



**PETRONAS**



# SEIZING SUSTAINABLE OPPORTUNITIES

**PETRONAS GAS BERHAD**

198301006447 (101671-H)

**SUSTAINABILITY REPORT 2021**



**As the world accelerates towards a net zero carbon future, we continue to capitalise on the opportunities to deliver gas as the cleanest fossil fuel option in a responsible and sustainable manner. By leveraging our people's skillsets, operational excellence, technological innovation, and a host of low carbon energy solutions, we are responding to the call for cleaner energy in an effective and resourceful manner. Moving forward, we will continue to look for opportunities to demonstrate our leadership on the Environmental, Social and Governance fronts as we make every effort to support the United Nations 2030 Agenda for Sustainable Development.**

# ABOUT THIS REPORT

At PETRONAS Gas Berhad (PGB or the Group), we advocate transparency to stakeholders, and we are honoured to present this report as the primary source of information on our Group's financial and non-financial performance for 2021. It forms part of our reporting suite which comprises:



## INTEGRATED REPORT

Our Integrated Report is the primary report to our stakeholders, showcasing our value creation proposition and delivery.

## GOVERNANCE & FINANCIAL REPORT

Our Governance and Financial Report provides our comprehensive approach towards protection of value in our activities, together with our financial performance for the year.

## SUSTAINABILITY REPORT

Our Sustainability Report details our efforts and commitment towards creating a sustainable business, positioned for long-term success.

## REGULATIONS COMPLIED

- Bursa Malaysia Main Market Listing Requirements
- Companies Act 2016
- Malaysian Code on Corporate Governance 2021
- Corporate Governance (4<sup>th</sup> Edition) issued by Bursa Malaysia
- Malaysian Financial Reporting Standards
- International Financial Reporting Standards

## SCOPE AND BOUNDARY OF REPORTING

This report covers the primary activities of the Group, our business segments and our subsidiaries as well as joint venture operations, with the aim to address the information requirement of long term investors. We also present information relevant to the way we create value for other key stakeholders, including our employees, customers, government agencies and authorities, suppliers and communities.

This report covers the period from 1 January to 31 December 2021, unless otherwise stated.

## APPROVAL BY THE BOARD

PGB Board of Directors (Board) acknowledges its responsibility in ensuring the integrity of this Integrated Report, which in the Board's opinion address all the issues that are material to the Group's ability to create value and fairly presents the integrated performance of PGB Group. This report has been prepared in accordance with the Value Reporting Foundation's Integrated Reporting Framework.

**ADNAN ZAINOL ABIDIN**  
Chairman

**ABDUL AZIZ OTHMAN**  
Managing Director/Chief Executive Officer



Scan this QR code with your smart device to access our Integrated Report suite.



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## FOREWORD BY THE CHAIRMAN OF THE BOARD RISK COMMITTEE

### Dear Valued Stakeholders,

I am pleased to present this foreword for PETRONAS Gas Berhad's (PGB, the Group or the Company) Sustainability Report 2021 in my capacity as the Chairman of PGB's Board Risk Committee (BRC). Established in 2021, the BRC and Sustainability Working Committee are responsible for overseeing sustainability governance at PGB. Together, we are to weigh up the Group's sustainability considerations, and ensure that all sustainability strategies, priorities and targets, as well as the performance against these targets, are communicated to internal and external stakeholders in a transparent manner. This Sustainability Report, which encapsulates the details of PGB's commitment and efforts towards creating a more sustainable business positioned for long-term success, serves as one of the mediums through which we communicate the Group's sustainability efforts.

In 2021, the COVID-19 pandemic continued to adversely impact people, businesses and economies the world over. Like so many others, PGB's priority was to keep people safe, re-strategise and transform – so as to do things better, and be better, for a better world. As we put in place the measures to deftly navigate the pandemic, I am pleased to say that we were able to make good progress in our sustainability endeavours, meet stakeholder expectations, and continue creating value in a responsible manner.



As the world accelerates towards embracing a low carbon future, gas still maintains its relevance as the cleanest fossil fuel that compliments renewables. Understanding the key role that we play in the energy transition movement as Malaysia's leading gas infrastructure and centralised utilities company, we remain committed to providing solutions for the nation's energy security and delivering on our sustainability commitments. Given our core competency and the strong foundations we have laid in the area of operational excellence, we are well primed to explore and pursue growth opportunities brought about by the energy transition while keeping a keen eye on driving sustainable development.

As PGB ventures forth, we will continue to align with the PETRONAS Group's aspiration to achieve net zero carbon emissions by 2050. To this end, we remain laser-focused on actively developing strategies to reduce our carbon footprint while undertaking resource and waste management efficiently. We trust that our ambitions will continue to be underscored by the year-on-year improvements we are making on the greenhouse gas (GHG) emissions as well as water and energy reduction fronts.

**Understanding the key role that we play in the energy transition movement as Malaysia's leading gas infrastructure and centralised utilities company, we remain committed to providing solutions for the nation's energy security and delivering on our sustainability commitments.**

PGB is committed to upholding strong governance mechanisms and ethical business practices. In all that we do, we want to ensure alignment with the Malaysian Code on Corporate Governance (MCCG) as well as build trust and respect with our stakeholders. In 2021, our Internal Audit Department conducted a review of PGB's sustainability management activities where the findings were presented to the PGB Board Audit Committee. To foster better understanding of five critical legal areas, namely Ethics and Integrity, Data Privacy, Sanctions, Export Control and Competition, all PGB staff are required to attend and pass these training sessions.

We continue to uphold socio-economic development through business sustenance activities as well as through our focus on developing the potential of our employees, partners, and communities. In 2021, we sponsored 15 students for a technicians' programme under Institut Teknologi Petroleum PETRONAS (INSTEP) and continued to participate in vendor development programmes. On top of this, we undertook regular community engagement activities which saw us providing support and organising foodbanks for communities in need during the festive seasons as well as when they were affected by the devastating floods and COVID-19 pandemic. We will continue to ensure the well-being of people as we move forward.

I would like to congratulate the team at PGB for another excellent year of progressing sustainably. I humbly ask that all our stakeholders continue to lend PGB their unstinting support as we passionately pursue sustainable growth.

Even as we have extended our reporting scope and boundary this year as well as highlighted our key achievements, we trust you will find the content in our Sustainability Report 2021 transparent and engaging. Thank you.

**DATUK YEOW KIAN CHAI**

Chairman  
Board Risk Committee

# WHO WE ARE

We are Malaysia's Leading Gas Infrastructure and Centralised Utilities Company and one of the largest companies on the local Exchange in terms of market capitalisation, with core businesses in Gas Processing, Gas Transportation, Regasification and Utilities

# Statement of Purpose

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

## VISION

A Leading Gas Infrastructure and Utilities Company

## MISSION

We are a Business Entity

Gas Infrastructure and Utilities is our Core Business

We Operate Safely, Reliably and Competitively

We Optimise the Gas Value Chain to Maximise Returns for our Stakeholders

## Shared Values



LOYALTY



INTEGRITY



PROFESSIONALISM

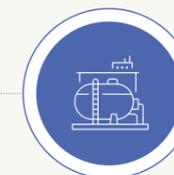


COHESIVENESS

## How We Differentiate Ourselves



Our Profitable and Balanced Business Portfolio



Our Integrated Gas Infrastructure and Utilities Facilities



Our Operational Excellence and Reliable Product Delivery at Competitive Cost



Our High-Performing People

## PETRONAS Cultural Beliefs

### CUSTOMER FOCUSED

I deliver solutions from the customer lens



### INNOVATE NOW

I challenge norms and push boundaries



### BE ENTERPRISING

I seek opportunities and make them happen



### SPEAK UP

I express my views openly



### COURAGE TO ACT

I take action to progress with pace



WHAT WE DO

Business Units & Highlights

### GAS PROCESSING



Process PETRONAS' upstream natural gas from offshore Peninsular Malaysia into salesgas, ethane, propane and butane



Revenue	Gross Profit
<b>RM1.7 billion</b>	<b>RM936 million</b>

### GAS TRANSPORTATION



Transport salesgas to shippers' end-customers through Peninsular Gas Utilisation (PGU) pipeline network



Revenue	Gross Profit
<b>RM1.2 billion</b>	<b>RM699 million</b>

### REGASIFICATION



Receive capacity users' imported Liquefied Natural Gas (LNG), store it in LNG Regasification Terminal Sungai Udang's (RGTSU) floating storage units and LNG Regasification Terminal Pengerang's (RGTP) storage tanks and convert the LNG to salesgas



Revenue	Gross Profit
<b>RM1.4 billion</b>	<b>RM811 million</b>

### UTILITIES



Produce, market and supply electricity, steam, industrial gases and other utility products to various petrochemical businesses and third parties in Kertih and Gebeng



Revenue	Gross Profit
<b>RM1.3 billion</b>	<b>RM274 million</b>

# WHERE WE OPERATE

## OUR PRESENCE

-  **2** Gas Processing Complexes
-  **2** Utilities Complexes
-  **2** LNG Regasification Terminals
-  **2,623** Overall Pipeline Length (KM)
-  **1,750** Total Gas Processing Capacity (MMSCFD)
-  **990** Total LNG Regasification Capacity (MMSCFD)



**LEGENDS**

-  1 Gas Processing Plant
-  2 Compressor Station
-  3 Utilities Plant
-  4 Industry
-  5 Tenaga Nasional Berhad Power Station
-  6 Independent Power Producer Power Station
-  7 Kimanis Power Plant
-  8 Tanjong Sulong Export Terminal
-  9 Offshore LNG Regasification Terminal
-  10 Onshore LNG Regasification Terminal
-  11 Air Separation Unit
-  O&M Services

MAIN PGU PIPELINE	LENGTH (KM)	GAS – IN
PGU I : Kertih – Teluk Kalong	32	1983
PGU II	714	
Sector I : Teluk Kalong – Segamat	265	1991
Sector II : Segamat – Kapar	241	1991
Sector III : Segamat – Plentong	208	1991
PGU III	450	
Sector I : Meru – Lumut	184	1996
Sector II : Lumut – Gurun	130	1996
Sector III : Gurun – Pauh	136	1996
Loop 1 : Kertih – Segamat	266	1996
Loop 2 : Segamat – Meru	228	1991
<b>Total</b>	<b>1,690</b>	

OVERALL PIPELINE	LENGTH (KM)	Complex	GPP	Capacity (MMSCFD)
Main PGU	1,690	GPK	2	250
Lateral	458		3	250
Liquid	373		4	250
Sungai Udang	30	GPS	5	500
Pengerang	72		6	500
<b>Total</b>	<b>2,623</b>	<b>Total</b>		<b>1,750</b>

### UTILITIES PRODUCT CAPACITIES

-   
 Electricity (MW)  
**541**
-   
 Steam (t/h)  
**1,080**
-   
 Oxygen (Nm<sup>3</sup>/h)  
**73,000**
-   
 Nitrogen (Nm<sup>3</sup>/h)  
**100,240**

### PRODUCT CAPACITY

COMPLEX	Electricity (MW)	Steam (t/h)	Oxygen (Nm <sup>3</sup> /h)	Nitrogen (Nm <sup>3</sup> /h)
Utilities Kertih (UK)	160	600	32,000	69,500
Utilities Gebeng (UG)	96	480	-	8,240
Kimanis Power Plant	285	-	-	-
ASU Pengerang	-	-	41,000	22,500
<b>TOTAL</b>	<b>541</b>	<b>1,080</b>	<b>73,000</b>	<b>100,240</b>

LNG REGASIFICATION TERMINAL	CAPACITY (MMSCFD)
Sungai Udang, Melaka	500
Pengerang, Johor	490

### OPERATIONS & MAINTENANCE (O&M) SERVICES

1. Trans Thai-Malaysia (M) Sdn. Bhd. (TTM)
2. Voltage Renewables Sdn. Bhd. (VRSB)

## About Our Sustainability Report

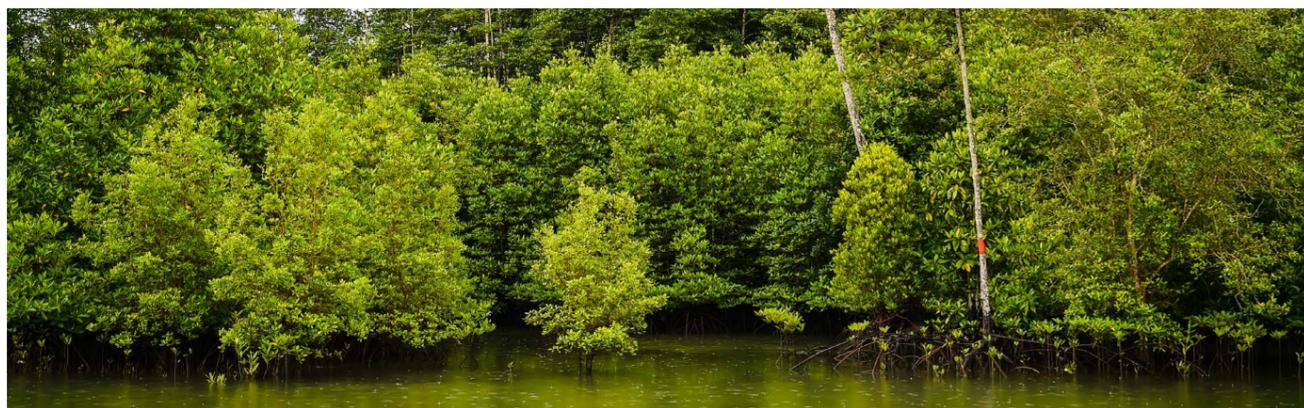
The PGB Group is on a mission to create a sustainable business that is positioned for long-term success. As we set our sights on achieving our economic ambitions and creating long-term value for our shareholders, we also remain committed to balancing this aspiration out with good environmental, societal and governance considerations. Being a conscientious corporate citizen, we believe that we must take responsibility for the impact of our operations on our business ecosystem, society and the environment, as well as be held accountable for our actions. To this end, we are actively managing our commitment to sustainable development on the Value Creation, Environmental, Social and Governance fronts.

This Sustainability Report (Report) serves to highlight the key EESG initiatives undertaken by the Company for the year under review. It aims to demonstrate how we progressively continue to evaluate and make adjustments to our sustainability agenda, in order to achieve our business goals.

### SCOPE AND BOUNDARY

The information in this Report covers the sustainability efforts undertaken by PGB and our subsidiaries throughout the 12-month period covering 1 January to 31 December 2021. We focus on our operations in Malaysia. Insights and feedback from our various stakeholders have been compiled to help us identify, prioritise and address material sustainability issues in our business strategy. We endeavour to report issues that are material to PGB and our stakeholders, as determined through analyses of a wide variety of sources such as Government and PETRONAS policies, benchmarking results, internal documents comprising enterprise risk, internal auditor reports and surveys, as well as media reports and stakeholder engagement sessions.

We acknowledge that there is room for improvement in our disclosures, and are committed to monitoring and reporting on our sustainability activities in a progressive manner each successive year.



### REPORTING FRAMEWORKS

In producing this Report, we are guided by local and international statutory and reporting frameworks, particularly Bursa Malaysia Securities Berhad's (Bursa Malaysia) Sustainability Reporting Guide (2<sup>nd</sup> Edition), the PETRONAS Corporate Sustainability Framework (PCSF), as well as the updated FTSE4Good Bursa Malaysia (F4GBM) Index ESG assessment indicators. We are also guided by the reporting requirements of organisations such as the International Petroleum Industry Environmental Conservation Association (IPIECA) and the Global Reporting Initiative (GRI).

PGB's overall sustainability agenda also aligns with the United Nations' 17 Sustainable Development Goals (UNSDGs) which serve as a "blueprint to achieve a better and more sustainable future for all" by 2030. Today, in line with the stance of the PETRONAS Group, we have adopted seven of the 17 UNSDGs with an additional two that are most relevant to the PGB Group's Sustainability Agenda and its Four Lenses (namely Continued Value Creation, Safeguard the Environment, Positive Social Impact, and Responsible Governance).

These nine UNSDGs are spelt out below:

- UNSDG 3** : Good Health and Well-being
- UNSDG 4** : Quality Education
- UNSDG 7** : Affordable and Clean Energy
- UNSDG 8** : Decent Work and Economic Growth
- UNSDG 9** : Industry, Innovation and Infrastructure
- UNSDG 12** : Responsible Consumption and Production
- UNSDG 13** : Climate Action
- UNSDG 14** : Life Below Water
- UNSDG 15** : Life on Land



This focused alignment with the UNSDGs is helping us to better coordinate our support of the global sustainability agenda whilst strengthening our collaborative efforts with our stakeholders, as we go about our business of creating sustainable value.

### FEEDBACK

We value all feedback and welcome any comments on our reporting. Please direct them to:

Sustainability Reporting Team  
 PETRONAS Gas Berhad  
 Level 50, Tower 1, PETRONAS Twin Towers  
 Kuala Lumpur City Centre  
 50088 Kuala Lumpur  
 Malaysia  
 or email: [pgbstratcomms@petronas.com](mailto:pgbstratcomms@petronas.com)

MD/CEO  
STATEMENT ON SUSTAINABILITY

# CHAMPIONING

## THE AGENDA OF SUSTAINABILITY

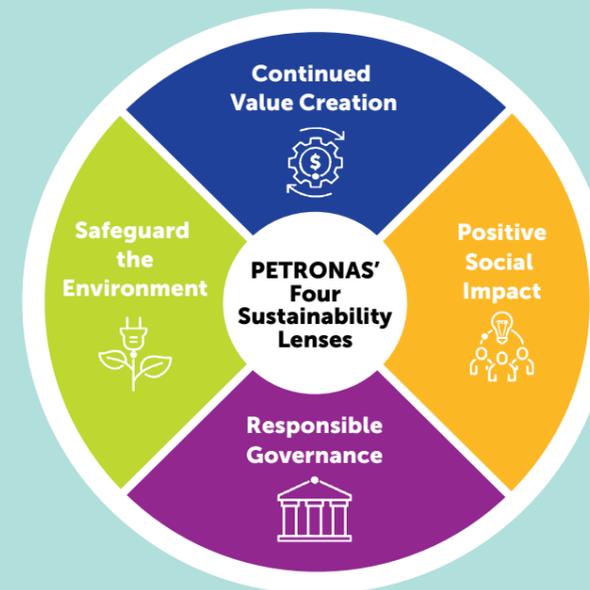
**We are mindful of the need to focus increasingly on responsible business practices and sustainable growth, while we develop tangible stakeholder value, and safeguard the Group's long-term prospects.**

**ABDUL AZIZ OTHMAN**  
Managing Director/Chief Executive Officer



**Dear Valued Stakeholders,**

It is my privilege to present PGB's Sustainability Report 2021 (Report) which underscores the Group's value creation efforts as we champion the agenda of sustainability across our organisation. PGB's commitment to prioritising the agenda of sustainability is evident in the good progress that we continue to make on the Value Creation as well as Environmental, Social and Governance or ESG fronts as we go about our daily business of providing Malaysia a steady, secure, and environmentally friendly gas supply. In supporting PETRONAS role as the custodian of the nation's natural gas resources, we are mindful of the need to focus increasingly on responsible business practices and sustainable growth, while we develop tangible stakeholder value, and safeguard the Group's long-term prospects. This Report aims to encapsulate the positive impact we made in the year under review against the backdrop of the COVID-19 pandemic and the global energy sector's transition to zero carbon emissions by 2050.



**Continued Value Creation**  
Drive long-term business value creation through responsible investments.

**Positive Social Impact**  
Create positive alliances with the communities in which we operate by protecting and adding value to the well-being of employees, partners and society.

**Responsible Governance**  
Safeguard the organisation's commitment through strong governance mechanisms and ethical business practices.

**Safeguard the Environment**  
Collaboratively reduce environmental impact by transitioning to lower carbon energy solutions and deploying innovative operations and technologies.

## MD/CEO STATEMENT ON SUSTAINABILITY

### OUR APPROACH TO SUSTAINABILITY

Acknowledging that we have a responsibility to balance out our economic ambitions with positive social and environmental considerations, we have aligned our sustainability approach with that of the PETRONAS Group. PETRONAS' Sustainability Agenda is the compass that guides us as we set out to deliver energy and solutions that fuel progress in a responsible manner. As we commit to uphold the agenda, our actions are guided by four strategic Sustainability Lenses.

PGB's mandate is to address the agenda in a continual manner by focusing on progressive value generation while giving back to those who have contributed to our success. Everything we do is governed by our Statement of Purpose – "A Progressive Energy and Solutions Partner Enriching Lives for a Sustainable Future" – while our business strategy is guided by a world-class structure and policies that correspond to Bursa Malaysia Securities Berhad's (Bursa Malaysia) requirements, the PETRONAS Corporate Sustainability Framework (PCSF), and the PETRONAS Sustainable Management Guidelines (PSMG). Our disclosures in this Report too are guided by local and international statutory and reporting frameworks, particularly Bursa Malaysia's Sustainability Reporting Guide (2<sup>nd</sup> Edition), the updated F4GBM Index ESG assessment indicators and the reporting requirements of organisations such as the IPIECA and GRI.

To ensure sustainability is embedded in a greater measure within PGB, we have set in place a sustainability governance structure whereby the Board Risk Committee (BRC) and Sustainability Working Committee are responsible for overseeing sustainability governance within the Group. With sustainability driven from the top down, our sustainability endeavours are expected to gain greater momentum and be cascaded down across our organisation in a stronger manner.

### FOCUSED ON CONTINUED VALUE CREATION

Since our inception in September 1983, PGB has always been supportive of governmental policies which have been beneficial to the nation and its citizens. When the Gas Supply (Amended) Act 2016 was gazetted on 9 September 2016 marking the formal liberalisation of the Malaysian gas market, PGB did its part to ensure the successful implementation of the Third-Party Access (TPA) mechanism. By allowing third parties to access gas facilities in the country, this not only provided customers with a host of product and service alternatives, it also contributed positively towards market-based pricing and a more competitive gas industry. Our efforts in supporting the TPA were made evident when we facilitated the successful delivery of the maiden liquefied natural gas (LNG) trial cargo by third parties in October 2019.

The vital role that PGB plays in maintaining the nation's gas supply security cannot be overstated. We continue to build and maintain the infrastructure to support different sources of gas supply. For instance, our regasification terminals in Sungai Udang and Pengerang are well-equipped and ready to accommodate LNG imports to meet the increasing demand in Malaysia, while our extensive pipeline network in Peninsular Malaysia connects these regasification facilities to designated customers.

In 2021, we focused our efforts on honing our operational efficiencies to better manage costs and reduce greenhouse gas (GHG) emissions. In supporting the initiatives to reach small-scale and off-grid customers who are located away from the gas pipeline network, PGB provided the infrastructure for LNG truck loading at RGTP, enabling LNG to be loaded into trucks fitted with cryogenic tanks and delivered to them. The year in review saw us undertaking 928 truck loadings and we are confident that the number will grow in 2022. Both our regasification terminals continued to provide gassing-up and cooling-down (GUCD) services and at the same time provided the infrastructure for re-load services which support PETRONAS' LNG Bunkering Vessel (LBV). We are proud to be part of the solution for LBV services as it promotes greater use of LNG as a cleaner and economically competitive source of energy in the marine industry.

To ensure continued value creation, we are strategically positioning ourselves to expand our co-generation and power generation businesses as well as exploring more areas of opportunity. The broad details of our plans are spelt out in the Value Creation section of this Report.

As the world continues to fast-track the transition to renewable energy sources, the case for gas as a cleaner alternative fuel has become increasingly clear. To this end, PGB will continue to grow and enhance its infrastructure and explore opportunities to contribute significantly to Malaysia's transition to a cleaner future. Even as we prioritise growth, we are focused on creating and delivering value for our shareholders by way of our sustained performance and consistent dividend pay-outs. To sustain our performance, in January 2021, we commissioned a Remote Operation Centre (ROC) at Utilities Kertih (UK) so that we can operate the utilities plant in Gebeng some 100 km away and optimise operating costs. The ROC is supported by the GPU Technical Centre (GTC) and strengthened via continuous improvements in work processes.

### ENSURING POSITIVE SOCIAL IMPACT

As a conscientious corporate citizen, we are mindful of our responsibility to look after the safety and well-being of PGB's employees, business partners, and the communities in which we operate. Through the adoption of a self-learning culture and the appreciation of timely feedback on issues we are always working to raise the bar on our performance and foster a stronger sense of responsibility amongst our people.

Recognising that long-term progress requires strong teamwork and collaboration, we have internalised the PETRONAS Employment Value Proposition (EVP) of Trust, Develop, and Reward in managing our employees. We are also on board with the PETRONAS Global Talent Strategy (GTS), which calls for an educated and multi-disciplinary pool of employees to be in place to support PGB's future growth. We believe that companies must ground themselves in a strong culture of ethics and enforcement to stay focused on delivering sustainable operations and growth. All these initiatives will eventually lead PGB towards its goal of becoming an Empowered Organisation, with an Agile Workforce that supports Diversity and Inclusion (D&I).

Internally, we are working towards strengthening the DNI agenda within our workforce by integrating people from diverse backgrounds and age groups who bring to the table their unique talents, ideas and expertise. I am pleased to report that by the end of 2021, some 40% of our 10 Board members were women Directors. In terms of PGB's overall female population, while the percentage of female employees in our total employee population of 1,671 employees reduced from 13% to 11%, however, the number of women in our Leadership Team (LT) strengthened, with women leaders comprising 44% of the LT.

The notion of caring for the safety and well-being of people is deeply rooted within PGB's Health, Safety, Security and Environment (HSSE) strategy and management activities and is underscored by the Group's Generative HSSE Culture. This culture aims to reproduce transparency and mindfulness amongst our staff, contractors and business associates by incorporating very high safety standards into all aspects of our systems and processes. In setting the bar high by way of process safety for our organisation and people, we are getting them to embrace HSSE as individuals as much as it is a collective responsibility. In 2021, we conducted assurance assessments based on a structured assurance plan for our contractors to ensure our operations and interests were protected against unwanted incidences.



For the year in review, we continued to reach out to communities and support various stakeholders in their fight against the global COVID-19 pandemic. On the employee front, we were able to protect our employees through coordinated vaccination and booster programmes as well as innovative Work-from-Home packages, thereby ensuring a safer working environment and uninterrupted operations. Our efforts extended to making contributions to Quarantine Centres and Vaccination Administration Centres or Pusat Pemberian Vaksin (PPV) in the East Coast region. On top of this, we lent emergency support to Hospital Banting, Selangor by way of contributing towards the cost of much-needed hospital beds at their ICUs during the peak of the pandemic.

We also went on to reach out to several underprivileged and deserving welfare homes in Perak and Kedah, as well as communities affected by disasters. Our efforts to strengthen ties with communities also saw us continuing our ongoing collaboration with the Malaysian Nature Society (MNS) to plant over 9,000 mangrove saplings at Sungai Latoh in Johor. The finer details of these activities can be found in the Positive Social Impact section within this Report.

## MD/CEO STATEMENT ON SUSTAINABILITY

### COMMITTED TO SAFEGUARDING THE ENVIRONMENT

As a responsible steward of the resources that we have been entrusted with, we make every effort to mitigate the impact of our operations on the environment and ensure that natural resources are used sustainably in our operations, products and overall business. With the world facing rising environmental challenges including climate change, increased pollution and waste mismanagement, the depletion of natural resources and biodiversity, as well as heightened regulatory requirements, PGB is committed to playing its part as we see environmental stewardship as both a moral obligation and a business advantage.

To ensure we remain relevant to the marketplace, we continue to be certified under the ISO 14001:2015 Environmental Management System. Through responsible emissions management, we are helping to mitigate global climate change as well as improving our operational costs and efficiencies.

In 2020, the PETRONAS Group set in motion its long-term aspiration of achieving Net Zero Carbon Emissions by 2050 (NZCE 2050). The NZCE 2050 aspiration underscores the PETRONAS Group's ambition to meet higher sustainability goals for the longer term that address stakeholder concerns and support the Paris Agreement. In formalising this aspiration, PETRONAS is not only strengthening the momentum of its climate initiatives but is also ensuring that the businesses under its ambit remain resilient for the long term.

As PGB aligns with PETRONAS's NZCE 2050 aspiration, we have set an emissions cap limit of 5 million tonne CO<sub>2</sub> equivalent (tCO<sub>2</sub>e) throughout the year to be achieved by 2024. Today, we continue to implement our energy efficiency improvement programme under the ambit of our Energy and Loss Management System. I am pleased to report that we are on track towards achieving our goal to achieve first quartile energy performance target by 2022 with an energy index of 97.5 and overall improvements in energy efficiency throughout the operations of PGB's plants.

We have also expanded the scope of our waste minimisation initiative and our activities have shifted from 3R (Reuse, Recycle and Recover) activities to 4R (Reuse, Reduce, Recycle and Recover) activities. In line with the programme's main focus of ensuring that resources are being used sustainably, we have deployed innovative operations and technologies to safeguard the environment.

### UPHOLDING RESPONSIBLE GOVERNANCE

Recognising that good governance translates into good business, PGB is deeply committed to upholding strong ethical and governance practices in every aspect of our business. To demonstrate this, PGB adopted the PETRONAS Integrity Pledge in 2021 where all the Directors, MD/CEO, and all General Managers and above are committed to ensuring that PGB and its subsidiaries do not indulge in any corrupt acts.

We have also adopted PERONAS's Anti-Bribery and Corruption Policy (ABC) policy to reflect our own zero-tolerance stance towards all forms of bribery and corruption. In line with this, we have introduced an awareness and education programme for our employees and management. At the same time, we have developed a Balance of Consequence process in the event that any non-compliance is detected among our employees and partners. On top of this, by stringently adhering to the Group's Code on Business Ethics (CoBE), and all relevant legal and regulatory requirements, we are ensuring that compliance and oversight matters are managed effectively.

In 2021, we rolled out several measures to strengthen internal and external dealings. Our Internal Audit Department, completed 10 audits including a sustainability review to ensure sustainability governance was in place. We established the Investment Steering Committee (ISC), which I chair, to look into investment-related matters, strategies and decision. A host of sustainability-related criteria have been included as part of our investment guidelines during the investment deliberation process to ensure our businesses continue to align with our sustainability agenda.

We have also reiterated our commitment to responsible governance via the establishment of the Board Risk Committee or BRC. The BRC is tasked with overseeing sustainability governance and considering sustainability elements, as well as ensuring PGB's sustainability strategies, priorities and targets, as well as our performance against these targets, are communicated to our internal and external stakeholders in a transparent and consistent manner.

### TOWARDS LONG-TERM, SUSTAINABLE GROWTH

In order for PGB to achieve long-term success, we must build a balanced strategy for our business that can constantly generate value while positioning us for long-term success. Even as all the necessary elements under our four strategic Sustainability Lenses were brought into play in 2021, they have positioned us in a very favourable position moving forward and we will continue to build upon them.

For 2022, the agenda of sustainability will feature more prominently in the Group's strategic undertakings. Recognising the importance of sustainability to our long-term value creation efforts, our leadership is committed to embedding sustainability into our culture, operations and business strategies in a more focussed manner. To this end, a new ESG blueprint and a refreshed sustainability roadmap, among other things, will be developed over 2022 and brought into play in due course.

As we focus on supporting the PETRONAS Agenda and NZCE 2050, we are exploring how best to leverage an outcome-based approach through the Just Transition concept. Just Transition will see us meaningfully participate and affect socioeconomic opportunities through capability building as well as respect for the natural environment and human rights.

As PGB navigates through the emerging business landscape to build upon existing opportunities and explore new ones, we will work on developing effective business strategies to propel us forward in a sustainable manner for the long term. As we do so, I call upon all our stakeholders and partners to lend us their unstinting support and provide your constructive input on the wide range of issues before us, so, together, we can identify market opportunities, concerns, and risks. Rest assured, PGB will endeavour to maximise value creation for the benefit of all our stakeholders.

Thank you for your kind support to PGB.

**ABDUL AZIZ OTHMAN**  
Managing Director/Chief Executive Officer



## OUR SUSTAINABILITY STRATEGY

### ENGAGING OUR STAKEHOLDERS

We continue to engage with our stakeholders in more meaningful ways to help us better understand their needs and interests so we can respond to them and together position ourselves for a sustainable future. We keep them informed about our activities, results, and direction and gather input on their expectations through existing engagement platforms. Each community within our group of stakeholders has its

own set of interests and expectations based on the way they are impacted by our Company. In the list of stakeholder groups provided below, we outline why we engage with them and what we offer them, their key concerns and our responses, as well as the specific platforms that we engage them through.

KEY STAKEHOLDER GROUPS	WHY WE ENGAGE	WHAT WE OFFER	WHAT WE FOCUS ON	OUR RESPONSE	OUR ENGAGEMENT PLATFORMS/FREQUENCY OF ENGAGEMENT
<b>INVESTORS AND FUNDING INSTITUTIONS</b> 	<ul style="list-style-type: none"> <li>To provide access to equity and debt funding</li> <li>To enable liquidity of our shares</li> <li>To ensure fair rating of our shares</li> <li>To initiate open dialogue to better understand and address concerns</li> <li>To strengthen stakeholder confidence in our ability to generate strong financial returns in a responsible manner</li> </ul>	<ul style="list-style-type: none"> <li>Solid investment case and understanding of the business strategy</li> <li>Continued, sustained growth in capital and distributions</li> <li>Assurance that our business activities and decisions are aligned to strategy in creating sustained value</li> <li>Assurance that sustainability and compliance with governance principles are considered and integrated into business strategy</li> <li>Ability to pay interest and repay debt capital</li> </ul>	<ul style="list-style-type: none"> <li>Third Party Access and regulatory risks to business</li> <li>Impact of COVID-19 and Movement Control Order (MCO) on the business</li> <li>Growth strategy</li> <li>Environmental, Social and Governance (ESG) practices</li> </ul>	<ul style="list-style-type: none"> <li>Provision of guided disclosure on developments within the Company, financial performance and progress of growth projects</li> <li>Issuance of PGB quarterly results</li> <li>Continuous engagement with investors and funding institutions</li> <li>Disclosure of ESG practices in the Integrated Report and Sustainability Report</li> </ul>	<ul style="list-style-type: none"> <li>Annual General Meeting (20 April 2021)</li> <li>Quarterly analyst briefing</li> <li>Investor roadshows and conferences</li> <li>One-on-one meetings</li> <li>Site visits</li> <li>PGB website</li> </ul>
<b>CUSTOMERS</b> 	<ul style="list-style-type: none"> <li>To present a superior offering that reflects our operational and commercial excellence</li> <li>To ensure the extension of contracts</li> <li>To secure new contracts</li> </ul>	<ul style="list-style-type: none"> <li>High Product Delivery Reliability (PDR)</li> <li>Flexible and stable product quality</li> <li>Competitive rates</li> </ul>	<ul style="list-style-type: none"> <li>Competitive rates</li> </ul>	<ul style="list-style-type: none"> <li>Ensure close integration along the value chain to ensure reliability and PDR</li> <li>Increase offering of customer-centric solutions for both products and prices</li> <li>Increase customer engagement and visits</li> <li>Increase marketing activities and outreach to customers</li> </ul>	<ul style="list-style-type: none"> <li>Annual Customer experience survey</li> <li>Customer visits</li> <li>Industry conferences, forums and events</li> <li>One-on-one meetings</li> </ul>
<b>BUSINESS PARTNERS</b> 	<ul style="list-style-type: none"> <li>To foster and maintain good business relationships</li> </ul>	<ul style="list-style-type: none"> <li>Mutually beneficial partnerships</li> <li>Support in business operations</li> </ul>	<ul style="list-style-type: none"> <li>Performance and returns on business ventures</li> <li>Opportunity for growth and value creation</li> <li>Sustaining long-term partnerships</li> <li>Regulatory compliance</li> </ul>	<ul style="list-style-type: none"> <li>Strengthen operational and commercial excellence to drive performance</li> <li>Identify potential business opportunities</li> <li>Mutual secondment of staff</li> <li>Ensure focused efforts to manage existing and potential partners</li> </ul>	<ul style="list-style-type: none"> <li>Quarterly joint venture company board meetings</li> <li>Management joint venture company committee meetings</li> <li>Strategic dialogues, conferences, forums and events</li> <li>One-on-one meetings</li> </ul>
<b>SUPPLIERS AND VENDORS</b> 	<ul style="list-style-type: none"> <li>To deliver services aligned to PGB's values and requirements</li> </ul>	<ul style="list-style-type: none"> <li>Fair opportunities and negotiation processes</li> <li>Opportunities and partnerships that assist in growing their business</li> </ul>	<ul style="list-style-type: none"> <li>Fair procurement and pricing practice</li> <li>Project delivery performance</li> </ul>	<ul style="list-style-type: none"> <li>Leverage on PETRONAS Group Procurement services</li> <li>Communications and guidance of standards through: <ul style="list-style-type: none"> <li>PETRONAS Code of Conduct and Business Ethics (CoBE);</li> <li>PETRONAS Anti-Bribery and Corruption Manual (ABC);</li> <li>and PETRONAS Vendor Development Programme</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Toolbox sessions (performed prior to work execution)</li> <li>Project sponsor meetings (performed quarterly for each project, chaired by Project Delivery and Technology or PD&amp;T Head Project Delivery Onshore)</li> <li>HSSE Contractor Improvement Programme (performed as per contract requirements. These include weekly HSSE campaigns and awareness activities such as the "Respect &amp; Care Programme" which encompasses the Welcome Gate/Morning Greeting, LTI Free Board +Touch the Heart, Love letter to Family, HSSE Bulletin, and road safety campaigns)</li> <li>Monthly HSSE management walkabout</li> <li>Contractor HSSE engagement programmes/forums</li> </ul>

## OUR SUSTAINABILITY STRATEGY

KEY STAKEHOLDER GROUPS	WHY WE ENGAGE	WHAT WE OFFER	WHAT WE FOCUS ON	OUR RESPONSE	OUR ENGAGEMENT PLATFORMS/FREQUENCY OF ENGAGEMENT
<b>EMPLOYEES AND UNIONS</b> 	<ul style="list-style-type: none"> <li>To encourage employees to make valuable contributions in delivering on business strategy, achieving strategic goals and acting as brand custodians</li> <li>To motivate employees to generate and implement innovative ideas and solutions for us</li> <li>To identify and fill the skills gap to nurture and develop future talent</li> </ul>	<ul style="list-style-type: none"> <li>A work environment that promotes sustainability</li> <li>Opportunities for learning, development and growth</li> <li>Career growth prospects</li> <li>Opportunity to make valuable contributions and achieve personal fulfilment and satisfaction</li> </ul>	<ul style="list-style-type: none"> <li>Staff health and well-being due to COVID-19</li> <li>Conducive working environment</li> <li>Diversity and Inclusivity (DNI) culture</li> <li>Overcome staff's inability to relate their contributions to Company's strategy and business plans</li> </ul>	<ul style="list-style-type: none"> <li>Increase flexibility in working arrangements during MCO</li> <li>Provide COVID-19 related health support</li> <li>Structure leadership development framework</li> <li>Implement internal programmes to encourage staff participation and understanding of PGB's strategy and business plans</li> </ul>	<ul style="list-style-type: none"> <li>PGB Townhall (15 April 2021)</li> <li>Quarterly Union engagement and activities</li> <li>Quarterly Engagement/Performance with the Leadership Team</li> <li>Periodic employee engagement with Human Resources Department</li> <li>Intranet and internal newsletters</li> <li>Company updates/sharing sessions (performed monthly by each superior via Monthly Message sessions)</li> </ul>
<b>GOVERNMENT AGENCIES AND AUTHORITIES</b> 	<ul style="list-style-type: none"> <li>To reinforce PGB's role in delivering sustainable energy for the nation</li> <li>To be the consultative partner in defining the role of gas in the energy market</li> <li>To gain approval for tariffs under the regulated business</li> </ul>	<ul style="list-style-type: none"> <li>Extensive gas delivery network in Peninsular Malaysia</li> <li>Cleaner energy from co-generation plants</li> <li>Safe, reliable and efficient operations across all facilities</li> <li>Competitive tariff</li> </ul>	<ul style="list-style-type: none"> <li>Gas supply, security and reliability</li> <li>Economic impact to consumers</li> <li>Regulatory compliance</li> <li>Health and safety of PGB operations and impact to surrounding communities</li> <li>Ethical business practices</li> </ul>	<ul style="list-style-type: none"> <li>Formal and informal engagements</li> <li>Joint emergency response exercises</li> <li>Familiarisation visit to PGB facilities</li> <li>Regular reporting to government agencies</li> </ul>	<ul style="list-style-type: none"> <li>Annual Engagement programmes</li> <li>Consultative sessions (as and when required)</li> <li>One-on-one meetings</li> </ul>
<b>COMMUNITIES</b> 	<ul style="list-style-type: none"> <li>To increase communities' understanding of PGB's business and operations</li> <li>To maintain a positive image of the Company</li> </ul>	<ul style="list-style-type: none"> <li>Education and social support</li> <li>Environmental protection and biodiversity preservation</li> </ul>	<ul style="list-style-type: none"> <li>Health and safety of PGB's operations and impact on the surrounding communities</li> </ul>	<ul style="list-style-type: none"> <li>Implement Corporate Social Responsibility (CSR) programmes in education, environment and social support: <ul style="list-style-type: none"> <li>Back-to-school programmes</li> <li>'Sayangi Sungai Latoh' mangrove planting programme</li> <li>Free market of which the proceeds were channelled to B40 recipients</li> </ul> </li> <li>Sponsorships and donations such as INSTEP student</li> <li>Outreach programmes to foster good relationships with communities</li> </ul>	<ul style="list-style-type: none"> <li>CSR programmes in conjunction with festivities</li> <li>Periodic briefings and engagement with local communities i.e., Dissemination of Control of Industrial Major Accident Hazard (CIMAH) Programme information with the public every two years</li> </ul>
<b>MEDIA</b> 	<ul style="list-style-type: none"> <li>To enable a key communication link between our business and our stakeholders</li> <li>To work hand-in-hand with the Media to circulate vital information that impacts our corporate brand and reputation</li> </ul>	<ul style="list-style-type: none"> <li>Transparency in information</li> <li>Regular engagement with PGB's Leadership Team</li> </ul>	<ul style="list-style-type: none"> <li>Business performance</li> <li>Environmental management and sustainability efforts</li> <li>New innovation and technology</li> </ul>	<ul style="list-style-type: none"> <li>Foster open and transparent communication with the Media</li> <li>Provide a speedy response to the Media's enquiries on business developments</li> <li>Organise rapport building activities</li> </ul>	<ul style="list-style-type: none"> <li>Interviews with PGB's MD/CEO (in 2021, via <i>Asian Downstream Insights</i>, <i>The CEO Magazine Asia</i>, <i>The Edge Weekly</i>, <i>Starbiz</i>, <i>BFM Radio</i>)</li> <li>Quarterly Performance Press releases</li> <li>Press releases on Key Business update</li> </ul>

## OUR SUSTAINABILITY STRATEGY

### DETERMINING OUR MATERIAL MATTERS

Material matters are matters that have the most significant impact on our ability to create long-term value. They influence how the Board and LT steer the Group. The Group's material assessment cycle is based on an annual assessment which is presented on various management platforms prior to obtaining approval from the Board.

#### MATERIAL MATTERS IDENTIFICATION PROCESS



##### Identify

We conduct relevant research to analyse our business context, consider our operating environment and the resources we rely on, as well as obtain feedback from our stakeholders (internal and external) to assess matters that are of financial, reputational, operational, environmental, social, strategic or legislative significance. We pinpoint and discuss our risks and opportunities for each component based on this.



##### Prioritise

We prioritise matters that influence our ability to create sustained value in the short, medium and long-term, using the outcome of our analysis as well as major risks and opportunities identified.



##### Integrate

We integrate our material matters into our strategy. We also track our performance against this strategy using clearly identified, strategic focus areas and key performance indicators (KPIs) that are cascaded down and monitored across the organisation.



#### LIST OF TOP 8 MATERIAL MATTERS

We draw up our strategies and business plans to complement the most material features of business growth and stakeholder needs to influence the way our leadership propels us towards sustainable growth. We carry out materiality assessments every two years to be precise about timing and relevance.

The following is a list of our eight topmost material matters:

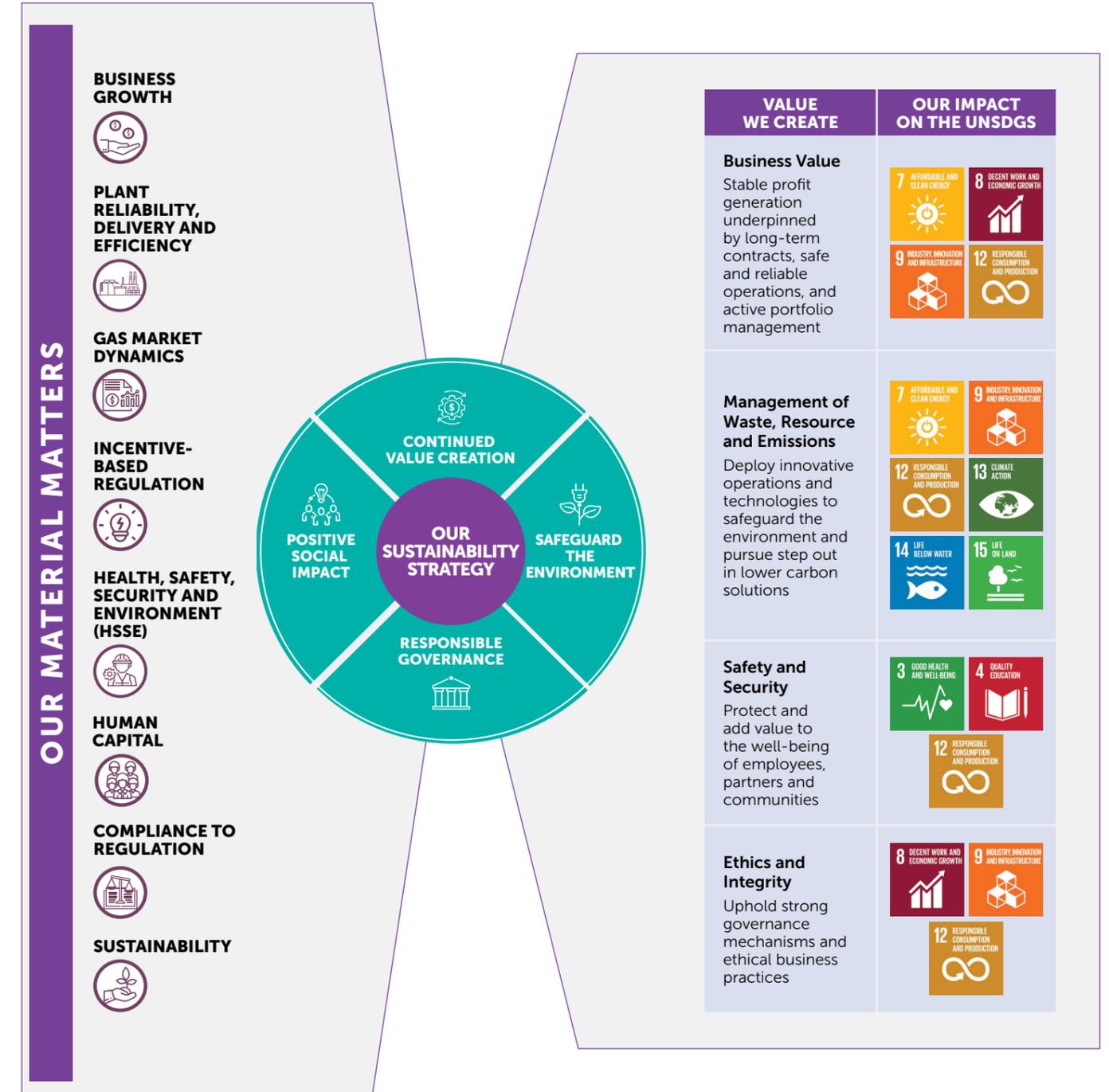
- Health, Safety, Security and Environment
- Plant Reliability, Delivery and Efficiency
- Gas Market Dynamics
- Incentive-Based Regulation
- Business Growth
- Human Capital
- Compliance to Regulation
- Sustainability

MATERIAL ITEM	WHAT ARE THE RISKS	WHAT ARE THE OPPORTUNITIES	OUR RESPONSE
<b>HEALTH, SAFETY, SECURITY AND ENVIRONMENT (HSSE)</b> 	<ul style="list-style-type: none"> <li>• Unsustainable HSSE performance, resulting in business, operational and reputational impact.</li> </ul>	<ul style="list-style-type: none"> <li>• Inculcation of a behavioural safety culture with commitment from all staff, leading to increased operational reliability and efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>• A strengthening of HSSE practices in identified key focus areas, which include:                             <ul style="list-style-type: none"> <li>- HSSE compliance improvement via digitalisation;</li> <li>- Efficient functional assurance;</li> <li>- Upskilling HSSE capability; and</li> <li>- An effective communication programme.</li> </ul> </li> <li>• Concerted and continued efforts to strengthen behaviour towards a Generative HSSE Culture.</li> </ul>
<b>PLANT RELIABILITY, DELIVERY AND EFFICIENCY</b> 	<ul style="list-style-type: none"> <li>• Unsustainable operational performance resulting in supply interruption to customers.</li> <li>• Exposure to operational system failure and data leakage due to ineffective cybersecurity measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Execution of key operational strategies to achieve world-class standards.</li> <li>• Implementation of the Cybersecurity Strategy and Deployment Programme.</li> </ul>	<ul style="list-style-type: none"> <li>• Identification and timely completion of operational initiatives under R2 Game Plan:301Q99 Pushing Forward PLUS which included the following:                             <ul style="list-style-type: none"> <li>- Successful implementation of digital solutions for effective monitoring and intervention such as the GPU Technical Centre (GTC);</li> <li>- Successfully passed the Operational Excellence Result 2 (OE R2) Overall OE R2 Implementation Assessment (OOIA) at Utilities Gebeng (UG), Utilities Kertih (UK) and Tanjung Sulong Export Terminal (TSET); and</li> <li>- Successfully passed the OE R2 Initial Implementation Assessment (IIA) at GPK and GPS.</li> </ul> </li> </ul>
<b>GAS MARKET DYNAMICS</b> 	<ul style="list-style-type: none"> <li>• Low asset utilisation from reduced demand for gas, use of alternative fuels, and the heightened call to tap renewables.</li> </ul>	<ul style="list-style-type: none"> <li>• Advocate the use of natural gas to achieve a sustainable energy mix in Malaysia so as to create business opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Explore growth opportunities to add further value to existing assets and futureproof the business.</li> <li>• Enable forward integration in the product value chain.</li> </ul>
<b>INCENTIVE-BASED REGULATION</b> 	<ul style="list-style-type: none"> <li>• Inability to achieve a reasonable tariff in regulated business.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential growth opportunities in non-regulated areas, such as utilities, power and ancillary services.</li> </ul>	<ul style="list-style-type: none"> <li>• Undertake efforts to ensure fair tariff development through continuous engagement with Suruhanjaya Tenaga, the Economic Planning Unit (EPU) and economic consultants.</li> <li>• Identification and effective implementation of commercial initiatives under R2 Game Plan: 301Q99 Pushing Forward PLUS.</li> </ul>
<b>BUSINESS GROWTH</b> 	<ul style="list-style-type: none"> <li>• Inability to secure and deliver growth projects effectively.</li> <li>• Unsustainable profitability from the utilities business.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential growth opportunities in core and adjacent plays to add further value to the business.</li> </ul>	<ul style="list-style-type: none"> <li>• Establishment of the Results Delivery and Investment Steering Committees to closely monitor growth progress and ensure compliance with the Group's sustainability agenda.</li> <li>• Strategic engagement with various parties to explore potential collaboration opportunities.</li> </ul>

## OUR SUSTAINABILITY STRATEGY

MATERIAL ITEM	WHAT ARE THE RISKS	WHAT ARE THE OPPORTUNITIES	OUR RESPONSE
<b>HUMAN CAPITAL</b> 	<ul style="list-style-type: none"> <li>Insufficient pool of competent and capable talent to drive value in growth and core business.</li> </ul>	<ul style="list-style-type: none"> <li>Robust talent management strategies and plans to produce capable and continuous pipeline of talent.</li> </ul>	<ul style="list-style-type: none"> <li>Development and implementation of a Talent Mix Strategy which enables an empowered organisation, an agile workforce as well as diversity and inclusion.</li> <li>Management of talent competencies through the RESCISCO framework introduced by PETRONAS which aims to maximise technical competencies in particular job roles and produce empowered, enabled and agile talent. On the sustainability front, this involved:                             <ul style="list-style-type: none"> <li>Establishment of a new dedicated Sustainability Team; and</li> <li>Establishment of the Sustainability Working Committee.</li> </ul> </li> </ul>
<b>COMPLIANCE TO REGULATION</b> 	<ul style="list-style-type: none"> <li>Breaches of critical laws, regulations and licenses resulting in reputational and financial loss.</li> </ul>	<ul style="list-style-type: none"> <li>Adherence to critical laws and regulations resulting in a strong reputation and standing.</li> </ul>	<ul style="list-style-type: none"> <li>Execution of awareness and communication programmes on laws, regulations and licences across PGB.</li> <li>Compulsory training via the MyLearning online platform on five modules of Critical Laws and Regulation, organised by the PETRONAS Group Legal. i.e.,                             <ol style="list-style-type: none"> <li>PETRONAS Personal Data Protection &amp; Privacy Compliance;</li> <li>Third-party risk management;</li> <li>Sanctions;</li> <li>Anti-Bribery and Corruption manual; and</li> <li>Competition Law.</li> </ol> </li> </ul>
<b>SUSTAINABILITY</b> 	<ul style="list-style-type: none"> <li>Inability to embed and implement an effective sustainability culture as well as practices, resulting in reputational and value loss.</li> </ul>	<ul style="list-style-type: none"> <li>Value creation, strong reputation and standing, as well as access to a broader investor base and sources of capital including green financing opportunities.</li> <li>The development of a Sustainability Blueprint and strategic ESG Roadmap and the effective implementation of a sustainability programme anchored on these.</li> </ul>	<ul style="list-style-type: none"> <li>Identification and monitoring of sustainability targets.</li> <li>Deliberation on sustainability practices at the Sustainability Working Committee level.</li> <li>Alignment of sustainability targets and initiatives with that of the PETRONAS Group.</li> <li>The blueprint and framework are to be established by the end of Q3 2022.</li> <li>Comprehensive and targeted disclosure vis-a-vis sustainability strategy, initiatives and targets through various mediums, including PGB's website, Annual Report and corporate briefings.</li> </ul>

## STRENGTHENING OUR SUSTAINABILITY FRAMEWORK



# SUSTAINABILITY GOVERNANCE AT PGB

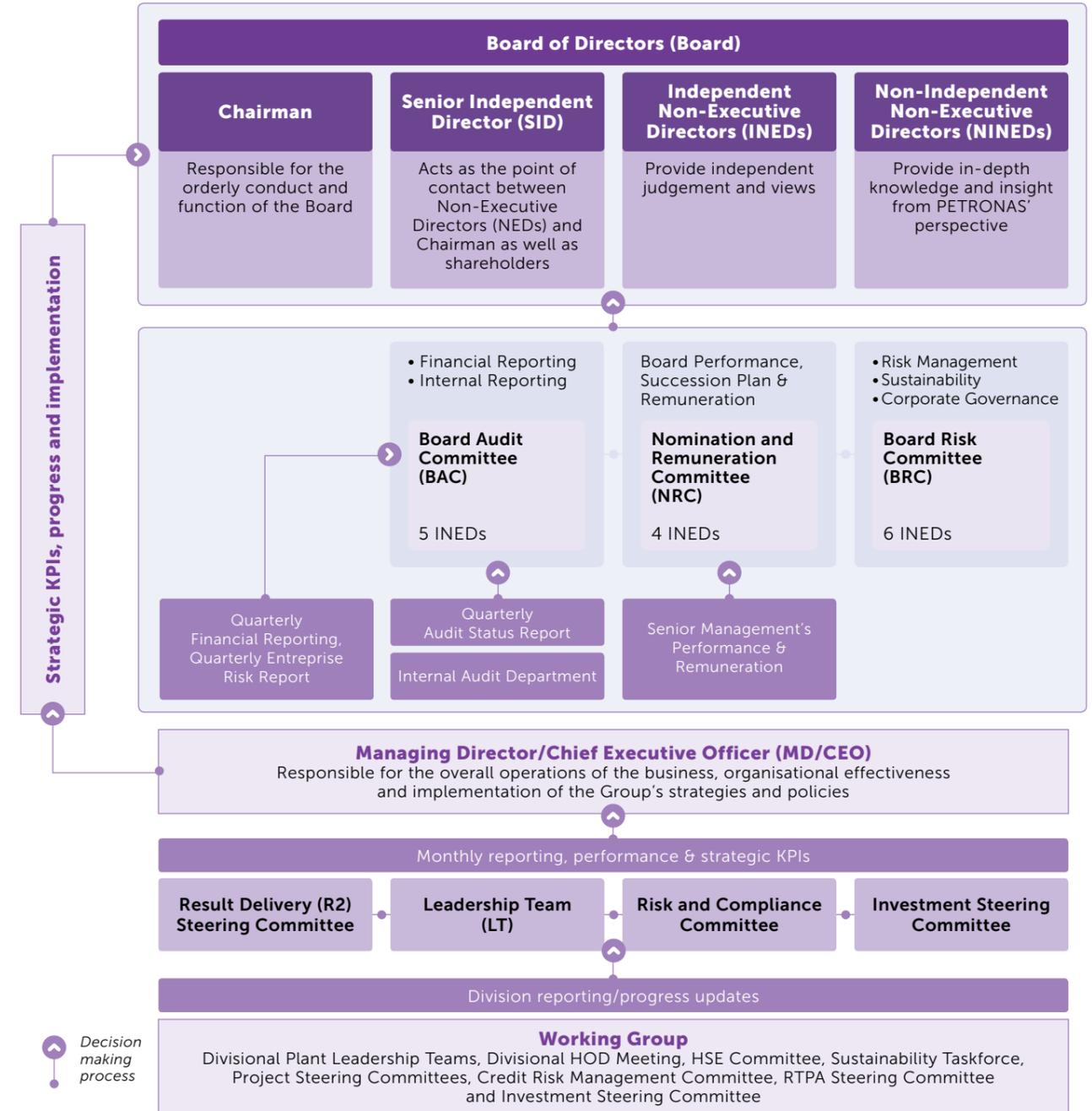
Recognising that a strong sustainability framework is essential for PGB as it has material impact on the Group's business strategy and performance as well as our ability to create long-term value, our leadership is deeply committed to reinforcing our business framework with focused sustainable practices and initiatives. This is especially important amidst the current operational and economic complexities of the new normal.

## SUSTAINABILITY DEVELOPMENT GOVERNANCE STRUCTURE

PGB's Board Risk Committee (BRC) was established in second quarter of 2021, followed by the establishment of the Sustainability Working Committee which is led by the HSE & Sustainability Department Head. Today, the BRC and Sustainability Working Committee are responsible for overseeing sustainability governance at PGB. Together, they are to weigh up the Group's sustainability considerations and ascertain that all sustainability strategies, priorities and targets, as well as the performance against these targets, are communicated to internal and external stakeholders in a transparent manner. In the first quarter of 2022, the BRC agreed to appoint a PGB Sustainability Focal Person to serve as an advisory role on PGB's overall sustainability development activities.



## GOVERNANCE STRUCTURE



The Terms of Reference (TOR) of the BRC spell out the BRC's responsibilities in the areas of risk management and sustainability. These TOR can be found in PGB's Governance and Financial Report 2021 and on the PGB corporate website.

## SUSTAINABILITY GOVERNANCE AT PGB

PGB's Sustainability Working Committee is tasked with developing a sustainability blueprint and framework by 2022 as well as with keeping a keen eye on the execution of approved sustainability initiatives. By leveraging a robust sustainability governance mechanism and sound sustainability practices, these efforts will go a long way in helping secure PGB's future. In ensuring that sustainability issues are factored in across all our products and services, the committee holds monthly meetings to ensure sustainability is embedded into our value creation activities and ESG goals.

The finer details of PGB's Sustainability Agenda, the metrics and details of how these align with the four strategic Sustainability Lenses are spelt below.

SUSTAINABILITY LENSES	METRIC	INTENT IN SUSTAINABILITY AGENDA
Continued Value Creation	Financial	Continue to deliver positive returns to our shareholders through long-term economic value creation
Safeguard the Environment	Emissions	Reduction of Greenhouse Gas (GHG) emissions and energy conservation in oil and gas production in addressing climate change issues
	Waste Reduction	Promote optimum use of resources in operations that result in waste reduction to lower the impact to environment
	Portfolio Mix	Progressively transition to a cleaner combination of different energy sources and feedstocks that the Organisation can use/produce/supply to customers
	Climate Adaptation	Moderate, cope with and take advantage of the consequences of climate events
Positive Social Impact	Health & Safety	Ensure facilities, products and services are in accordance with all legal requirements and the industry's best practices to safeguard the health, safety and well-being of employees, contractors, and communities
	Talent & Education	Equip the workforce with skills and empower communities through educational opportunities per our Purpose's aspiration of enriching lives for a sustainable future
	Labour & Supply Chain	Respect for human rights, good work conditions and protection, equity and non-discriminatory labour practices. Provide growth opportunities while ensuring fair operating and ethical practices throughout the supply chain
Responsible Governance	Compliance & Oversight	Ensure compliance with our CoBE, and all relevant legal and regulatory requirements. Upholding the organisation's integrity and trustworthiness in delivering value through strong governance mechanisms and ethical business practices.

The structure as well as roles and responsibilities of PGB's Sustainability Working Committee are outlined below. The Sustainability Working Committee in turn is monitored by a Risk Compliance Committee, chaired by the MD/CEO, with members comprising representatives from all the functions across the business units.

### PGB SUSTAINABILITY WORKING COMMITTEE



ROLES	RESPONSIBILITIES OF MEMBERS
<b>PGB Sustainability Result Manager</b>	<ul style="list-style-type: none"> <li>Orchestrate and determine the best approach for PGB's sustainability in term of business strategy implementation resource, communication to stakeholders, timelines, and schedules</li> <li>Establish taskforce for planning and implementation of all commitments</li> <li>Lead core members meeting and provide direction to the taskforce</li> <li>Ensure PGB's sustainability milestones and objectives are met</li> </ul>
<b>Sustainability Leader</b>	<ul style="list-style-type: none"> <li>Develop and implement governance of respective Sustainability Lens</li> <li>Conduct gaps analysis and implement gaps closure</li> <li>Liaise with relevant stakeholders whenever required</li> <li>Ensure appropriate resources are available to perform team duties</li> <li>Ensure Sustainability Lens metrics and intents are met</li> </ul>
<b>Division Focal (GPU/GTR)</b>	<ul style="list-style-type: none"> <li>Facilitate division teams and advise on the best approach for sustainability transition</li> <li>Manage division stakeholders and provide necessary engagement and communication</li> <li>Drive division data collection and system readiness</li> <li>Facilitate training and issue resolutions throughout implementation</li> </ul>

### INVESTMENT STEERING COMMITTEE

PGB's Investment Steering Committee was established in 2021 and is helmed by the MD/CEO. This committee is responsible for looking into investment-related matters, and decisions on a monthly basis. As part of the investment guidelines, consideration is to be given to sustainability metrics such as carbon emissions, among other factors, when evaluating investment opportunities in addition to commercial and financial parameters. This will ensure more effective decision-making during the investment deliberation process.

The well-defined sustainability governance structure that has been implemented throughout PGB aims to ensure that all decisions are made in an equitable and balanced manner for the long-term, sustainable growth of the Group.

## SUSTAINABILITY GOVERNANCE AT PGB

### OPERATIONAL EXCELLENCE MANAGEMENT SYSTEM (OEMS)

As we pursue operational excellence, we are tapping digitalisation, leading edge technologies and sophisticated facilities to deliver on our performance targets in a cost-effective manner while ensuring high productivity. To ensure operational excellence is implemented in a safe, reliable, and sustainable manner, we continue to leverage our OEMS which incorporates a value-driven approach that delivers bespoke solutions to key operational areas.

Periodic assessments of the OEMS are performed and deliberated upon by the LT at the Management System Review to ensure continuous compliance with the PETRONAS Sustainable Management Guideline. In 2021, we performed a sustainability review that involved PGB's Internal Audit Department and external parties to ensure our sustainability measures aligned with the PETRONAS Sustainable Management Guideline and the Group's globally-recognised framework. These findings will support the formulation of PGB's upcoming ESG blueprint.

### SUBSCRIPTION TO STANDARDS AND CERTIFICATION

Today, PGB subscribes to the ISO Occupational Health and Safety Assessment Series (OHSAS) 45001:2018 standard (relating to occupational health and safety) and the ISO EMS 14001:2004 standard (relating to environmental management).

### RISK MANAGEMENT AND SUSTAINABILITY

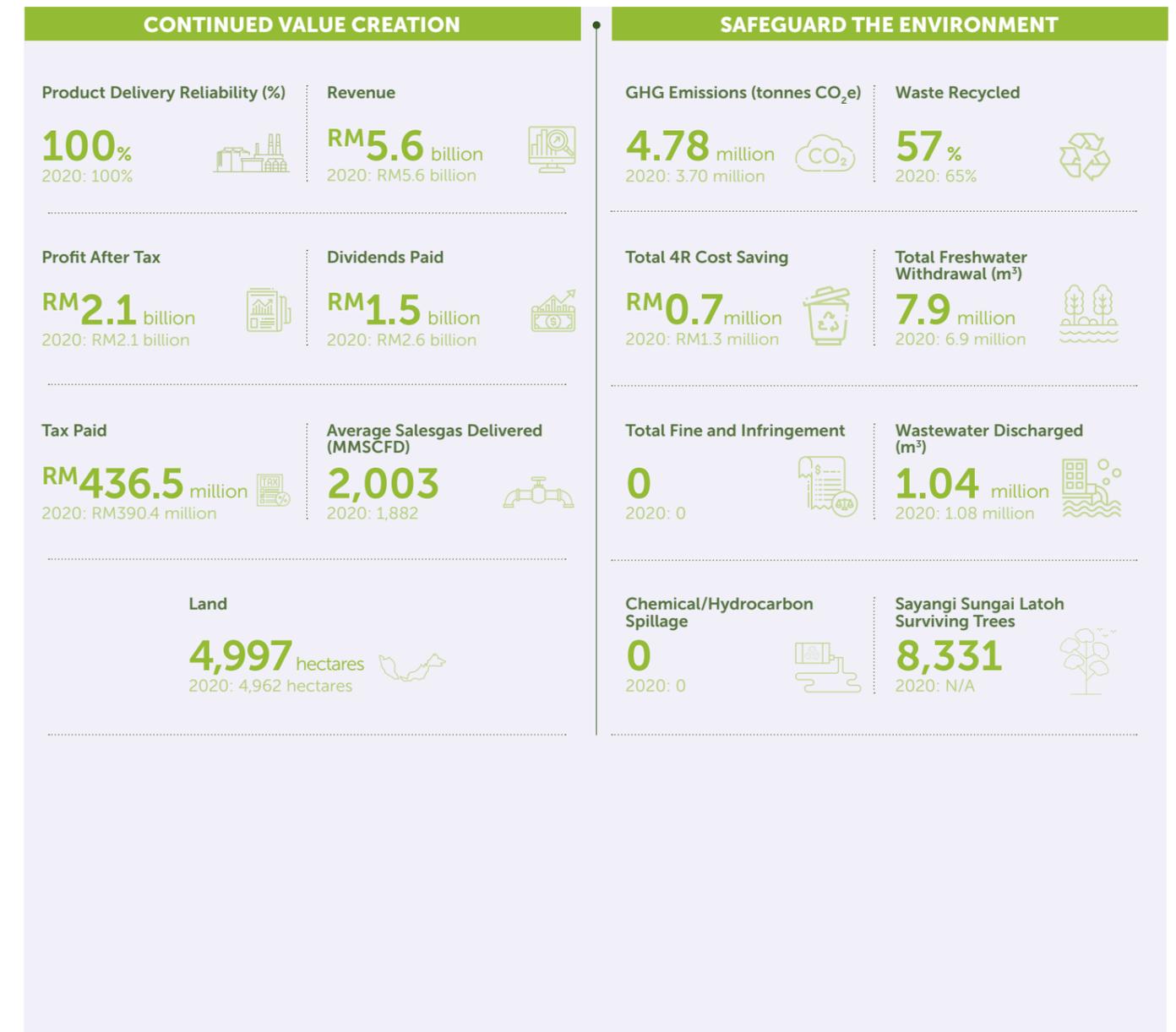
Being a key player in Malaysia's energy landscape, PGB is exposed to a variety of significant risks that can have an impact on our operations, prospects, future performance, financial position, liquidity, asset value, growth potential, sustainable development and reputation. To ensure that we continue creating, preserving and realising value, we are proactively leveraging an effective and comprehensive system of risk management and internal control to mitigate these significant risks. The details of our risk management and mitigation activities can be found in the Statement on Risk Management and Internal Control in our Governance and Financial Report.



## OUR SUSTAINABILITY PROGRESS

In 2021, the respective teams within the PGB Group continued to perform strongly on the ESG fronts. The year's key sustainability achievements are spelt out below.

### SUSTAINABILITY SCORECARD



OUR  
SUSTAINABILITY PROGRESS

POSITIVE SOCIAL IMPACT

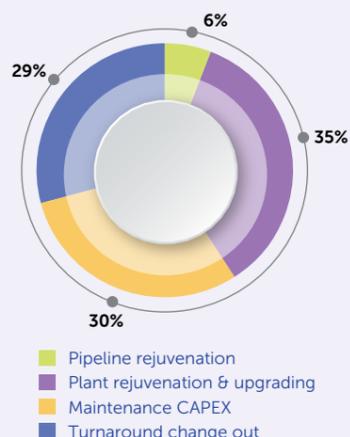
HSSE



<b>LTIF</b> <b>0.09</b> 2020: 0 2019: 0.21	<b>Major LOPC</b> <b>1</b> 2020: 0 2019: 0	<b>Major Fire</b> <b>0</b> 2020: 0 2019: 0
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Providing Safe Workplace to Staff

CAPEX on Facilities Integrity  
2019 to 2021



Human Capital

Human Capital impacting communities' socio-economics through employment, spin-off service industries and education

Education Programme in 2021

<b>89</b> internship students from undergraduate and diploma	<b>86</b> graduates on job programme at PGB
<b>15</b> INSTEP trainees sponsorship	<b>210</b> virtual and physical HSE training

Internal and external competency training for staff

Employment

Employee Compensation

**RM372.6** million  
2020: RM346.8 million

Workforce Employed

**1,671**  
2020: 1,765

Age Diversity

Baby Boomers <b>3%</b> 2020: 0.9%	Millennial <b>65%</b> 2020: 61.8%
Gen X <b>32%</b> 2020: 36.1%	Post Millennial <b>1%</b> 2020: 1.2%

Female Workforce

Leadership Team <b>44%</b> 2020: 33%	Board Member <b>40%</b> 2020: 50%	Total Overall <b>12%</b> 2020: 13%
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Spin-Off Industries

**30**  
contract awarded to local suppliers

Vendor development programme

Corporate Social Responsibility



RM240,000 allocated for festive celebration by Program Sentuhan Kasih benefiting 50 families and 4 welfare homes

Provide emergency assistance for COVID-19 at Hospital Banting, Kemaman Quarantine Centre, and Dungun Quarantine Centre

Donations for welfare/community well-being at Kg Sura Melati, Dungun and Pejabat Daerah dan Tanah Alor Gajah

Free Food initiative to all 3,000 contractors involved in Gas Processing Santong shutdown 2021

RM800,000 allocated for mangrove planting (2019 - 2023) under Program Sentuhan Alam

RM60,000 allocated for Back-to-School programme by Program Sentuhan Ilmu

RECOGNISED FOR EXCELLENCE

We are honoured to have been accorded the following awards and accolades by prominent national and international organisations for our distinctive HSSE practices, and initiatives, as well as the implementation of the HSSE Management System in 2021.

RECIPIENT	ACHIEVEMENT	AWARDING PARTIES
GP Santong UT Kertih UT Gebeng Tanjong Sulong Export Terminal (TSET) GP Kertih UT Kertih UT Gebeng TSET GP Kertih	RoSPA Gold Award	Royal Society for the prevention of Accidents UK
GPU HSSE – Waste Buster GP Santong – GPS H20 GPU ETS Lab – Culture 5 GP Santong – Procure GP Kertih – The Lords Pacer 5	PAR Excellence – Highest Award	46 <sup>th</sup> International Convention on Quality Control Circles (ICQCC) Hyderabad, India
GP Kertih UT Gebeng GP Santong TSET	Excellent Achievement Notable Achievement Melaka State Award & Exceptional Achievement	Prime Minister's Hibiscus Award
GT Seremban RO GT Sitiawan RO GT Gurun Regional Office (RO) GT Shah Alam RO GP Kertih GT Segamat OC GT Pasir Gudang RO RGT Pengerang GT Kuantan RO GT Kertih RO	MSOSH Gold Class 1 MSOSH Gold Merit	Malaysian Society of Safety & Health
<b>Gas Processing (GP)</b>	<b>Utilities (UT)</b>	<b>Gas Processing &amp; Utilities (GPU)</b>
		<b>Gas Transportation (GT)</b>
		<b>Regasification (RGT)</b>

# FOCUSED ON CONTINUED VALUE CREATION

As PGB positions itself to embrace a low carbon energy future in line with the PETRONAS Group's NZCE 2050 aspiration, we are confident that this will not only accord us the licence to operate for the long-term but will also ensure that we remain resilient and relevant to the marketplace. Today, the Group continues to cultivate existing opportunities and resources as well as pursue new top line and bottom-line value creation to ensure our market valuation strengthens over time.

## LONG-TERM CONTRACTS

PGB's customers are at the core of our business and are integral to its sustainable growth. To ensure our customers' needs and expectations are met, we continue to deliver customer-centric solutions by way of superior quality products, services and technological solutions, as well as by improving the overall customer experience. This supports thriving mutual value creation.

Today, our business continues to benefit from a variety of long-term contracts.

 <b>Gas Processing Agreement</b> Parties: PETRONAS & PGB Expiry: 31 December 2033	 <b>Gas Transportation Agreement</b> Parties: PETRONAS & PGB Expiry: 31 December 2033	 <b>Terminal Use Agreement</b> (RGT Sungai Udang) RGTSU Parties: PEGT & RGTSU Expiry: 31 June 2033  <b>Terminal Use Agreement</b> (RGT Pengerang) RGTP Parties: PEGT & PFLNG2 Expiry: 31 October 2042	 <b>Utilities Agreements</b> 6 Contracts renewal in 2021 10 Contracts under discussion  <i>*The cost of fuel gas is largely passed through to customers except for electricity</i>
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## ASSET PERFORMANCE

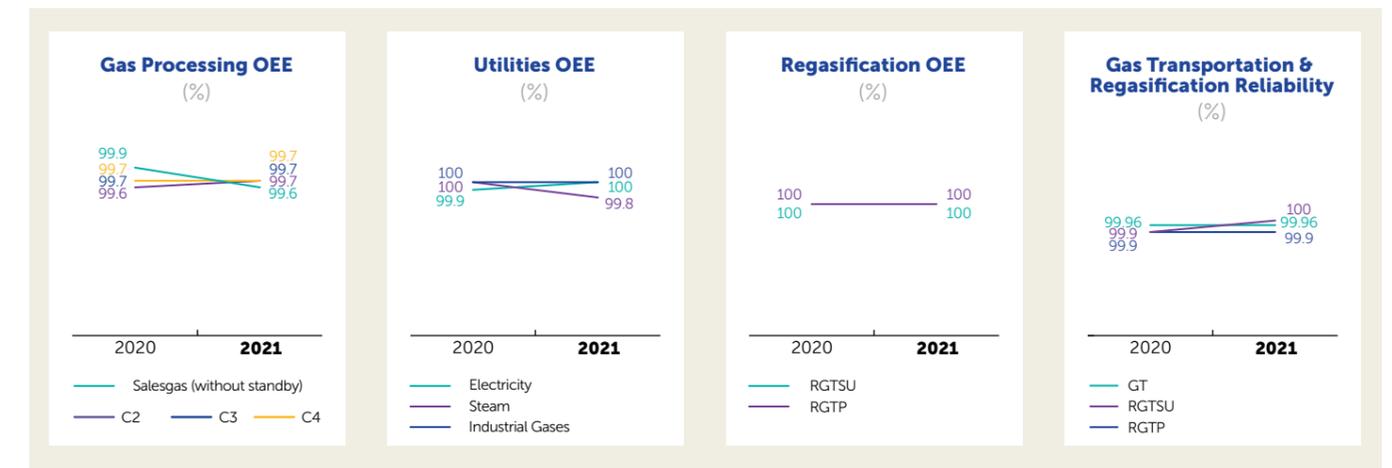
The year in review saw PGB continuing to manage its asset portfolio in an optimal manner to maximise returns.

Product Delivery Reliability	Asset		Output/ Outcome	
<b>PDR (C1, C3, C4, Electricity)</b> <b>100 %</b> 2020: 100 %	<b>Plant OEE</b> <b>99.8 %</b> 2020: 99.8 %	<b>Salesgas PDR</b> <b>100 %</b> 2020: 100 %	<b>Salesgas Delivered (mmscfd)</b> <b>2,003</b> 2020: 1,882	<b>Steam (kMT)</b> <b>4,741</b> 2020: 4,043
	<b>Plant Reliability – GTR</b> <b>99.96 %</b> 2020: 99.96 %	<b>Utilities PDR</b> <b>100 %</b> 2020: 100 %	<b>Electricity (GWh)</b> <b>1,673</b> 2020: 1,535	<b>Industrial gases (Mil Nm<sup>3</sup>)</b> <b>706</b> 2020: 660

## OPERATIONAL EXCELLENCE

For the year in review, we continued to leverage our operational resources, manage them in an optimal manner, and produce solid returns. A higher Overall Equipment Effectiveness (OEE) rate on the Gas Processing, Utilities and Regasification fronts translated into 100% Product Delivery Reliability (PDR) for our customers as well as for the Gas Processing Business (value in the form of performance incentives).

Indicator	Unit of Measurement	Description	2017	2018	2019	2020	2021
Ethane Production	MT/hr	Annual average ethane production from the gas processing plants	134	142	144	134	148
Salesgas PDR	%	Product delivered as per customers' nomination	100	100	100	100	100
Electricity PDR	%		100	100	99.9	100	100
Steam PDR	%		99.8	100	99.8	100	100
Industrial gases PDR	%		94.1	98.9	97.2	100	100



Notes:  
**OEE** - A measure of plant performance against its limits and identified sources of loss within the plant and a measure of how well equipment is used when available. World-class performance benchmark for OEE is 95%.  
**Reliability** - A measure to determine the impact of unscheduled downtime on the availability of the plant. World-class performance benchmark for Reliability is 98%.

## FOCUSED ON CONTINUED VALUE CREATION

In 2021, we continued to implement our strategic roadmap, R2 Game Plan 301Q99 Pushing Forward PLUS, with clear goals to be achieved every year via strategic thrusts on the asset, system and process as well as people and culture fronts. All this led to us delivering a solid performance in 2021. Our efforts were bolstered by several digital initiatives and work processes that sought to ensure we had safe, reliable and efficient operations.

In 2021, PGB completed the GPU Technical Centre (GTC) Phase 2 which primarily responsible for monitoring plant conditions so that proactive measures can be taken to prevent unplan outages or shutdown.

A remote operation centre (ROC) has been established at Utilities Kertih (UK) and has been in operation since January 2021. This facility allows the operations team at UK to remotely operate the plant at Utility Gebeng (UG) and thus optimise operating costs. By tapping data-driven activities, we are developing new ways of working and creating new value for the Company.

### EFFECTIVE PORTFOLIO MANAGEMENT

In 2021, we continued to make good in-roads by way of effective portfolio management to deliver on the Group's growth agenda.

#### 1 EXPAND CURRENT BUSINESS IN LINE WITH DEMAND

- **Lateral gas pipeline project**  
42km pipeline extension to new power plant in Pulau Indah
- **Debottlenecking southern pipeline project**  
Relocate compressor to meet higher pressure requirements
- **Potential 3<sup>rd</sup> storage tank at RGTP**  
Expression of interest announced for capacity booking
- **NGU 3 Plant in Utility Kerteh**  
Increase N<sub>2</sub> Capacity production to supply to new customer PCESB
- **NEDA**  
Surplus Electricity to TNB grid

#### 2 PURSUE GROWTH LEVERAGING ON KEY COMPETENCIES

- **Integrated utilities solutions for industries**
- **Power generation through IPP**

#### 3 EXPLORE STEP OUT OPPORTUNITIES

- **Infrastructure for CO<sub>2</sub> capture and collaborate with PETRONAS for storage.**
- **Waste to energy**

### TOWARDS FUTURE VALUE CREATION

Moving forward, we will continue to explore new avenues of opportunity on diverse fronts to ensure continued value creation for PGB. For instance, our co-generation utilities assets at Kertih and Gebeng are capable of generating electricity at high levels of efficiency with lower amounts of fuel gas. As this energy is generated on-site, the load on the power network is minimised, and transmission line losses are prevented. We intend to leverage our success in this area to motivate our customers to use energy more sustainably while reducing their carbon footprint.

We also anticipate potential growth in demand for gas from the power sector. The Malaysian Government plans to retire around 7GW of coal-fired capacity by 2039, and financial providers have stated their commitment to phase out coal power plants from their portfolios. All these point to the fact that gas power plants stand out as the clear solution for a cleaner and reliable energy supply for Malaysia. This provides PGB with the opportunity to both, supply more gas as well as venture into the power generation business. In this regard, our knowledge and expertise in running and maintaining the gas-fired power plant in Kimanis is an added advantage. The future bodes well for PGB.



# COMMITTED TO SAFEGUARDING THE ENVIRONMENT

As a conscientious steward of the resources we have been entrusted with by the PETRONAS Group, we are committed to minimising the impact of our operations on living and non-living natural systems such as plant and animal ecosystems, as well as land, air and water, by applying innovative operating technologies, strategies and best practices. As we focus on mitigating our carbon footprint while preserving the environment, we are helping PETRONAS build a legacy for existing and future generations.

## MITIGATING AND ADAPTING TO CLIMATE CHANGE

### ALIGNING WITH GLOBAL FRAMEWORKS AND GROUP POLICIES

In our quest to reduce greenhouse gas or GHG emissions, we are aligning with the relevant global emissions frameworks and standards. In line with our efforts to align with the disclosure requirements of the Task-force on Climate-Related Financial Disclosure (TCFD) by 2023, we will conduct a situational assessment in 2022 to see how we measure up against the TCFD framework.

Central to our GHG emissions mitigation efforts is our commitment to uphold the PETRONAS Group's NZCE 2050 aspiration. This calls for the companies within the Group to minimise the impact of their carbon footprint on existing and future operations as well as to deploy more low carbon solution technologies. We also uphold the guidelines as per the PETRONAS Carbon Commitment, PETRONAS Climate Change Position, as well as Energy and Loss Management and System (ELMS) Charter as we go about implementing our sustainability undertakings. All these also serve as essential guides that are helping us finetune the ESG blueprint that we are currently developing.

#### MAIN HIGHLIGHTS

EI 97.0 vs. 98.0 (target)

4.78 mil Tonne CO<sub>2</sub>e vs.  
5 mil Tonne CO<sub>2</sub>e (target)

Reduction effort 70,643 Tonne CO<sub>2</sub>e

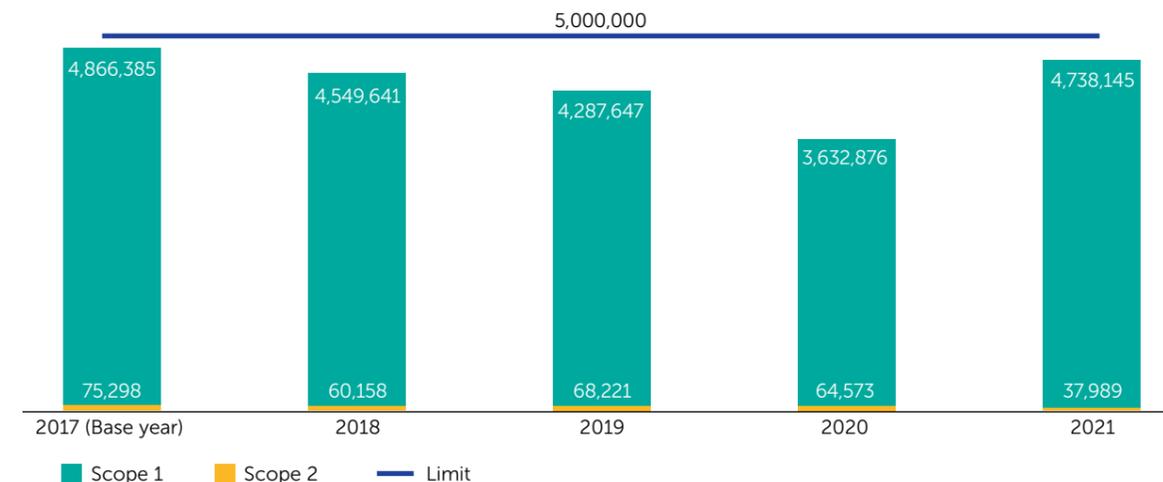
We also hope to leverage the PETRONAS Group's membership in the World Business Council for Sustainable Development (WBCSD) to acquaint ourselves with the sustainability-related best practices of member organisations. As membership of WBCSD provides access to a like-minded network of peers focused on sustainably delivering energy to an expanding world population by leveraging on collaboration, technology and people, this should prove fruitful.

The PETRONAS Group has set a GHG emissions limit of 49.5 million metric tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) by 2024 for Scope 1 and 2 emissions. In relation to this, PGB has been allocated a target cap of 5 million tCO<sub>2</sub>e (based on the PETRONAS-wide boundary).

As a result of our current emissions reduction efforts, we have already met the limit set by PETRONAS. To sustain the momentum of our short-term target/limit of 5 million tCO<sub>2</sub>e in emissions, we embarked on a holistic Operational Excellence project in 2021. The Operational Excellence project includes components such as flare reduction, energy efficiency and improved plant reliability.

In 2021, PGB produced a total of 4.78 million tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) emissions (Scope 1 and Scope 2 combined) within the target cap of 5 million tCO<sub>2</sub>e

### PGB GHG Emissions



Indicator	Limit/Target	2017 (Base)	2018	2019	2020	2021
GHG Emissions (100% Coverage of Scope 1 and Scope 2)	5.00 million tCO <sub>2</sub> e (by 2024)	4.94 million tCO <sub>2</sub> e	4.61 million tCO <sub>2</sub> e	4.36 million tCO <sub>2</sub> e	3.70 million tCO <sub>2</sub> e	4.78 million tCO <sub>2</sub> e

The table above shows an increase in the 2021 value for GHG emissions against the 2020 value. This is in line with higher production demand in 2021 compared to 2020, when production demand was affected by the Movement Control Order (MCO) imposed to mitigate the impact of the (then) emerging COVID-19 pandemic.

We are analysing the pathway towards net zero carbon emissions in line with PETRONAS's NZCE 2050 aspiration. Moving forward, we are committed to fulfilling our long-term NZCE 2050 aspiration by collaborating with PETRONAS to make the most of their Carbon Capture Utilisation and Storage (CCUS) system.

The following tables highlight the details of PGB's emissions performance.

#### Scope 1 Breakdown by GHG Type for 2021

Pollutant	Annual Total (tonnes)	Global Warming Potential (GWP)
CO <sub>2</sub>	4,654,656.14	1
CH <sub>4</sub>	3,997.01	25
N <sub>2</sub> O	65.38	298
HFCs	1.44	18-18,100

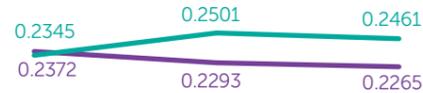
#### Methane (CH<sub>4</sub>) Emissions over Three Years

Year	2019	2020	2021
Methane (Tonne)	3,024.51	3,414.42	3,997.01

\* Global Warming Potential (GWP) is a factor describing the radiative forcing impact of one 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 certain type of GHG to the earth.

## COMMITTED TO SAFEGUARDING THE ENVIRONMENT

### PGB GHG Intensity



The GHG intensity indicators reflect the GHG emissions released in energy consumption for production purposes. They are based on total emissions (i.e., GHGs released in energy consumption for overheads, GHGs released by transport used for business travel; and additional GHGs released from the production process) normalised by the total value of production output.

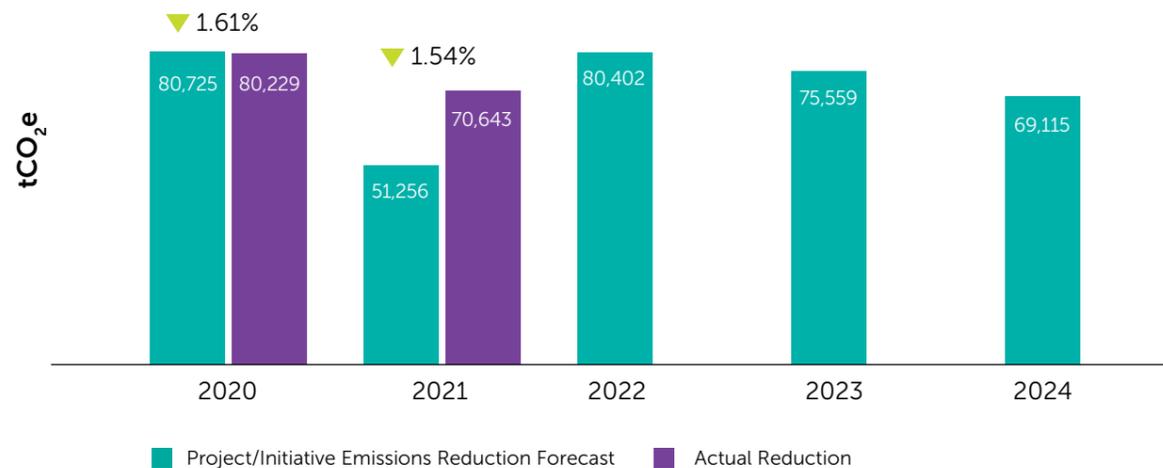
In 2021, the GHG intensity indicators for PGB's Gas Processing (GP) and Utilities (UT) Divisions were lower as a result of the Operational Excellence initiative that was completed in the same year. In comparison, the GHG intensity indicator for Gas Transmission and Regasification (GTR) increased, mostly because of high flaring during the zero send-out mode where there was no gas transmission from the facility.

Moving forward, the reduction targets for PGB's Scope 1 and 2 emissions are spelt out in the following table. These targets are based on the outcome of a preliminary study from several identified potential CO<sub>2</sub> reduction initiatives. The reduction targets are based on identified initiatives that could potentially reduce Scope 1 and 2 emissions. Each of these projects will be evaluated based on their GHG emissions reduction results as well as their fuel gas and flared gas reduction results.



**GP** (Tonne of CO<sub>2</sub>e / Tonne Production [C1-C4])  
**UT** (Tonne of CO<sub>2</sub>e / MWh of energy [Steam+Power])  
**GTR** (Tonne of CO<sub>2</sub>e / Tonne of throughput)

### Emissions Reduction



In 2021, PGB embarked on 13 Operational Excellence projects encompassing 11 OE initiatives, one CO<sub>2</sub> utilisation initiative and two low carbon energy initiative. With a total investment of RM3 million, these projects contributed to the reduction of some 76,000 tCO<sub>2</sub>e and value creation of close to RM30 million. The reduction in GHG emissions and the value creation quantification was based on the amount of fuel gas savings and the reduction in product flaring. The details of these projects are outlined below:

Cluster	Initiative
<b>Operational Excellence Initiatives</b> GHG Reduction: 62,378 CO <sub>2</sub> e/annum	GPP2, 3 and 4 Butane (C <sub>4</sub> ) Treater Optimisation (OE: Flare Reduction)
	GPS Efficiency Improvement of Air Fin Cooler (OE: Energy Efficiency)
	GPS Dehydration Unit Regen Cycle Optimisation (OE: Flare Reduction)
	GPS FG Blanketing Reduction at Condensate Tanks (OE: Flare Reduction)
	GPS Reinstatement of Deaerator Operating Condition (OE: Energy Efficiency)
	GPS Optimisation of Fuel Gas Consumption at Furnace: (OE: Energy Efficiency)
	GPK and GPS Improved GT Degradation Rate by EPA Inlet Filter Upgrading Project (OE: Energy Efficiency)
	Optimise Switching Over Kuantan Compressor (OE: Energy Efficiency)
	GPK Energy Equipment Configuration Compliancy (OE: Energy Efficiency)
<b>Low Carbon Energy</b> GHG Reduction: 4,403 CO <sub>2</sub> e/annum	Conversion of Sweep Gas Medium from Fuel Gas to Nitrogen at RGTP (Low Carbon Energy)
	H <sub>2</sub> Rich Reinstatement and Utilisation at UG (Low Carbon Energy)
<b>CO<sub>2</sub> Utilisation</b> GHG Reduction: 10,134 CO <sub>2</sub> e/annum	Carbon Dioxide Supply to New Customers or COSLA New Customer 2021 (Leeden Gases Sdn. Bhd.) (CO <sub>2</sub> utilisation)

### EXPLORING CLIMATE CHANGE RISKS AND OPPORTUNITIES

At PGB, we recognise climate change poses both a material risk and opportunity for our business. We also acknowledge that strengthening our resilience against the physical effects of climate change, will help build business sustainability and reduce potential asset damage.

In 2021, PGB collaborated with PETRONAS and participated in a climate vulnerability assessment across PETRONAS' business locations in Malaysia including PGB's operational sites in Kertih, Gebeng and Melaka. The findings of the assessment highlighted that the risks related to climate adaptation included the potential impact from extreme weather events particularly storms and floods, as well as the failure to act on climate change.

## COMMITTED TO SAFEGUARDING THE ENVIRONMENT



### Safeguarding Our Resources from Extreme Weather Events

To protect people, installations and investments against lightning strikes, we are utilising the Compound Air Plasma Lightning Rejection System (CPLR). This system uses active charge neutralisation technologies to effectively detect and defuse lightning storms before they occur. Lightning is typically produced by cumulonimbus clouds, which have a base of approximately 1-2 km above the ground and reach up to 15 km in height.

The CPLR system is able to detect the increased atmospheric electrical field strength of an approaching storm at a height of 600 metres. The system then triggers the control unit to ionise the air and generate a high-density plasma cloud consisting of billions of negative and positive ions. Using the law of equivalent ions, negative ions will bond with positive ions ascending from the ground, while positive ions will bond to negative ions from the base of the thundercloud. The plasma cloud effectively neutralises the electrical charge of a storm and greatly reduces the possibility of lightning strikes taking place within the effective radius of the system.

As part of our risk mitigation efforts, we are developing a climate change adaptation plan. This will involve assessing the risks and opportunities relating to different climate change scenarios. The results from this assessment will help in developing the 2022 PGB Enterprise Risk Profile.

Acknowledging the host of material risks and opportunities that come with climate change, we will focus our efforts in these areas moving forward:

#### Operational Excellence:

We will meet and sustain top quartile energy performance and reduce flaring where operationally and economically feasible, based on the ELMS Charter commitment. We will target a top quartile performance of 97.5 by 2022.

#### Technology and innovation:

We will consider renewable energy technologies and low carbon solutions in all facilities and projects where operationally and economically feasible.

#### Carbon offsets:

When all options are exhausted, we will consider natural climate solutions through reforestation or the protection of forests as these will be crucial in compensating for the remaining Scope 1 and 2 emissions.

#### Planning and projects:

The PETRONAS Group has developed the PETRONAS Technical Guideline (PTG) and the Carbon Footprint Assessment (CFA) Guideline for projects. PGB has adopted these essential guides. In utilising the CFA, the Internal Carbon Price is to be considered in project decision-making by using USD20 per tonne for developing countries and USD40 per tonne for developed countries. In circumstances where there is no legislated carbon price in the host country, we will put an estimate on the carbon emitted and consider the option of carbon abatement where economically feasible.

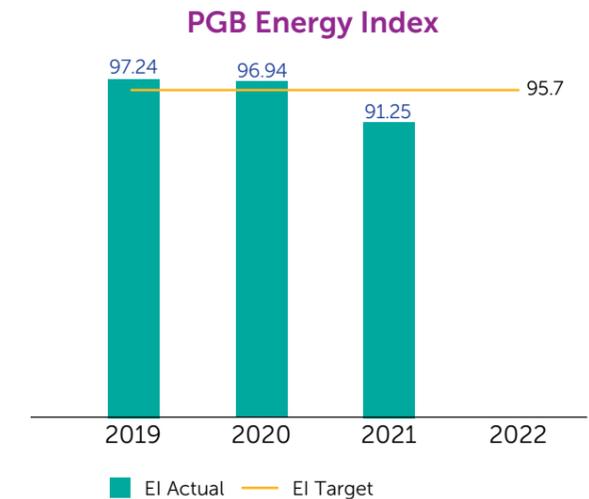
### Independent GHG Verification Exercise

In December 2021, we conducted an independent GHG emissions verification exercise using the ISO 14064-3 standard (with limited assurance) and the PETRONAS Technical Standard (PTS). This was done in collaboration with the PETRONAS Group Health, Safety and Environment (GHSE) and PETRONAS Project Delivery and Technology (PD&T) teams. The scope covered relevance, completeness, consistency, accuracy and transparency. PETRONAS also hired ERM Certification and Verification Services (ERM CVS), a wholly owned subsidiary of the ERM Group, a global market leader in sustainability services, to provide assurance on the GHG emissions in relation to the Malaysia Operations using a risk-based approach.

## ENERGY MANAGEMENT

Under PGB's 301Q99 R2 Game Plan, we have set a target of achieving Quartile 1 energy performance by year 2022. This requires us to deliver more relevant, profitable and sustainable operations where our assets perform at their true potential.

PGB is also committed to developing an energy culture and to becoming a cost-effective production unit by implementing an effective energy and loss management system. Our proactive approach zeroes in on areas like energy conservation and GHG emissions reduction through continuous improvements in plant design and operational efficiencies. Our goal is to run our business by focusing on energy utilisation efficiency and the reduction of wasteful energy in any form. Our Zero Routine Flaring Initiative underscores our efforts to eliminate routine gas flaring at our facilities. In 2021, as a result of intensive energy and emissions reduction initiatives, PGB achieved an Energy Index (EI) rating of 91.25 versus the EI yearly target of 95.7.



The following tables outline the Group's production capacity by energy type and overall energy production and consumption:

#### Power Production Capacity by Energy Type

##### Total Electricity Generation Capacity

**398** MW  
Natural Gas

**0.151** MW  
Solar

##### Total Steam Generation Capacity

**1,312** MT/hour  
Natural Gas

#### Power Production by Energy Type

##### Fuel Gas

**17,310,838** MWh  
2020: 15,725,433 MWh  
2019: 17,098,905 MWh

##### Solar

**202** MWh  
2020: 192 MWh

##### Imported Electricity from Grid

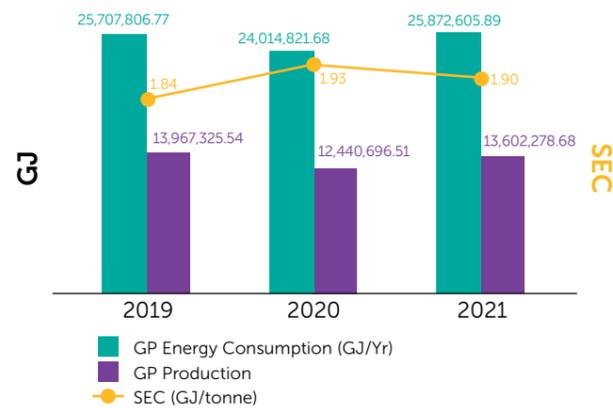
**63,791** MWh  
2020: 94,405 MWh  
2019: 99,739 MWh

## COMMITTED TO SAFEGUARDING THE ENVIRONMENT

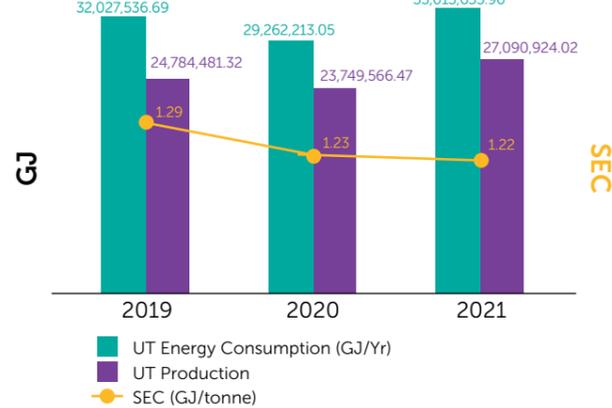
### ENERGY MANAGEMENT AT GPU

In 2021, the Gas Processing & Utilities Division or GPU's overall Energy Optimisation initiative was found to be ahead of schedule at 97% versus the target of 96%. Due to the completion of the registered initiative as well as the operational optimisation workaround, GPU managed to reduce its Specific Energy Consumption (SEC) by 0.03 gigajoule per year (GJ/year) for its gas processing plants i.e., GP Kertih (GPK) and GP Santong (GPS), and by 0.01 GJ/year for its utilities plants i.e., UT Kertih (UK) and UT Gebeng (UG). This generated savings equivalent to more than RM20 million for PGB.

#### GP Energy, Production and SEC Trending

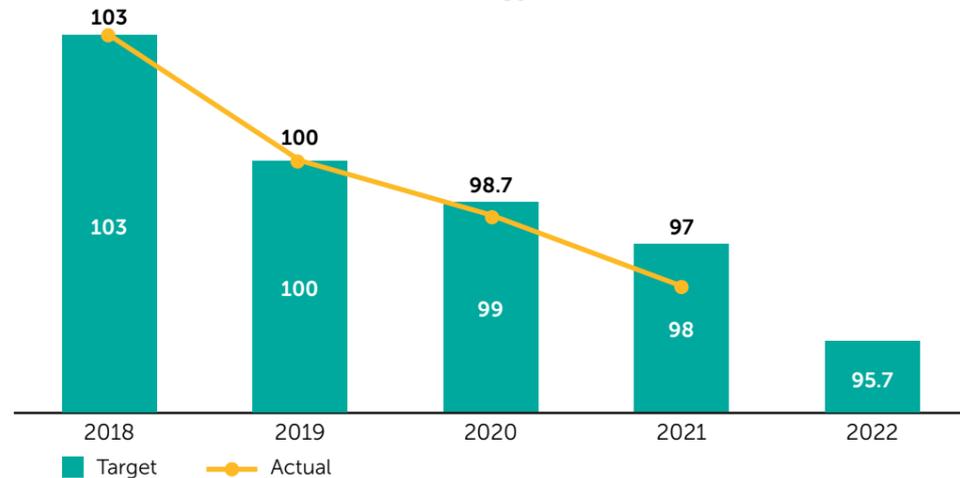


#### UT Energy, Production and SEC Trending



Since 2018, GPU's Energy Index (EI) performance has been strengthening year-on-year on the back of the precise and careful execution of EI reduction initiatives. EI is a parameter that calculates the energy efficiency of a plant by comparing its energy intensity for a particular year against its best tested energy intensity rate. With the completion of the Key Results Area (KRA) initiative for 2021, GPU achieved an EI target of 97.0 versus the target of 98.

#### GPU Energy Index



### Optimising GPK's Acid Gas Oxidiser

GPU has identified an opportunity to optimise fuel consumption at GPK's Acid Gas Oxidiser (AGO). In 2021, fast-tracked rectification works were completed that involved calibrating and switching transmitters and analysers as well as stroking the air combustion damper. These led to several improvements including the tuning of the Air to Fuel (A/F) Ratio and O<sub>2</sub> excess at the Programmable Logic Controller (PLC). On top of this, the AGO temperature optimisation study and initiatives resulted in a reduction in the temperature while meeting the Department of Environment's (DOE) air regulation limit. These initiatives may potentially lead to over RM7 million savings annually a 11k tCO<sub>2</sub>e/year reduction from 2022 onwards.

### Reinstating and Utilising Hydrogen Rich Gas at UG

UG has three Heat Recovery Steam Generation (HRSG) systems with Hydrogen Rich Gas (H<sub>2</sub>RG) lines for burners. However, only HRSG B was reinstated in 2019 due to low H<sub>2</sub>RG supply from Propane Dehydrogenation (PDH) Plant. H<sub>2</sub>RG will not be utilised whenever HRSG B is shut down. UG was unable to utilise its H<sub>2</sub>RG lines during the Hot Gas Path Inspection (HGPI) in July 2021 for one month which led to a lost opportunity to reduce the Fuel Gas cost. The UG operations and maintenance teams collaborated and identified the action items needed to reinstate the H<sub>2</sub>RG line to HRSG A. In 2021, UG garnered Fuel Gas cost savings amounting to RM4.0 million while some 4.0k tCO<sub>2</sub>e per annum was reduced.

### Improving GPK and GPS's Gas Turbine Degradation Rate with EPA-Grade Filters

In 2021, GPU undertook a collaborative engineering study with various air filter OEMs to select EPA-grade air filters that were best suited for the gas turbines at GPK and GPS. The study sought to extend the air filter changeout interval from one to two years while reaping the benefits of best-in-class EPA filters. A total of 10 out of 12 units of the gas turbines at GPK and GPS air intake filtration systems were upgraded to EPA-grade air filters. As of November 2021, over RM9.5 million cost savings had been realised by using EPA-grade filters.

### Rollout of the TCOT Reroute Project

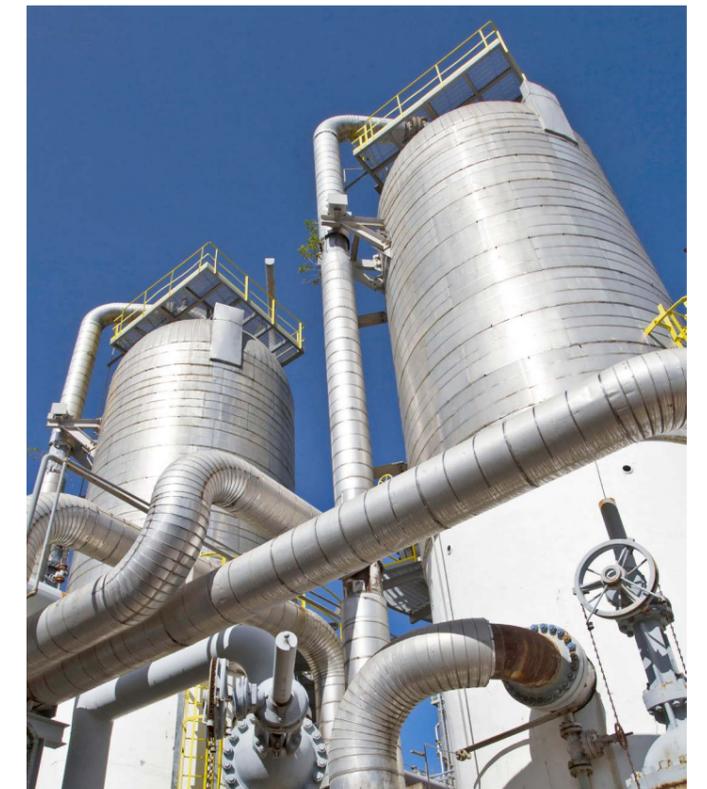
This rerouting project, which serves to recover flared gas from the Terengganu Crude Oil Terminal (TCOT), is expected to be completed in 2023 and contribute an estimated 306,000 tCO<sub>2</sub>e in reduced GHG emissions. The project was sanctioned in August 2021 with capital expenditure (CAPEX) of RM189 million.

### Reinstating Deaerator Operating Conditions at GPS

The process of deaeration protects the steam system from the effects of corrosive gases. In 2021, GPS undertook a detailed study to improve the operating condition of its deaerator. This contributed to higher steam production from the waste heat boiler, and a reduction of energy required at the auxiliary boilers to produce the same amount of steam. This initiative is estimated to have generated RM85,000 in savings to date since July 2021.

### Optimisation of the Butane Treater at GPP2, 3 and 4

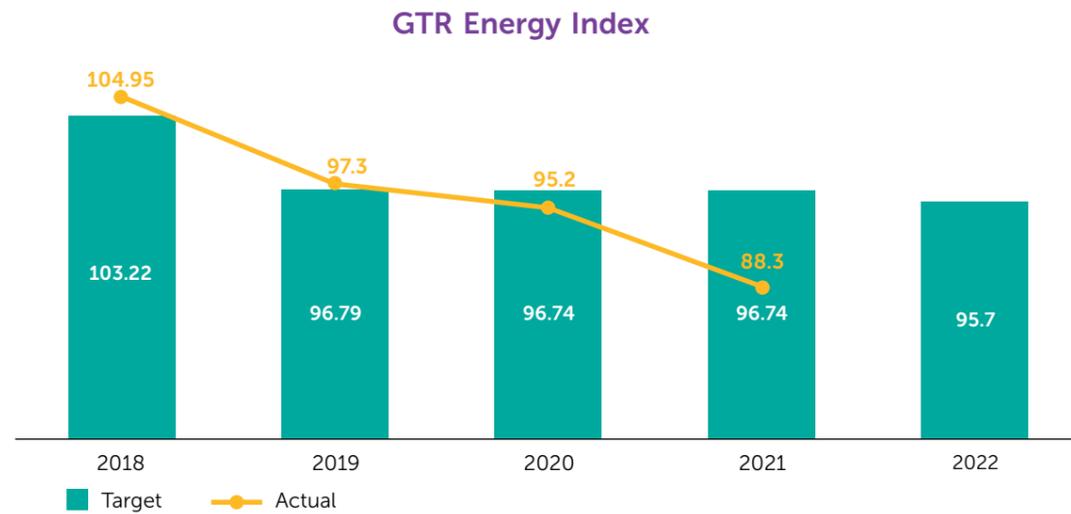
The butane (C<sub>4</sub>) product treater regeneration sequence process at GPK involves hot and cold regeneration. The hot regeneration sequence consumes methane which will be returned to the Salesgas Pipeline. By prolonging C<sub>4</sub> product treater absorption sequence, the project managed to reduce product flaring, increase product flow, reduce high pressure steam consumption, and reduce fuel gas combustion. All this led to a product butane (C<sub>4</sub>) flow increment of 0.4 tonne/hr and a 30,000 tCO<sub>2</sub>e GHG reduction in 2021.



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### ENERGY MANAGEMENT AT GTR

The Gas Transmission and Regasification or GTR Division is similarly committed to developing an energy culture through cost effective transmission and regasification. It is doing this via implementing the Energy and Loss Management System or ELMS to meet PGB's 301Q99 Pushing Forward PLUS target for first quartile efficiency and the PETRONAS NZCE 2050 aspiration. The 2018 to 2021 data for GTR shows a significant and continued reduction in its EI from 104.9 in 2018 to 88.3 in 2021.



GTR's energy management efforts focus on increasing efficiency when utilising internal gas consumption (IGC) and electrical consumption. Between 2019 and 2021, there were a total of 21 initiatives to reduce IGC and electricity consumption. The completion of 18 of these initiatives resulted in notable EI reduction from 104.9 in 2018 to 88.3% in 2021.

The key initiatives that contributed to GTR's performance in FY2021 were:

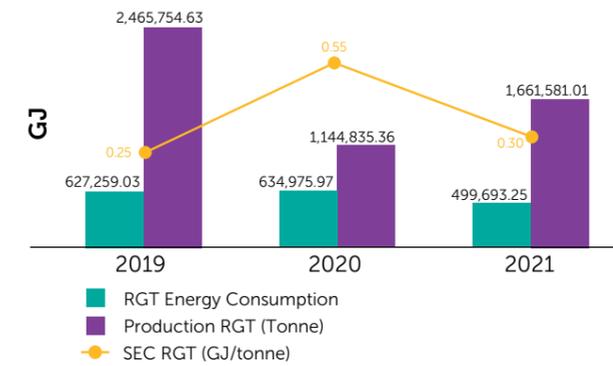
- Conversion of the sweep gas medium from fuel gas to nitrogen at Regasification Terminal Pengerang (RGTP); and
- Optimisation Compressor switching over Kuantan compressor.

These two initiatives alone led to over RM5 million in value creation for PGB in 2021. In addition, we achieved a reduction in energy consumption from RGTP as depicted in the chart below. The Specific Energy Consumption or SEC trend increased due to the lower send-out of compressed gas based on Key Performance Base Index (KPBI) as a result of lower than targeted customer offtake.

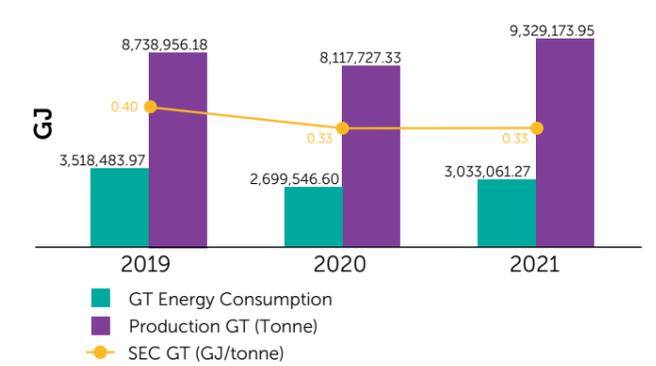
The remaining initiatives at GTR are expected to be completed in 2022 and will focus on sustaining the EI below 95.7%.



### RGT Energy Consumption, Production, SEC



### GT Energy Consumption, Production, SEC



## POLLUTION MANAGEMENT

With regard to pollution management efforts, PGB has adopted the PETRONAS HSE Policy and PETRONAS Health, Safety & Environment (HSE) Mandatory Control Framework (MCF) which centre on managing hazardous and non-hazardous waste, air emissions, wastewater, soil and groundwater. The MCF in turn supports the PETRONAS HSE Policy Statement which spells out the commitment to upholding the safety of people, assets and the environment. Applicable wherever we operate, the PETRONAS HSE Policy ensures every person at any of the Group's vicinities does the right thing, every time. It provides clear and prescriptive requirements related to management of significant HSSE risks, including technical and operational integrity of facilities and equipment. This includes conducting environmental assessments at various phases of a project, while timely audits and risk management activities ensure effective daily operations.

In line with our HSSE mandate, we continuously undertake measures to protect the environment, prevent pollution and use natural resources sustainably. We are also committed to reducing environmental impact by identifying potential environmental hazards due to pollution, natural resource depletion or high waste generation, and subsequently reducing these risks to as low a level as reasonably possible.

### MANAGING HAZARDOUS WASTE

As part of PGB's commitment to uphold Safeguard the Environment lens, we continue to ensure strict management of hazardous waste and have the following targets:

- Improving hazardous waste management through 4R (Reduce, Reuse, Recycle, Recover) activities to 61% by 2024;
- Completely phase out R22 refrigerants (which contribute to thinning the ozone layer) by 2030; and
- Complete the installation of the Acid Gas Oxidiser or AGO at GPS by 2022 thereby improving the quality of CO pollutants released into the atmosphere.

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### Key Achievements in 2021

- Recovered 57% of hazardous waste under 4R activities and created value amounting to RM0.7 million.
- Continued to phase out of environmental hazardous substances including controlled and banned chemicals
- Collaborated with others agencies for hazardous and non-hazardous waste management 4R (Reduce, Reuse, Recycle, Recover)
- Zero fines and infringement

The following are among the key initiatives that PGB has undertaken to manage hazardous waste:

### Ongoing Hazardous Waste Management Efforts

In line with our HSE Policy of preventing pollution throughout our operations, we continue to review PGB's Waste Management Plan on an annual basis and are making good strides forward under the 4R principle of Reduce, Reuse, Recycle, and Recover in managing generated waste. In strict compliance with local environmental regulations, all our hazardous waste is managed properly by qualified and certified waste contractors registered with the DOE.

In 2021, we generated a total amount of 1,419 metric tonnes (MT) of hazardous wastes from normal operations and turnaround activities. A total of 804 MT or equivalent to 57% from total hazardous wastes comprising mainly of spent catalyst was recovered. The remaining 575 MT or equivalent to 43% of hazardous waste generated was disposed at licensed facilities. The year saw us recovering RM0.7 million from hazardous waste-related 4R activities.

Quantity of Hazardous Waste Generated	Quantity of Hazardous Waste Disposed	Quantity of Hazardous Waste Recovered by 4R Activities	Percentage of Hazardous Waste Recovered by 4R Activities	Cost Savings from Hazardous Waste Recovered by 4R Activities
<b>1,419</b> MT 2020: 1,489 MT 2019: 2,437 MT	<b>575</b> MT 2020: 443 MT 2019: 1,295 MT	<b>804</b> MT 2020: 966 MT 2019: 1,179 MT	<b>57</b> % 2020: 65 % 2019: 48 %	<b>RM0.7</b> million 2020: RM1.3 million 2019: RM5 million

In relation to 4R activities, we achieved 57% hazardous waste recovered, exceeding the 4R% target set for 2021 of 55%. The target was developed based on the identified hazardous waste to be potentially reduced, reused, recycle and recovered against the total waste generated on a yearly basis.

Our collaborative efforts with a recovery company to manage waste (such as spent catalyst) and turn it into raw material to be used by other industries was accorded the Par Excellence Award, the highest award ever, by the International Convention on Quality Control Circles (ICQCC-2021).

### 4R% TARGET FOR HAZARDOUS WASTE (2019-2024)

Target 4R%	Actual 4R%	Actual (MT)
<b>55</b> % 2020: 42 % 2019: 28 %	<b>57</b> % 2022: 56 % 2023: 56 %** 2024: 61 %**	<b>804</b> MT 2020: 966 MT 2019: 1,179 MT

\*\*preliminary target based on FY2021 plan

### Ongoing R22 Refrigerants Phase-Out Activities

In 2020, the Malaysian Government gazetted the new Environmental Quality (Refrigerant Management) Regulations 2020 that prohibits the use of R22 refrigerants in the manufacturing or assembling of any air conditioning equipment as well as set a target of zero R22 utilisation by 2030. In line with this, PGB is fully committed to phasing out our usage of R22 refrigerants in existing refrigeration and air conditioning equipment.

In 2021, a total of 91 units of equipment containing R22 were phased out. The ongoing activity will be monitored closely to ensure that we achieve 100% regulatory compliancy by 2030.

### PGB R22 Phase-Out Plan

PGB GPU			PGB GTR		
Total Units	Phase out completion	Status as of 2021	Total Units	Phase out completion	Status as of 2021
<b>601</b>	<b>2025</b>	<b>5</b> %	<b>430</b>	<b>2030</b>	<b>13</b> %

### GPS Foam System Rejuvenation Project

We are committed to eliminating controlled chemical environmental hazardous substances, specifically polyfluoroalkyl substances (PFAS) at site, as per the Stockholm Convention. In 2021, we embarked on a pilot project to phase-out foam containing PFAS from our firefighting suppression system at GPS and then replaced this with 29,000 litres of chemical pro-foam at a cost of RM0.6 million. The alternative chemical pro-foam has no impact on the environment.

### Secondary Containment Assessment

In line with PETRONAS and industry best practices, Group Technical Services conducted a secondary containment assessment at the Tanjung Sulong Export Terminal (TSET) site. This exercise sought to identify and develop mitigation measures at TSET's chemical and product storage areas to prevent potential discharge and spillage onto the soil and into storm water drains. As part of continuous improvement efforts, this assessment will be continued at the UK site in 2022 and at other sites in 2023.

### OTHER WASTE GENERATION MITIGATION ACTIVITIES

The following are among the other key initiatives that we have conducted throughout our operations to mitigate hazardous waste generation:

### Reduce: LED Upgrading Project at GPS and TSET

Previously, major lighting at the GPS and TSET sites used conventional lighting that contributed to the generation of hazardous waste under the SW109 label i.e., waste containing mercury or its compound.

A total of RM2.5 million was spent to replace this with LED lighting, thus ensuring this type of hazardous waste is avoided and reduced, and that the life span of the lighting is increased. The project will continue throughout other PGB sites in 2022.

### Reuse: Reusing Transformer Oil

During the Gas Turbine B(GTB) mechanical inspection, a total of 104 MT of transformer oil was generated and reused after filtration had been done to ensure the quality of the oil was maintained as intended. This initiative has prevented the generation of more scheduled waste and reduced the need to utilise new resources.



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### Recover: Spent Catalyst Recovery at Recovery Facilities

A total of 50.42 MT of spent catalyst such as spent molecular sieve, spent alumina ball and spent ceramic ball were sent to a recovery company to be recycled as raw materials for cement-related industries. This waste minimisation initiative garnered cost savings amounting to RM57,500 in 2021.

### Installation of Online Washing System to Gas Turbine

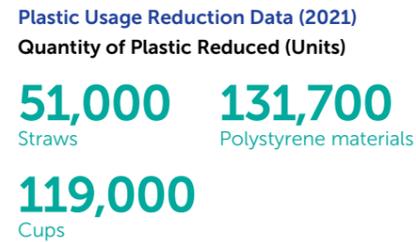
With the addition of an online washing system which involved the installation of HEPA filters, the reliability of the compressors has significantly increased. The offline washing interval has increased from three months to six months and instead of performing offline washing four times per year, the number has reduced to twice a year. This innovation has reduced the quantity of SW410 labelled hazardous waste generated at the operational level, specifically spent filter, from 2.10 MT to 1.39 MT per year.

### MANAGING NON-HAZARDOUS WASTE

The following are among several key initiatives that we implemented to manage non-hazardous waste generation:

#### Single-Use Plastic Campaign

To reduce the unnecessary use of resources and in line with Malaysia's Towards Zero Single-Use Plastic Roadmap 2018-2030 initiative, PGB collaborated with PETRONAS Gas & New Energy (GNE) in February 2021 on the Zero Single Use Plastic Campaign. Keenly aware that plastic pollution had become one of the most pressing environmental issues, and that food and drink packaging materials made of plastic were (then) still being widely used throughout PGB, we made the shift to a greener initiative i.e., paper-based materials which are biodegradable. Today, these biodegradable materials are being utilised throughout PGB's operations during normal operations, over the course of projects, and during turnaround activities resulting in the following reduction.



### Collaboration with FELDA to Manage Spent Perlite

Under our 4R programme, we worked closely with the Federal Land Development Authority (FELDA) to manage spent perlite generated from our operations by recycling this material and using it to improve soil conditions and boost plant growth. As result of these collaborative efforts, we successfully garnered a total of 1,474 jumbo bags (294.8 MT) of spent perlite to be reused by FELDA instead of having this material disposed at landfills.



### RESOURCES MANAGEMENT

#### Reducing Onsite Chemical Usage

In line with efforts to reduce resource usage in 2021, we identified several areas for improvement. These included areas such as loss of water, high chemical consumption, and the reduced shelf life of resin due to the low reliability of the reverse osmosis (RO) system. Improvements were then made by upgrading the design of the connectors. This saw us shifting from the conventional connector type to the interlocking membrane type at a total cost of RM500,000. As a result of these efforts, we managed to successfully reduce chemical consumption by RM69,300 annually and extend resin longevity.



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### Raw Material Usage (Tonnes) (2019-2021)

Unit	Type of Chemical	Annual Average Consumption (kg) according to Type		
		2019	2020	2021
Cooling water	3DT 129	10,430	8,905	7,737
	3DT 304	12,119	12,929	12,050
	N7330	12,522	14,510	14,655
	3DT 199	3,520	3,960	4,080
	GN8020	20,965	22,289	23,413
	NX1103	14,840	16,363	14,985
	NX1104	14,042	15,130	14,887
	SODIUM HYPOCHLORITE	219,000	219,000	220,000
Boiler Water	BT3000	1,136	1,009	1,181
	TriAct 1800	36,185	35,937	36,291
	ELIMINOX	5,247	4,941	4,864
	HTP73614	25,962	22,644	22,276
	NA0660	5,864	6,363	5,826
OS5300	5,980	5,955	6,284	

\*These results reflect the total chemical consumption in the PGB boiler and cooling water system.

### EFFLUENT MANAGEMENT

Effluent is the outflowing of water to a natural body of water, from a structure such as a sewage treatment plant, sewer pipe, industrial wastewater treatment plant or industrial outfall. In the context of PGB, effluent is water knock-out from feed and processes, which is released by a few of our facilities, namely GPK, GPS, UK and LNG Regasification Terminal Pengerang or RGTP. Being a responsible company, we monitor effluent discharge from the Industrial Effluent Treatment System (IETS) to ensure compliance with the DOE Standard B limit as per the Environmental Quality (Industrial Effluent) Regulations 2009. Performance monitoring is conducted monthly by an IETS-competent person certified by DOE. The monitoring of effluent discharge and IETS performance are conducted by an internal laboratory and an accredited third-party laboratory.

The table below shows the results of PGB IETS discharge for parameter Chemical Oxygen Demand or COD, for all plants from 2019 to 2021. Based on the analyses, all the results were within the limit as per Standard B.

### Point of Effluent Generation and Respective Destination of Discharge

Point of Effluent Generation	Destination of Discharge
 <b>GPK</b>	Sungai Kertih
 <b>GPS</b>	Sungai Paka
 <b>UK</b>	Sungai Kertih
 <b>RGTP</b>	Marine Water (South China Sea)

### Total Amount, Quality and Loading of Effluent Discharge from Each Facility

Plant	Parameter	Limit Based on IER 2009 (Standard B)	2019	2020	2021
 <b>GPK</b>	Total Amount of Effluent Discharge (m <sup>3</sup> )	Nil	40,387	46,612	36,279
	Total COD Loading (tonnes)	Nil	0.82	1.94	1.88
	<b>Average COD*</b>	<b>200 mg/l</b>	<b>20.40</b>	<b>41.73</b>	<b>43.31</b>
 <b>GPS</b>	Total Amount of Effluent Discharge (m <sup>3</sup> )	Nil	206,291	279,548	109,514
	Total COD Loading (tonnes)	Nil	5.91	7.28	3.77
	<b>Average COD*</b>	<b>200 mg/l</b>	<b>19.64</b>	<b>19.84</b>	<b>30.23</b>
 <b>UK</b>	Total Amount of Effluent Discharge (m <sup>3</sup> )	Nil	775,054	752,263	889,906
	Total COD Loading (tonnes)	Nil	26.63	13.96	27.47
	<b>Average COD*</b>	<b>200 mg/l</b>	<b>43.00</b>	<b>20.60</b>	<b>23.76</b>
 <b>RGTP</b>	Total Amount of Effluent Discharge (m <sup>3</sup> )	Nil		No Discharge	
	Total COD Loading (tonne)	Nil		No Discharge	
	<b>Average COD*</b>	<b>200 mg/l</b>		<b>No Discharge</b>	

\* Meets Standard B IER 2009

As part of our continuous improvement efforts, we work closely with other PETRONAS Operating Units (OPU) at the Kertih Integrated Petrochemical Complex (KIPC). This saw us establishing an automatic water quality monitoring system (AWQMS) at the common stormwater drainage streams located within the complex. By having the AWQMS in place, data can be accessed in real time and any abnormalities can be tracked immediately for recovery purposes.



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### AIR EMISSIONS MANAGEMENT

PGB closely monitors and manages air emissions using a Continuous Emission Monitoring System (CEMS) and Predictive Emission Monitoring System (PEMS). On top of this, manual sampling is undertaken by an accredited third-party contractor and under the Leak Detection and Repair (LDAR) programme. Through the LDAR initiative which commenced in 2018, we have identified the areas releasing fugitive emissions, including methane leaks, and are focusing on repairing the leaks to prevent further release of fugitive emissions into the atmosphere.

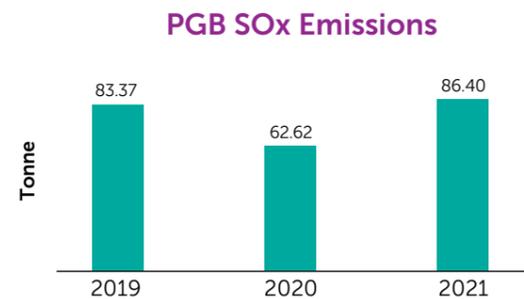
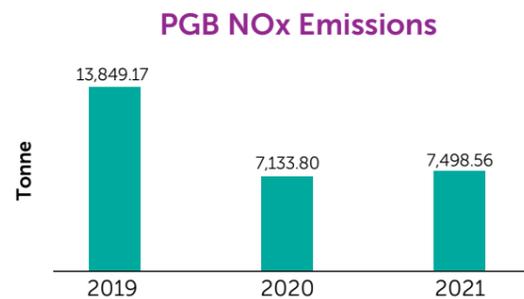
As of 2021, a total of 33 units of CEMS have been installed within our equipment. With the installation of CEMS, it will allow us to obtain real-time data and take prompt action should any abnormal reading be recorded.

#### Installation of New Acid Gas Oxidiser at GPS

As part of our commitment to protecting the environment, we invested approximately RM85 million to replace two units of Acid Gas Incinerator (AGI) at GPS with an AGO to improve the reliability and efficiency of the equipment. This project also led to significant improvements in the quality of CO pollutants which dropped from 1,950 mg/m<sup>3</sup> to less than 600 mg/m<sup>3</sup> as per standard limit.

#### Monitoring Nitrous Oxide and Sulphur Oxides Loading

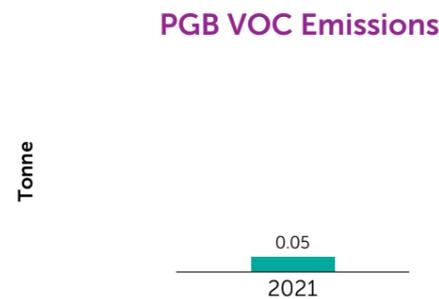
Aside from monitoring the quality of emissions, we also measure the quantity of emissions through calculating Nitrous Oxide (NOx) and Sulphur Oxides (SOx) loading. The following charts highlight the NOx and SOx loading from 2019 to 2021.



\* Data for the year 2019 has been restated from the previous report due to changes in the calculation basis factor in the AGRU module and GT.

The lower NOx and SOx levels in 2020 were due to low production demand as a result of the impact of the (then) emerging pandemic on industrial activities. However, in 2021, the NOx and SOx levels increased on the back of higher production demand as industrial activities resumed.

In 2021, PGB began quantifying its volatile organic compound (VOC) emissions. While all the VOC emissions in the hydrocarbon storage are diverted to flare, however, a very small amount of the remaining VOC emissions will be released through the breathing line from the diesel and methanol tank. To ensure optimum safety, there are controls in place such as nitrogen (N<sub>2</sub>) blanketing inside the tanks, while the tanks themselves are located at a remote area within the plant.



\*PGB only commenced VOC reporting in 2021.

### LIFE CYCLE ASSESSMENT (LCA)

Life Cycle Thinking is an integral part of our NZCE 2050 aspiration. This helps us to appraise our environmental footprint across the value chain and to identify opportunities to create products and solutions that are geared towards more sustainable production and consumption. To strengthen our product safety and sustainability portfolio, we are looking to adopt several of PETRONAS' initiatives, one of which is the Life Cycle Assessment (LCA) methodology.

Today, PGB is collaborating with PETRONAS Group HSE Product Stewardship and Toxicology to leverage the LCA methodology to estimate the environmental impacts (including GHG impacts) occurring along the value chain of our products that contain

methane, ethane, propane, butane and condensate. The findings from these assessments, which include the environmental footprint of these products and their carbon price, are being used to identify opportunities to improve our waste minimisation programme as well as to optimise the use of natural resources. Today LCA activities have been conducted at UG, GPS and Tanjung Sulong Export Terminal or TSET. In 2022, we will continue to conduct assessments at our remaining facilities, namely RGTSU, RGTP, UK and GPK.

### ENVIRONMENTAL FINES

In term of environmental fines, PGB has been able to steadfastly maintain a zero-fine track record for three consecutive years between 2019 and 2021.

NO. OF ENVIRONMENTAL FINES IMPOSED (2019-2021)	NO. OF ENVIRONMENTAL INCIDENTS (2019-2021)				
	Total Cost of Environmental Fines (RM)	Major Spill (To Environment)	Minor Spill (To Environment)	Black Smoke	Discharge of Spec Effluent
RM0 2020: RM0 2019: RM0	0 2020: 0 2019: 0	0 2020: 0 2019: 0	0 2020: 1 2019: 0	0 2020: 0 2019: 0	0 2020: 1 2019: 0



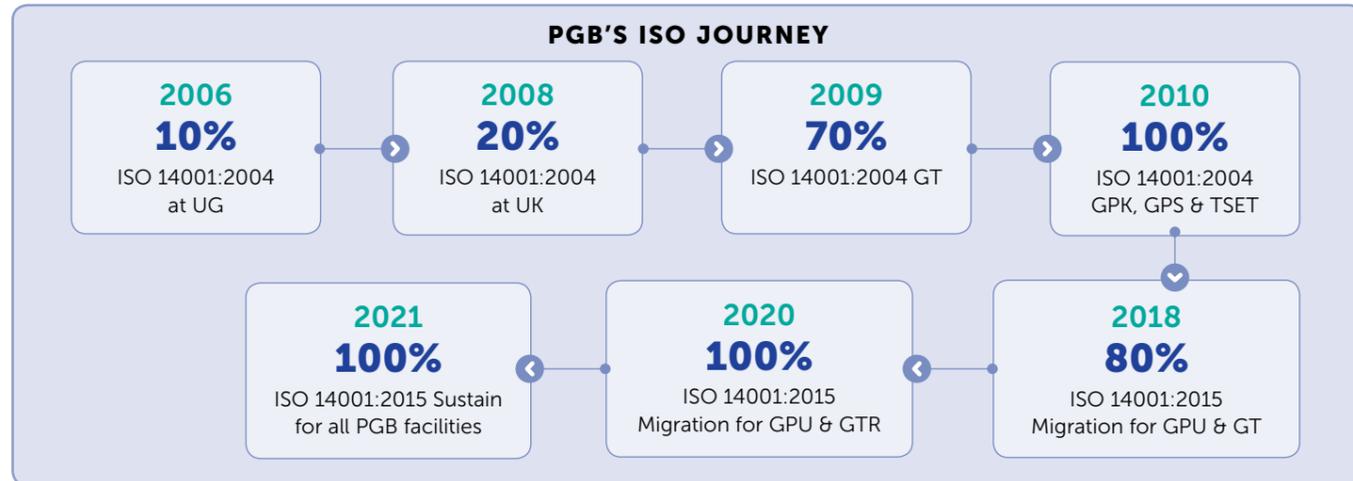
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### ENVIRONMENTAL MANAGEMENT SYSTEM (ISO 14001:2015)

We began our ISO journey in 2008 with the commencement of ISO 14001:2004 certification at UG and UK. The rollout of the ISO 14001:2004 standard was then extended to other facilities, namely GPK, GPS, TSET and GT in 2010, until we successfully migrated to the revised ISO 14001:2015 standard.

All our sites, including RGTSU and RGTP have successfully migrated to the ISO 14001:2015 and we are confident of renewing this in the next assessment cycle.

Having ISO 14001:2015 accreditation underscores our commitment to improving our environmental performance through more efficient use of resources and the reduction of waste. Moreover, it gives us a competitive advantage and enables us to secure the trust of stakeholders as we align and comply with global sustainability practices and requirements.



### PGB'S ENVIRONMENTAL-RELATED CSR EFFORTS

In 2021, PGB collaborated with diverse organisations to undertake corporate social responsibility (CSR) activities aimed at preserving the environment.

#### Collaboration with DOE Melaka: Oil Spill Cleaning at Tanjung Tuan Beach

PGB in collaboration with DOE Melaka, Malaysia Refining Company Sdn. Bhd. And Sungai Udang Port Sdn. Bhd., carried out an oil spill cleaning exercise at Tanjung Tuan Beach, Port Dickson as part of efforts to conserve the environment. The team from RGTSU supported the efforts with 26 employees putting in 362 man-hours. A total of RM20,000 worth of items including Tyvek suits, gloves, dust masks, oil absorbent booms, mineral water, shovels and chemical boots were invested in this exercise.



#### Collaboration with DOE Pahang: Denai Sungai Kebangsaan 2021

PGB worked hand-in-hand with DOE Pahang on the "Program Denai Sungai Kebangsaan" in tandem with World River Day on 27 March 2021. Carrying the theme, "Valuing Water", the programme saw PGB employees involved in water sampling activities as part of efforts to improve the river's water quality.

#### Collaboration with DOE Pahang: National Environmental Day 2021

DOE Pahang in collaboration with PGB organised a National Environment Day celebration with the theme, "The Environment is Our Responsibility" at Sungai Balok, Pahang on 23 October 2021. This programme, which aligned with the national agenda of making Malaysia a Sustainable Nation, sought to increase environmental awareness and strengthen the relationship between the public and private sectors. The day's programme focused on cleaning the area and tree planting activities.



### THIRD-PARTY ENVIRONMENTAL AUDIT

To date, selected PGB facilities have conducted annual third-party environmental audits as part of EIA Approval Conditions criteria. As per the Environmental Audit Guidance Manual, the third-party environmental audit is to be conducted by a DOE-registered auditor. The scope of the audit covers the assessment of environmental compliance as well as verification of environmental operational data that was submitted to the authorities, namely hazardous wastes, effluent, and air emissions, among others. Apart from this, we undergo yearly independent limited assurance by SIRIM auditors to maintain our ISO 14001:2015 certification.

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### BIODIVERSITY AND ECOSYSTEM SERVICES (BES)

#### Biodiversity and Ecosystem Services or BES Explained

There is now a greater demand for the business community to play a bigger role in Biodiversity and Ecosystem Services (BES) management and conservation.

**Biodiversity** – made up of the words “biological” and “diversity” – refers to all the variety of life that can be found on earth as well as to the communities that they form and the habitats in which they live.

**Ecosystem Services** focus on the benefits that ecosystems contribute towards the well-being of humans. These can be divided into four categories, namely (i) provisioning services – products or goods such as water, fish, or timber; (ii) regulating services – ecosystem functions such as flood control and climate regulation; (iii) cultural services – non-material benefits such as recreational, aesthetic and spiritual benefits; as well as (iv) supporting services – fundamental processes such as nutrient cycling and photosynthesis that support the above three categories.

Source: Based on World Resources Institute (WRI) materials

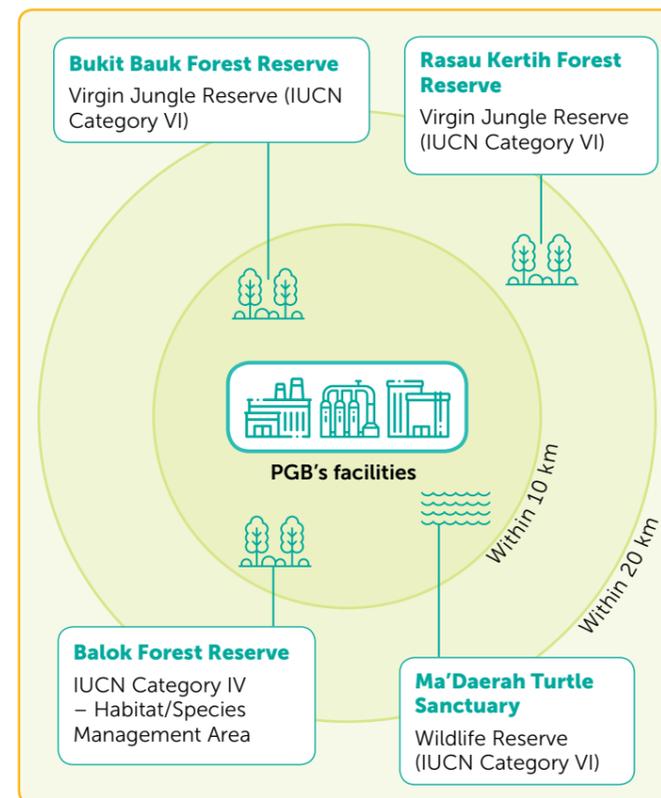
The PETRONAS Group is committed to minimising and preventing disruptions to BES through leveraging tools such as holistic BES risk assessments which include the Integrated Biodiversity Assessment Tool (IBAT), a one-stop global dataset on biodiversity. At the same time PETRONAS is focused on restoring and nurturing the ecosystems around its operations through conservation efforts.

Here at PGB, we too are doing our part to protect the BES surrounding our projects and operations by tapping tools such as Environmental Impact Assessments (EIAs), and the Biodiversity and Ecosystem Services Risk Assessment (BESRA), while undertaking conservation initiatives.

#### BES RISK PROFILING

In 2020, PETRONAS completed BES risk profiling for all its onshore and offshore facilities in Malaysia including PGB’s facilities, namely GPK, GPS, TSET and UK which are located within the KIPC area in Kertih, Terengganu. Because of the size and complexity of KIPC operations, any spill or pollution can cause damage to sensitive riverine, marine and coastal ecosystems, which may also impact surrounding BES as well as the livelihood of communities. Although the KIPC is not within any protected area, it does contain important ecosystems which give it a medium risk rating. In line with this, the assessed sites within the KIPC, namely GPK, GPS, TSET, and UK, have also been categorised as medium risk. UG in particular has been given a medium risk rating due to its proximity to protected areas such as forest reserves. Upon identifying the inherent risks involved, physical, operational or abatement controls have been put in place by applying a mitigation hierarchy and minimising risk impact.

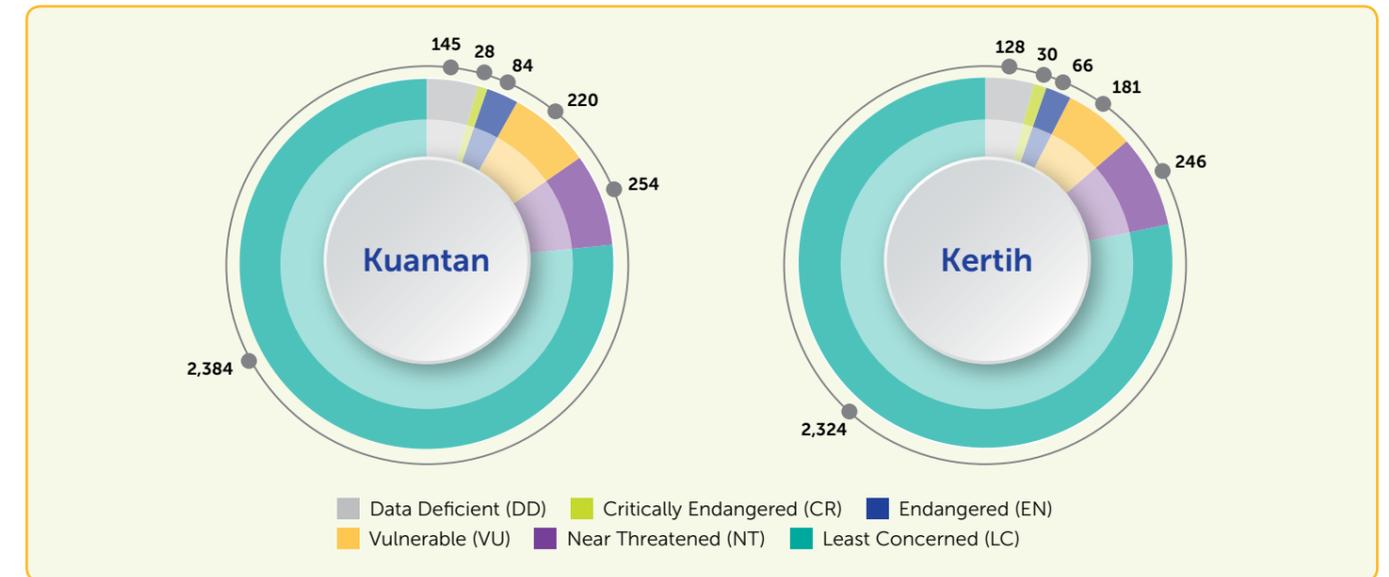
Below are the Key Biodiversity Areas (KBA) within a 10 km to 20 km radius of PGB’s Gas Processing and Utilities facilities:



#### What is the IUCN?

The International Union for Conservation of Nature or IUCN's Red List of Threatened Species has evolved to become the world's most comprehensive information source on the global conservation status of animal, fungi and plant species. It is a critical indicator of the health of the world's biodiversity and serves as a powerful tool to inform and catalyse action for biodiversity conservation and policy change, critical to protecting the natural resources we need to survive. IUCN Category VI denotes protected areas with sustainable use of natural resources, while Category IV denotes protected areas that serve to protect particular species or habitats with management that reflects this priority.

Below are the number of species potentially found within a 50 km radius from PGB's facilities:



#### BIODIVERSITY AND ECOSYSTEM SERVICES RISK ASSESSMENT (BESRA)

The BESRA conducted on the KIPC in 2018 included PGB's facilities, namely our GPS, GPK and UK sites. The BESRA methodology sought to provide better insights into PETRONAS' potential impact on BES in the areas surrounding our operations. Based on the risks identified, the KIPC (then) was classified as having moderate risk upon the surrounding BES. The data collected will serve as baseline data for future assessments.

#### BIODIVERSITY SURVEY

A biodiversity survey was first carried out on the KIPC in 2010 and another in 2016 by PBG to focus on the biodiversity surrounding our facilities. The results of these surveys were used as the baseline data for the area's biodiversity. A follow-up survey will be carried out in 2022 to ascertain the changes to biodiversity such as flora, fauna, avifauna, herpetofauna and arthropods in the same area over a period of 10 years. The latest survey will provide an updated overview of the health of the BES within the KIPC area.

## COMMITTED TO SAFEGUARDING THE ENVIRONMENT

### BIODIVERSITY PROTECTION AND CONSERVATION PROGRAMME

PGB is committed to implementing biodiversity protection and conservation programmes which seek to maintain the ecosystems essential for present and future generations. In stepping up our efforts, we continue to collaborate with other industries, non-governmental organisations (NGOs) and regulators in Malaysia to implement environmental conservation programmes.

Apart from promoting awareness on the importance of preserving the environment using an educational approach, we aim to continuously build good relationships with the relevant authorities and communities. We continue to engage with several government officials including representatives from various district offices, state DOEs, state drainage and irrigation departments, state forestry departments and state education departments. On top of this, our engagement efforts extend to state assemblyman, municipal councils and police departments.

**23 October 2021**  
Collaboration with DOE Pahang at Jeti Nelayan Kuala Sungai Balok in conjunction with National Environmental Day

**27 March 2021**  
Collaboration with DOE Pahang at Denai Sungai Kebangsaan in conjunction with National Water Day

### “Sayangi Sungai Latoh” Programme

PGB supports numerous local community programmes in areas surrounding our operations. The “Sayangi Sungai Latoh” Programme at Kampung Sungai Latoh located in Kongkong Laut, Johor, is a five-year environmental conservation programme in collaboration with the Malaysian Nature Society (MNS). The partnership is aimed at preserving and restoring the ecosystem and related species within the Sungai Latoh area as well as preventing erosion along riverbank. It involves the collection of data on the ecological stability of flora and fauna as well as river conservation which aims to benefit all parties concerned, especially those residing within the area, which is close to PGB’s right-of-way gas pipeline.

As of 2021, over 9,525 mangrove samplings have been planted since the initiative kicked-off in 2018. In tandem with this, a comprehensive study on the habitat of the flora and fauna of Sungai Latoh has been undertaken by MNS experts, a local university as well as through syndication with the local authorities. The mangrove planting programme was carried out using the comp-pillow technique introduced by Forest Research Institute of Malaysia (FRIM). It is an innovative planting technique made from palm fibre, which is 100% natural, non-hazardous, biodegradable and environmentally friendly. We regularly monitor the survival and growth rate of the mangrove trees planted to ensure the success of the programme. As of 2021, a total of 8,331 mangrove trees have survived since 2018.

Following a biodiversity survey conducted at Sungai Latoh, several instances of species growth at the conservation area have been identified including the following species:

Java Mayna	Spotted Dove
Pink Neck Pigeon	Malaysia Pied Fantail
White Collared Kingfisher	Yellow Vented Bulbul
Terek Sandpiper	Crows
Brahminy Kite	Sun Bird
Oriental Pied Hornbill	White-Bellied Sea Eagle
White Breasted Western	Nightjar



### OUTCOME OF THE SUNGAI LATOH PROGRAMME AND MANGROVE PLANTING JOURNEY



Aside from stabilising the ecosystem and preventing erosion along the riverbank, this programme has done much to help build goodwill and enduring ties with local communities in the areas.

## COMMITTED TO SAFEGUARDING THE ENVIRONMENT

### ENSURING WATER SECURITY

As PGB aligns itself with the PETRONAS HSE Policy Statement which spells out the commitment to upholding the safety of people, assets and the environment, we are ensuring that we protect and make the best use of our natural resources in a sustainable manner. Water is one of the key natural resources that we are committed to optimising and we strive to reduce water wastage throughout our business operations.

#### WATER MANAGEMENT GUIDELINES

It is vital that we integrate water conservation practices into our decision-making processes and operational management. PGB's water management efforts are based on PETRONAS' Guidelines on Water Practices (WAPS) as well as Wastewater Management and Water Management PETRONAS Technical Standard (PTS). These guides aim to ensure that water is used in an optimal manner throughout our operations and that we minimise the impact of our water discharge on surrounding water bodies. The WAPS and PTS also pinpoint the framework by which we are to manage water at our facilities and covers elements such as cooling water, ion exchange, reverse osmosis, electrode ionisation, steam generation and condensate water. They also spell out how we are to handle sludge, wastewater discharge, collection and treatment, as well as the recycling methodology, among others.

#### Key Achievements in 2021

**Saved 20,000m<sup>3</sup>/month** from freshwater withdrawal

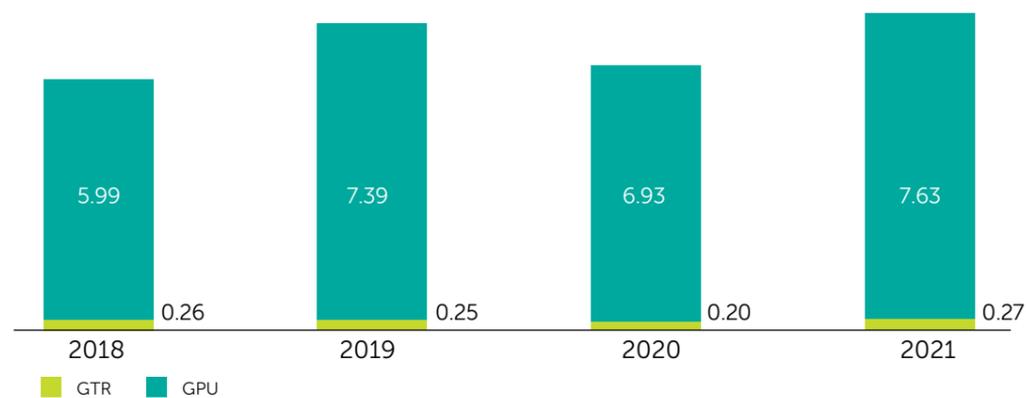
Reduced rejected water by **12,000 m<sup>3</sup>**

**Zero fines** and non-compliance

#### FRESHWATER WITHDRAWAL

Water withdrawal describes the total amount of water withdrawn from surface water or groundwater sources. In 2021, PGB recorded a total water withdrawal of 7.9 million m<sup>3</sup> compared to 7.13 million m<sup>3</sup> in 2020, marking a 10.7% increment in our water withdrawal activities. There was lower freshwater withdrawal in 2020 due to low production demand resulting from the impact of the (then) emerging COVID-19 pandemic on industrial activities. As industrial activities resumed in 2021, there was an increase in production demand and consequently freshwater requirement/withdrawal.

#### PGB Water Withdrawal (mil m<sup>3</sup>)



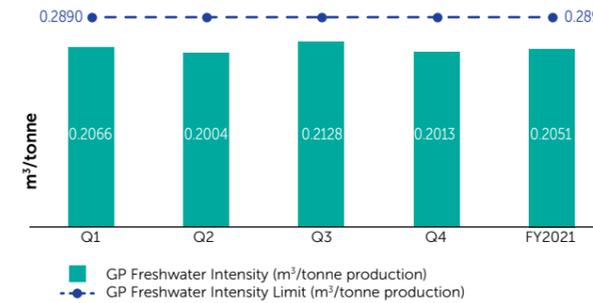
Our main source of freshwater water supply is from municipal potable water. Meanwhile, at our regasification terminals namely RGTSU and RGTP, seawater is being utilised to heat up LNG to become salesgas. We monitor the temperature discharge of the seawater to ensure the discharge temperature does not become overly cold for marine life.

The increase in water usage in 2021 was mainly due to:

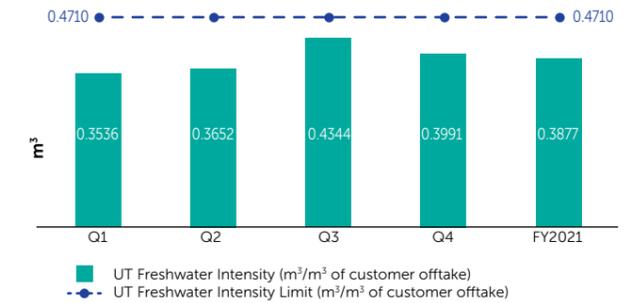
- An increase in production demand;
- Maintenance activities related to tank and column cleaning; and
- Scheduled turnaround activities such as water jetting for equipment cleaning.

In 2021, we started monitoring freshwater intensity for GP and UT and set the limit based on the mode data for early monitoring.

#### Freshwater Intensity GP



#### Freshwater Intensity UT



#### Wastewater Discharge by Location



#### 2018 - 2021 Wastewater COD Loading



We measure the Chemical Oxygen Demand (COD) of our wastewater, which indicates how much oxidisable material it contains. The higher the COD, the lower the dissolved oxygen level in a water body, which is harmful to living organisms. All of our wastewater is treated prior to discharge and monitored regularly to ensure compliance with the Standard B limit Environmental Quality (Industrial Effluent) Regulations 2009. All wastewater that we discharge is channelled into rivers and seas, and not to enclosed water bodies. Regular monitoring is conducted to ensure our wastewater discharge will not pose a threat to the populace and the environment.

The COD level is one of the key parameters that we monitor regularly monitored. In 2021, our COD level reflected an increase in terms of COD loading by 10 tonnes as compared to 2020. This was mainly due to the increase of wastewater flow received.

In the past, we have collaborated with University Malaysia Terengganu and the PETRONAS Downstream Business to conduct a water quality study. The main purpose of this study was to gain a clearer understanding on the ideal water conditions that are required for healthy aquatic life.

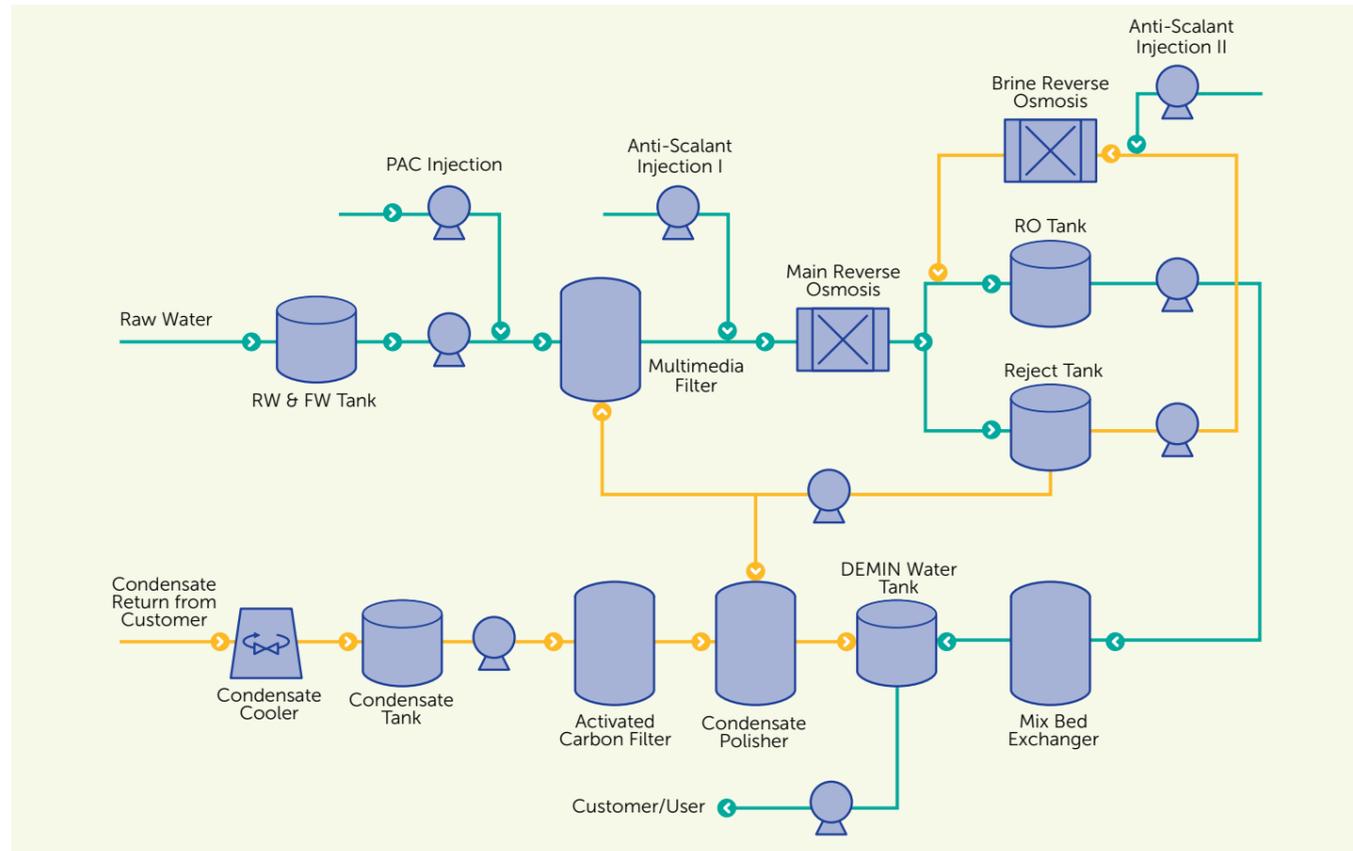
## COMMITTED TO SAFEGUARDING THE ENVIRONMENT

### WATER CONSERVATION IMPROVEMENT INITIATIVES

Each of our assets have developed specific procedures to suit their respective operating conditions. For example, PGB's GPU and GTR Divisions have developed their own process equipment and technology performance procedures. In the same manner, they have adapted and developed water management guidelines specific to their operations.

#### Reusing Rejected RO Water at UK and UG

UK and UG are utilising the reverse osmosis or RO process to produce demineralised water. It is commonly known that when water is processed using the RO process, a tremendous amount of water is rejected. At UK and UG, the rejected water is recycled back and treated using the brine reverse osmosis process or it serves as backwash water for multimedia filters and activated carbon filters. Today, UK and UG are utilising 31,000 m<sup>3</sup> and 21,000 m<sup>3</sup> of rejected RO water respectively per month.



#### Collaborating with Customers to Recycle Condensate Water

UK and UG provide a wide range of products such as electricity, steam, industrial gases such as oxygen and nitrogen, demineralised water, raw water, cooling water and boiler feed water to customers in the surrounding vicinity. To ensure water resources are used in a sustainable manner, we work hand-in-hand with our customers to buy back the condensate from the steam supplied and recycle this. The recycled external industrial condensate water serves as input for boiler operations at the UK and UG sites.

#### Increasing the Demineralisation System Throughput at GPS

Demineralised water (also known as deionised water) is water that has had its mineral ions removed. Demineralised water systems are the main equipment used in the preparation process of high purity water and treatment water. By optimising the resin regeneration system, the GPS demin system has significantly improved the ion exchange system throughput from 3,000 m<sup>3</sup> to 4,000 m<sup>3</sup>. This has led to improved water usage for regeneration, minimised wastewater discharge, and created value amounting to RM69,300 per annum. This initiative had also done much to mitigate the demineralised water quality issue, improve equipment efficiency, and reduce the boiler blowdown rate.

#### Improving the Reliability of the Brine Reverse Osmosis System

The UK site is committed to ensuring that water usage is within the design capability and capacity of the water system so that any increase in water withdrawal is prevented. To date, it has improved the reliability of the RO system and reduced rejected water by 12,000 m<sup>3</sup>.

Meanwhile UG is using its existing facilities to better manage its water withdrawal volume. In 2021, it conducted condition assessments on its brine reverse osmosis (BRO) system and identified areas for improvement. The team strategised and initiated the replacement of the membrane from Membrane Reverse Osmosis B and replaced the membrane in the BRO to improve the reliability. Through this, the BRO was able to reduce water withdrawal by approximately 20,000 m<sup>3</sup> a month.

In Gebeng, PGB has joined the Gebeng Industrial Support Group (GISG) to support the Pahang State Government and other relevant government agencies in addressing this frequent water supply interruptions. In 2022, we plan to have a water situational assessment at the UG asset to identify proactive measures to reduce water consumption.

**PGB's efforts to date have focused on enhancing environmental practices by developing more robust and integrated energy, air, materials, waste and water environmental strategies that go beyond meeting basic compliance standards. We intend to continue strengthening our KPIs, policies and various measures by leveraging innovation and industry best practices to ensure that we truly preserve the environment for the enjoyment of future generations.**



# ENSURING POSITIVE SOCIAL IMPACT

In line with PGB's endeavours to enrich lives for a sustainable future, we have set our sights on building enduring and positive relationships with our employees, partners and the communities in which we operate by keeping each and every one safe and adding value to their well-being through a host of effective and tangible measures. In 2021, we continued to strengthen our social performance by making good progress forward in many areas.

## COMMITTED TO UPHOLDING EFFECTIVE, SUSTAINABLE HSSE PRACTICES

As we go about the business of effectively stewarding our resources, one of our highest priorities is to take responsibility for the well-being of the employees and contractors under our care. To ensure people are at their optimum level of health and are working under the safest possible conditions, we enforce stringent Health, Safety, Security and Environmental (HSSE) policies across our highly complex business in an uncompromising manner.

### A HOLISTIC HSSE FRAMEWORK

PGB's Health, Safety and Environment (HSE) Policy underscores our Leadership Team or LT's commitment to strengthen our position as a reliable, responsible and caring employer that has the safety of people, assets and the environment in mind. As we endeavour to build safe working environments and quality work processes, we also expect all employees and representatives of PGB to conduct themselves in a safe and responsible manner every time, all the time, in accordance with our HSE Policy.

Our HSE Policy also guides us in our efforts to manage risks and hazards in accordance with ALARP levels. "ALARP" is short for "as low as reasonably practicable" and involves weighing a risk against the trouble, time and money needed to control it. In essence, ALARP describes the level to which we expect to see workplace risks controlled.

In tandem with PGB's HSE Policy, a HSE Management System (HSEM System) is in place to govern all HSSE aspects of our business. The HSEM aligns with the International Organisation for Standardisation's ISO OHSMS 45001:2018 and ISO EMS 14001:2015 criteria, nine of the 17 UNSDGs, and our four strategic sustainability lenses.

PGB's HSE Policy reflects the Board and Leadership Team or LT's commitment towards upholding HSSE matters, integrating it into business plans and targets, as well as leading with HSSE. Leveraging continuous engagement with employees, the LT sets clear targets, expectations and objectives for our workforce, including our partners, who themselves carry the highest accountability for HSSE key performance indicators (KPIs). The policy is effectively cascaded down to all PGB's stakeholders and clearly displayed throughout our work facilities so that everyone is reminded of their responsibility to each another.



## PETRONAS GAS BERHAD HEALTH, SAFETY & ENVIRONMENT POLICY STATEMENT

### MANAGEMENT LEADERSHIP

PGB is committed to HSSE Excellence in every aspect of our activities.

### WORKSITE ANALYSIS

PGB is committed to eliminate hazards and reduce risks to as low as reasonably practicable.

### WORKER PARTICIPATION

PGB shall provide consultation and participation to all employees and other interested parties.



### HAZARD PREVENTION & CONTROL

PGB shall provides safe and healthy work conditions for prevention of work-related injury.

### HEALTH & SAFETY TRAINING (COMPETENCY)

PGB shall provide the necessary resources, organisation and engage with key stakeholders on relevant HSE matters.

### CONTINUAL IMPROVEMENT

PGB shall ensure continual improvement of the HSE management system and enhance HSE performance.

For the year in review, the team at PGB delivered a strong HSSE performance as per the KPIs below:

Lagging Indicator	Limit	PGB Result	Industrial Standard	Leading Indicator	Target	PGB Result
Fatality	0	0	American Petroleum Institute (API) U.S. Petroleum Industry Workforce Benchmark	Unsafe Act, Unsafe Condition (UAUC) – Person/Month	2	2
Lost Time Injury	1	1		First Line Assurance Implementation – Schedule Compliance	100%	99%
Lost Time Injury Frequency	0.13	0.09		HSSE Mandatory Training -Attended	100%	99%
Major Fire	0	0	API Recommended Practice 754	Compliance Again MOC System, SSOW-Compliance	100%	100%
Major LOPC	0	1		Culture Maturity Survey	4.5	4.15
HSE Regulatory Non-Compliance	0	0	ISO OHSMS 45001:2018 and ISO EMS 14001:2015	Management Walkabout/Lesson L learnt Sharing Per Month	1	2

## ENSURING POSITIVE SOCIAL IMPACT

With clear objectives and targets spelt out, the team at PGB will set its sights on making continual improvements in HSSE performance so that all gaps are clearly identified and improvements made until the gaps are closed. In the meanwhile, PGB's LT will uphold and drive HSSE excellence through strong leadership values, competencies and a Generative HSSE Culture. The goal is to inculcate a strong Generative HSSE Culture at PGB with a score of 4.5 by 2024.

Even as our team has wholeheartedly embraced PETRONAS' Generative HSSE Culture, the following behaviours have become the mantra for all within PGB:

While our leaders are to serve as role models, everyone is to take ownership of HSSE matters to create true value for the Group.

All of us are to be mindful about what we do and how our actions can impact others.

We are all to look out for one another and keep potential risks and errors at the top of our minds.

We are all to create a safe space to intervene when any of us sees unsafe conditions or behaviours.

FATALITY



MAJOR FIRE



0

TARGET : 0

MAJOR LOPC

MAJOR SECURITY

We are confident that through a high level of commitment from PGB's LT and the effective implementation of our HSE Policy, we will sustain our Four ZEROs target – 0 fatalities, 0 major fires, 0 Major Loss of Primary Containment (LOPC) incidents, and 0 major security incidents – by 2025

### A ROBUST ASSURANCE FRAMEWORK

To assess compliance with all HSSE requirements, we have adopted the PETRONAS Assurance Framework as a guide. It is a structured approach based on three lines of assurance which are managed through an online platform known as myAssurance. All assurance processes, starting from assurance planning to post-assurance and monitoring are conducted online. To date, we have completed this assurance programme, utilising this online platform for all PGB's assets across Malaysia.

We also place an emphasis on stringent HSSE compliance among our contractors. To date, we have conducted compliance assurance assessments for identified high-risk contractors. In addition to compliance checks, we have also introduced Contractor HSSE Pre-Mobilisation assessments to evaluate the capabilities and readiness of contractors based on their HSSE plans to uphold our stringent HSSE requirements before they enter our premises. This requirement ensures that all our contractors are well-equipped to follow our HSSE requirements. At the same time, it helps them achieve sustainable HSSE management over the longer term.

The annual Health, Safety, Security and Environmental Management System (HSSEMS) review is carried out as part of a continuous improvement cycle. Findings from all assurance assessments are analysed and reported on a quarterly basis at HSSE Steering Committee meetings. Annual reviews of improvements to be made on assurance programmes are part of the annual Management Review to ensure strategic improvements are made for the purpose of future assurance. These measures will go a long way in ensuring that a sustainable and holistic HSSEMS is always in place at PGB.

An audit conducted by the Department of Occupational Safety and Health (DOSH) on our Malaysian operations in 2021 resulted in zero non-compliance findings. Notwithstanding PGB's good standing with DOSH, we will not rest on our laurels but will continue to roll out robust HSSE initiatives to ensure full compliance with OSHA 1994 Laws and Regulations as well as sustain our good performance.

In view of the effective HSSEMS initiatives within the Group, all of PGB's subsidiaries have received international certifications. Our health and safety data continues to be assessed via independent third-party verification in line with the requirements of local and international standards including the National Fire Protection Association (NFPA), ISO OHSAS 18001:2007, ISO OHSAS 45001:2018, ISO EMS 14001:2004, ISO EMS 14001:2014, and OSHA 1994 standard.

The table below spells out the details of the certifications accorded to PGB's assets as at 31 December 2021:

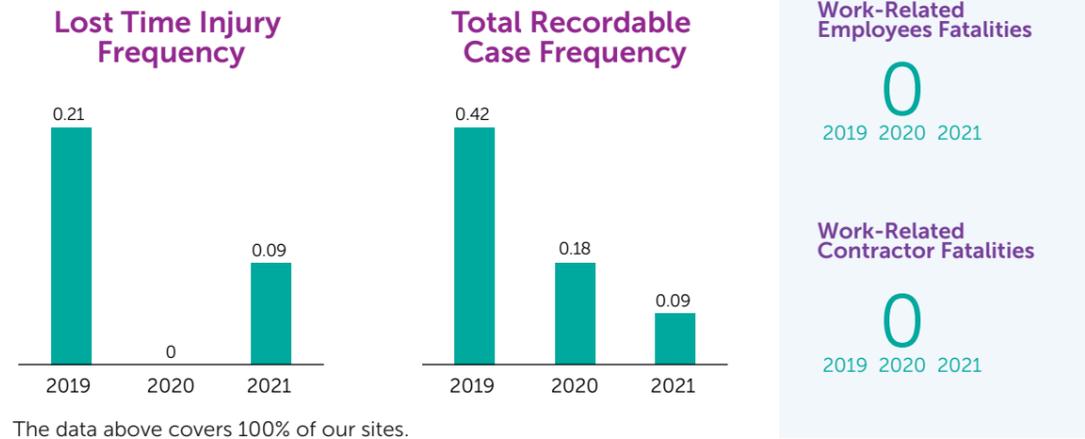
ISO EMS 14001:2004		ISO OHSAS 18001:2007	
2006	» UT Kertih	2006	» UT Gebeng
2008	» UT Gebeng	2008	» UT Kertih
2009	» GT Gurun RO » GT Sitiawan RO » GT Shah Alam RO » GT Seremban RO » GT Segamat RO » GT Pasir Gudang RO » GT Kuantan RO » GT Kertih RO » RGT Sungai Udang » RGT Pengerang	2009	» GT Gurun Regional Office (RO) » GT Sitiawan RO » GT Shah Alam RO » GT Seremban RO » GT Segamat RO » GT Pasir Gudang RO » GT Kuantan RO » GT Kertih RO » RGT Sungai Udang » RGT Pengerang
2010	» GP Santong » GP Kertih » TSET	2010	» GP Santong » GP Kertih » Tanjung Sulong Export Terminal (TSET)
ISO EMS 14001:2014		ISO OHSAS 45001:2018	
2018	» GP Kertih » GP Santong » UT Kertih » UT Gebeng » TSET » GT Gurun RO » GT Sitiawan RO » GT Shah Alam RO » GT Seremban RO » GT Segamat RO » GT Pasir Gudang RO » GT Kuantan RO » GT Kertih RO	2020	» GP Santong » TSET » GT Gurun RO » GT Sitiawan RO » GT Shah Alam RO » GT Seremban RO » GT Segamat RO » GT Pasir Gudang RO » GT Kuantan RO » GT Kertih RO » RGT Sungai Udang » RGT Pengerang
2020	» RGT Pengerang » RGT Sungai Udang	2021	» GPU (HSSE, ETS, FNA) » PGB Headquarters Office » GP Kertih » UT Kertih
Gas Processing (GP)	Utilities (UT)	Gas Processing & Utilities (GPU)	Gas Transportation (GT)      Regasification (RGT)

## ENSURING POSITIVE SOCIAL IMPACT

### GROUP HEALTH AND SAFETY PERFORMANCE IN 2021

The team at PGB is continuously endeavouring to improve the Group's HSSE performance by implementing specific HSSEMS programmes. To ensure that the people responsible for tasks involving significant safety hazards have the necessary competencies, we provide adequate and relevant training. In addition, rigorous HSSE pre-mobilisation assurance is carried out within the Group's workshops and project sites as well as externally to ensure the effective compliance with HSSEMS programmes. This is a significant factor that is contributing to our excellent HSSE performance.

We disclose our target KPIs for health and safety in the HSSE Steering Committee's report that can be found within PGB's Integrated Report 2021. The following charts reflect PGB's health and safety performance in 2021:



In 2021, our Total Recordable Case Frequency (TRCF) dropped to 0.09 incidents per million man-hours worked from 0.18 in 2020. However, our Lost Time Injury Frequency (LTIF)\* was 0.09 in 2021 compared to zero in 2020. There was one recorded lost workday (classified as Incident Rating 3) when one of our GTR staff slipped and fell during Right of Way (ROW) surveillance at one of our projects.

In response to this, an independent investigation team has come up with prudent recommendations which include using additional hand tools such as a trekking pole or stick to help keep balance when going uphill or downhill on loose ground such as sand or gravel. New technologies such as drone technology to undertake ground surveillance and identify risks at the access area have also been adopted to minimise risk to workers. To avoid a reoccurrence of such an incident, the remedial actions to improve the system have been incorporated in written procedures, communicated to the staff, and immediately reinforced.

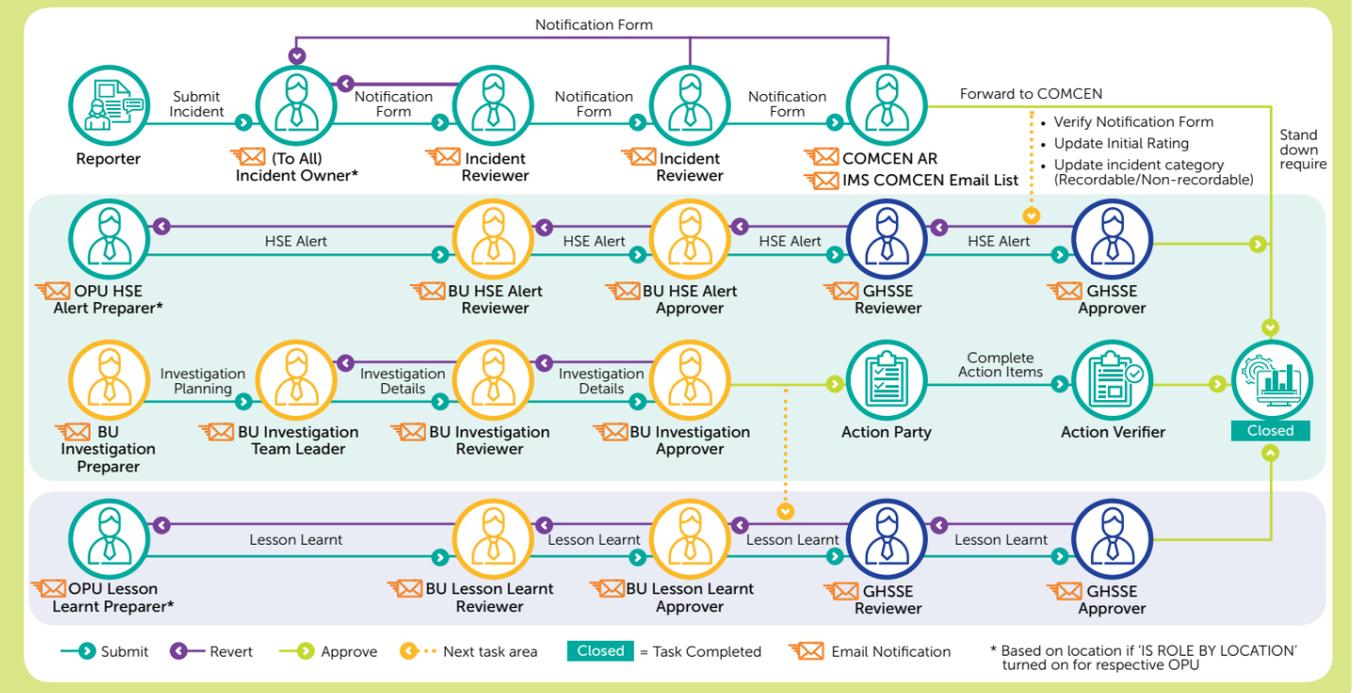
\* Loss Time Injury Frequency is defined as the number of Lost Time Injuries per million man-hours worked. A Lost Time Injury is further defined as a work-related injury or illness which renders the injured person unable to perform his normal duties on any day immediately following the day of the incident. It includes fatality, permanent total disability, permanent partial disability and loss of workday case. The Lost Time Injury Frequency is based on aggregated Employee and Contractor man-hours.

### Implementing Stringent Remedial Actions

On 4 July 2021 at about 0945 hours, during a natural gas pipeline replacement activity by a project team's contractor, an excavator inadvertently caused damage to a nearby live underground 8" liquid butane pipeline. The incident resulted in (Loss of Primary Containment) LOPC of liquid butane. Fortunately, there was no adverse impact to people or the public and downstream customers due to the incident. In the aftermath, the independent investigation team brought forward several recommendations which included:

- » Complying with the Greenfield/Brownfield physical demarcation barrier requirement to avoid encroachment in a brownfield area;
  - » Installing a physical demarcation barrier and a control requirement in the Permit to Work (PTW) and Job Hazard Analysis (JHA); and
  - » Providing refresher training to project and contractor personnel at all levels on the requirements for a bridging document (safe work document for standard and procedure).
- In addition, the team recommended the following:
- » that project and contractor personnel are made aware of the hazards of working next to a live pipeline during training and toolbox sessions;
  - » that regular site verification be conducted via joint inspection between the operation and project teams; and
  - » that Stop Work authority for non-compliance practices/conditions is immediately exercised.

The following Incident Rating 3 workflow is based on the PETRONAS Technical Standard 18.06.01 - Incident Notification, Investigation and Reporting. All incident reporting is to be recorded and monitored via the HSSE Incident Management System (IMS).



## ENSURING POSITIVE SOCIAL IMPACT

### ENSURING EFFECTIVE HSSE PERFORMANCE AT ALL LEVELS WITHIN PGB

The KPIs within PGB's Annual HSSE Scorecard are developed based on historical data with the aim of improving our safety performance year-on-year, and ultimately achieving zero incidents. Our HSSE risks, incidents, performance and issues are deliberated at the monthly LT meeting, discussed in depth during HSSE Steering Committee meetings chaired by the MD/CEO, and subsequently reported to the Board.

In addition, a HSSE management review is conducted as part of benchmarking against the previous year's HSSE performance and PETRONAS Group's OPU's performance as part of lessons learnt and improvements for the following years' strategic objectives. The session also reviews the effectiveness of the previous HSSE plan and provides input for improvements, where required.

Today, we are ensuring employees are involved in worksite HSE Committee meetings to deliberate onsite-specific HSSE issues, programmes and performance on a monthly basis. Any escalation of strategic HSSE matters is to be communicated back to the LT for future improvement. These periodic meetings include the participation of both employees and management representatives.

Health and safety committees and representatives, whom play a vital role in preventing work-related injuries and diseases, are an important part of the internal responsibility system. This system, based on cooperation between employers and employees seeks to improve the overall understanding and resolve occupational health and safety issues in the workplace.

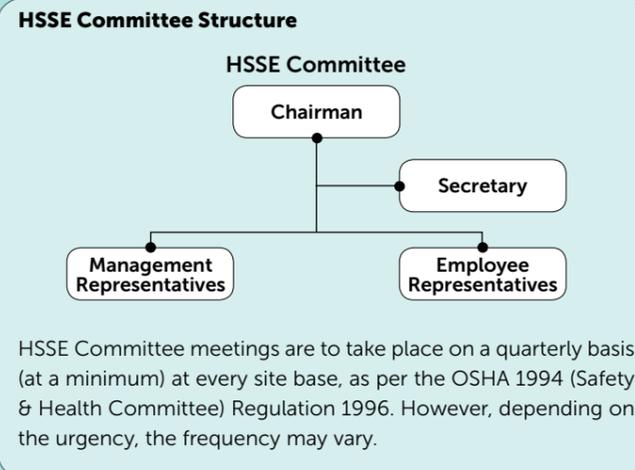
In addition, an HSSE management review is conducted as part of the benchmarking against the previous year's HSSE performance and the PETRONAS Group's OPU's performance. At this session, we all learn from one another and make improvements to strengthen the following years' strategic objectives. At the same time, the effectiveness of previous HSSE plans is reviewed and input for improvement is provided where required.

### PGB'S HSSE Committee – Mandate and Structure

Today, an HSSE Committee has been set up at every asset level namely PGB Headquarters, GPU – GPK, GPU-GPS, GPU-TSET, GPU-UK, GPU-UG, GT Gurun RO, GT-Sitiawan RO, GT-Shah Alam RO, GT-Seremban RO, GT-Segamat RO, GT-Pasir Gudang RO, GT-Kuantan RO, GT-Kertih RO, Regas Terminal Sungai Udang and Regas Terminal Pengerang.

The following are the HSSE Committee's Terms of Reference:

- » To review the effectiveness of the HSSE Management System programmes and implementation and to recognise HSSE achievements;
- » To promote employee awareness, positive thinking and behaviour towards HSSE excellence;
- » To deliberate on ways to eliminate or reduce injuries, property damage, environmental pollution and occupational illnesses and diseases;
- » To review and analyse the trending of incidents or accidents; and
- » To comply with OSHA 1994 (Safety & Health Committee) Regulations 1996



The following is a sample of the issues typically brought up and deliberated on at an HSSE Committee meeting:



The HSSE Committees are also tasked with introducing HSSE initiatives such as walkabouts as well as awareness and HSSE campaigns to instil a Generative HSSE Culture among workers and contractors. The following are some of the typical initiatives undertaken by the committees.



### STRENGTHENING PGB'S GENERATIVE HSSE CULTURE

Recognising the integral role of our workforce in sustaining a Generative HSSE Culture, the focus in 2021 was to develop capabilities at all levels. Our goal was to build an ecosystem where at all levels, we embodied the five Generative HSSE Culture Behaviours – Role Model HSSE, Feedback Truthfully, Empower Through Capability, Act Interdependently, and Engage Authentically.

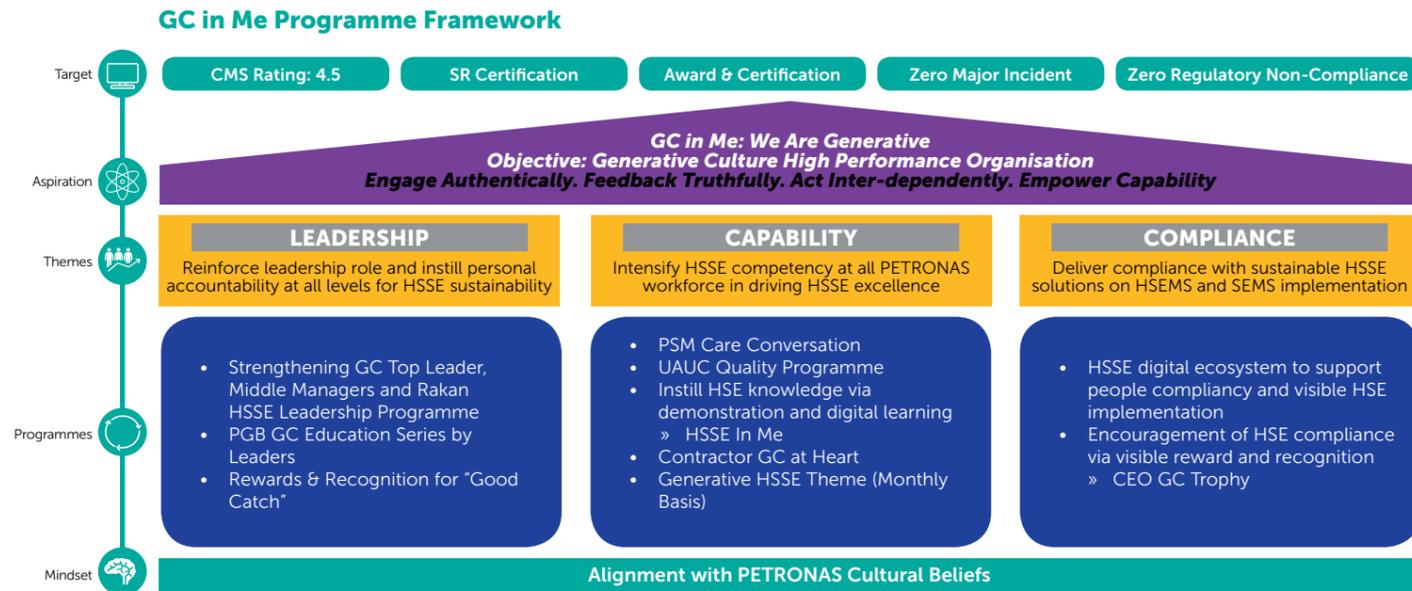
Our goal is to achieve and sustain a culture maturity level generative score of 4.5 and above beyond 2024. The recent Culture Maturity Survey 2021 score of 4.15 (Proactive Level), indicates that we are on the right track towards achieving this goal. Programmes and initiatives are progressively being crafted into a journey roadmap, namely the Generative Culture in Me programme, to ensure PGB, as an entity, fulfils its HSSE Generative Culture mandate.

The HSSE Leadership Conversation for LT and Generative HSSE Culture for Middle Management programmes seek to encourage peer learning as well as active discourse among leaders on how they can shape experiences and actions within their respective functions. The course includes a three-month journey with a minimum of two coaching sessions with HSSE Generative Culture subject matter experts. The aim is to inculcate an HSSE Generative Culture among our leaders (by getting them to serve as role models) and to create a Generative HSSE Culture at the respective OPU's.

## ENSURING POSITIVE SOCIAL IMPACT

The Rakan HSSE programme empowers our front-liners to become Change Agents who will rally their peers by equipping them with the necessary communication and supervisory skills to push the Generative HSSE Culture agenda. Rakan HSSE participants are given three months to complete their individual projects before they graduate. These programmes aspire to create an environment where everyone takes ownership of HSSE, looks out for each another, and has the courage to intervene when dealing with unsafe behaviours or conditions.

### PGB'S GENERATIVE CULTURE IN ME PROGRAMME FRAMEWORK



### PGB GC ROADMAP

The Culture Maturity Survey conducted in 2021, shows that we are on the right track in achieving a Generative HSSE Culture by 2021



### LEVERAGING DIGITAL TOOLS TO SHAPE OUR HSSE CULTURE

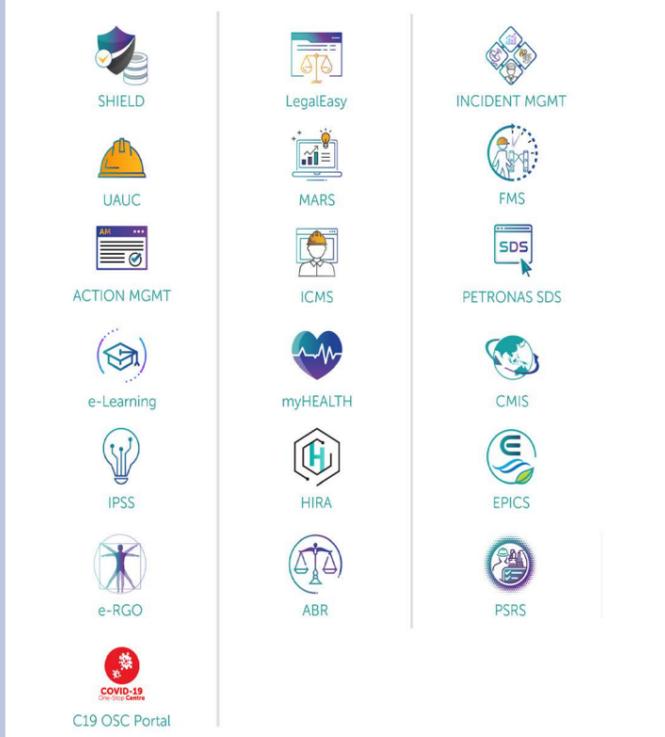
We firmly believe that trust is a crucial element for us if we are to effectively shape our Generative HSSE Culture. Our aim is to create a culture of trust among team members by asserting that bringing up concerns and issues on unsafe acts and conditions is a means to show that we care about one another.

The Unsafe Act and Unsafe Condition (UAUC) initiative is one of our key safety behaviour programmes whereby employees are encouraged to proactively identify safety risks and hazards, then report these so that intervention can be carried out. Unsafe conditions are rectified immediately to ensure a safe work environment is maintained. The UAUC reports are an opportunity for learning and are valued by everyone. Due recognition by leaders affirms this positive behaviour.

## ENSURING POSITIVE SOCIAL IMPACT

### Digital HSSE at PETRONAS

The myHSSE digital platform serves as our-stop platform for all PETRONAS HSSE digital solutions and their related system training resources. By adopting a single information that houses all 16 of our HSSE digital solutions-each of which addresses different business pain points - we are according to users' easier access and fit for purpose usage. Moreover, we are also enabling users to harness the power of HSSE data to derive insights on HSSE performance, trends, emerging risks and other important elements so that we can make proactive interventions.



PGB has adopted PETRONAS' myHSSE digital platform which serves as a one-stop platform for all HSSE digital solutions and their related system training resources. By adopting a single information platform that houses 16 HSSE digital solutions – each of which addresses different business pain points – the platform is enabling users to gain easier access and leverage fit-for-purpose usage. Moreover, users are also able to harness the power of HSSE data to derive insights on HSSE performance, trends, emerging risks and other important elements so that they can make proactive interventions. As we move towards predictive and even prescriptive HSSE analytics, we expect PGB's HSSE achievements to improve.

The digitalisation of UAUC reports since 2018 has made it convenient for all our employees to submit their reports through web-based and mobile applications. This sparked a 100% increase in the quality of UAUC reports in 2021 compared with 70% in 2020. Real-time data analytics aids in the development of various forms of predictive analysis models to prevent potential incidents, potential Zero Tolerance (ZeTo) Rules violations, and near repeats in the future.

For the year in review, amidst the restricted movement challenges brought on by the COVID-19 pandemic, we remained agile and adapted to the new norm by migrating our Generative HSSE Culture Leadership Programmes from conventional face-to-face training platforms to Virtual Instructor-Led Training (ViLT). We will continue to accelerate our digital culture by leveraging digital applications in myHSSE.

### TAPPING DIGITAL SAFETY INITIATIVES FOR TURNAROUND ACTIVITIES

Aside from tapping digital tools for routine activities, PGB is today also leveraging digital tools for turnaround activities. Collaboration between various parties has resulted in several new key initiatives coming to the fore. These include the following:

Turnaround Initiative	Outcome	Impact
ePTW+ (electronic Permit to Work) application to replace manual permit.	<ul style="list-style-type: none"> <li>» Paperless permit database enhances efficiency/time saving in relation to permit tracking, applications and approvals.</li> <li>» Smooth Data Management and online tracking of any incident.</li> </ul>	Improves productivity.
Online gas detection monitoring – the continuous tracking will give real-time conditions within confined spaces and enable the release of AGT (Authorised Gas Tester) from the operations team to perform other activities if needed.	<ul style="list-style-type: none"> <li>» Real-time and continuous gas monitoring at site.</li> <li>» Live reading is displayed via the online dashboard throughout shutdown execution.</li> <li>» Enhanced safety for confined space activities.</li> <li>» Data collection for gap analysis and improvement.</li> </ul>	Strengthens Zero Incident objectives.
ITDIS (Integrated Turnaround Digital Solution) – the live TA dashboard provides real-time progress status and enables timely intervention by the scheduler and turnaround manager as and when necessary.	<ul style="list-style-type: none"> <li>» Displays a high-level dashboard consisting of shutdown progress, HSSE information and manpower productivity, and enables monitoring of low-level details progress.</li> <li>» Accessible anywhere through the ITDIS Dashboard on a laptop, phone or tablet.</li> <li>» Incorporation of the Work Control Sheet (WCS) tracking feature in the dashboard improves work efficiency and assists in PASR closure.</li> <li>» Displays shutdown worklist, and status of emergent work requests – either additions or cancellations. Features enhance work efficiency and assist in PASR closure.</li> </ul>	Improves productivity and enables immediate intervention during any progress delay.
Explosion proof digital tablet – used by maintenance personnel for timely updates of progress status. Wireless connectivity at site enables the tablet to fulfil the ITDIS requirement.		Improves productivity and enables immediate intervention during any progress delay.
Biometric and temperature scanner – placed at the gate entry to support COVID-19 mitigation plan.	<ul style="list-style-type: none"> <li>» An enhanced system equipped with face recognition features, temperature scanner and daily health declaration.</li> <li>» Effective and safe COVID-19 screening with no human intervention required for temperature checks.</li> <li>» Shortens the duration for manpower entering the plant.</li> <li>» Furnished with auto blocking features for fatigue management and COVID-19 screening.</li> </ul>	Reduces time of daily screening upon entry and improves overall productivity.
	Value Creation: 50% (1.6 hours) reduction in time entrance compared to the previous practice of 3.3 hours' time entrance.	
Real-time drone monitoring – can be viewed online and by those who are working from home.	<ul style="list-style-type: none"> <li>» Enables monitoring of critical activities and working at height.</li> <li>» Immediate intervention via attached camera and speakers.</li> <li>» Reduces unsafe act and unsafe conditions.</li> </ul>	Increases HSSE Self-Awareness, and improves overall productivity.
	Value Creation: 60% (1,656 man-hours) reduction in manhours manning compared to previous practice of 2,761 manhours manning.	

## ENSURING POSITIVE SOCIAL IMPACT

Following the implementation of these initiatives, there were zero HSSE incidents in relation to turnaround activity in 2021 equivalent to 559,908 total safe manhours during turnaround for LPGU, TSET and GPP6 shutdown. The implementation of digital initiatives will continue to ensure we achieve safe turnaround execution.



### ENSURING EFFECTIVE RISK MANAGEMENT

We are aware that we operate in a high-risk environment and place an emphasis on effective risk management to identify, assess, manage and mitigate risks to the lowest levels possible. Various controls and preventive measures are implemented based on a risk-based prioritisation and we adopt comprehensive processes to analyse HSSE risks as well as their impacts on our people, assets, reputation and the environment.

Specialised techniques are used for the identification of HSSE hazards and effects during operation and project which include Hazard Identification (HAZID), Process Hazard Analysis (PHA), Health Risk Assessment (HRA), Environmental Impact Assessment (EIA), Project Risk assessment (PRA), Job Hazard Analysis (JHA), Environmental Aspect and Impact (EAI), Chemical Health Risk Assessment (CHRA), Noise Risk Assessment (NRA), Health Risk Assessment (HRA), Simultaneous Operations (SIMOPs) Assessment, Turnaround Risk Assessment (TARA) and Quantitative Risk Assessment (QRA). This risk-based approach is applied across our value chain, encompassing new projects and existing operations.

We have completed the Control of Industrial Major Accident Hazards (CIMA) Report for the UK plant to identify the type, relative likelihood and the consequence of a major accident that might occur. The report also provides recommendations for the safe operation of activities, outlines the controls for a serious deviation that could lead to a major accident, and spells out emergency procedure at the site.

All identified potential merger and acquisition projects and new operations must go through due diligence assessments by adopting the PETRONAS Technical Standard or PTS HSSE Due Diligence process. There was one identified potential merger and acquisition (M&A) project where due diligence was conducted in 2021.

The scope of the PTS HSSE Due Diligence covers business activities such as M&As, handovers, investitures, closures, asset decommissioning, well abandonment, operatorship contract expiry and block/field/asset relinquishments which require evaluation due to the inherent risks they are exposed to. To avoid unplanned corrective expenses as well as understand our financial exposure in such transactions, we should uncover critical financial, operational and HSSE issues as well as strategic information to make an informed decision on the way forward. An independent group within PETRONAS from various PETRONAS OPU's will serve as the assessors for the assessment.

The typical key focus areas in due diligence assessments are:

- » Commercial;
- » Financial;
- » Health, Safety, Security and Environment (HSSE);
  - HSE Management System
  - Environmental and Natural Resources Management
  - Social Performance
  - Product Stewardship and Toxicology
  - Climate Change
  - Operations Safety
  - Process Safety Management
  - Industrial Hygiene
  - Occupational Health
  - Crisis Management
- » Human Resources;
- » Intellectual Property;
- » Legal;
- » Taxation; and
- » Technical and Operations.

### UPHOLDING STRONG PROCESS SAFETY PRINCIPLES

To prevent major process safety incidents with serious impact, we apply the Process Safety Principles in designing, building, operating, maintaining and inspecting our facilities, while taking future emerging risks into consideration. In 2021, we ventured into digital platforms and focused our efforts on developing and adopting digital initiatives by applying a 'mistake-proofing' concept. This will enable us to enhance the monitoring of the integrity and reliability of process safety barriers, ensure compliance standardisation, data integrity and data transparency, as well as leverage analytical capabilities in terms of HSSE core modules.

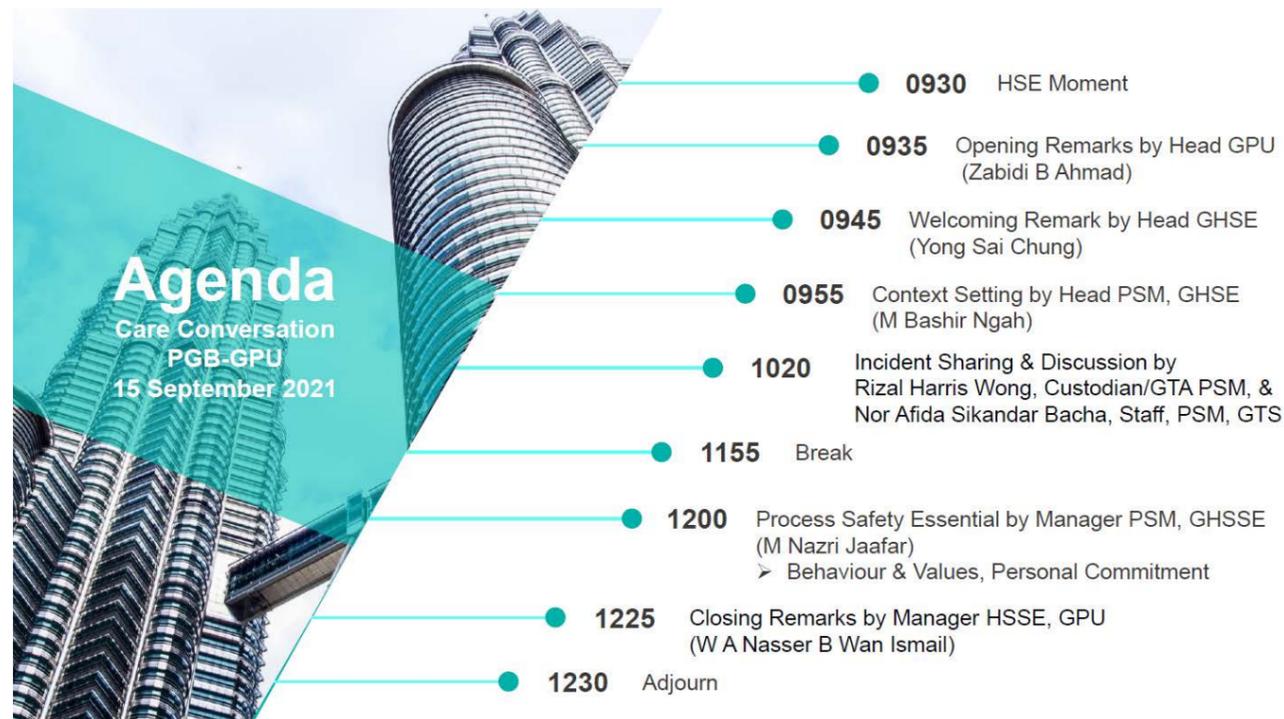
The following are some of the process safety digital initiatives in place at PGB:

- I. Integrated Process Safety Solution (IPSS) for the Management of Change (MoC) and Hazard Identification and Risk Assessment (HIRA);
- II. e-Permit to Work plus (e-PTW+) integrated with Safe System Bypass/Override Certificate (SSBC);
- III. e-Permit to Work plus (e-PTW+) integrated with Energy Isolation (EI);
- IV. Facilities Status Management (FSM) for safety critical equipment preventive and corrective maintenance management;
- V. Alarm Management Plant State Suite (PSS) which serves as an alarm management tool at GPU;
- VI. Temporary Repair – Temporary Repair Digital Management;
- VII. Enhanced EDMS system with 3D plant view to manage Process Safety Information;
- VIII. Inspection – drone inspection;
- IX. Corrosion Analytic for plant piping and equipment corrosion prediction; and
- X. Integration between EDMS with PETRONAS Risk Based Inspection for plant risk visualisation.

To realise our target of No Process Safety Accidents, we rigorously monitor our compliance against the PETRONAS Standards and close all identified gap findings. This involves consolidated teamwork among the LT, staff and our frontliners. Process safety will continue to be our focus in 2022 to strengthen asset integrity and create a strong process safety culture across PGB.

## ENSURING POSITIVE SOCIAL IMPACT

### CARE CONVERSATION PGB-GPU ON PROCESS SAFETY MANAGEMENT



### IMPLEMENTING RELIABLE CONTRACTOR HSSE MANAGEMENT

Safety requirements must be followed by all contractors and staff at all times to ensure they perform their work safely at our facilities. Prior to entering any of our premises, our contractors must go through a detailed screening before contracts are awarded to them. As part of the improvement strategy, we have placed more stringent requirements on the pre-award and post-award processes. In doing so, we have constant engagement and effective communication with Group Procurement to implement the best possible way to execute the strategy without any misconceptions.

As of 2020, contract owners are required to conduct an overall risk assessment strategy, leveraging PGB’s hazard register. This strategy has benefitted PGB’s overall risk mitigation efforts as contracts are now evaluated well before they are executed at our facilities. We have improved our HSE Technical Evaluation Criteria for contracts with thresholds of RM2 million and above. By assessing and addressing safety issues during the pre-award phase, the data can then be captured in the contractor’s HSSE plan. The actions to mitigate the risk is are frequently monitored and audited by contract owners during the post-award phase.

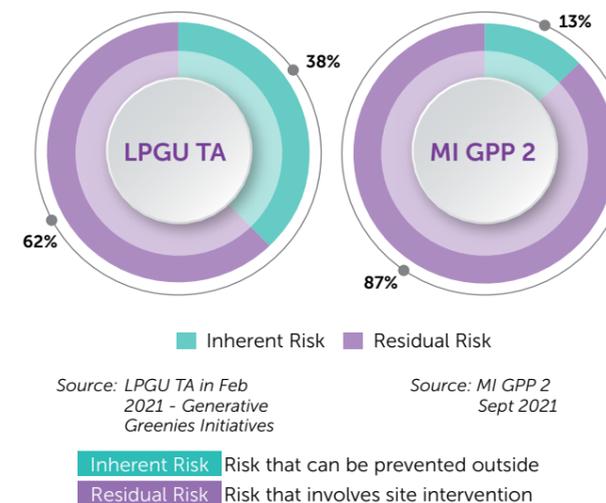
In addition to auditing and monitoring, we engage with the contractor’s top management on an annual basis. Via this communication platform between PGB and contractors’ top management, contractors may raise their concerns on contracting issues. Contractors are evaluated after the completion of every contract in terms of their work performance, quality, timeliness and HSSE criteria. Any gaps and non-compliance towards these elements will be recorded as credentials for the next award process and future improvements. We have conducted 100% upskilling for contract owner via the compulsory myLearning training.

Effective 2021, we have introduced a more stringent approach to managing contractors’ performance. The External Risk Management (Ex-RM) programme involves managing hazards, risk and structured method to evaluate contractors based on their HSSE performance (Post Award). This programme is aligned with PTS 18.03.03 Contractor HSSE Management and L3 Contractor HSSE Management.

The two main pillars for Ex-RM are Level-4 Assurance and Contractor Profiling. Level-4 Assurance is a structured assurance process to minimise inherent risks before they enter our plant, so that we are only required to manage on-site risks (residual risks) inside our plant. Through Contractor Profiling, we aim to record and analyse each contractor’s HSSE performance to evaluate their capabilities in delivering HSSE excellence. The Ex-RM programme was piloted at Gas Processing Kertih (GPK) and will be implemented progressively across PGB.

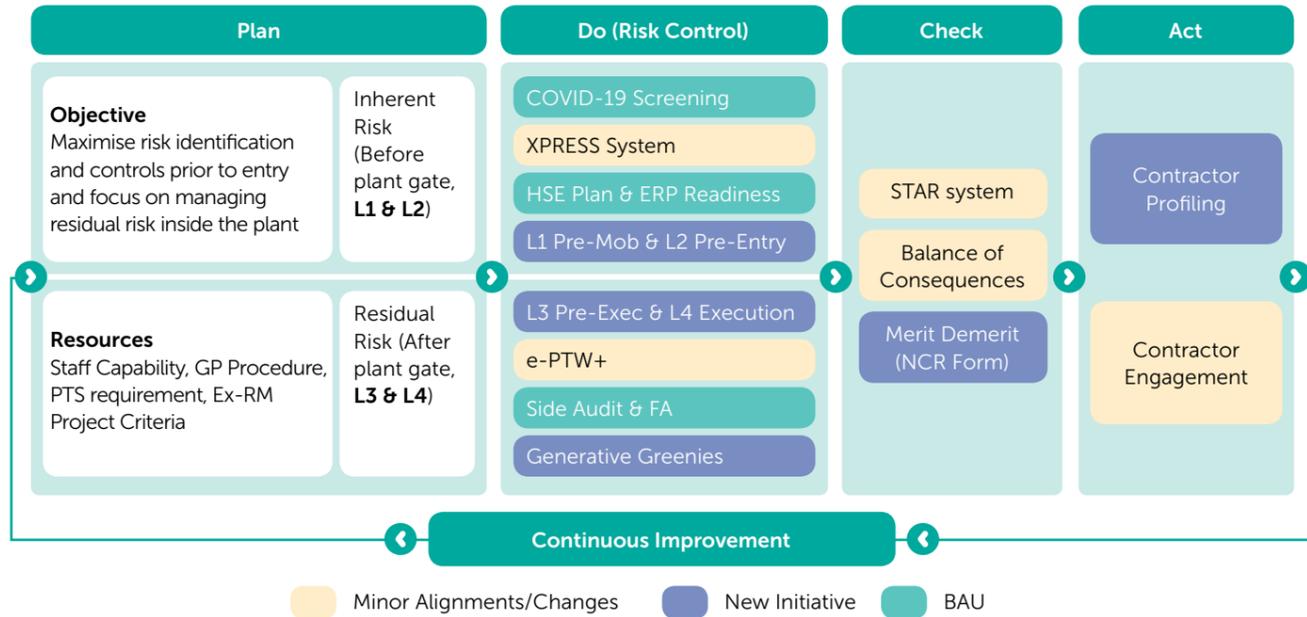
### PILOT IMPLEMENTATION OF THE EXTERNAL RISK MANAGEMENT PROGRAMME: FINDINGS FROM THE ANALYSIS OF INHERENT RISKS DURING THE LEVEL-4 ASSURANCE CONDUCTED AT LGPTU TA AND MI GPP2

Site Assurance conducted at LPGU TA and GPP2 have shown 25% reduction of inherit risk found at Level 4 Assurance when the effort for Ex-RM is intensified.

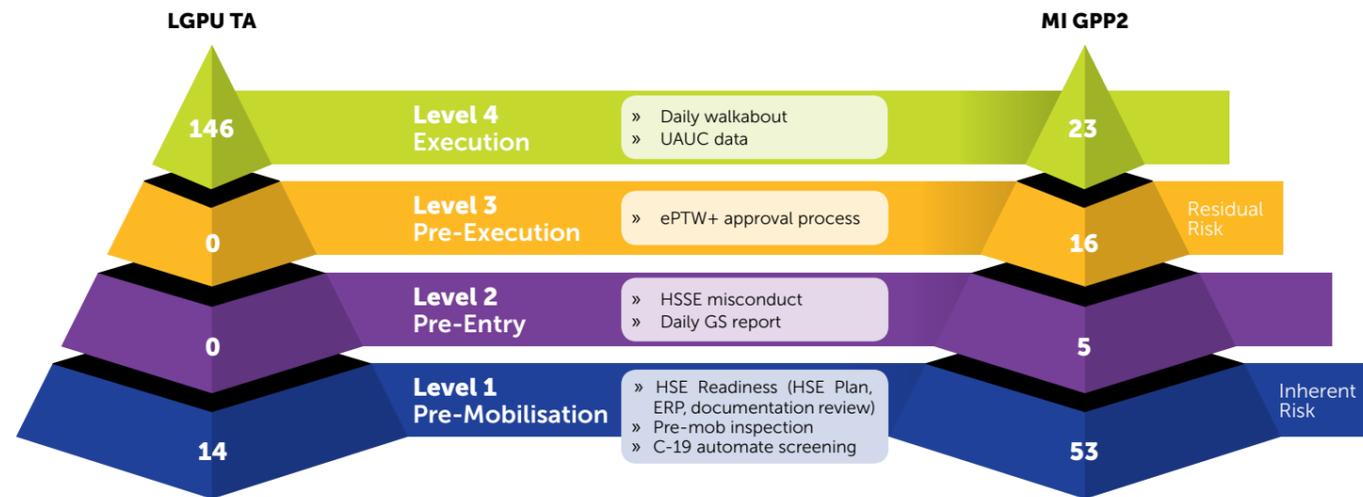


## ENSURING POSITIVE SOCIAL IMPACT

### EXTERNAL RISK MANAGEMENT FRAMEWORK



### RESULTS OF EX-RM FROM THE PYRAMID TRIANGLE



From the tabulated results, we see that with the implementation of the External Risk Management initiative during Liquefied Petroleum Gas Unit (LPGU) turnaround (TA) and Mechanical Integrity (MI) GPP2, there was a significant reduction in residual risk prior to level 4-execution which means that the inherent risk was captured at levels 1 and 2 as well as level 3 before the execution of work at site. By implementing this initiative, we have established a proactive and leading indicator towards preventing incidents at our plants.

In 2020, registration for workers at PGB had to be performed manually before they could begin work on site. These were among some of the shortcomings of the (then) manual system:

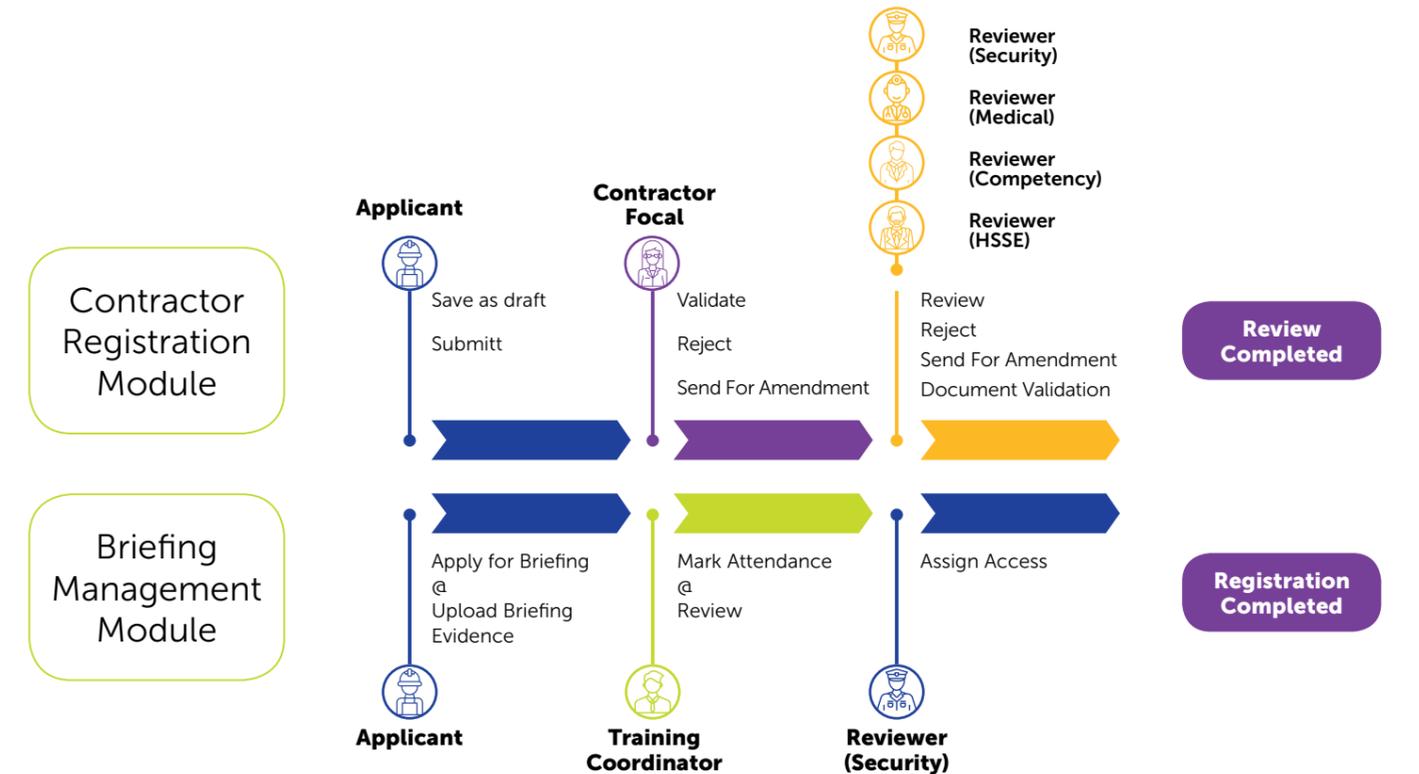
- » Workers needed to fill in a manual form and the company representative had to review the documents manually;
- » The process of tracking workers' registration and Balance of Consequence (BOC) records management was inefficient, while the workers' database itself was unreliable; and
- » It usually took about 10 days for workers to complete their registration before they could gain access to their worksites.

It was decided that the best way to monitor and track workers was to have a proven system and a reliable database that would increase productivity and efficiency when it came to managing workers at our sites. The system in question would need to:

- » Provide a more robust data tracking and data integrity ability;
- » Reduce the manhours spent on data management;
- » Deter opportunities for misconduct; and
- » Shorten the registration process from 10 days to five days.

In October 2021, contractors began to fully utilise the Express Registration for External Service Supplier (XPRESS) system which we spent RM172,200 to implement with an annual maintenance fee of RM140,000. The contractors' registration and review process are currently being applied and reviewed online, thereby reducing registration time and increasing our efficiency when it comes to managing contractor registration.

### PGB XPRESS WORKFLOW PROCESS



## ENSURING POSITIVE SOCIAL IMPACT



### PGB'S COVID-19 RESPONSE

As the COVID-19 pandemic continues to make an impact on people, businesses and economies the world over, PGB is making every effort to minimise its impact on our operations, without jeopardising the safety of our people or the continuity of our businesses.

Aside from the general mandatory standard operating procedures that have been implemented to stem the effects of the pandemic, we have set the following measures in place:

- » Our Leadership Team convenes weekly to continuously assess the evolving risks of the coronavirus and formulate the necessary mitigation measures.
- » We have implemented split team arrangements with minimum manning. This critical measure ensures the continuity of our operations. It includes Business Recovery Plan (BRP) strategies for each facility where special working arrangements have been activated based on the scenario identified in the BRP. We remain committed to maintaining an uninterrupted end-to-end supply chain to deliver products to our customers in a safe, timely and reliable manner, regardless of the zone status of the delivery areas.
- » Our internal workplace COVID-19 infection control known as the "Green Net" is in effect. It encompasses numerous updated guidelines as well as procedures that specify the control and precautionary measures along with a clear case management process. The PGB Pandemic Preparedness and Response Plan acts as the main guideline to address all reasonable steps in preventing, containing, and reducing the spread of COVID-19.

- » Given the emergence of new variants of the virus and countless new clusters in Malaysia, we have developed a cluster management process whereby the risk level for each of our facilities has been identified and action plans drawn out based on the COVID-19 cases or clusters that are reported within the area of a facility. The respective facility owners are also kept well-informed and updated on COVID-19 cluster cases within their vicinity.
- » We continue to actively monitor and assess the capacity and capabilities of local health facilities to handle COVID-19 patients. This is essential if we are to ensure continuous accessibility to both public and private medical facilities. To date, PGB has provided infected staff with a quarantine and home care package which includes an oximeter for personal home care monitoring.

During Movement Control Orders (MCO) 2.0 and 3.0, which saw local business operations curbed and controlled to break the infection circuit, we provided meal packages throughout the working day to ensure staff were well taken care of. This also helped prevent our employees from being unnecessarily exposed to the general public.

The personal protective equipment (PPE) supplied to the workforce is also subjected to continuous reviews and upgrades. During the spike of local COVID-19 cases, personnel who are identified as coming into contact with a high volume of personnel were provided with disposable aprons, disposable gloves and face shields on top of the mandatory three-ply masks.

One of the key strategies that we used to curb the transmission of COVID-19 within PGB was to strengthen communications and issue alerts on COVID-19 constantly to our employees and contractors. We also communicated continuously via the PGB HSSE email, COVID-19 Stand-down, case alerts, daily toolbox and other engagement sessions to highlight the importance of complying with COVID-19 SOPs at all times.

We also developed a clear and detailed case management process for our people. This comprised a testing process, quarantine, business disruption management, close contact tracing, sanitisation process and Return to Work assessment.

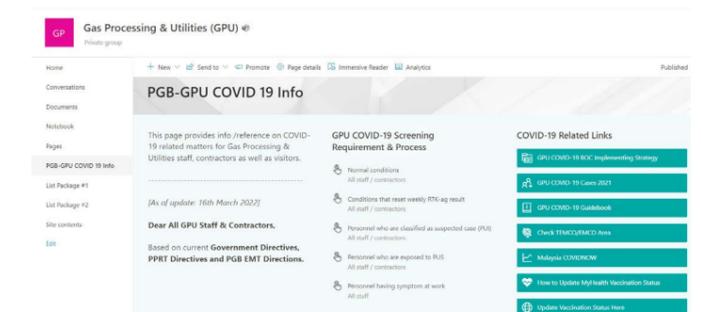
### SAMPLE PGB COVID-19 STAND DOWN ANNOUNCEMENT AND AWARENESS CAMPAIGNS



### DRIVE THRU SWAB TEST PROGRAMME PRIOR TO WORKING AT A PGB ASSET



### SCREENSHOT OF THE COVID-19 ONLINE INFORMATION CENTRE



## ENSURING POSITIVE SOCIAL IMPACT

### COVID-19 MANAGEMENT DURING TURNAROUND

Despite a spike in COVID-19 cases in early 2021, we successfully planned and executed a scheduled turnaround safely without any incident or outbreak. While previous best practices such as the Turnaround Ecosystem were maintained as part of our sustainability efforts, we have embarked on additional measures to combat the COVID-19 threat during turnarounds and shutdowns. These included:

- » A comprehensive COVID-19 management plan that included a daily signpost and proactive intervention plan as well as the application of a green bubble to isolate critical position staff from others during execution, plus swab testing for all partners and staff involved;
- » Alternative inspection methods using advanced Non-destructive Test (NDT) to minimise the risk of COVID-19 infections on site;
- » Rearranging logistic arrangements at rest areas to comply with social distancing SOPs as well as undertaking packed food distribution, staggered breaks and plant entry in the morning;
- » Revisiting work schedules so that manpower loading could be distributed across the turnaround duration and reduce the peak crowd period;
- » Replacement of mass toolbox activities with mini toolbox activities at the respective zones; and
- » Online meetings to replace face-to-face meetings for daily progress updates and the implementation of Pre-Activity Safety Review (PASR) sessions, among others.



### EMERGENCY PREPAREDNESS ACTIVITIES

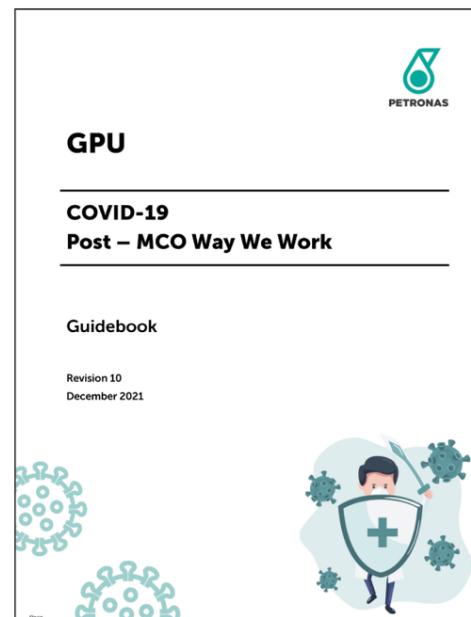
PGB has adopted the PETRONAS Resiliency Model (PRM) which provides an integrated view of the strategy for managing risks in three areas, namely Enterprise Risk Management (ERM), Crisis Management (CM), and Business Continuity Management (BCM). By leveraging the PRM by Group Risk Management (GRM), we are in a position to execute a prompt and coordinated response and recovery activities in the event of an emergency or crisis.

To ensure the readiness of responders, in terms of their competency in managing emergency, as well as the readiness of the emergency facilities, the year in review saw us conducting 960 small-scale emergency drills under Tier 1 and one emergency drill with the support of external response agencies under Tier 2 base. These drills, which were based on the requirements of the PTS 18.40.01 – PETRONAS Contingency Planning Standard, enabled us to verify the readiness of emergency response team and our emergency facilities. The planned exercises covered Incident Action Plans (IAP) based on potential credible scenarios and major hazard related scenarios including the Control of Industrial Major Hazards (CIMAH) and Hazard and Effect Management Process (HEMP). By undertaking frequent exercises and ensuring good cross-team interaction as well as interaction with external response teams, we are enhancing our responders' decision-making and response capabilities.

### SAFEGUARDING EMPLOYEE'S PHYSICAL AND MENTAL WELL-BEING

In 2021, we faced a challenging work environment with the enforcement of the MCO as well as Work-from-Home (WFH) arrangements. We quickly responded to these situations by implementing measures to ensure our employees maintained a healthy lifestyle while away from the workplace. The PGB HSSE shared useful WFH advice to all staff such as tips to create an ergonomic workstation at home, staying mentally healthy as well as keeping fit by incorporating regular exercise and stretch breaks in their daily routine.

We also view mental health as a vital component in safeguarding the overall well-being of our employees. Thus, we held several virtual talks promoting mental health awareness among our employees and provided them with tangible insights on how best to tackle the issues they faced daily. The talks were organised by PGB Naluri in collaboration with Naluri Hidup Sdn. Bhd. which specialises in digital therapeutics for mental health support and digital health coaching. In addition, our employees were able to leverage PGB Naluri's Digital Healthy Lifestyle Coaching platform, where a dedicated online coach helped them to plan their health journey throughout the programme in the areas of physical exercise, nutritional intake, as well as mental well-being.



## ENSURING POSITIVE SOCIAL IMPACT

### PGB NALURI FITNESS PROGRAM 52 staff WILL PARTICIPATE IN THIS PROGRAM



#### WORK-FROM-HOME ERGONOMICS

In collaboration with PETRONAS, we strengthened WFH assistance by rolling out the New Ways of Working Assistance package. This included a one-off payment to each employee to purchase ergonomic furniture as well as a monthly Connectivity Assistance package. These initiatives also helped our employees maintain their productivity.

On top of this, PGB ergonomists rolled out the e-Ergo system to enable employees to perform self-assessments and make personal ergonomics adjustments to their home office. Ergonomics awareness sessions and interactive multimedia sharing sessions were conducted to communicate and guide employees on the recommended practices for working from home.

#### WORKPLACE MODIFICATIONS FOR PERSONNEL WITH DIFFERENT ABILITIES

In facilitating occupational rehabilitation and workplace safety for employees with different physical abilities, the Central Control Room (CCR) at GPK has been modified to incorporate grab bars, friction pads and stools at ablution and prayer areas to enable safe

movement for plant operators who face physical challenges. This modification has become the benchmark for our other plants and is being replicated as part of our Diversity and Inclusion (D&I) agenda to ensure staff with different abilities can work safely within our facilities.

#### EMPLOYEE ASSISTANCE IN TIMES OF CRISIS

In 2021, we encountered severe flooding due to three consecutive days of heavy rain, affecting a total of 33 staff located Pahang, Kuala Lumpur and Selangor. The PGB Flood Committee who were proactively monitoring the situation, arranged for rescued staff and their families to be moved from the affected locations into nearby temporary relocation centres or hotels until it was safe for them to re-enter their homes.

#### HSSE COMPETENCY DEVELOPMENT

Competence Assurance is one of the essential elements of an effective HSSEMS which ensures that people have the required levels of skills and knowledge to perform their roles adequately and safely throughout their careers. It is designed to ensure that the risk of harm, as a consequence of substandard human performance, to

people, environment and assets is reduced to as low as reasonably practicable. We are committed to ensuring that our plant personnel have access to continuous knowledge development. This is not confined to our staff but is also open to contractors working at our facilities. Our workforce must have the ideal range of competencies and line management to remain up-to-date.

In 2021, a total of 280 training classes were held, both online and physical, related to health and safety, to ensure the competency of the staff at site. A total of 4,183 staff attended the training based on our HSSE Training Matrix plan which in turn is based on the PTS 18.03.02 – HSE Competence Assurance. A total of 116 classes were carried out and a total of 1,740 contractors were trained.



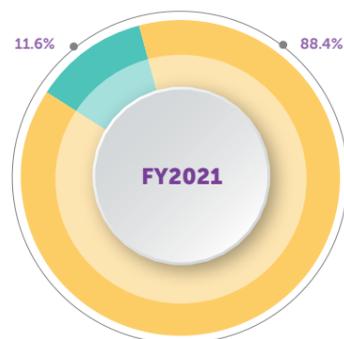
#### RECOGNISED FOR OUR HSSE ACCOMPLISHMENTS

We are honoured to have been accorded several awards and accolades at the national and international levels for our distinctive HSSE practices, initiatives and implementation of our HSSEMS in 2021. These are spelt out in the sub-section titled "Recognised for Excellence" on page 35 of this Report.

## ENSURING POSITIVE SOCIAL IMPACT

### OUR WORKFORCE

#### Workforce



	MALE	FEMALE
Gas Processing	830	81
Gas Transportation	256	30
Regasification	111	7
Utilities	199	12

	2021	2020
Female	194	232
Male	1,477	1,533
<b>Total</b>	<b>1,671</b>	<b>1,765</b>

#### Employee Compensation

Manpower Cost  
**RM372.6** million  
YEP 2020: RM346.8 million

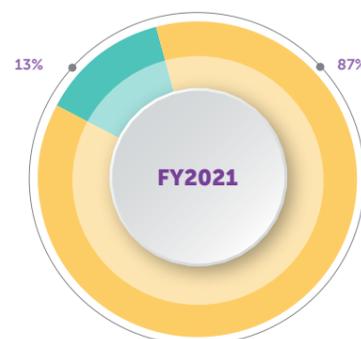
#### Gender Diversity (Composition of Women)

Board	Leadership Team	Total
<b>4</b>	<b>4</b>	<b>194</b>
2020: 4	2020: 3	2020: 232

#### Nationality

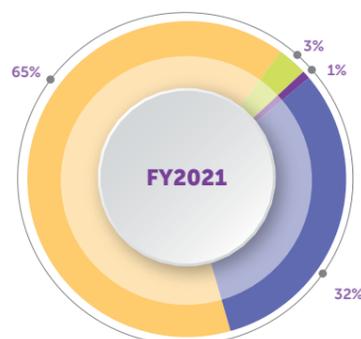
	Number	%
Malaysian	1,671	100
Other Nationality	0	0
<b>Total</b>	<b>1,671</b>	<b>100</b>

#### Technical vs. Non-Technical (Exclude Senior Management Level 6 & above)



	2021	2020
Technical	1,459	1,536
Non-Technical	212	229
<b>Total</b>	<b>1,671</b>	<b>1,765</b>

#### Age Diversity



	2021	2020
Baby Boomers	10	17
Gen X	534	637
Millennials	1,084	1,090
Post Millennials	43	21
<b>Total</b>	<b>1,671</b>	<b>1,765</b>

Note:  
1. Data as at 31 December 2021.  
2. Manpower generation data 2021 is based on the new definition, i.e. Baby Boomers (1965 and before), Gen X (1966 - 1979), Millennials (1980 - 1994) and Post Millennials (1995 and after).

#### Approved Positions

	Number of positions	% of PGB share
PGB	1,670	100
RGTSU	65	100
RGTP	57	100
KPSB	92	60
PGSSB	24	51
PLNG Two	1	65

	2021
Full time staff voluntary turnover rates	<b>4.6%</b>
Percentage of global staff with a disability	<b>0%</b>
Amount of time spent on employee development training	<b>15.6</b> average training man-days

### STAFF BENEFITS

Having deftly navigated through the challenges of the pandemic, we continue to provide support and assistance to our employees as well as motivate them to deliver on PGB's business strategy, achieve strategic goals, and act as our brand custodians. The following are some of the benefits that we are according our staff:

- » The introduction of FLEXWEAR which allows casual wear based on the WFH guidelines under the pandemic situation;
- » Provision of one-off New Way of Working (NWO) Assistance:
  - To set-up a home office; and
  - Monthly Connectivity Assistance to facilitate smooth and reliable connectivity;
- » Special Paid Leave for COVID-19 vaccination;
- » Enhancements to Employee Benefits due to COVID-19:
  - Quarantine accommodation coverage;
  - Pulse oximeter reimbursement; and
  - COVID-19 Vaccination at Private Facilities; and
- » Learning and development opportunities
  - Investment in learning and development to develop skills and accelerate employee growth;
  - Innovative HR solutioning to elevate technical capabilities and build critical competencies for business growth; and
  - Strengthening the implementation of a Talent Mix Strategy in our effort to embrace D&I in the workplace.

### NURTURING OUR HUMAN CAPITAL

We have adopted an empowered organisation model and continue to review its effectiveness as we strive to achieve world-class standards and competitiveness. We continuously design and implement Leadership and Technical Capability Development programmes to enhance the capability of our staff and move them towards becoming a highly engaged and capable workforce.

We have optimised our training investment through Virtually-Led Instructor Trainings (ViLT) or self-learned digital modules. The new intuitive learning platform, myLearningX, was introduced to offer personalised and flexible learning options to employees, which encourages self-driven learning and competency development, including the Harvard Manage Mentor (HMM)/HMM Sparks series which would enable on-the-go learning experience, through its short burst of learning content.

With competency becoming the norm in the workplace, we have rolled out the new Human Capital Management platform,

myCareerX. This platform leverages artificial intelligence to provide insights into talent within our overall organisation as well as provides employees insights into their personal competency proficiencies, gaps, and potential areas for development.

### EMPLOYEE AND UNION ENGAGEMENT ACTIVITIES

Employee and union engagement sessions play an important role in helping motivate employees to align their behaviour with our Company values and business objectives. We provide several open platforms to share common interests and address concerns. These include the annual PGB Townhall, quarterly union engagement and activities, quarterly company update sharing sessions, and periodic employee engagement with the Human Resources Department over each quarter. There are also monthly engagement sessions with the LT, while updates are provided on PGB's Intranet and via internal newsletters.

In 2021, we conducted 30 sessions with staff via our virtual platforms, namely the HR on Air, Education Series and Sembang Sihat session. These sessions served as opportunities to update our staff about the improved HR benefits as well as policies and procedures, while educating them on the importance of looking after their mental wellbeing during the pandemic. We also provided opportunities for staff to provide their insights into areas for continuous improvement through the SPEAK UP airtime after each engagement session. By leveraging these sessions, we were able to quickly and efficiently respond to their queries and concerns.

We also conducted quarterly engagement sessions and activities with the union members under KAPENAS where we recorded their feedback and took the necessary steps to mitigate and address the concerns raised to ensure a harmonious working relationship between employee and employer.

To ensure that HRM is connected 24/7 with employees, we have set up the PGB HRM Helpdesk where general information on employee relations is shared out. Where staff have any enquiries or concerns, they can email HRM via a dedicated e-mail channel.

### PROMOTING INDUSTRY GROWTH

As a key player in the energy industry, PGB is committed to lending its support not only to industry players but to the businesses in general. Our efforts extend to supporting the PETRONAS Leading Women Network (PLWN) which is focused in providing a platform for women to be part of an active network and to thrive in the workplace. Under

## ENSURING POSITIVE SOCIAL IMPACT

the Professional Training and Education for Growing Entrepreneurs (PROTÉGÉ) programme, we provide internships and industrial training programme placements for local universities students and graduates. We have also embarked on a three-year collaboration with INSTEP to supply technical talent in support of manpower requirements at a minimum of 15 talents per year.

### TALENT SOURCING AND PEOPLE MANAGEMENT

PGB applies PETRONAS' guiding principles of attracting and recruiting individuals, where only the most suitably qualified and competent individuals are selected for hiring. We provide equal employment opportunities for all qualified candidates. We follow existing Company policies, procedures and guidelines when filling up vacancies. We have prioritised recruitment based on how crucial the position is and successfully recruited 44 individuals in 2021.

As part of the HR NWOW initiative, hiring managers can recruit talent via an enhanced recruitment process through the myCareerX platform. We have also introduced virtual talent sourcing assessments and virtual onboarding in our talent sourcing processes, while partnerships with recruitment specialists have been established to select the best talent from a broader and more diverse pool of candidates.

Apart from sourcing externally, we continue to invest in developing our human capital by providing opportunities through cross business and cross-function mobility. To support talent development, 22% or a total of 369 talented individuals advanced within the organisation in 2021. We continue to strengthen our Talent Mix Strategy that is aligned with our aspiration to become an empowered organisation, agile workforce as well as uphold a D&I agenda. In support of our D&I agenda, 19% of our technical executive and managers as well as 40% of our Board of Directors respectively are women.

### STAFF EDUCATION AND CAPABILITY MANAGEMENT

Staff are empowered and encouraged to chart their own capability development by focusing on On-Job Training (OJT) (70%), coaching and networking (20%) and classroom learning (10%) both physically or virtually to meet the demands of the ever-changing business environment.

The following are among the initiatives made available to staff:

#### myCareerX Talent Competency Dashboard

We have adopted a transparent, self-driven and easily-accessible ecosystem in managing talent competency. By leveraging the Superior Managed Assessment (SMA) module on the myCareerX Talent Competency Dashboard, staff can develop their own competencies at their own pace. They can elevate their skill sets as required by the business by focusing on technical and leadership proficiency.

#### Technical Manager with Technical Professional qualification (TPqTM)

The challenging outlook in the industry requires us to rethink the way our skilled workforce is managed to enable our business to thrive. With the goal of strengthening in-house technical capability, we have begun to develop Technical Managers with Technical Professional qualifications (TPqTM) to run the plants. They are trained to make quick decisions and operate the plants in a safe and highly efficient manner, thus improving productivity. These managers are expected to be hands-on in resolving operational technical issues, which will build a strong technical foundation with in-depth technical proficiency of the identified discipline, proven through the PETRONAS Standard Technical Professional competency assessment.

#### Intensify Virtual and Digital Learning Experience

To complement PETRONAS' New Way of Working due to the COVID-19 pandemic, virtual and digital learning are even more crucial in ensuring continuous learning experience among staff. Online classrooms via Microsoft Team rather than physical classes have become the norm. These are complemented with Virtually Led Instructor (ViLT) or self-learned digital modules which optimise the training investment. The all-new intuitive learning platform, myLearningX, offers personalised and flexible learning options which encourage self-driven learning and competency development. As part of digital learning, HMM Sparks enables on-the-go learning experience, through its short burst of learning content. In addition, the structured and curated learning content in the SWITCH mobile learning application provides staff with the latest digital knowledge on topics such as cybersecurity, agile way of working, and digital initiatives information.

#### Industrial Training Opportunities and Graduates Employability Enhancement Scheme

In the year under review, a total of 89 undergraduates and diploma students from overseas and local universities were given the opportunity to undergo their internship programme at PGB under the Industrial Training Opportunities and Graduates Employability Enhancement Scheme (GEES). Some 52 students were attached to GPU, 30 to GTR and seven to the Head Office. The students spent between three to eight months at their assigned departments and completed the internship programme with final presentations to their respective superiors on their projects.

Under GEES, 86 graduates were given the opportunity to undergo a one-year on-the-job programme at PGB in 2021. During this period, they had the opportunity to observe our high performing work culture and it is hoped that the lessons they have learnt will prepare them for their future careers.

### UPHOLDING HUMAN RIGHTS

In alignment with the PETRONAS Human Rights Commitment, our Company seeks to work with contractors who share our values of integrity, while being committed to fighting bribery and corruption, and contributing to sustainable development. We require them to:

- » Respect internationally recognised human rights principles and comply with PETRONAS' Code of Conduct and Business Ethics (CoBE) and all relevant legal requirements;
- » Take reasonable steps to ensure policies and guidelines are in place to demonstrate their respect for human rights including those applicable to its employees and contract personnel providing services to PGB. These policies and guidelines shall include labour rights, workplace health and safety, security, and conditions of employment. The contents of these policies and guidelines shall be made known to employees and contract personnel in languages they understand;
- » Provide human rights awareness training to their employees and contract personnel and ensure that all employees and contract personnel providing services to PGB attend the training;
- » Establish a grievance mechanism for their employees, contract personnel and any party involved in providing services to PETRONAS. This grievance mechanism shall be made known to them and in languages they understand; and
- » Provide timely feedback to PGB regarding the contractor's human rights performance within the duration of the contract, as gathered through personnel engagements, questionnaires and other appropriate means as required.

As a minimum requirement, we require them to adhere to the following principles:

- » Freedom of Labour;
- » Prevention of Child Labour;
- » Wages and Benefits;
- » Working Hours;
- » Establish Grievance Mechanisms;
- » Non-Discrimination;
- » Freedom of Association;
- » Humane Treatment; and
- » Foreign or Migrant Workers.

We will assess the contractor's compliance from time to time by (but not limited to) the contractors' performance indicators. Failure to comply with the provisions and standards may result in the termination of the non-complying party's relationship with PGB or other adverse consequences. This applies to all our contractors, subcontractors, consultants, suppliers, agents, representatives and others performing work or services for or on behalf of PETRONAS. It is the contractor's obligation to ensure that any party who is performing work and/or business for or on their behalf adhere to these principles as well.

In 2021, there was no recorded cases of violation toward human rights and no recorded cases on non-compliance to labour standards at PGB. We follow PETRONAS' Human Rights Commitments, which is in line with the UN's guiding principles on Human Rights. It is applicable to all PGB employees, contractors and any third-parties within our premises who are carrying out work on behalf of PGB in line with PETRONAS' Contractor Code of Conduct on Human Rights.

### ENSURING EFFECTIVE SUPPLY CHAIN MANAGEMENT

A strong supply chain management is vital if we are to ensure efficiency in our operations and reaffirm our license to operate. Through establishing robust and transparent partnerships with the relevant skilled suppliers, vendors and contractors, we aim to ensure the delivery of services that are aligned with our values. Issues faced by the suppliers can create a ripple effect across the value chain, which can disrupt our ability to meet stakeholder needs. In addition to protecting social and environmental well-being, responsible supply chain management can maximise economic growth. By prioritising local suppliers, we can enhance the income opportunities and livelihoods of local communities. In 2021, PGB gave opportunities to more than 30 local suppliers through multiple contracts that were awarded.

## ENSURING POSITIVE SOCIAL IMPACT

### OUR APPROACH TO GOOD SUPPLY CHAIN MANAGEMENT

Our procurement process is governed by PETRONAS Group Procurement who are in turn guided by PETRONAS' Tender and Contracts Administrative Manual whereby we are to provide fair procurement, fair opportunities, fair negotiation and fair pricing practices. Adherence to the PETRONAS Anti-Bribery and Corruption Manual is also taken into consideration for the suppliers' selection and tendering process. All contractors must meet safety, technical, environmental and CoBE requirements for the licensing, bidding, contracting and execution stages. We also subscribe to the PETRONAS Vendor Development Programme (VDP) that focuses on nurturing Bumiputera vendors to be resilient and sustainable to become world-class Bumiputera companies that are able to compete in global markets.

We have zero-tolerance for non-compliance or malpractices within our supply chain. Serious action is taken against suppliers that fail to comply with social and environmental regulations, including contract termination. Furthermore, we have established a formal grievance system for stakeholders to safely report any misconduct or malpractice, which extends to the supply chain. All grievances are investigated and resolved based on specific site arrangement. The aggrieved stakeholders can raise their concerns and work towards a solution in a timely, fair and consistent manner. After we receive a particular grievance case, we conduct in-depth studies to identify the root causes and prevent future cases from arising.

### CARING FOR PEOPLE AND SOCIETY

#### ENRICHING COMMUNITIES

We firmly believe in delivering a sustainable future to our stakeholders by supporting the communities in which we operate. Guided by the three CSR pillars of Yayasan PETRONAS – Education, Welfare and Community Development, as well as Environmental Conservation, PGB continues to support the Government, as well as PETRONAS to improve the quality of life of the underserved.

#### COVID-19 Contributions

For the year in review, we continued to reach out and support various stakeholders in their fight against the global COVID-19 pandemic. In support of the nation's aspiration to have its population fully vaccinated, PGB contributed a total of RM46,000 to Quarantine Centres and Vaccination Administration Centres or Pusat Pemberian Vaksin (PPV) in the East Coast region. Our efforts here saw us working hand-in-hand with our PETRONAS counterparts to provide assistance to PPVs in Kemaman, Kertih and Paka.



Similarly in the Northern region, our Gurun Regional Office played its part in engaging with and supporting local stakeholders to facilitate a smooth vaccination process at selected centres. We also went on to deliver medical equipment and supplies to hospitals.

Through a collaboration with Pejabat Tanah dan Daerah Kuala Langat, PGB contributed RM20,000 to address emergency needs at Hospital Banting. This was at the peak of COVID-19 cases nationwide when the need for hospital beds especially in Intensive Care Units (ICUs) rose significantly.

As conditions around the COVID-19 pandemic continue to evolve, PGB remains committed to playing its part in supporting the efforts of PETRONAS and the Malaysian Government.



### Program Sentuhan Kasih PETRONAS

As we contribute in cash and kind to the communities around us, we are also focused on encouraging them and providing them hope, courage and resilience in the face of adversity. Each year, in conjunction with major celebrations in Malaysia, we collaborate with Yayasan PETRONAS to send out basic necessities to underprivileged communities under their Sentuhan Kasih Festive programme. This initiative, which is part of PETRONAS' Community Well-being and Development focus, provides an avenue for PGB and Yayasan PETRONAS to work with communities to provide for their basic needs and well-being. It is also in line with the PETRONAS Sustainability Agenda and the UNSDGs.

In May 2021, PGB organised the Sentuhan Kasih Aidilfitri event, a collaborative effort with Badan Kebajikan Islam PETRONAS (BAKIP).



The PETRONAS family made the day memorable for over 500 less fortunate beneficiaries in Kuala Lumpur, Pahang, Johor and Pulau Pinang. Over RM10,000 in donations were distributed to four selected homes, namely:

- » Pusat Jagaan Anak Yatim dan Saudara Baru An Najjah, Kuala Lumpur;
- » Pertubuhan Kebajikan Baitul Husna, Kuantan, Pahang;
- » Pertubuhan Kebajikan Anak-anak Yatim Islam Darul Saadah, Segamat, Johor; and
- » Badan Kebajikan Rumah Warga Emas Darul Hanan, Pulau Pinang.

## ENSURING POSITIVE SOCIAL IMPACT

Over the course of 2021, a total of 50 families in the B40 category in Kelana Jaya benefitted from receiving home essentials such as food supplies, hygiene kits and face masks.

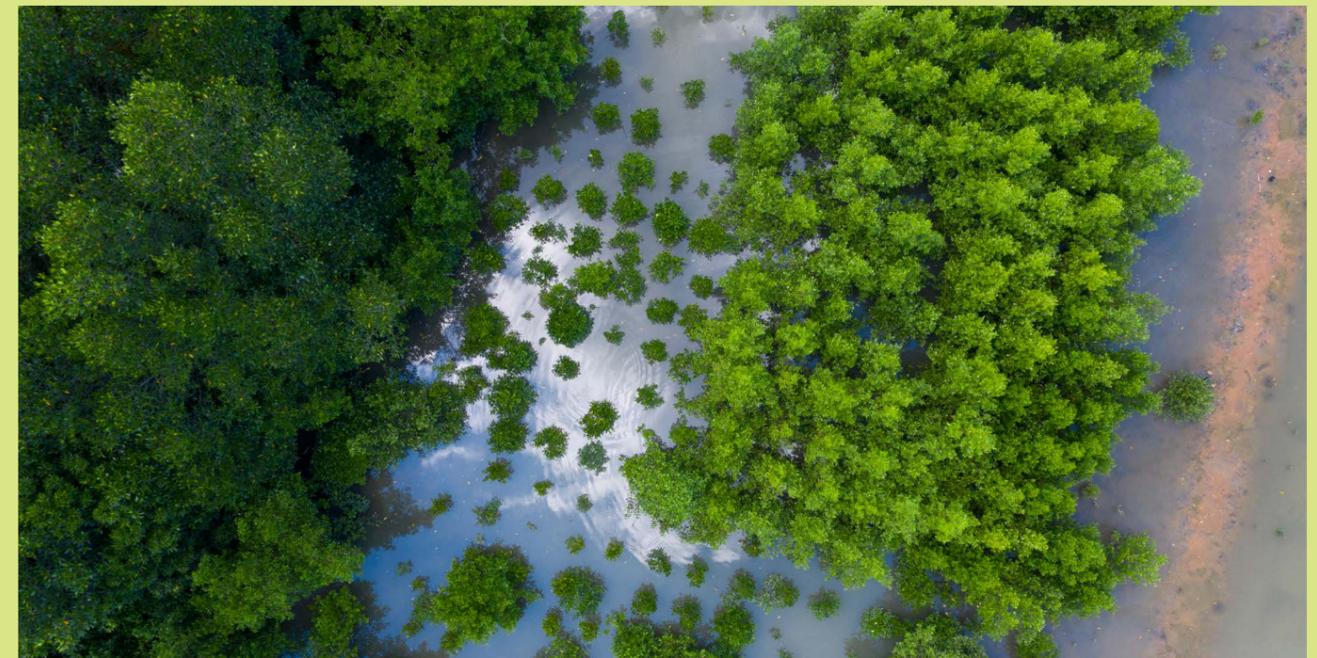
We also went on to provide assistance to the less-privileged families in preparation for the Festival of Lights. In Seri Iskandar, Perak, we once again joined forces with Yayasan PETRONAS to hand out essentials to more than 50 families. The efforts were recognised by the Ministry of Women, Family and Community Development via Pejabat Kebajikan Masyarakat Daerah Perak Tengah. The small-scale event was organised in strict compliance with COVID-19 SOPs. The majority of the families in selected areas in Seri Iskandar are from the B40 category. They work in the nearby plantations as general workers, lorry drivers and entrepreneurs.



Similar activities were also carried out in Kulim, Kedah. PGB also took the lead in approaching and delivering contributions of RM10,000 to assist communities affected by a landslide incident.

### Committed to Preserving Community Ecosystems

As mentioned in the Environmental section of this Report, PGB and the MNS are collaborating on the Sayangi Sungai Latoh programme and keeping track of mangrove plant growth in the area. Overall, this community programme serves to conserve the Johor River's ecosystem via smart partnerships between the private and public sectors as well as the local community. It also aims to strengthen the Johor River Restoration programme and species conservation with an efficient monitoring system; and to educate the local community about the importance of mangrove ecology sustainability and river conservation.



## UPHOLDING RESPONSIBLE GOVERNANCE

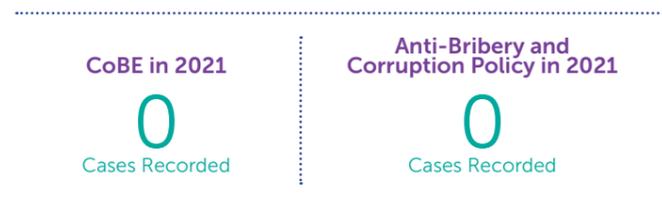
PGB believes good governance translates into sustainable business. As such, we remain committed to upholding high standards of corporate governance as well as applying robust risk management and internal control measures across the Group. These elements are not only helping us ensure the delivery of sustainable and long-term business growth, they are also safeguarding PGB's reputation as we lend support to PETRONAS as the custodian of the nation's gas resources, while ensuring continued shareholder value creation. In 2021, we continued to strengthen our corporate governance practices in several key areas.

### COMMITTED TO ETHICAL AND GOOD GOVERNANCE PRACTICES

Good business ethics and good corporate governance practices serve as the guardrails that keep PGB on track and in check. To ensure integrity and ethical practices abound at PGB and that a solid governance framework is in place, PGB has implemented the following stringent policies and guidelines:

- » Code of Conduct & Business Ethics or CoBE – provides policy statements on the standards of behaviour and ethical conduct expected of employees of the Group and others performing work or services for or on behalf of the Group;
- » Anti-Bribery and Corruption Policy (ABC) – deals with improper solicitation, bribery and other corrupt activities that may arise in the course of business;
- » The PETRONAS Whistleblowing Policy – offers an avenue for employees and other stakeholders to safely report misconduct within the Group;
- » Insider Trading – prohibits the Board and principal officers from trading in securities based on knowledge acquired by virtue of their positions. Directors and Principal Officers are also reminded not to deal in the Company's shares when in possession of price-sensitive information relating to the Group; and
- » Corporate Disclosure Guide – describes the disclosures and conduct on the dissemination of information. The guidelines are based on the Bursa Malaysia's Main Market Listing Requirements (MMLR) and the Corporate Disclosure Guidelines (4<sup>th</sup> edition), which promotes transparency and accountability in the communication and dissemination of material information to the public.

In 2021, PGB conducted awareness and education programmes to ensure employees were aware of guidelines and policies, particularly in relation to the CoBE and ABC. All in all, there were zero incidents of non-compliance by way of adherence to policies.



### CHANGES TO THE GOVERNANCE FRAMEWORK

In 2021, PGB's Board continued to provide oversight on corporate governance and work closely together with the LT. Their efforts centred on refining PGB's corporate governance practices to align with the updated Malaysian Code on Corporate Governance 2021 (MCCG 2021) issued by the Securities Commission Malaysia and the 4<sup>th</sup> edition of the Corporate Guidance Guide issued by Bursa Securities Malaysia Berhad. We also worked to recompose PGB's Board and Board Committees to ensure more balanced and effective representation, as well as strengthened our overall governance framework. Over the course of 2021, the Group also implemented several other governance and risk management measures.

The details of how we have complied with the recommended practices applicable for Large Companies under the MCCG 2021 are spelt out in our standalone 2021 Corporate Governance Report which is published on our website and submitted to Bursa Malaysia. These details can also be found in PGB's Governance and Financial Report 2021 which makes up one of three books in our Reporting Suite for 2021.

### ENSURING STRINGENT INTERNAL CONTROL MEASURES

To ensure compliance with stringent internal control processes, audits are carried out by PGB's Internal Audit Department on a regular basis based on specific criteria and guidelines.

Assignments	Coverage
Audit on commercial excellence and customer centricity	» End-to-end CX and commercial activities: Marketing, sales, operations and post CX
Audit on the overall management of Pengerang LNG (Two) Sdn. Bhd. (PLNG2)	» Overall governance of PLNG2 » Activities based on PLNG2's strategic design
Shareholders audit on Kimanis Power Sdn. Bhd. (KPSB)	» Overall governance of KPSB » Activities based on its strategic design
Shareholders audit on Industrial Gases Solutions Sdn. Bhd. (IGSSB)	» Overall governance of IGSSB » Activities based on its strategic design
Audit on the overall governance of PGB's corruption risk and corporate liability	» Adequacy and effectiveness in line with the TRUST Principle and Information & Communication platform
Audit on the overall management of PGB's procurement activities	» Effectiveness of procurement activities: Focus on value generation and safeguarding internal resources
Audit on operations & maintenance and process safety management	» Overall governance, O&M activities and PSM activities
Audit on PGB project management and governance activities	» Overall project governance & management, operations readiness, operations and interfacing
Review of PGB governance platforms and activities	» Governance platforms: PGB, GPU and GTR » Terms of reference and implementation » Control environment
Review on PGB sustainability management and activities	» Overall governance and management of sustainability plans and activities of PGB » Information & Communication platform

## UPHOLDING RESPONSIBLE GOVERNANCE

### BOLSTERING OUR CYBERSECURITY CAPABILITIES

#### Why it is Important

The sophistication, scale and frequency of cybercrimes are on the rise across the globe. Cyberattacks continue to escalate, as attacks become easier to deploy with the attackers coming in all shapes and forms. Cybercriminals have become increasingly sophisticated and are continually changing their attack methodology and penetrating even the most complex of security systems. This has created more challenges and we need to be mindful about how we protect and secure our assets. Under the pandemic situation, with significant numbers of staff working from home and the rapid digitalisation of system and processes taking place, this has further exposed us to network intrusion and critical data theft. It is our responsibility to protect the PGB business and its stakeholders from malicious cybercrime.

#### What We Have Done

We have taken a proactive approach in protecting ourselves from cyber threats and have adopted the PETRONAS Enterprise Cyber Security Governance Framework (ECSGF), a group-wide governance framework which forms the foundation for our cybersecurity efforts. Cyber security risk for IT and operational technology (OT) are now managed enterprise-wide based on the mandatory Cyber Security Risk Management guidelines.

To date, we have organised Human Firewall Campaigns, where we adopt a robust culture of cybersecurity among our employees and educate them on various low level social engineering scams to the more sophisticated cyberattacks. We also send out a cyber security e-newsletter to our employees on monthly basis to increase their awareness. This includes best practices on avoiding cyber threats. We have also conducted periodic phishing tests to improve employee awareness and measure the effectiveness of our campaigns.

At the plant level, we have deployed Real Time Operational Technology (RTOT) solutions where our OT asset and its vulnerability status are monitored in real time from a single dashboard. This has improved the visibility of cyber threats to our OT system, thus providing a faster response when preventing a cyber-related incident. It is mandatory for all staff and contractors who work with our OT system to undergo special training on OT Cybersecurity Rules to ensure there are no breaches because of their actions.

#### What We Achieved in 2021

**95% of PGB staff attended and completed 178 modules and assessments on cybersecurity as at 31 December 2021.**

**Re-certification of ISO 27001 Information Security Management System in December 2021.**

**Successfully deployed our RTOT solutions to OT systems at all five plants at GPU.**

## TOWARDS LONG-TERM SUSTAINABLE GROWTH

As the PGB Group sets its sights on achieving long-term success, we are focusing our efforts on building a balanced business strategy that will constantly create value and position us for long-term, sustainable growth. As we venture forth, we will continue to look to the PETRONAS Sustainability Agenda, the Four Lenses, and NZCE 2050 aspiration, among other elements, to guide us.

Acknowledging how important the agenda of sustainability is to the Group's long-term value creation efforts, our leadership is today laser-focused on embedding sustainability in a more prominent and focussed manner into the Group's culture, operations and strategic undertakings. A new strategic ESG blueprint and a reinvigorated sustainability roadmap are in the pipeline, and we expect these, among other things, to be rolled out in the near future. Once these fundamental building blocks are in place, the Group will focus on the effective implementation of a sustainability programme anchored on the blueprint and roadmap.

At the same time, our leadership is exploring how best to leverage an outcome-based approach through the Just Transition concept. This calls for PGB to meaningfully participate and affect socioeconomic opportunities through capability building as well as respect for the natural environment and human rights. One of the potential avenues to do this would be through working together with all stakeholders across the supply chain to make sure smallholders are not left behind in the transition. To fast-track our efforts, we will take a page from the achievements of other companies on this front.

As PGB moves forward, the agenda of sustainability will remain a central feature of our overall business strategy. We will continue to make good on our existing sustainability initiatives and practices while remaining open and flexible to adopting new ones. This is especially important given the uncertain and ever-evolving market landscape that we operate in. As we focus our efforts on maximising value creation and making strong strides forward on the ESG fronts for the benefit of all, we are confident of reinforcing PGBs' position as a model for responsible corporate behaviour.

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