

With the Malaysian government set to enforce the EECA 2024 from Jan 2025 onwards, we are committed to supporting the Act’s objectives to promote energy efficiency and sustainable energy practices amongst top energy consumers.

▶ **National Climate Change Policy 2.0 (NCCP 2.0)**

We attended the launch of NCCP2.0 on 30th Sept 2024 and are working to establish open communications with government organisations to stay updated on the latest developments and promote collaboration in driving climate action.

▶ **Malaysian National Energy Transition Roadmap (NETR)**

We are progressively diversifying our portfolio with lower carbon and renewable energy initiatives to drive alignment with this roadmap.

▶ **National Sustainability Reporting Framework (NSRF)**

We acknowledge this regulatory initiative to enhance transparency and accountability in managing sustainability risks and opportunities, and commit to align with these guidelines from 2025 onwards.

SAFEGUARD THE ENVIRONMENT

Climate Change Management

Our Integrated Climate Strategy

Guided by globally recognised climate action frameworks and our PGB NZCE 2050 pathway, we have established a comprehensive, Group-wide focus on driving impactful climate action. Our efforts include aligning with national and global climate policies and regulations, closely monitoring emissions, and implementing diverse strategies to reduce or eliminate emissions, capture and monetise emissions, as well as potentially leveraging carbon offsets or credits in the long-run.

OUR ABATEMENT STRATEGIES



Mitigation and adaptation approaches are essential to realising our NZCE 2050 aspirations, and we are dedicated to leveraging all available tools and solutions to progressively reduce our carbon footprint in the years ahead. Our efforts centre around the following three (3) key areas:

► Elimination and Reduction of Emissions

To progressively lower GHG emissions, we continue to enhance our operational excellence (OE) initiatives, aiming to reduce or eliminate flaring as well as combustion, venting and fugitive emissions. We leverage technology and innovation to implement science-based resource optimisation and decarbonisation solutions, including:

- Optimisation and upgrading of gas turbines
- Improvements in boiler heat recovery
- Implementation of an equipment reliability system
- Optimisation of furnace operations
- Utilisation of zero-carbon methane
- Installation of flare recovery systems
- Replacement of sweep gas with inert gas
- Installation of leak prevention and rectification systems

In 2024, our efforts revolved around optimising equipment efficiency to minimise fuel gas combustion, while reducing flaring and venting through various recovery methods, such as utilising overhead compressors and automating BOG suction drums. Additionally, we also leverage renewable energy to supplement power needs at our non-process buildings, contributing to our ongoing GHG reduction efforts.

► Capture and Monetise Emissions

As part of our roadmap to net zero, we collaborate with PETRONAS to capture inherent CO₂ emissions, which account for approximately 2 million tCO₂e per annum. By leveraging this captured CO₂ as a feedstock for downstream customers, we are able to generate value while simultaneously reducing emissions. Since the early 2000s, monetising CO₂ sales has been a key activity, and in 2024, this contributed to an additional 51 ktCO₂e reduction in GHG emissions.

► Netting, Carbon Offsetting and Carbon Credits for Remaining Emissions

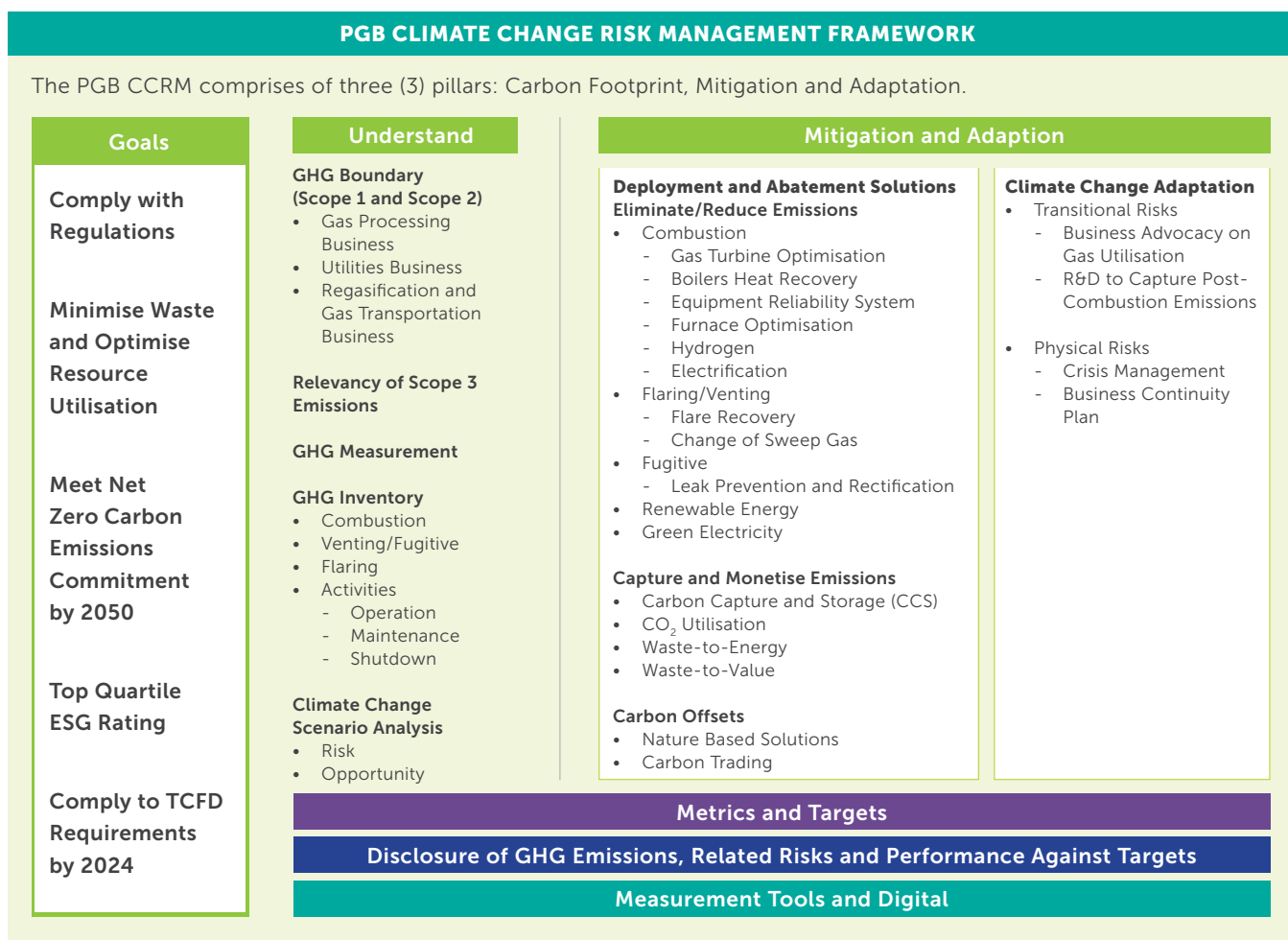
To address hard-to-abate and unavoidable residual emissions, we are exploring netting as a viable option in our journey toward net zero based on the available initiatives in the market, including reforestation projects. To ensure these projects are recognised by governing bodies, we are also assessing the best methods for obtaining carbon credits certificates to validate these initiatives.

SAFEGUARD THE ENVIRONMENT

Climate Change Management

A Robust Framework to Manage Climate Risks

Through the PGB Climate Change Risk Management (CCRM) Framework, we have established a robust approach to managing, mitigating and adapting climate-related risks pertinent to our business. While currently aligned with TCFD recommendations, we are on track to address gaps in IFRS 2 requirements by 2025, ensuring compliance with the latest standards.



Our Climate Risk Management Goals

The CCRM Framework sets clear goals and provides a thorough understanding of emissions across our operations—critical for achieving our net zero journey. It enables the identification and analysis of all relevant climate-related risks and opportunities, while guiding the implementation of effective mitigation and adaptation measures. Additionally, the framework underscores our commitment to transparent disclosures of our performance against established targets, facilitating effective progress tracking and benchmarking.

Ensure Compliance

Strive to ensure full compliance with all relevant laws and regulations, maintaining our record of zero non-compliance incidents or penalties through timely adherence and proactive governance.

Mitigate Emissions

Address inherent and post-combustion emissions through carbon abatement strategies, while managing other emissions through carbon trading, netting and carbon offsetting.

Enhance Operational Efficiencies

Adopt key strategies that minimise emissions while enhancing the efficiency of our operations, namely by minimising waste, optimising energy consumption and maximising the use of low-carbon energy.

Regulatory Alignment

Having successfully addressed TCFD recommendations by 2024, we aim to meet IFRS S2 requirements while sustaining top-quartile ESG performance in key sustainability indices.

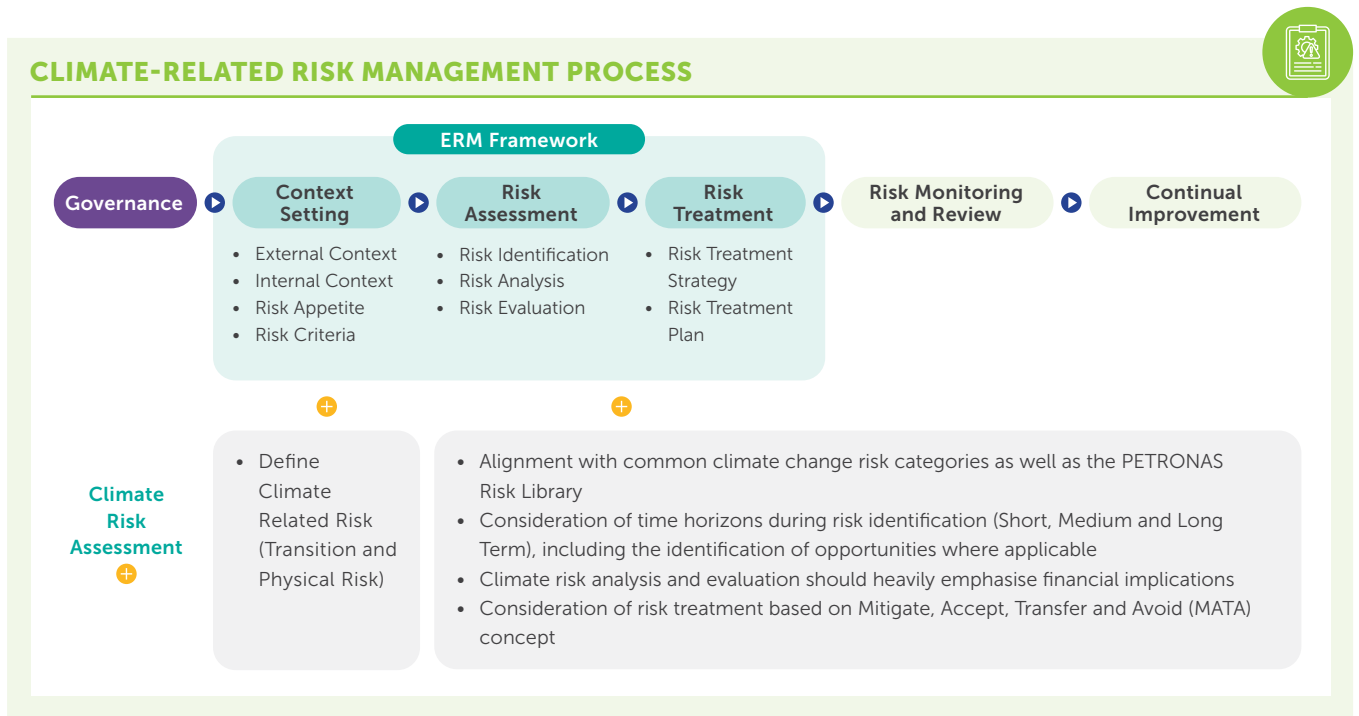
SAFEGUARD THE ENVIRONMENT

Climate Change Management

Our Risk Assessment Approach

To effectively assess the impact of climate change on our business, PGB adopts a structured risk assessment approach for climate-related risks, aligning with the PETRONAS Enterprise Risk Management Framework (ERMF). This approach integrates both external and internal contexts, including regulatory requirements and asset-level risks, to ensure a comprehensive evaluation. Once key risks and opportunities are identified, their implications are thoroughly analysed, enabling us to anticipate, mitigate, and adapt to emerging environmental challenges.

The process is illustrated in the diagram below:



Integration into Enterprise Risk Profile

The climate risk events identified through the above assessment are analysed to determine their impact on the value chain and potential financial implications. Climate-related risks are integrated into PGB’s multi-disciplinary company-wide risk management framework through the Enterprise Risk Profile (ERP), which further includes other key risk areas such as Project Delivery, HSSE, Cybersecurity, Legal and Regulatory, and Financial risks. By incorporating climate-related risks into the PGB Enterprise Risk Profile, we ensure leadership oversight and strategic resource allocation for mitigation efforts. Periodic reviews are conducted to maintain a proactive approach in addressing emerging risks and refining mitigation strategies.

As part of our commitment to strengthening climate resilience, we actively participate in PETRONAS’ ongoing climate vulnerability assessments across various business locations in Malaysia, covering the following:

- Climate transition risks and physical risks**
- Potential scenarios for legislation, technological development and market conditions**
- Our own operations, suppliers and customer activities**
- The expected useful life of the assets and activities**

SAFEGUARD THE ENVIRONMENT



Climate Change Management

Summary of Our Transition Risks, Opportunities and Associated Impacts

PGB is committed to understanding and addressing the diverse impacts of climate change on our operations. Through comprehensive internal assessments, we have identified key risks, including increased operational costs due to rising compliance expenses and regulatory changes, alongside opportunities such as innovations in sustainable practices. Financial implications have also been carefully evaluated, considering both immediate and long-term effects.





To mitigate these risks, we have developed targeted action plans that strengthen resilience while enabling us to capitalise on growth opportunities, ensuring sustainable development and long-term value creation for our stakeholders.

By assessing all aspects of risk, including the effectiveness of existing mitigation measures, we assign each risk a Nett Rating, which reflects the potential level of risk that remains after mitigation efforts are considered.

Risk Category	Potential Impact on PGB Operations	Financial Implication	Mitigation	Opportunities
Policy and Legal				
Introduction of climate-related policies and regulations leading to increased operating costs	Potential negative impact on profit margins due to non-recovery of compliance costs	Increased OPEX due to higher compliance costs	To execute Carbon Tax assessments, including proposing recommendations and way forward to the Board Upskill personnel to develop robust mitigation through Carbon Footprint Assessments (CFA), with training included in the Training Matrix	Secure incentives and cost recovery for low-carbon projects from the molecule owner and stakeholder Explore cost optimisation strategies and leverage CFAs to prioritise investments aligned with our Sustainability Lenses
Nett Rating  HIGH				
Non-compliance with regulatory disclosure requirements leading to reputation impact and loss of stakeholder trust	Potential exclusion from Bursa Malaysia Sustainability Index (such as FTSE4Good) and loss of investor trust in sustainability efforts	Increased OPEX for adopting specific tools and hiring consultants	Execute an engagement plan with Bursa and/or FTSE4GOOD to stay updated on the latest changes Establish a process for data extraction and disclosure of Scope 3 emissions with third parties	Leverage high-tech measurement tools and digital platforms for improved quantification, monitoring, tracking, and projection, enhancing transparency
Nett Rating  MEDIUM				

SAFEGUARD THE ENVIRONMENT

Climate Change Management

Risk Category	Potential Impact on PGB Operations	Financial Implication	Mitigation	Opportunities
Market				
Limited access to financing and insurance due to extensive ESG requirements from financiers and insurers, leading to higher borrowing and premium costs	High borrowing costs and insurance premiums	Increased cost of capital	Engage continuously with ESG rating agencies, bankers, and insurers (via Group Insurance) to demonstrate PGB's commitment to the sustainability blueprint	Wider financing options from financial institutions, coupled with the implementation of proactive resolution to achieve a strong sustainability index score, contributing to smooth fundraising and facilitating PGB's growth agenda
Nett Rating  LOW				
Shifting demand towards green electricity resulting in lower demand for gas-generated electricity	Potential reduction in utilities revenue	Decreased revenue as shifting customer preferences impact PGB's sales	Execute Solar PV projects for Utilities Kerteh (UK) and Utilities Gebeng (UG)	Promote green electricity as a cleaner, more sustainable energy source
Nett Rating  MEDIUM				
Technology				
Unable to adopt low-carbon and energy-intensive technology to reduce emissions, leading to regulatory non-compliance and increased financial impact	Potential penalties from regulators (such as fines, imprisonment, stop work notices)	Increased costs in terms of CAPEX for technology adoption and potentially higher OPEX due to penalties or business disruptions	Collaborate closely with PD&T to stay updated on the latest technological developments	Work proactively with the parent company and stakeholders to expedite the deployment of low-carbon technologies and innovations
Nett Rating  HIGH				
Reputation				
Increased stakeholder concerns, negative feedback, and perception in view of increasing expectations on climate change	Potential reputational damage (such as social media accusations or allegations of greenwashing)	Increased OPEX for managing stakeholder perceptions	Establish a timeline and execute Scope 3 emissions disclosure assessments	Implement a proactive resolution to achieve a strong sustainability index score, contributing to smooth fundraising and facilitating PGB's growth agenda
Nett Rating  MEDIUM				

SAFEGUARD THE ENVIRONMENT

Climate Change Management

Assessing Transition Risks Through Scenario Analysis

To assess our future climate-related risks and opportunities from a transition perspective, we have adopted two (2) scenarios from the International Energy Agency’s (IEA) World Energy Outlook (WEO) 2023: the IEA Announced Pledges Scenario (APS) and the IEA Stated Policies Scenario (STEPS). Below is a summary of the potential overall implications of these contrasting scenarios for our business:

Low Emission Scenario (IEA Announced Pledges Scenario - APS)

Alignment: Aligned with the below 2°C Paris Agreement Goal.

Assumptions: Full implementation of all global commitments, including Nationally Determined Contributions (NDCs) and net zero targets, by their intended deadlines.

Implications: Higher regulatory risks as Malaysia would need to accelerate its transition to green energy sources, requiring a significant shift towards low-carbon technologies like carbon capture and storage (CCS). Natural gas demand may decline due to the emphasis on renewable energy, increasing the urgency for PGB to decarbonise its operations.



High Emission Scenario (IEA Stated Policies Scenario - STEPS)

Alignment: Current policy environment, focusing on measures already in place or in development, and takes into account the current capacity for clean energy technologies.

Assumptions: Business-as-usual without additional mitigation beyond what has been planned.

Implications: More favourable for PGB, as natural gas is positioned as a greener energy alternative during Malaysia’s gradual transition away from coal. There are opportunities to maintain or expand natural gas infrastructure, particularly in applications where it replaces higher-emission fuels like coal or oil. Regulatory risks are minor under this scenario, with less urgency for decarbonisation compared to APS.



The table below outlines the six (6) key transition risks identified by PGB, categorised according to the TCFD focus areas. Each risk has been assessed for our level of exposure under the APS and STEPS, covering medium to long-term projections from 2030 - 2050.

Risk Category	Impact Description	Risk Level	
		IEA APS 2030 - 2050	IEA STEPS 2030 - 2050
Policy and Legal	Introduction of climate-related policies and regulations leading to increased operating costs	High to Very High	Medium to Medium
	Non-compliance with regulatory disclosure requirements leading to reputation impact and loss of stakeholder trust	High to Very High	Medium to Low
Market	Limited access to financing and insurance due to extensive ESG requirements from financiers and insurers, leading to higher borrowing and premium costs	High to Very High	Medium to Medium
	Shifting demand towards green electricity resulting in lower demand for gas-generated electricity	Low to High	Low to Medium
Technology	Unable to adopt low-carbon and energy-intensive technology to reduce emissions, leading to regulatory non-compliance and increased financial impact	High to High	Low to Low
Reputation	Increased stakeholder concerns, negative feedback, and perception in view of increasing expectations on climate change	High to Very High	Medium to High



SAFEGUARD THE ENVIRONMENT

Climate Change Management

Assessing our Physical Risks

CLIMATE CHANGE VULNERABILITY ASSESSMENT

A joint climate change vulnerability assessment, conducted in collaboration with PETRONAS’ Group Health, Safety, and Environment (GHSE) division, has allowed us to quantify risk ratings for physical climate change. The table below presents the outcomes of this assessment, with medium-term defined as 2030 and long-term as 2050.

The risk scores provided are based on initial assessments and do not factor in existing or future mitigation measures. These findings highlight the importance of climate adaptation strategies, particularly in addressing potential risks from extreme weather events such as floods and storms, as well as the broader implications of failing to act on climate change.

Hazard	Surface Water Flooding		River Flooding		Coastal Flooding		Storminess		Lightning		Marine Sedimentation, Coastal Erosion		Corrosion		Seawater Temperature		Heat		Droughts		Wildfires		Landslides		River Morphology	
	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050	2030	2050
East Coast	20	25	15	15	15	15	25	25	0	0	15	15	20	20	0	0	4	4	4	4	20	20	16	16	4	4
West Coast	8	8	2	2	2	2	2	5	16	16	2	2	3	3	1	1	1	2	16	25	8	8	4	4	3	3
Southern	12	12	3	3	3	3	6	6	0	0	6	6	3	3	0	0	1	2	3	3	6	6	1	1	1	1
Northern	3	3	3	3	0	0	3	3	0	0	0	0	2	2	0	0	2	4	9	12	1	1	1	1	1	1

Risk Level	Exposure	Score	Basis
Very Low		1	<ul style="list-style-type: none"> Adopt PETRONAS risk scoring based on regional risk exposure Offshore facility (RGTSU) is considered as an onshore facility in the assessment The risk level is an initial risk rating which excludes existing or future mitigation
Low		2 to 3	
Medium		4 to 9	
High		10 to 14	
Very High		15 to 25	

In collaboration with PETRONAS Group, we initiated risk assessments to evaluate the physical impacts of climate change on our six (6) key assets: GPK, UK, GPS, UG, RGTP, and RGTSU. The Shared Socio-economic Pathway 2-4.5 climate model, which underpinned the Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report, was selected as the most plausible scenario, representing an intermediary greenhouse gas pathway.

These six (6) assets were assessed against seven (7) critical climate hazards—extreme precipitation, lightning, drought, heatwaves, storm surges, fluvial floods, and pluvial floods. By 2050, these hazards may pose high, very high, or extreme risks to our operations.

To ensure comprehensive outcomes, a prioritisation approach was adopted to validate the results of the risk assessments, followed by site-specific evaluations to confirm identified hazards and conduct detailed vulnerability assessments of critical assets. This process is intended to inform and shape robust adaptation plans. In 2024, site validation was completed for RGTP, with plans to validate the remaining assets in the future.

SAFEGUARD THE ENVIRONMENT

Climate Change Management

Adapting to and Mitigating Physical Risks

We employ the following climate risk mitigation and adaptation strategies to safeguard our operations from extreme weather events:

Flood Preparation and Mitigation



Since completing a drainage system improvement project in 2014, Flood Committees have been established across our locations. These committees are mobilised during the monsoon season (October to December) to implement flood prevention measures and coordinate emergency responses during flood events. Working closely with local authorities such as the Fire and Rescue Department of Malaysia (BOMBA) and the Public Services Department (JPA), these committees assist in evacuating affected areas and provide essential support to impacted families, including flood clean-up efforts.

Protection from Storms



We conduct periodic studies and implement enhancements to strengthen our roofing systems, ensuring their ability to withstand predetermined wind speeds of up to 28 m/s. One (1) key initiative involved replacing the conventional nailing system at the Air Separation Unit (ASU) 2 compressor shelter with an enhanced clipping system, improving the structural integrity of the metal roofing deck and its components.

Additionally, the ASU 2 shelter has been enrolled in the Structure Integrity Management System (SIMS) preventive maintenance programme. This programme includes annual monitoring to preserve the shelter's superstructure integrity. Following an integrity exercise on wind loading, the ASU 2 shelter was confirmed to withstand 40% higher wind loads, affirming its long-term durability.

Corrosion Prevention



We utilise innovative graphene-based technology to protect steel structures from corrosion. This initiative, conducted in collaboration with PETRONAS Research Sdn. Bhd., aims to extend asset lifespans by 5 to 15 years.

Mitigating Coastal Erosion



Breakwaters are deployed as a critical component of our coastal management system, protecting operational sites from tides, currents, waves, and storm surges. Additionally, breakwaters create sheltered spaces for vessel berthing and help mitigate sediment transport within the littoral and basin zones.

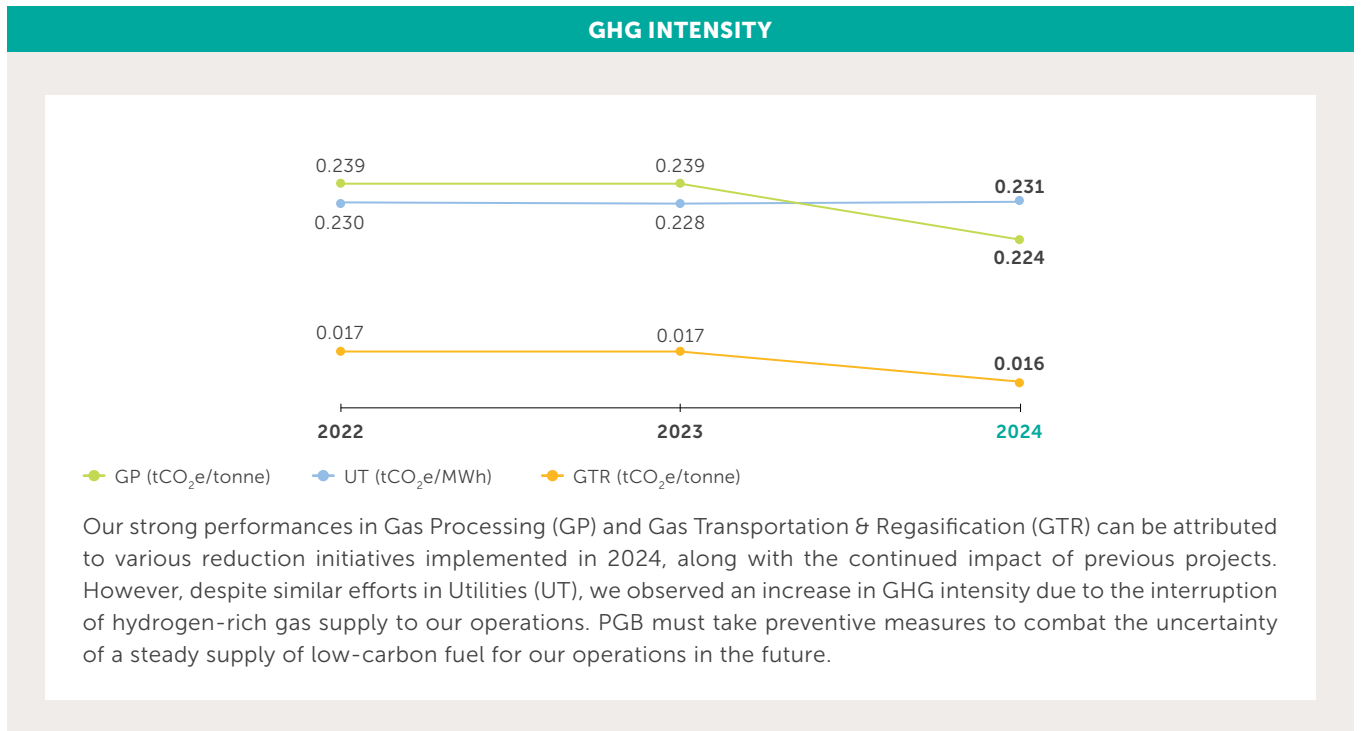
SAFEGUARD THE ENVIRONMENT

Climate Change Management

OUR PERFORMANCE

All methodologies used to quantify our GHG emissions align with internationally recognised standards, including the American Petroleum Institute (API) Compendium of Greenhouse Gas Emissions Methodologies for the Oil and Natural Gas Industries, the GHG Protocol, and the PETRONAS Technical Standard.

For GHG emissions consolidation, we adopt the operational control method rather than the equity share approach, accounting for 100% of emissions from operations under our operational control. As PGB is a non-REITs organisation, emissions data for real estate holdings are not included in our calculations.



SAFEGUARD THE ENVIRONMENT

Climate Change Management

GHG EMISSIONS

GHG Emissions (tCO ₂ e)	2022	2023	2024
Scope 1	5,754,544	5,859,402	6,074,946
Scope 2	49,762	49,165	51,319
Scope 3 - Business Travel	1,499	2,249	2,216
<i>Distance-based</i>			
Air Travel	111	169	44
Car Travel	1,166	1,718	1,708
<i>Spend-based</i>			
Accommodations	204	308	355
Airfare	16	48	35
Car Rental	0	1	67
E-Hailing	2	5	7
Scope 3 - Employee Commuting	-	-	2,839
Total (Scope 1 and 2)	5,804,306	5,908,567	6,126,265
Total (Scope 1, 2 and 3)	5,805,805	5,910,816	6,131,320

Despite our reduction efforts in 2024, an unavoidable increase in upstream CO₂ composition led to a significant spike in inherent emissions. Additionally, higher production levels required us to increase energy consumption to meet customer commitments. However, we remain committed to adapting our operations to sustain value creation at a similar or lower rate of emissions, as reflected in our GHG intensity performance.

Our commitment extends across our value chain as we initiated Scope 3 reporting in 2024, starting with Category 6 and 7 emissions. These emissions are calculated using distance and expenditure data obtained from our Employee Commuting Survey and travel claim system.

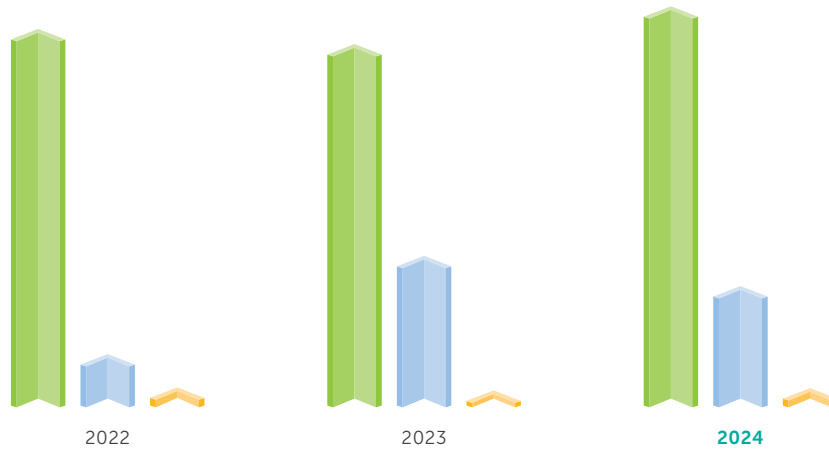
Embarking on this disclosure will allow PGB to evaluate the adequacy and effectiveness of our current efforts as we strategise the management of GHG emissions throughout our value chain. Our current initiatives targeted towards employee commuting and business travel include offering flexible work schedules through work-from-home (WFH) and Compressed Work Week (CWW) initiatives to reduce the frequency of employee commuting, while encouraging hybrid-meetings and carpooling to minimise unnecessary business travels.

SAFEGUARD THE ENVIRONMENT

Climate Change Management

GHG EMISSIONS BY TYPE

Scope 1 Breakdown by GHG Type



Pollutant (tonnes)	2022	2023	2024	Global Warming Potential (GWP) ¹
● CO ₂	5,564,964.84	5,471,599.79	5,752,363.01	1
● CH ₄	6,725.04	14,670.71	14,112.66	25
● N ₂ O	71.49	70.42	70.76	298

Notes:

¹ GWP is a factor describing the radiative forcing impact of one (1) mass-based unit of a given GHG relative to an equivalent unit of carbon dioxide. Hence, the higher the value, the higher the global warming impact of the specific type of GHG. We are following Malaysian reporting standards using the Fourth Assessment Report.

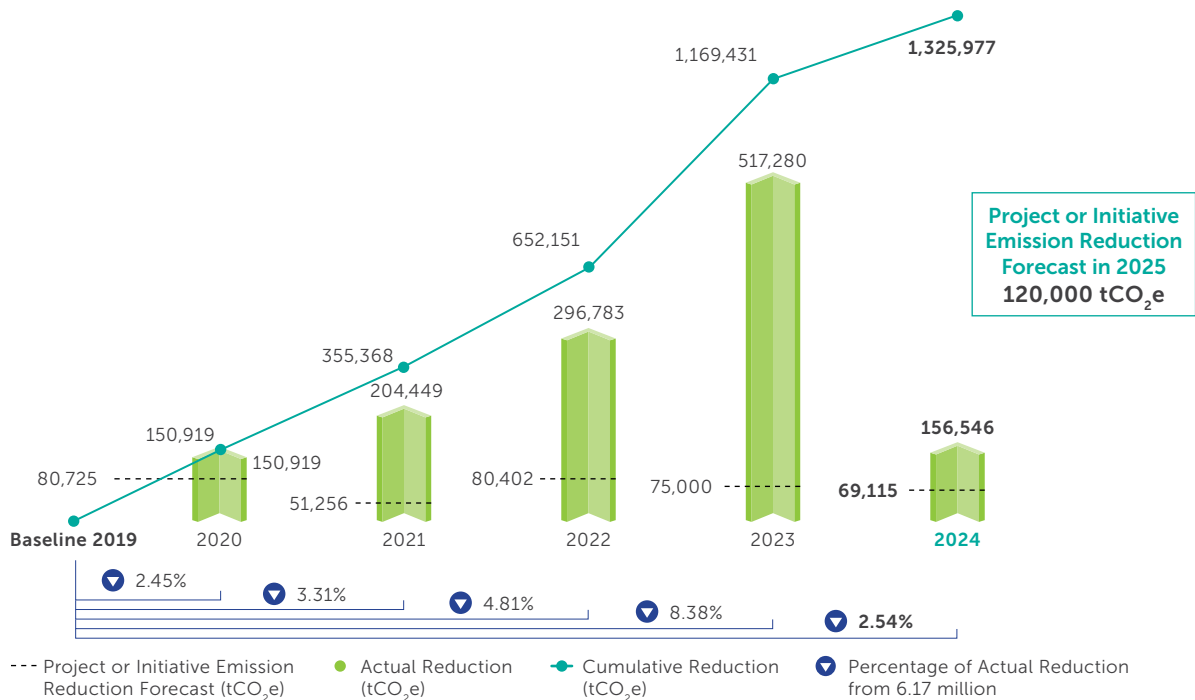
We recorded an increase in CO₂ emissions due to higher CO₂ loading, driven by an increased CO₂ composition in feedgas used as feedstock. Additionally, higher production demand for UT (2.4%) and GP (6.5%) resulted in increased fuel gas consumption.

Methane (CH₄) levels from GPU decreased in 2024 due to reduced flaring, driven by improved plant efficiency and optimisation. In November 2024, two (2) new Acid Gas Oxidiser (AGO) units were commissioned at GPS, representing an RM85 million investment that is expected to reduce methane venting by 10,000 tonnes. However, this reduction was offset by increased CH₄ emissions from GTR, attributed to venting from new pipeline commissioning, pipeline replacement, and maintenance activities.

SAFEGUARD THE ENVIRONMENT

Climate Change Management

GHG EMISSIONS REDUCTION



Our journey towards NZCE is driven by a range of GHG emissions reduction initiatives. In 2024, we successfully completed eight (8) projects targeted at reducing Scope 1 and Scope 2 emissions across our facilities. These included new operational optimisations, such as automating LNG Drain Spool Operations at our Regas Terminal in Sungai Udang, and replicating successful initiatives, including the enhancement of overhead compressors at Gas Processing Plant 6 (GPP6) in Gas Processing Santong, which was initially implemented at GPP5 in 2023. Additionally, we expanded CO₂ sales to our customers, reinforcing our focus on carbon capture and utilisation. In addition to the continuation of previous initiatives, the newly implemented projects in 2024 contributed to reducing emissions by an additional 156,546 tCO₂e.

Projects Contributing to Reduced GHG Emissions

Abatement Strategies	Projects	Reduction (tCO ₂ e)
Eliminate or Reduce Emissions	GPU <ul style="list-style-type: none"> Enhanced Utilisation of GPS Overhead Compressors UG Utility Optimiser Alternative insulation installation for GPS Auxiliary Boiler 	Scope 1: 95,495
	GTR <ul style="list-style-type: none"> Automation Enhancement for LNG Drain Spool Operations at BOG Suction Drum (LASPOOL) – PLNG2 	Scope 1: 10,270
	<ul style="list-style-type: none"> RB211 Bleed-Off Valve (BOV) Optimisation at Segamat Compressor Station Adoption of Gas Transmission Optimisation (GTOP) Solar installation at roof admin building and office, carpark, warehouse (RGTSU) 	Scope 2: 19,61
CO ₂ Capture and Monetise Emissions	GPU <ul style="list-style-type: none"> Increased sales of CO₂ to neighbouring plants 	Scope 1: 50,761
Total Reduction		156,546

SAFEGUARD THE ENVIRONMENT

POLLUTION MANAGEMENT

WHY IT MATTERS

As a key contributor to the nation’s development, we recognise the impact of our choices and are committed to preserving natural environments for generations to come. This includes mitigating pollutants from our operations, minimising our ecological footprint, and conserving finite resources.

In an operating landscape marked by escalating environmental challenges, stakeholders increasingly value organisations that champion responsible practices and support cleaner, healthier environments. Our commitment to environmental protection is therefore not only a moral imperative but also a strategic business decision that aligns with stakeholder expectations and drives sustainable growth.



OUR APPROACH

Driving Environmental Responsibility and Resource Sustainability

We are committed to managing pollution, effluent, and resources responsibly to minimise the environmental impact of our operations. This commitment is guided by the PGB Health, Safety, and Environment (HSE) Policy, developed in alignment with PETRONAS’ HSE Mandatory Control Framework (MCF), ensuring effective management of environmental risks and hazards related to our business activities.

In addition to adhering to our internal guidelines, we align our practices with global and industry standards, including the International Organisation for Standardisation (ISO), Original Equipment Manufacturer (OEM) standards, and other relevant regulatory frameworks. Our resource management efforts are further aligned with UNSDG 12 (Responsible Consumption).

By actively identifying environmental hazards such as pollution, resource depletion, and excessive effluent generation, we work to reduce risks to levels ‘as low as reasonably practicable’ (ALARP). This informed approach allows us to implement continuous measures to protect the environment, prevent pollution, and promote the sustainable use of natural resources, as demonstrated by the ongoing initiatives outlined below.

Element	Initiatives	Impacts
Resources	Monoethylene Glycol (MEG) usage at Industrial Effluent Treatment System (IETS) GPK	Reduce usage of chemicals i.e. MEG in IETS
Pollution	Scheduled Waste Yard Project Upgrading at TSET	Pollution prevention by improving our secondary containment that potentially lead to soil and groundwater contamination
Air Emissions	Continuous Emission Monitoring System (CEMS)	Enables real-time monitoring of air emissions, enabling the prompt identification and addressing of abnormal readings

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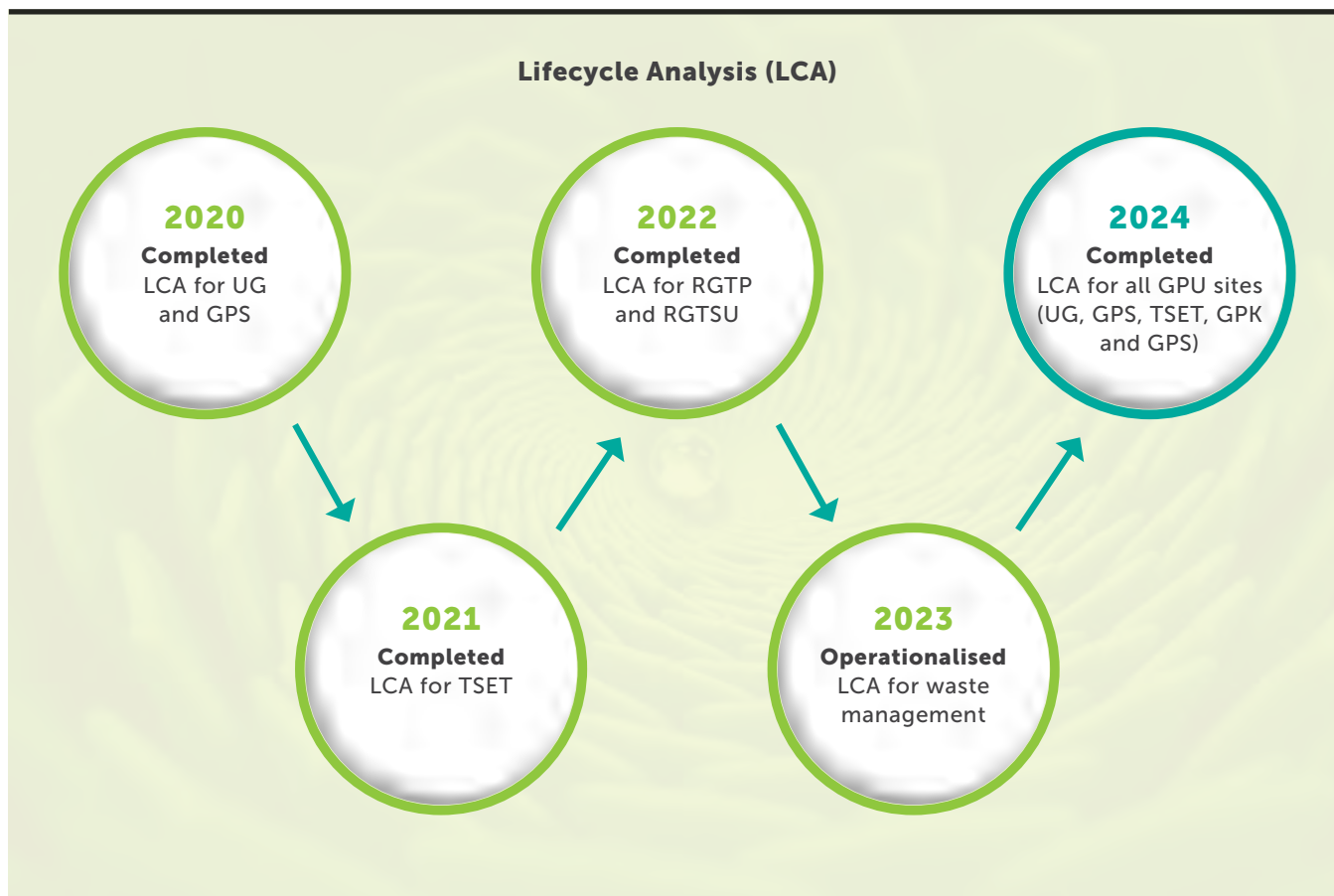
Pollution Management

UTILISING LIFE CYCLE ASSESSMENTS TO ENHANCE OUR PRACTICES

Life Cycle Assessment (LCA) is a critical tool we use to evaluate the environmental footprints of products generated from PGB facilities. Conducted in compliance with ISO 14040/44 standards (Environmental Management: Life Cycle Assessment), these assessments are performed in collaboration with the PETRONAS HSE Product Stewardship and Toxicology team. These insights enable us to identify opportunities for pollution prevention programmes and improve natural resource utilisation.

For 2024, the scope of products included in the assessment is outlined in the table below:

Facility	Products Assessed
GPK and GPS	<ul style="list-style-type: none"> Sales Gas (C1) Ethane (C2) Propane (C3) Butane (C4) Condensate (C5+) CO₂ (only for GPK)
UK and UG	<ul style="list-style-type: none"> Electricity Steam Demineralised Water Cooling Water Raw Water Gaseous N₂ Liquid N₂ Liquid O₂ (UK only) Gaseous O₂ (UK only) Argon (UK only) Instrument Air (UK only)
TSET	<ul style="list-style-type: none"> Propane (C3) Butane (C4) Liquified Petroleum Gas (LPG)



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Pollution Management

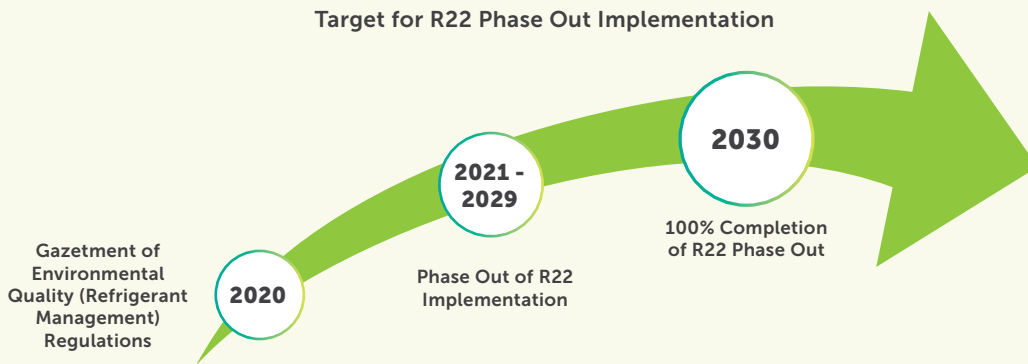
POLLUTION MANAGEMENT

Throughout 2024, we carried out activities aimed at identifying and managing potential hazards stemming from pollution sources or pollution risks associated with sources of pollution.

Ongoing R22 Refrigerant Phase-Out Activities

In alignment with the Environmental Quality (Refrigerant Management) Regulations introduced by the Malaysian Government in 2020, we are actively working to reduce and ultimately eliminate the use of R22 refrigerants. These regulations aim to address environmental sustainability by banning the use of R22 refrigerants in the manufacturing and assembly of air conditioning equipment and setting a target to phase out R22 usage entirely by 2030.

R22 refrigerant is classified as an ozone-depleting substance (ODS), one (1) of the pollutants that significantly affects the environment by breaking down ozone molecules when released into the atmosphere, causing the depletion of the ozone layer.



To ensure compliance in accordance with the act, we have implemented monitoring mechanisms to track and report progress in phasing out R22 refrigerants across our operations. The status as at the end of 2024 is depicted below:

Units Phased Out by End of 2024

GPU

517

Total Units to be Phased Out: 663



GTR

201

Total Units to be Phased Out: 447



Visual Management Improvement at GPS

At GPS, we have enhanced visual management practices to improve the handling and storage of scheduled waste. These enhancements include educational initiatives with our staff and contractors, and using pictorial signage to ensure correct labelling, packaging, and storage of scheduled waste.

Scheduled Waste Yard Projects


We have upgraded the scheduled waste yard at TSET, ensuring it is both efficient and compliant with the Environmental Quality Act 1974 (Scheduled Waste Regulation 2005). This upgrade enhances pollution prevention by improving our secondary containment systems. Additionally, new scheduled waste yards have been constructed at our Gurun, Seremban, and Kerteh Regional Offices to accommodate the storage of scheduled wastes generated across multiple states and regions, including Perlis, Penang, Melaka, and Kerteh.

SAFEGUARD THE ENVIRONMENT


Pollution Management

RESOURCE MANAGEMENT

We aim to optimise our use of finite natural resources that are vital in maintaining the delicate balance of natural ecosystems. The following initiatives are ongoing in this aspect:



Optimisation of Raw Water and Chemical Usage at GPK Cooling Water System
 The GPK Cooling Water System initiative underscores our strategic approach to integrating sustainable water management into maintenance activities. To drive continual improvement, we have prioritised chemical and operational adjustments over resource-intensive flushing and passivation processes. This approach has resulted in a reduction of chemical wastage by 11,622 kg.



Monoethylene Glycol (MEG) usage at Industrial Effluent Treatment System (IETS) GPK
 Integrates the 4R principles into daily operations, fostering effective waste management and conserving chemicals as resources. In 2024, we reused MEG from the decommissioned plant at GPK as an alternative nutrient for biological treatment instead of disposal to scheduled waste treatment facilities.

RAW MATERIALS (CHEMICALS) USAGE (ANNUAL CONSUMPTION IN KG)

Unit	Type of Chemical	2022	2023	2024
Cooling Water	3DT 129	10,780	9,259	9,619
	3DT 304	15,055	10,586	10,187
	N7330	19,557	12,816	14,842
	3DT 199	4,355	3,960	3,290
	GN8020	24,934	24,032	22,605
	NX1103	15,850	14,137	13,867
	NX1104	13,902	12,976	12,697
	SODIUM HYPOCHLORITE	120,201	280,000	229,200
Total		224,634	367,766	316,307
Boiler Water	TriAct 1800	35,449	28,531	30,805
	ELIMINOX	5,369	4,270	4,297
	HTP73614	27,418	20,568	17,850
	NA0660	5,065	5,171	4,888
	OS5300	5,586	5,359	5,121
Total		78,887	63,899	62,961

Note:
Both units are at GPU assets only

SAFEGUARD THE ENVIRONMENT

Pollution Management

EFFLUENT MANAGEMENT

Effluent from our operations is primarily generated at GPK, GPS, UK, and RGTP, and we are committed to managing it responsibly in accordance with the Environmental Quality (Industrial Effluent) Regulations 2009 (IER 2009). Discharges from our IETS are rigorously monitored to ensure compliance with the Department of Environment's (DoE) Standard B limit outlined in the IER 2009.

To uphold these standards, a DoE-certified IETS-competent person conducts regular performance monitoring, with reports submitted via the DoE's Online Environmental Reporting (OER) system. Effluent monitoring is further strengthened through the use of both internal and third-party laboratories, alongside online analysers installed at our facilities, ensuring accurate and reliable oversight of final discharges.

EFFLUENT PERFORMANCE

The table below shows our IETS discharge and Chemical Oxygen Demand (COD) parameters across all plants between 2022 and 2024, alongside the respective locations where this effluent is discharged. Based on the analysis, the results were within the limit as per IER 2009 Standard B.

Plant	Destination	Effluent Quality	2022	2023	2024
● GPK	Sg Kertih	Amount of Effluent Discharge (m ³)	30,340.00	38,853.00	48,928.98
		COD Loading (tonnes)	2.75	3.32	3.46
● GPS	Sg Paka	Amount of Effluent Discharge (m ³)	48,925.00	32,673.00	48,471.22
		COD Loading (tonnes)	1.29	0.98	1.35
● UK	Sg Kertih	Amount of Effluent Discharge (m ³)	792,005.00	705,236.00	915,532.22
		COD Loading (tonnes)	27.24	25.22	32.24
● RGTP	South China Sea	Total Amount of Effluent Discharge (m ³)	0	0	0
		COD Loading (tonnes)	0	0	0
Total		Total Amount of Effluent Discharge (m ³)	871,270.00	776,763.00	1,012,932.42
		COD Loading (tonnes)	31.29	29.52	37.05



SAFEGUARD THE ENVIRONMENT

Pollution Management

EFFLUENT COMPLIANCE

We have established internal limits for specific parameters in GPU’s IETS, which are intentionally set below the Standard B limit outlined in the IER 2009. This proactive approach ensures early alerts for our operations team in the event of any irregularities in the IETS process.

To ensure the quality of receiving water bodies and prevent any adverse impacts on rivers and oceans, we conduct regular monitoring of seawater and river conditions in accordance with the frequency stipulated in our Environmental Management Plan (EMP).

This initiative reflects our commitment to responsible effluent management and has contributed to our consistent record of zero incidents of non-compliance with discharge limits.

Incidents of Non-Compliance Related to Discharge Limits	2022	2023	2024
Total	0	0	0



SAFEGUARD THE ENVIRONMENT

Pollution Management

AIR EMISSIONS MANAGEMENT

To drive proactive air emissions management and ensure compliance with the Environmental Quality (Clean Air) Regulations 2014, we have implemented advanced technologies such as the Continuous Emission Monitoring System (CEMS) and Predictive Emission Monitoring System (PEMS), complemented by periodic air emissions quality monitoring conducted by accredited third-party contractors.

As of 2024, we have installed 35 CEMS units across our equipment, enabling real-time monitoring of air emissions. These systems are integrated with the DoE Integrated Remote and Monitoring System (iREMOTE) platform and supported by our internal GPU Technical Centre (GTC). This robust framework allows us to promptly identify and address any abnormal readings, ensuring effective air emissions management and regulatory compliance.

AIR EMISSIONS PERFORMANCE

As part of our commitment to monitoring air emissions, we measure the quantity of Nitrous Oxide (NOx) and Sulphur Oxides (SOx) loading in our emissions, as well as quantify our Volatile Organic Compound (VOC) Emissions, across all of our facilities.



SOx emissions increased in 2024 compared to 2023 due to higher H₂S and sulphur content in the feed gas supplied to the GPP plant. VOC emissions in 2024 decreased by only 0.2 tonnes compared to 2023, primarily due to a lower frequency of diesel tank refills, which are conducted based on operational requirements.

Note:
 * Data from 2022-2023 has been corrected based on the findings from an independent third-party verification conducted in January 2024.

SAFEGUARD THE ENVIRONMENT

Pollution Management

ENVIRONMENTAL FINES AND PENALTIES

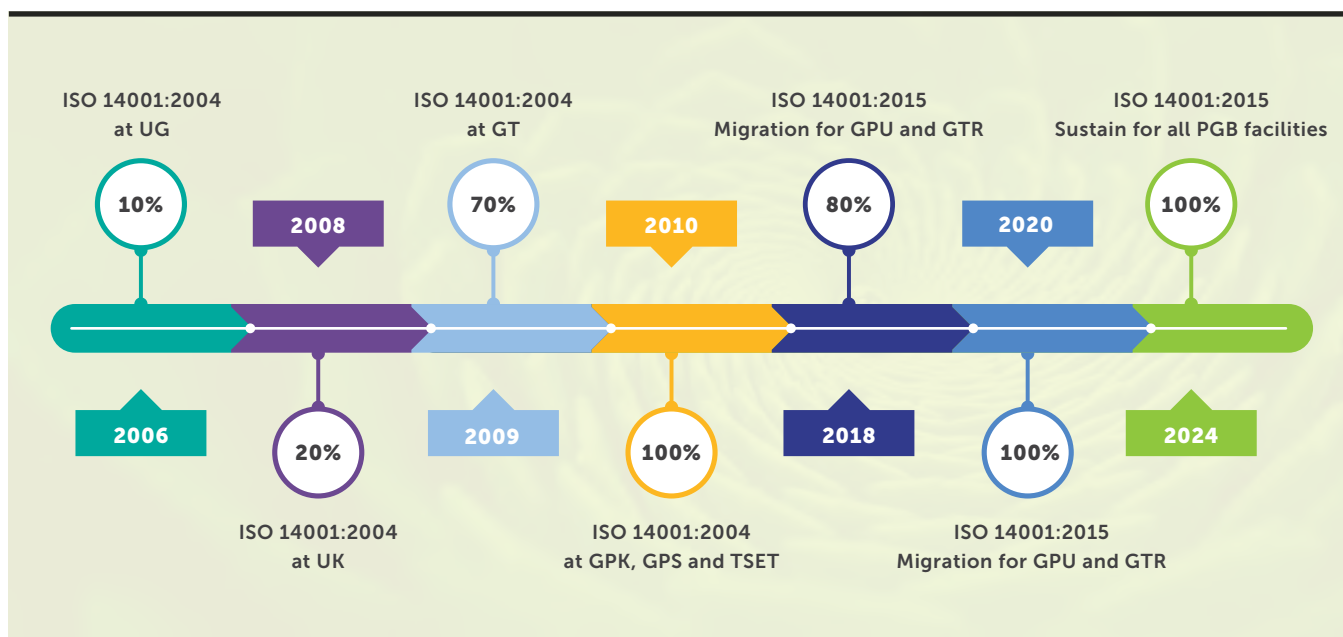
In 2024, we successfully maintained our track record of zero environmental fines and penalties. We remain committed to upholding exemplary standards and consistently delivering practices that go beyond compliance requirements.

	2022	2023	2024
Number of Environmental Fines of Penalties	0	0	0
Total Cost of Environmental Fines (RM)	0	0	0

UPHOLDING GLOBAL ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) CERTIFICATIONS

Our journey with ISO certification began in 2008 when Utilities Gebeng (UG) and Utilities Kerteh (UK) achieved ISO 14001:2004 accreditation. By 2010, this standard was implemented across other facilities, including Gas Processing Kerteh (GPK), Gas Processing Santong (GPS), Tanjung Sulong Export Terminal (TSET), and Gas Transportation (GT). Since then, we have successfully transitioned to the updated ISO 14001:2015 standard.

Today, 100% of our sites, including Regasification Terminal Sungai Udang (RGTSU) and Regasification Terminal Pengerang (RGTP), hold ISO 14001:2015 certification and we are committed to maintaining our accreditation. These certifications underscore our focus on efficient resource utilisation, pollution prevention and waste management in alignment with global sustainability practices. Possession of these accreditations also provide us with a competitive edge within the industry and reputation amongst stakeholders.



Ensuring Compliance Through Environmental Audits

In line with Environmental Impact Assessment (EIA) approval conditions, selected PGB facilities, including RGTSU and RGTP, conduct annual third-party environmental audits. These audits, carried out by DOE-registered auditors, to confirm compliance with environmental regulations.

To further ensure adherence to global standards, these facilities also undergo yearly independent limited assurance audits by SIRIM auditors to maintain ISO 14001:2015 certification. As part of our ongoing commitment to transparency and accuracy, PGB engaged SIRIM in February 2025 to perform independent assurance through data verification, affirming our adherence to environmental best practices.

SAFEGUARD THE ENVIRONMENT

Pollution Management

COLLABORATING FOR ENVIRONMENTAL CONSERVATION

Aligned with our HSE policy on environmental protection, we are committed to partnering with various organisations to deliver impactful CSR initiatives. Over the past year, we continued to collaborate with local authorities and non-governmental organisations (NGOs) to support the preservation and conservation of environmental ecosystems. These efforts not only strengthened relationships between our staff and partners but also encouraged a healthy and active lifestyle among participants. The following are some of the key initiatives in 2024:

Collaborating Partner(s)	Events
Universiti Sultan Zainal Abidin (UniSZA), University Malaysia Terengganu (UMT), DoE Terengganu, Politeknik Kuala Terengganu, TATI UC, Kuala Terengganu City Council (MBKT)	<p>Enviro Fun Walk and Nakudah</p> <p>The NAKUDAH Programme (Nampak, Kutip, and Riadah) at Muzium Negeri Terengganu was a standout feature of the Hari Alam Sekitar Negara (HASN) celebration at the state level in Terengganu, held on 24 October 2024. This programme engaged various community segments and was organised in collaboration with a total of 163 participants from UniSZA, UMT, DoE Terengganu, Politeknik Kuala Terengganu, TATI UC, and other key partners. With the support of the MBKT, which provided transportation services, the programme successfully collected and responsibly disposed of 105 kg of waste.</p>
DoE Terengganu	<p>Environment Awareness during Hari Alam Sekitar Negara (HASN) celebration</p> <p>To instil environmental conservation awareness among students, a colouring contest was held during the HASN celebration on 24 October 2024 at Muzium Negeri Terengganu. Officiated by YB Datuk Razali bin Idris, the program involved 178 students and 20 teachers. As part of our support and strategic partnership with local authorities, we contributed 200 packs of colouring kits to the program.</p>
SMK Kerteh, SMK Rantau PETRONAS dan Politeknik Sultan Mizan Zainal Abidin	<p>4R Campaign Towards Sustainable Environment</p> <p>The "4R Campaign Towards Sustainable Environment" initiative, with the tagline "Sustainable Environment: You have the power to change," is a key part of our company's commitment to environmental sustainability. A total of 150 employees and students participated in this impactful program, demonstrating strong community engagement. A significant aspect of the campaign is encouraging the reuse and recycling of pre-loved items such as clothes, paper, and electronic waste (e-waste). The initiative emphasises rethinking the lifecycle of products, urging individuals to repurpose instead of discarding items.</p> <p>This practice reduces waste, conserves valuable resources, and minimises the energy required for producing new goods. The success of the campaign is evident in the total collection of 6,037 kg of materials, showcasing the remarkable collective impact made by the community's commitment to these sustainable practices. Beyond its environmental benefits, the initiative focuses on educating and raising awareness among the younger generation about the critical need for environmental conservation.</p> <p>Through partnerships with institutions such as the Civil Engineering Department of Politeknik Sultan Mizan Zainal Abidin (PSMZA) in Dungun, SMK Rantau PETRONAS, and SMK Kerteh, we aim to instil a strong sense of environmental responsibility in students. These collaborations provide a platform for students to actively engage in sustainability efforts, empowering them to become informed, proactive leaders in future environmental conservation efforts.</p>

SAFEGUARD THE ENVIRONMENT

WASTE MANAGEMENT



WHY IT MATTERS

As a large-scale operator, PGB generates various types of waste across its facilities, making effective waste management essential to minimising environmental impact and promoting resource efficiency.

By implementing structured waste handling, storage, and disposal practices, we reduce environmental risks, optimise material recovery, and contribute to a circular economy. Our commitment to responsible waste management not only safeguards the environment but also reinforces operational sustainability and regulatory adherence across all our sites.

OUR APPROACH

Adopting a Systematic and Informed Approach

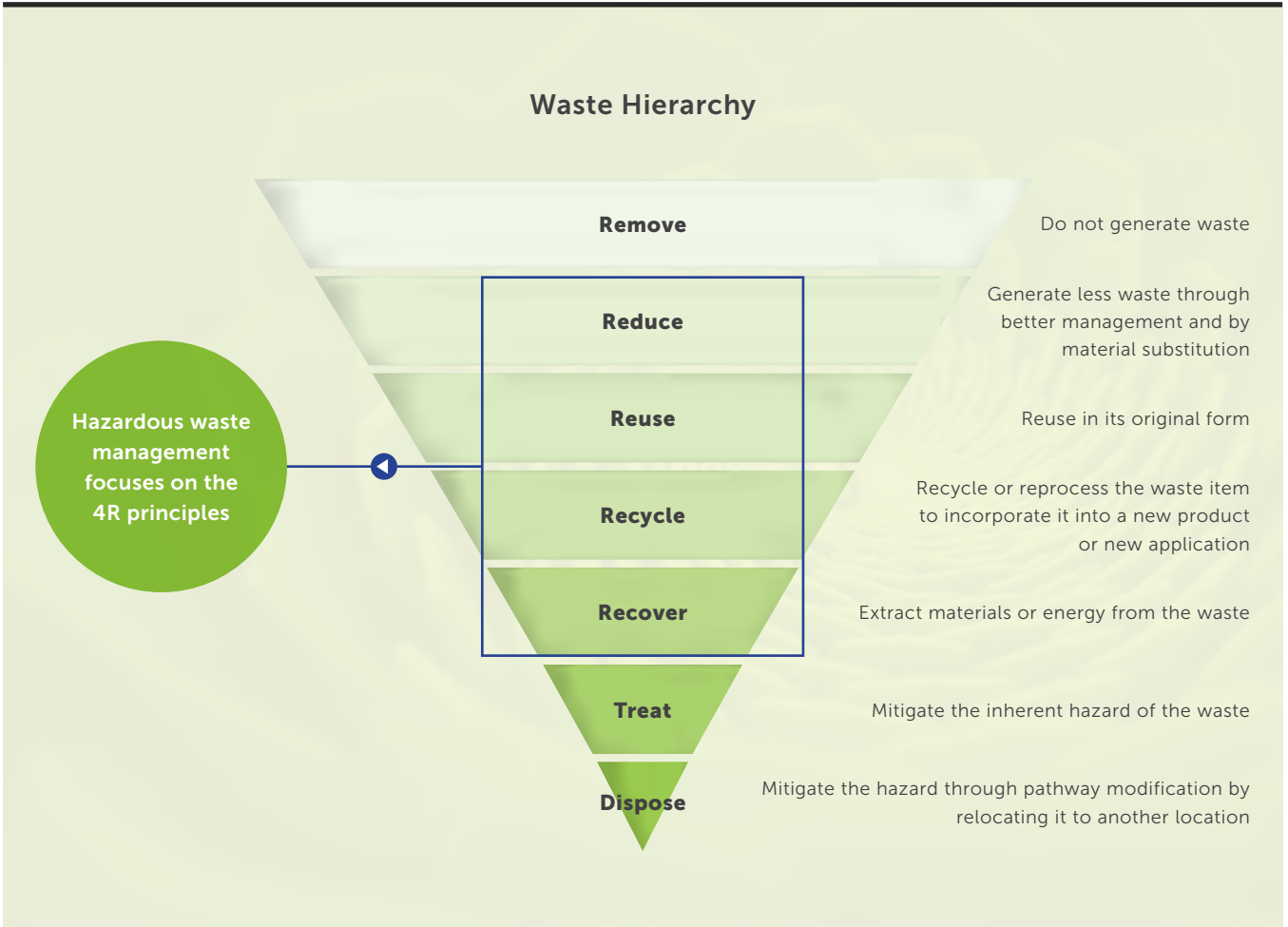
Within our operations, waste is primarily generated from routine activities, operation and maintenance tasks, shutdowns, and turnaround activities, among other sources. Our commitment to responsible waste management has been embedded in our HSE Policy and is further supported by a Waste Management Plan, which is reviewed annually to ensure our practices are updated in accordance with best practices.

Element	Initiatives	Impacts
Hazardous Waste	Recovery of spent lube at recovery premises	Reduce the resources required for the generation of new products
	Reuse containers under "Take Back Programme"	
Non-Hazardous Waste	Food compost initiative	Reduce waste disposed at landfill

SAFEGUARD THE ENVIRONMENT

Waste Management

We employ tailored approaches for handling hazardous and non-hazardous waste, ensuring compliance with the specific requirements of each category. Central to our strategy is the adoption of the Waste Hierarchy concept, which informs our priorities and drives continuous improvements in our waste management practices through the 4R principles of Recover, Recycle, Reuse, and Reduce.



Another cornerstone of our Environmental Management system (EMS) are Environmental Aspect Impact (EAI) assessments, which are fully aligned with and certified under ISO 14001:2015. These live assessments are carried out periodically across routine operations, maintenance activities, projects, and turnarounds, enabling us to identify and address actual and potential waste-related impacts effectively. A sample of waste outputs from our typical business activities is outlined below.

Activities	Inputs	Outputs
Routine Operations (Top Up of Chemicals)	Chemicals (Glycol)	Spent Chemicals (Used Glycol)
Maintenance Activities (Lube Oil Change Out)	Lube Oil	Spent Lube Oil
Turnaround (Catalyst Change Out)	Catalyst	Spent Catalyst

SAFEGUARD THE ENVIRONMENT

Waste Management

Hazardous Waste Management

In our commitment to local authority compliance, we engage licensed waste contractors registered with the Department of Environment (DoE) to handle hazardous waste. This ensures adherence to local environmental regulations at all times. To uphold the highest standards, these contractors undergo third-party assurance review to verify continued compliance with legislative requirements.

We also leverage the Electronic Scheduled Waste Information System (eSWIS), developed by the DoE, to systematically monitor waste-related data from its generation through to treatment and disposal. The adoption of eSWIS streamlines processes and enhances reporting accuracy, supporting our commitment to effective and transparent waste management.

KEY ACTIVITIES TO MANAGE HAZARDOUS WASTE IN 2024

Recovery of Spent Lube Oil



Spent lube oil from PGB facilities is recovered and processed into low-grade oil for use in the automotive and machinery industries. This process involves collecting the used oil, treating it to remove contaminants, and refining it for practical applications. In 2024, a total of 195 MT was sent to recovery facilities, effectively managing waste while reducing the need for new oil production and contributing to environmental conservation.

Reuse of Containers under the "Take-Back Programme"



Aligned with our HSE policy on sustainable resource use, we collaborate with chemical vendors through a container take-back program. With approval from the Department of Environment (DoE), packaging is reused to deliver chemicals until the containers reach the end of their lifespan. This initiative supports waste reduction and promotes a more circular approach to resource utilisation.

Recovery of Spent Activated Carbon



In 2024, a total of 43 MT of spent activated carbon was collected and sent to recovery facilities. After undergoing the filtration and carbonisation process, the activated carbon may be recovered and utilised in various industrial applications that leverage its excellent adsorption properties. It is particularly useful in wastewater treatment plants for removing impurities, contaminants, and odours.

Recovery of Discarded Chemical and Laboratory Waste



Recognising the significant volume of hazardous waste generated, amounting to 653 MT in 2024, we have pursued opportunities to recover discarded chemical and laboratory waste. By segregating waste at the source and analysing its characteristics, we have increased the proportion of chemical and laboratory waste that are recovered instead of disposed. This initiative, spearheaded by the ForcEco team under GPU, was honoured with a bronze award at the *Making Impossible Possible Awards & Convention (MIPAC) 2024*.

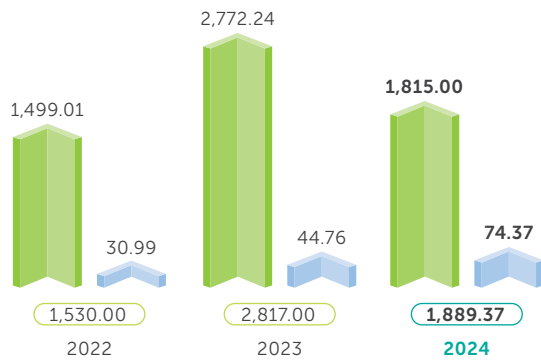
SAFEGUARD THE ENVIRONMENT

Waste Management

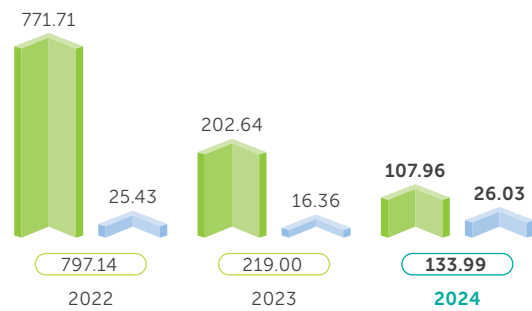
OUR PERFORMANCE

HAZARDOUS WASTE MANAGEMENT

Quantity of Hazardous Waste Generated (MT)



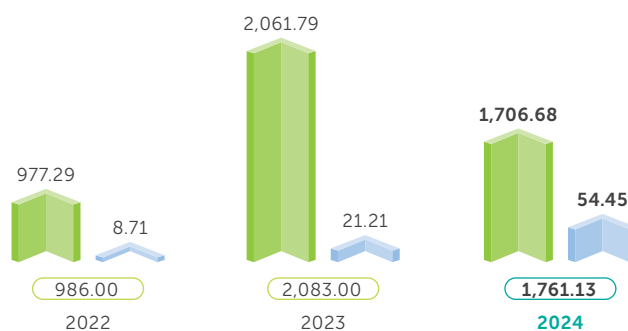
Quantity of Hazardous Waste Disposed (MT)



Hazardous Waste Disposed by Disposal Operations (MT)

Type of Disposal Operation	GPU			GTR		
	2022	2023	2024	2022	2023	2024
Incineration with Energy Recovery	0	0	0	0	0	0
Incineration without Energy Recovery	590.69	191.11	87.39	17.39	14.01	19.30
Secured Landfill	0.60	6.60	0	2.85	1.19	2.92
Other Disposal Operations (Physical Treatment, Solidification)	180.85	4.93	20.57	2.19	1.16	3.81

Quantity Hazardous Waste Diverted from Disposal by 4R Activities-Waste Recycled (MT)



Coverage:

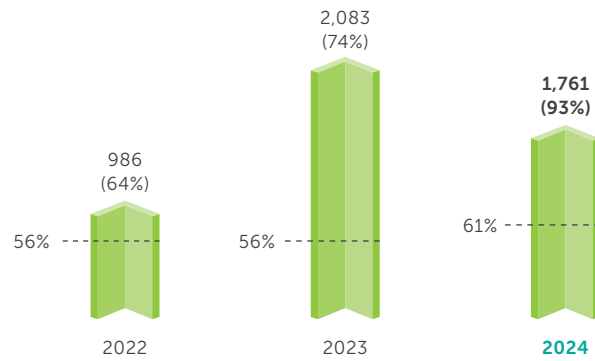
● GPU ● GTR

Type of Recovery Operation	GPU			GTR		
	2022	2023	2024	2022	2023	2024
Preparation for Reuse	0	0	0	0	0	0
Internal Recycling	0	0	0	0	0	0
Other Recovery Options – Third Party Prescribed Premises	977.29	2,061.79	1,706.68	8.71	21.21	54.45

SAFEGUARD THE ENVIRONMENT

Waste Management

Actual Against Target 4R



● Actual --- Target

	2022	2023	2024
Target 4R (%)	56	56	61
Actual 4R (%)	64	74	93
Actual 4R (MT)	986	2,083	1,761

A total of 1,761 MT, equivalent to 93% of our total hazardous waste, was recovered by 4R activities at prescribed premises, exceeding our target of 61% set for 2024.

Notes:

Preliminary target based on FY2022 plan. Increment of 4R % due to new 4R project at our facilities and for long term commitment and sustenance, we established long term contract with 4R company.

SAFEGUARD THE ENVIRONMENT

Waste Management

Alongside our focus on hazardous waste management, we are equally committed to the responsible handling of non-hazardous waste. To this end, we have launched several key initiatives designed to prevent waste generation and effectively manage its significant impacts. Many of these efforts involve partnering with other companies to amplify the overall impact.

Food Waste Compost During Turnaround at Utilities Kertih

As part of our commitment to minimising waste and adopting sustainable practices, we have successfully expanded the food waste composting programme that was piloted at Regas Terminal Pengerang (RGTP) to Utilities Kertih during the NGU3 turnaround.



This initiative exemplifies our commitment to reducing landfill strain while nurturing our environment. Transforming food waste into nutrient-rich compost not only prevents wastage but also enhances soil quality. Through our dedication to composting, we are not merely reducing food waste but creating a valuable resource that improves land fertility. To date, UK has collected 140 kg of compost.

GPU Free Market at Dewan Sivik Kertih

On 1 April 2024, the GPU Free Market 2024 held at Dewan Sivik Kertih. This charity program aims to contribute to deserving recipients and create awareness among GPU staff about recycling practices, encouraging them to adopt these habits for a better future. Under the Community Wellbeing and Development focus area, PGB is committed to reaching out to communities and establishing positive relationships with those living near our site. This initiative also contributes to PETRONAS' Sustainability Lenses of Positive Social Impact.



Organised by the GPU Social Bureau, the GPU Free Market aims to share the 'Barakah' of Ramadhan and Aidilfitri by donating new and preloved items to the underprivileged community. The program also seeks to raise awareness among GPU staff about recycling practices and encourage them to adopt these habits for a sustainable future. During the event, a total of 5,000 pairs of clothes, pants, scarves, and shoes were collected. Additionally, items like books, toys, and kitchen utensils were donated by GPU staff to the deserving communities. This initiative highlights the dedication of GPU staff to supporting the community and promoting recycling for a greener, cleaner, and more sustainable future.

4R (Reduce, Reuse, Recycle, Recover) Campaign

Our dedicated recycling campaign aims to improve waste management and domestic waste handling practices while raising recycling awareness among our workforce. We are collaborating with various concession and waste recycling companies, including SWM Environment Sdn. Bhd., Alam Flora, and Klang Waste Care. Additionally, seeing the significant success of our collaboration with the AWIE Metal recycling centre in Terengganu to recycle waste from our GPK and GPS during turnaround or shutdown activities, we have extended the initiative to the UK plant during normal operations. In 2024, the UK plant contributed 1,213 kg of recycled waste.



Food Waste Compost Programme at GTR and Collaboration with UiTM on Tanah Subur Pintar Program

GTR has also launched a Food Waste Compost Program to repurpose food waste by converting it into nutrient-rich compost. In collaboration with UiTM, PGB – GTR initiated the Tanah Subur Pintar Program that promotes sustainable agriculture using smart composting techniques. GTR supplies food waste-derived compost to UiTM, supporting research on improving soil health and reducing reliance on chemical fertilisers. The programme will be continued in 2025, further including workshops, awareness campaigns and CSR activities to encourage responsible food waste management.

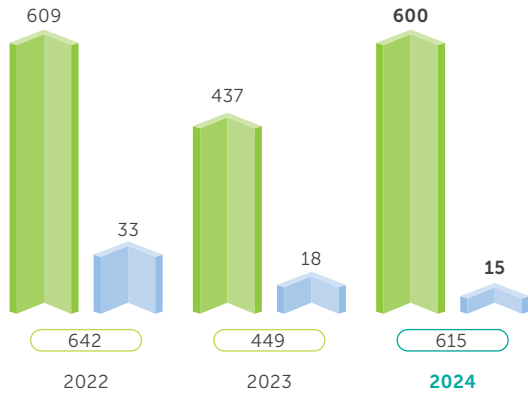


SAFEGUARD THE ENVIRONMENT

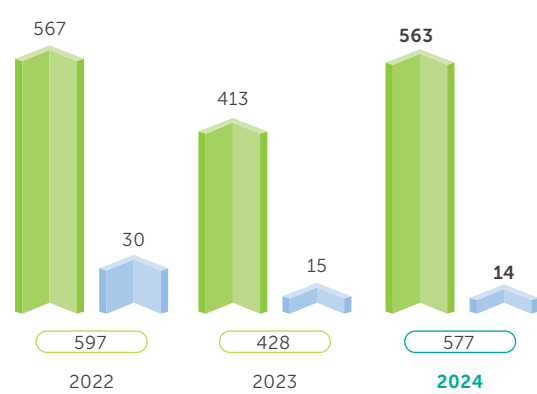
Waste Management

NON-HAZARDOUS WASTE MANAGEMENT

Quantity of Non-Hazardous Waste Generated (MT)



Quantity of Non-Hazardous Waste Disposed (MT)



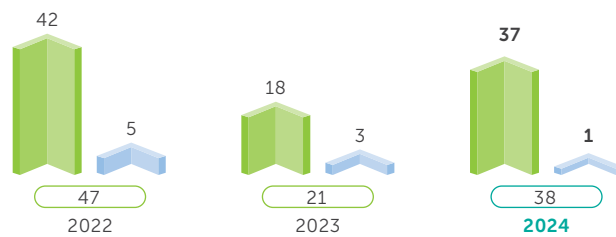
Coverage:

- GPU
- GTR

Non-Hazardous Waste Disposed by Disposal Operations (MT)

Type of Disposal Operation	GPU			GTR		
	2022	2023	2024	2022	2023	2024
Incineration with Energy Recovery	0	0	0	0	0	0
Incineration without Energy Recovery	0	0	0	0	0	0
Landfill	567	413	563	30	15	14
Other Disposal Operations	0	0	0	0	0	0

Quantity Non-Hazardous Waste Diverted from Disposal-Waste Recycled (MT)



Coverage:

- GPU
- GTR

Type of Recovery Operation	GPU			GTR		
	2022	2023	2024	2022	2023	2024
Preparation for Reuse	0	0	0	0	0	0
Recycling	42	18	37	5	3	1
Other Recovery Options	0	0	0	0	0	0

SAFEGUARD THE ENVIRONMENT

Waste Management

TOTAL OF HAZARDOUS WASTE AND NON-HAZARDOUS WASTE (MT)

	2022	2023	2024
Total Waste Generated	2,172.00	3,266.00	2,504.56
Total Waste Diverted from Disposal (4R)	1,033.00	2,104.00	1,799.13
Total Waste Directed to Disposal	1,394.74	647.00	710.99



SAFEGUARD THE ENVIRONMENT

WATER MANAGEMENT



WHY IT MATTERS

The global challenge of water scarcity impacts public health, sanitation, agriculture, and economic development, emphasising the need for sustainable water management. As a critical resource increasingly strained by rapid development and rising global temperatures, we prioritise the integration of water conservation practices and strategies at all levels of decision-making and operational management.

These efforts contribute to preserving water resources for future generations while building resilient systems capable of withstanding the escalating pressures of climate change and population growth.

OUR APPROACH

Robust Standards to Drive Sustainable Water Practices

Our efforts to safeguard the environment and promote the sustainable use of natural resources is upheld through our Health, Safety, and Environment (HSE) Policy, which guides the implementation of comprehensive measures for reducing water usage, enhancing water efficiency and addressing water-related issues responsibly.

To ensure responsible water management and efficient resource utilisation, we adhere to the PETRONAS Guidelines on Water Practices (WAPS) and the Technical Standard (PTS) for Wastewater and Water Management. These standards cover key areas such as cooling water systems, ion exchange processes, reverse osmosis, electrode ionisation, steam generation, and condensate water management. They also provide detailed procedures for sludge handling, wastewater treatment and discharge, and water recycling.

Our sites adhere to the PTS and our GPU sites have established robust water management plans aligned with its requirements. These include condensate return systems and brine reverse osmosis facilities, alongside detailed water recycling frameworks, to ensure efficient and sustainable water practices.

SAFEGUARD THE ENVIRONMENT

Water Management

Our Water Sources and Usage

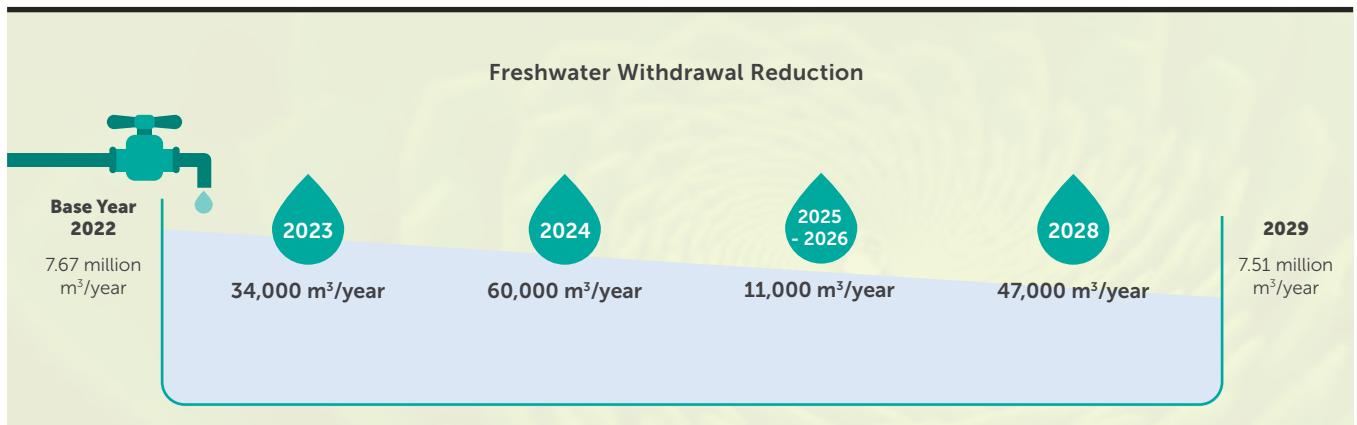
Our primary freshwater supply comes from municipal potable water, which supports the majority of our operations. At our regasification terminals, RGTSU and RGTP, seawater is utilised as a medium to heat LNG and convert it back into its gaseous state for commercial use. To protect marine ecosystems, we have systematic procedures in place to monitor and regulate the temperature of discharged seawater, ensuring it remains at optimal levels for marine life.

Water consumption or withdrawal is not required for powering our facilities, as electricity generation is exclusively supported by gas turbines and rooftop solar panels.

PGB Water Roadmap

To reinforce our commitment to conserving natural resources, we have established the PGB Water Roadmap for the period 2023 to 2028, using 2022 data as the baseline to drive continuous improvements. The roadmap outlines staggered targets for reducing water withdrawal annually, which will be driven by various initiatives and innovative solutions.

With total freshwater withdrawal recorded at 7.67 million m³ per year in 2022, the roadmap targets a gradual reduction to 7.51 million m³ per year by 2029. Additionally, it sets a specific reduction target for freshwater withdrawal in water-stressed regions, aiming for a decrease of 43,800 m³ per year by 2028.



Stringent Water Management

We have implemented innovative initiatives to reduce freshwater withdrawal and improve water efficiency. These efforts include optimising our operations to improve the cycle of concentration in the boiler water system, as well as identifying and rectifying water and steam leaks within the pipeline infrastructure, alongside other water recycling and conservation measures.

Additionally, we have adopted robust wastewater management processes to ensure regulatory compliance and minimise environmental impact. A key focus is the systematic monitoring of Chemical Oxygen Demand (COD) in wastewater prior to discharge. Elevated COD levels indicate organic pollutants that can deplete oxygen in receiving water bodies, posing risks to aquatic ecosystems. By proactively managing COD levels, we ensure adherence to environmental standards while protecting aquatic life.

Beyond COD, we monitor additional critical parameters such as temperature, ammonia, free residuals, and pH. This ensures all treated wastewater complies with the Level 3 requirements of the PTS for Wastewater Management and the Standard B limits set under the Environmental Quality (Industrial Effluent) Regulations 2009 (IER 2009).

Treated wastewater is responsibly discharged into open water bodies, such as rivers and seas, to mitigate ecological risks that could arise from discharge into enclosed water bodies. Monitoring of these receiving water bodies is conducted regularly as specified in our Environmental Management Plan (EMP), incorporating risk assessments to evaluate and address potential environmental impacts.

SAFEGUARD THE ENVIRONMENT

Water Management

OUR PERFORMANCE

<p>Saved 66,500 m³ in freshwater withdrawal from our water reduction initiatives</p>	<p>Successfully maintained operations within the set water intensity limit</p>	<p>Recorded zero fines and incidents of non-compliance</p>
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Freshwater Withdrawals

In 2024, we recorded a total water withdrawal of 8.00 million m³, compared to 8.26 million m³ in 2023, reflecting a 3.15% decrease in our water withdrawal activities. This change in water usage can be attributed to several key factors:

- GPU implemented a range of initiatives and innovative solutions to enhance water reduction efforts.
- GPU optimised plant operations by improving the cycle of concentration and minimising water blowdown.
- GPU actively rectified water and steam loss in primary containment under the Fantastic Four+ (F4+) programme.
- GPU recorded fewer plant shutdowns in 2024, resulting in a decrease in maintenance activities that require water.

Municipal Freshwater Withdrawal ¹ by Location (million m ³)	2022	2023	2024
GTR	0.38	0.63	0.43
GPU	7.77	7.63	7.57
Total	8.15	8.26	8.00

Water Withdrawal ¹ by Source (million m ³)	2022	2023	2024
Surface Water from Rivers, Lakes, Natural Ponds	0	0	0
Groundwater from Wells, Boreholes	0	0	0
Used Quarry Water Collected in the Quarry	0	0	0
Municipal Potable Water	8.15	8.26	8.00
External Wastewater (Recycled Condensate Water)	1.73	1.95	3.39
Harvested Rainwater	0.000254	0.000254	0.000028
Sea Water, Water Extracted from the Sea or Ocean	128	109	125
Total	136.15	117.26	133.00

Note:
¹ Water withdrawal represents the total amount of water withdrawn from surface water or groundwater sources

SAFEGUARD THE ENVIRONMENT

Water Management

Freshwater Intensity

GP Freshwater Intensity (m ³ /tonne production)	2022	2023	2024
Q1	0.2098	0.1975	0.2037
Q2	0.1908	0.2107	0.1791
Q3	0.2271	0.2205	0.2063
Q4	0.2164	0.1851	0.1981
Total Average Per Year	0.2099	0.2024	0.1968
Limit or Target	0.2890	0.2890	0.2890

UT Freshwater Intensity (m ³ /tonne production)	2022	2023	2024
Q1	0.4035	0.4262	0.4588
Q2	0.4434	0.4730	0.3769
Q3	0.4636	0.4418	0.3946
Q4	0.4131	0.4593	0.4752
Total Average Per Year	0.4305	0.4503	0.4264
Limit or Target	0.4710	0.5200	0.5200

Water Discharge

Water Discharge by Location (million m ³)	2022	2023	2024
Ocean Total Discharge	128.00	109.00	125.00
Surface Water Total Discharge	3.50	4.15	2.99
Subsurface or Well Total Discharge	0	0	0
Off-site Water Treatment Total Discharge	0	0	0
Beneficial or Other Use Total Discharge	0	0	0
Total	131.50	113.15	127.99

Water Consumption

Water Consumption at All Sites by Source (million m ³)	2022	2023	2024
Total	4.063	4.168	4.543

Note:

GPU recorded an increase in water consumption due to the commissioning of the New Instrument Air Compressor Project (NICE), which involved the installation of a new cooling water system at GPS to support business needs.

Water Consumption Intensity for Power Generation

Power Generation Water Withdrawal or Consumption Intensity by Source (m ³ /MWh)	2022	2023	2024
Total	0	0	0

SAFEGUARD THE ENVIRONMENT

Water Management

Water Withdrawal and Consumption at Water Stressed Regions

Two (2) of our assets, the UG operational site and the RGTSU site office, are located in water-stressed regions. We continue to explore measures and initiatives for optimising water use to safeguard our access to clean water.

Costing Category	Cost (RM)	Remarks
Costs associated with water-related risks	0	No cost was incurred for purchasing and transporting water as there was no recurrence of the water crisis within the area in 2024.
Investment in R&D to mitigate water related risks	296,995	Investments were made in an Environmental Resource Management (ERM) study to develop an action plan for Gebeng Utilities, focusing on site location, water sources, and infrastructure. The study addresses key challenges such as water availability, quality, and infrastructure constraints. Its outcomes include recommendations to enhance water management through improved water use efficiency, rainwater harvesting, and the development of a stormwater management plan.

Water withdrawal at UG increased due to plant shutdowns by customers, which led to a reduction in condensate return. This limitation in water reuse within the system necessitated higher raw water intake to compensate for the shortfall. Additionally, maintenance activities at the Brine Reverse Osmosis (BRO) unit further contributed to the increase in water withdrawal.

During the maintenance period, the BRO unit was unable to process and recover water for reuse, reducing the overall water recycling capacity. As a result, a greater volume of raw water was required to meet operational demands, leading to an overall increase in water withdrawal.

	2022	2023	2024
UG			
Water Withdrawal (million m ³)	1.217	1.238	1.283
Water Consumption (million m ³)	0.758	0.720	0.693
Percentage of Water Consumption (%)	62	58	54
RGTSU			
Water Withdrawal (million m ³)	0.002	0.001	0.002
Water Consumption (million m ³)	0.000	0.000	0.000
Percentage of Water Consumption (%)	0	0	0
Total	1.977	1.959	1.978

Note:

The percentage of water consumption is calculated based on the amount of water consumed out of the total water withdrawn

Wastewater Discharge and Chemical Oxygen Demand (COD) Loading

Wastewater Discharge by Location (m ³)	2022	2023	2024
GPK (Sg Kertih)	30,339.93	38,853.38	48,928.98
GPS (Sg Paka)	48,997.00	32,673.17	48,471.22
UK (Sg Kertih) ¹	792,004.51	705,232.14	915,532.22

Wastewater COD Loading (tonnes)	2022	2023	2024
GPK	2.75	3.32	3.46
GPS	1.29	0.98	1.35
UK	27.24	25.22	32.24²
RGTP	0.00	0.00	0.00

Notes:

¹ The wastewater discharge from UK is inclusive of the treated effluent from other plants (customers)

² A higher COD discharge was recorded in 2024 due to the onboarding of an additional customer (PCC Oxyalkylates Malaysia Sdn Bhd)

SAFEGUARD THE ENVIRONMENT

Water Management

Water Conservation Initiatives in 2024

Our facilities across various business segments have implemented tailored water management approaches to align with operational needs and sustainability goals. The execution of strategic initiatives throughout PGB has resulted in a 66,500 m³ per year reduction in freshwater withdrawal. This achievement underscores our commitment to conserving natural resources and meeting the water reduction targets set for 2024.

Reduction of blowdown via improvement in water cycle of concentration throughout the company facilities

UK and UG conducted studies and implemented operational adjustments to optimise the cycle of concentration in their boiler systems, increasing it from 10 to 35 cycles. This optimisation reduced boiler blowdown, leading to lower water consumption. In 2023, UK further enhanced its cycle of concentration from 35 to 40 cycles, achieving an annual water savings of 30,344 m³ across both plants.

Building on this progress, in 2024, GPK adopted the same approach, optimising its boiler system by increasing the cycle of concentration from 80 to 120 cycles, resulting in water savings of 56,000 m³ per year. These improvements highlight our continued commitment to sustainable water management and operational efficiency.

Collaboration with UK and UG customers to recycle condensate water

UK and UG, which produce a diverse range of industrial gases and products, have sustained collaborative efforts with neighbouring customers to recycle condensate water. This practice involves repurchasing and reusing condensate from the steam supplied, serving as an input for boiler operations. In 2024, this initiative led to the recycling of 3.392 million m³ of water at both UK and UG facilities, further reinforcing our focus on sustainable resource management.

Rainwater Harvesting

The GPK Green Scheduled Waste Yard integrates Rain Harvesting Technology, enabling the collection and storage of up to 3,000 litres of clean rainwater for daily operations. In 2024, we successfully utilised a total of 28,800 litres of harvested rainwater, reducing our reliance on conventional water supplies and promoting resource conservation.

Optimisation of Raw Water Usage

The GPK Cooling Water System also enabled sustainable water management during plant shutdown activities by eliminating the high raw water consumption typically required for flushing and passivation during start-up. Through process optimisation, the initiative avoided the use of 10,500m³ of raw water during shutdown in 2024. This approach not only conserved critical water resources but also demonstrated our ability to operate sustainably while upholding system reliability and compliance.

Water and Steam Leak Rectification

In line with our commitment to sustainability and resource conservation, we regularly identify and address water and steam leaks across our operations. A total of 25 Loss of Primary Containment (LOPC) water leaks and 48 steam leaks have been identified, with 8 water leaks (32% rectification rate) and 24 steam leaks (50% rectification rate) successfully resolved. These rectifications have reduced water wastage and improved the efficiency of our systems.

MOVING FORWARD

Looking ahead, we will prioritise preserving the integrity of our assets to optimise water use and minimise wastage. We aim to enhance monitoring systems, allocate additional resources for leak rectifications, and train employees to proactively manage leaks, targeting a better rectification rate in 2025. By continually embracing innovation and setting industry benchmarks, we strive to conserve resources and protect the environment for future generations.

SAFEGUARD THE ENVIRONMENT

BIODIVERSITY MANAGEMENT



WHY IT MATTERS

A significant portion of the planet's biodiversity is increasingly at risk due to various human-driven pressures, including pollution, overexploitation of species, deforestation, and other activities that disrupt natural habitats and ecological balance. As a leader within the energy sector, we recognise the critical importance of adopting sustainable development practices to safeguard biodiversity and ensure the long-term health of ecosystems.

Overlooking biodiversity considerations in our corporate strategy could result in operational inefficiencies, heightened public and regulatory scrutiny, and significant reputational risks. Aligned with our broader climate objectives, we remain steadfast in our commitment to biodiversity conservation, prioritising the protection of endangered species and the ecosystems that sustain them within the regions where we operate.

OUR APPROACH

Enhancing Our Position on Nature and Biodiversity

We are proud to play our part in advancing in the nation's nature and biodiversity agenda. Our biodiversity management efforts are fully aligned with PETRONAS' Position on Nature and Biodiversity, which represents a cornerstone of the broader Group's Sustainability Approach and NZCE 2050 ambitions.



SAFEGUARD THE ENVIRONMENT

Biodiversity Management

The Position outlines five (5) key focus areas, each supported by specific commitments to ensure our operations and new business ventures uphold the respect, preservation, and enhancement of biodiversity and natural ecosystems, in line with global best practices.

ESTABLISHING VOLUNTARY EXCLUSION ZONES	<ul style="list-style-type: none"> We recognise the Outstanding Universal Values¹ of UNESCO World Heritage Sites and pledge to refrain from undertaking new operations or projects within these sites.
MANAGING NATURE AND BIODIVERSITY RISKS	<ul style="list-style-type: none"> Understanding the importance of nature and biodiversity conservation, we aim to minimise or eliminate any potential adverse impacts from our ongoing and future operations. Our goal is to achieve a net positive impact (NPI) on nature and biodiversity for new projects or developments in Protected Areas² and Key Biodiversity Areas². For existing sites, we will conduct site-specific inventories of critical biodiversity features and assess the need for additional conservation measures based on a risk-based approach. A Biodiversity Action Plan (BAP) will be developed for new operations and projects in Protected Areas² and Key Biodiversity Areas². For ongoing operations, a BAP will be developed for sites determined as 'high risk' or 'very high risk' through Biodiversity and Ecosystem Services (BES) risk profiling.
PROMOTING NATURE AND BIODIVERSITY THROUGH PARTNERSHIPS AND COLLABORATIONS	<ul style="list-style-type: none"> We actively support and engage in initiatives focused on preserving and restoring nature and biodiversity, particularly in protecting endangered species and habitats across Malaysia and our operating regions. We collaborate with international organisations to align our conservation initiatives with global best practices, frameworks, and standards. To drive collective action to prevent biodiversity loss, we prioritise fostering goodwill and strengthening collaborative relationships with local communities and non-profit organisations in our development areas. Additionally, we regularly partner with government and local authorities, including district offices, regulatory bodies and agencies such as the Department of Environment (DoE), state drainage and irrigation authorities, forestry and education departments, municipal councils, state assemblies, and police departments, to drive joint conservation efforts. Further details on these collaborations are available in the "Our Performance" section of this topic.
SUPPORTING PUBLIC POLICY TO PROTECT NATURE AND BIODIVERSITY	<ul style="list-style-type: none"> We support PETRONAS' endorsement of the Post-2020 Global Biodiversity Framework (GBF) and Malaysia's National Policy on Biological Diversity (NPBD). We are committed to aligning our operations with the policies and objectives of the countries in which we operate.
PROMOTING HIGH-QUALITY NATURE-BASED CLIMATE SOLUTIONS	<ul style="list-style-type: none"> We acknowledge the vital role that balanced and biodiverse ecosystems play in offsetting carbon emissions and contributing to our NZCE 2050 goal. We will ensure that the nature-based climate solutions we adopt adhere to internationally recognised certification standards.

Notes:

¹ Outstanding Universal Values means cultural and/or natural significance which is so exceptional so as to transcend national boundaries and to be of common importance for present and future generations of humanity (Source: UNESCO World Heritage Centre – Compendium).

² Will be determined using BES risk profiling and analysis by leveraging the Integrated Biodiversity Assessment Tool (IBAT) (Source: UNESCO World Heritage Centre - Compendium).

SAFEGUARD THE ENVIRONMENT

Biodiversity Management

Our Scope of Biodiversity and Ecosystem Assessments

Aligned with PETRONAS Group’s conservation initiatives, we are dedicated to minimising the impact of our operations on biodiversity while preserving the benefits provided by surrounding ecosystems.

To support these efforts, we employ a comprehensive range of assessments and tools to analyse sites, identify risks, and implement effective mitigation measures.

▶ **Biodiversity and Ecosystem Services (BES) Surveys**

BES Surveys help us identify and evaluate the diversity of flora and fauna at ecological sites and assess the importance of these ecosystems in terms of their contribution to human well-being and the surrounding natural systems.

▶ **Biodiversity and Ecosystem Services Risk Assessments (BESRA) and BES Risk Profiling**

Using internationally recognised methodologies, BESRAs and BES Risk Profiling activities provide enhanced insights into the potential impacts of undertaking operations at assessed sites. These allow us to determine the likelihood and severity of risks to biodiversity and natural ecosystems, developing risk ratings for each site.

▶ **Integrated Biodiversity Assessment Tool (IBAT)**

The IBAT provides access to a centralised global dataset on biodiversity, including information on Protected Areas, Key Biodiversity Areas, and the IUCN Red List of Threatened Species. This tool allows us to adopt fact-based decision-making to manage biodiversity risks and impacts effectively.

▶ **Environmental Impact Assessments (EIA)**

Environmental Impact Assessments (EIAs) are integral to our approach to sustainable operations, providing a comprehensive evaluation of the ecological impacts of our business activities in the areas where we operate, including impacts on flora, fauna and natural ecosystems.

▶ **Environmental Aspect and Impact (EAI)**

An environmental aspect refers to any element of an organisation’s activities, products, or services that can impact the environment, while an environmental impact is the outcome of that aspect. In alignment with the ISO 14001:2015 framework, we adopt an Environmental Aspect and Impact (EAI) approach to evaluate the environmental risks and opportunities associated with our operations.

Utilising BES Surveys to Understand Surrounding Ecosystems

Our assessments are conducted within the PETRONAS Petroleum Industry Complex (PPIC) operations area, encompassing all PETRONAS onshore and offshore facilities in Malaysia, including our GPK, GPS, TSET, and UK facilities located in Kertih, Terengganu. A follow-up survey was conducted in 2022 by an external party, Chemsain Konsultant Sdn. Bhd. alongside a subject matter expert from Universiti Sains Malaysia (USM), to provide an updated perspective on the ecosystem’s health and identify changes in the area over the course of a decade.

The survey assessed the four (4) main habitats in the area, which include hill forests, coastal sandy beaches, freshwater swamps, man-made lakes, mangroves and riparian areas of Sungai Kertih. It also examined various flora and fauna groups such as fish, avifauna (birds), herpetofauna (reptiles and amphibians) and arthropods (insects). Additionally, the results from the 2022 BES survey were compared against the Biodiversity Blueprint developed by the Malaysian Nature Society (MNS) in 2010.



SAFEGUARD THE ENVIRONMENT

Biodiversity Management

Despite differences in survey methodologies and coverage areas between the 2010 and 2022 surveys, the 2022 survey indicated an overall increase in species groups around the facilities. The findings are summarised in the following table:

	2010	2022
Plants	190	286
Mammals	7	10
Fish (Swamp and Man-Made)	17	18
Fish (Sg Kertih)	9	13
Avifauna (Birds)	123	122
Total	346	449

Based on the BES Survey, we have crafted a directory of all species identified across our PPIC, listed in the following table.

Group	Species
 Flora	Kelat Jambu Laut, Rhizophora Spp, Nypha Fruticans (Nipah), Balau Laut, Willow, Asam Kumbang, Rotan Kerai Laut, Serdang, Calamus Ericanceus (Rotan Bakau), Keruing Gasing, Akasia, Semalu Gajah
 Snakes	Mangrove Snake, Painted Bronzeback, Striped Bronzeback, Puff-Faced Water Snake, King Cobra, Equatorial Spitting Cobra, Dog-Faced Water Snake
 Mammals	Long-Tailed Macaque, Dusky Leaf Monkey, White-Handed Gibbon, Smooth-Coated Otter
 Frogs	Sunda Toad, Butler's Rice Frog, Dark-Sided Chorus Frog, Banded Bullfrog, Greenback Frog, Three-Striped Frog, Common Treefrog, Malayan Slender Treefrog, Dark-Eared Treefrog, Grass Frog, Rough-Sided Frog
 Birds	Lesser Adjutant, Grey-Headed Fish Eagle, Great Hornbill, Red-Crowned Barbet, Red-Throated Barbet, Mangrove Pitta, Green Iora, Black-Bellied Malkoha, Rhinoceros, Hornbill
 Lizards	Spiny-Tailed House Gecko, Flat-Tailed House Gecko, Many-Lined Sun Skink, Garden-Fenced Lizard, Green-Crested Lizard, Water Monitor, Common Butterfly Lizard, Clouded Monitor
 Turtles	Southern River Terrapin, Painted Terrapin, Southeast Asian Box Turtle, Malayan Softshell Turtle
 Crocodiles	Estuarine Crocodile
 Freshwater Fish	Puyu, Tahi Lalat, Haruan, Tilapia, Keli Kayu, Bulan, Selat, Sepilai, Sepat Siam, Sepat Kedah, Keli Bunga, Pelampong Jaring, Seluang, Tembok Tebing, Patung, Julung
 Seawater Fish	Serinding, Tahi Lalat, Duri, Kapas, Ubi, Bawal Bulan, Belanak, Bolos, Buntal, Julung, Gerut, Siakap, Kekek, Udang, Ketam Nipah, Udang Galah
 Insects	Bees, Wasps, Ants, Flies, Mosquitoes, Beetles, Weevils, Moth, Bugs, Treehoppers, Cicadas, Termites, Cockroaches, Dragonflies, Damselflies, Mantids, Butterflies, Grasshopper, Katydid, Cricket, Caddisflies, Barkflies, Earwig, Lacewings

SAFEGUARD THE ENVIRONMENT

Biodiversity Management

Conducting BESRAs and BES Risk Profiling to Identify Risk Potential

Recognising the diverse ecosystems surrounding our operations, as highlighted in the 2010 BES Survey, a BESRA was conducted for PPIC in 2018, covering key operations in the region. The assessment indicated that PPIC presents a low to moderate risk to BES. The biodiversity data collected during this process will serve as baseline information for future assessments.

Building on this, a Biodiversity and Ecosystem Services (BES) risk profiling exercise was undertaken in 2020 for all PETRONAS onshore and offshore facilities in Malaysia, including sites within PPIC. Although located outside a protected area, PPIC was assigned a medium risk rating due to its scale and operational complexity, which increase the likelihood of environmental pollution potentially impacting vital riverine, marine, and coastal ecosystems, as well as nearby communities. This medium risk rating was also applied to the GPK, GPS, TSET, and UK sites within PPIC.

Separately, the UG site in Pahang received a medium risk rating owing to its proximity to protected forest reserve areas. Despite the medium risk classification, a BAP is not required under PETRONAS' Biodiversity Positioning guidelines. Concurrently, BES risk matrices were developed using the PETRONAS HSE Matrix and the "Good Practices for Biodiversity Inclusive Impact Assessment and Management Planning" document.

The table below outlines the risk likelihoods and severity levels across our operational sites:

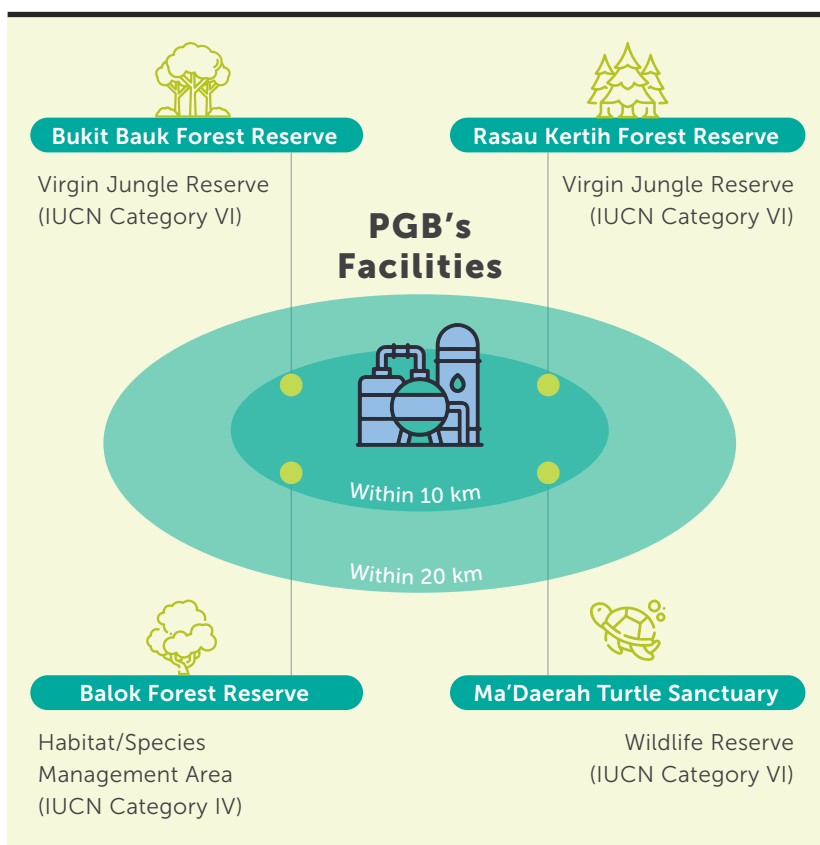
Facility or Asset	Likelihood	Severity	Risk Rating	Justification
PPIC Facilities in Kertih (GPK, GPS, TSET, UK)	(C) Possible	(3) Moderate	C3 Medium	Attributed to PPIC's scale and complexity and potential impact on vulnerable surrounding ecosystems and communities
UG	(C) Possible	(3) Moderate	C3 Medium	Attributed to UG's proximity to protected areas

Leveraging IBAT to Identify Key Biodiversity Areas and Endangered Species

We identify and categorise the significance of KBAs near our operations using the International Union for Conservation of Nature (IUCN)'s Red List of Threatened Species. This globally recognised repository provides the most comprehensive conservation statuses for animal, fungi, and plant species.

The IUCN classifies protected areas based on their ecological significance and conservation objectives. Category VI represents areas that allow sustainable use of natural resources, while Category IV indicates the necessity to protect specific species or habitats with management strategies.

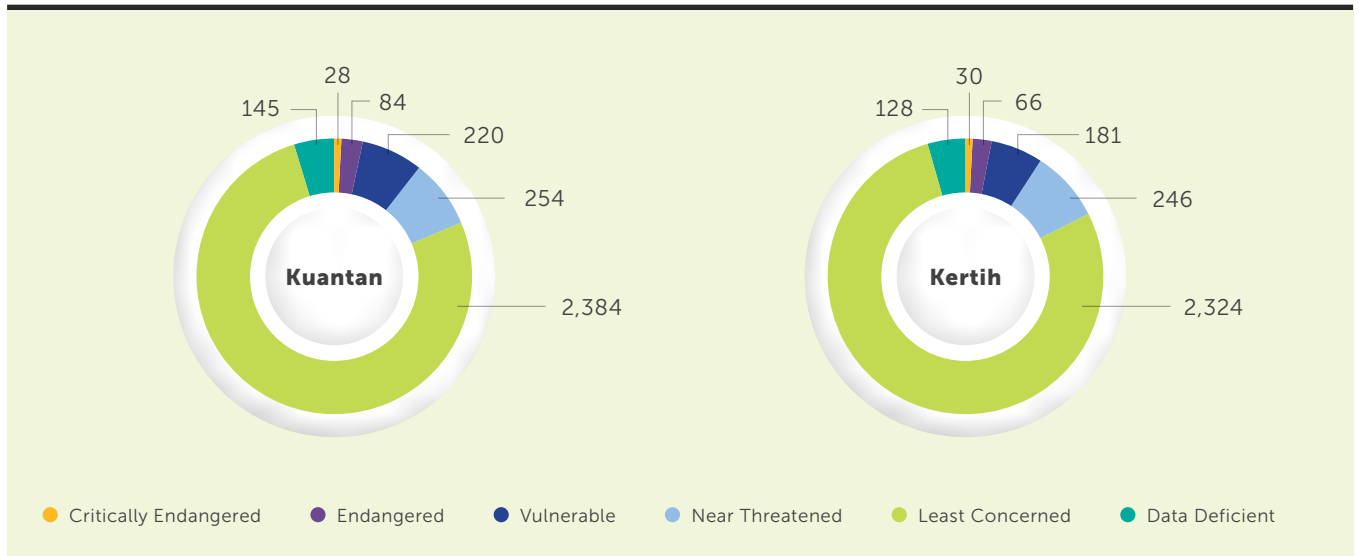
The accompanying graphic highlights the KBAs located within a 10 km to 20 km radius of our Gas Processing and Utilities facilities, along with their corresponding IUCN categories.



SAFEGUARD THE ENVIRONMENT

Biodiversity Management

The IBAT has provided insights into the potential number of flora and fauna species within a 50 km radius of our facilities, along with details on their vulnerability and endangered status, as depicted below:



Ensuring Responsible Growth Through Environmental Impact Assessments

In line with our commitment to biodiversity protection within the framework of economic development, Environmental Impact Assessments (EIAs) are a critical component of our due diligence process for new operations and projects. They play a vital role in evaluating the ecological impact of our activities in the areas where we operate, ensuring responsible and sustainable business practices.

Commissioning of the New PGU-I Replacement Pipeline

The new replacement pipeline, which replaces the aging PGU-I pipeline, was successfully commissioned in 2024. This new 36-inch diameter, 33-kilometer pipeline passes through three (3) key areas in the Kemaman district: Kerteh, Kemasik, and Kijal. Before the project execution, a comprehensive Environmental Impact Assessment (EIA) was conducted to evaluate its potential effects on biodiversity and socioeconomic factors.

Result from EIA study conducted are mentioned below:

Impact on Flora and Fauna

The Right of Way (ROW) clearing and trench excavation typically results in habitat loss and reduced population along the pipeline route. However, in this case, the environmental impact was minimal since most of the alignment had already been cleared, with only small bushes present. As a result, the overall impact on flora and fauna was very limited.

Impact on Socioeconomic

The project's social impact was assessed through stakeholder engagement and perception surveys. Feedback from the local community was overwhelmingly positive, as the project brought aesthetic improvements, enhanced the general landscape, and contributed to a better living environment. Additionally, the project stimulated local economic growth, particularly benefiting businesses in food services, construction material supply, and maintenance support.

The commissioning of this pipeline marks a significant step in infrastructure improvement while ensuring minimal environmental disruption and fostering community development.

SAFEGUARD THE ENVIRONMENT

Biodiversity Management

OUR PERFORMANCE

Biodiversity Protection and Conservation Programmes

In our commitment to upholding the highest standards of corporate citizenship, we actively collaborate with industries, NGOs, national regulators, and local communities to implement biodiversity protection and conservation programmes. These initiatives reflect our dedication to preserving ecosystems and fostering sustainable development.

FLORA AND FAUNA SPECIES HIGHLIGHT



Merawan Siput Jantan
(*Hopea Odorata*)

50



Turtle
(*Chelonia Mydas*)

100



Mangrove
(*Rhizophora Mucronata*)

980

REPLANTING PROGRAMME FOR FLORA

Mangrove Planting

On 15 February 2024, PGB collaborated with Jabatan Perhutanan Negeri Selangor (JPNS) to plant 980 mangrove trees at Hutan Simpan Banjar Utara, Kuala Selangor. The initiative brought together volunteers from various parties, including representatives from PGB, JPNS, and Puspanita, in a collective effort to promote environmental sustainability and biodiversity.

Mangrove Cleaning

This programme was conducted in collaboration with Majlis Bandaraya Pasir Gudang (MBPG) and the community members of Kg. Pasir Gudang Baru. More than 100 volunteers participated in this initiative, including both internal and external volunteers.

The primary objective of this programme was to conserve natural resources for present and future generations by providing communities with opportunities to reduce carbon emissions and mitigate the effects of climate change. Additionally, the engagement helped enhance our reputation, strengthen relationships with stakeholders through social impact initiatives, and promote sustainable livelihoods within local communities.



Funride with Green Growth and Tree Planting

In celebration of Ozone Day at the Terengganu State level, we partnered with the Department of Environment (Regulator Terengganu), Forestry Department of Peninsular Malaysia and local communities to plant 50 Merawan Siput Jantan (*Hopea Odorata*) trees on 24 September 2024 at SMK Balai Besar, Dungun. This initiative promotes biodiversity conservation and healthy lifestyle by encouraging cycling, with tree planting at checkpoints to aid in carbon removal and ecosystem strengthening.

SAFEGUARD THE ENVIRONMENT

Biodiversity Management

FAUNA SPECIES RESTORATION AT MA' DAERAH, TERENGGANU AND PUSAT KONSERVASI PENYU, SEGARI, PERAK

Pusat Santuari Penyu
Ma' Daerah, Terengganu
16 July 2024

100
Participants

Pusat Konservasi Penyu,
Segari, Perak
14 February 2024

35
Participants

Educational Talk of Biodiversity Conservation and Constructing Turtle Nest Protection

This initiative aimed to support sea turtle conservation efforts and promote awareness of marine biodiversity protection, particularly for the Green Turtle (Penyu Agar), one (1) of Malaysia's endangered species. Activities included an awareness briefing to educate participants on the importance of sea turtle conservation, the threats posed by habitat destruction and pollution, and the urgent need for protective measures. Volunteers also engaged in creating protective barriers for turtle nests, monitoring nesting sites, and collecting data on turtle habits and migration patterns.

Beach and Turtle Conservation Area Clean Up

A cleanup initiative focused on preserving sea turtle habitats through beach cleanup, turtle pond maintenance, and direct turtle care. Volunteers removed harmful waste from nesting areas, ensuring a safer environment for turtles and hatchlings. They also cleaned turtle ponds to maintain healthier living conditions for rehabilitated turtles and assisted in scrubbing algae and barnacles from turtle shells. The effort significantly reduced pollution, improved turtle well-being, and raised awareness about marine conservation. Through collective action, such initiatives contribute to the long-term protection of endangered sea turtles and their ecosystems.



Turtle Hatching Release

Turtle hatchlings that have successfully completed their incubation period are separated and taken to the shoreline for release into the sea. The release is carried out in the early morning to ensure the hatchlings' comfort and safety as they return to their natural habitat. A total of 100 Green Turtle (Penyu Agar) hatchlings were successfully released into the sea as part of an ongoing conservation effort to protect endangered marine species. This initiative aimed to improve hatchling survival rates by ensuring a safe journey from the shore to the ocean. Volunteers and conservationists gathered to witness and support the release, emphasising the importance of protecting nesting beaches from pollution and human interference.

MOVING FORWARD

In line with our broader climate protection objectives, we remain committed to advancing biodiversity conservation initiatives to safeguard endangered species and protect natural ecosystems surrounding our operations. Moving forward, our efforts will remain guided by PETRONAS' Position on Nature and Biodiversity, complemented by ongoing biodiversity risk assessments and dedicated conservation programmes.