

OPERATING ENVIRONMENT AND OUTLOOK

As a global integrated chemicals company, we pay close attention to our operating environment and the external factors that influence our business. Given how interconnected PCG is to the energy and commodities industry, and the global demand for our products—changes in the macro economy, geopolitical uncertainty and supply-demand cycles can impact our ability to create value. We consider these factors in our strategies to ensure we respond proactively and appropriately to mitigate any impact on our business.

ECONOMIC RECOVERY

OVERVIEW

The economies of nations around the world recovered* at varying speeds throughout the year as a result of the different approaches taken to managing the spread of COVID-19. Global economic growth was also moderated by the impact of the Russia-Ukraine war, China's internal policies amid surging commodities prices, rising inflationary pressure and record high debt levels. Commodity prices including chemicals remained at elevated levels while demand for commodity chemicals continued to be impacted by global economic activities.

The persistent effects of the La Niña weather phenomenon have added further economic uncertainty, bringing with it extreme temperatures and heavy rainfall which affected the output of agricultural sectors in some regions of the world, including in Southeast Asia. According to the Climate Prediction Centre in the United States, the La Niña phenomenon is expected to continue into early 2023.

* As per IMF and IHS economic reports

HOW IT IMPACTED OUR STRATEGY

Learning from the previous year, we deployed solutions to cushion the impact of the economic uncertainty. Through our operational and financial resilience, we overcame some disruptions and continued to progress with our Two-Pronged Strategy.

HOW WE RESPONDED

- Maintained our plant availability and executed major turnaround activities without any impact on schedule, while carefully managing COVID-19 impacts
- As integrated facilities, we optimised the availability of every molecule available while aligning with the overall value chain shutdown or slowdown activities throughout the value chain which yielded the highest ethylene production volume
- Implemented digital tools as part of our digital transformation journey for faster business decisions and more value creation while putting customer centricity as a priority
- Exercised discipline cost management and prudent spending



Employees

- Continued to provide Flexible Work Arrangements (FWA) to promote work-life balance throughout the organisation to nurture engaged employees
- Created conducive working environment through both virtual and physical employee engagements and initiatives that focused on mental health and well-being
- Resumed physical training for selected development programme and technical courses to ensure effective hands-on learnings



Customers

- Maintained competitive pricing by offering a good value proposition through alternative packaging, Just-in-Time inventory via sales through our local tankages, product bundling and after-sales service
- Launched new products which help to address the changing needs of customers' requirements and growing demand of increasing population



Suppliers & Vendors

- Worked closely with authorities and relevant stakeholders on possible diversion to alternative ports of destination when needed to ensure timely product delivery to customers



Government & Regulators

- Worked closely with authorities to adhere to Standard Operating Procedures and continued operations

OUTLOOK

A robust recovery continued to be observed in 2022, though the situation may turn bearish in 2023.

The reopening of China and the relaxation of its zero-COVID policy is positive for the chemicals sector, especially for polymers and olefins. Nevertheless, we remain cautious due to the dynamic changes in geopolitics and climate that can potentially affect the global economy. One factor that heightens uncertainty of the pace of recovery moving forward is the significant increase of prices and inflationary pressure. The potential economic impact due to global interest rate hikes to tame high inflation and the fear of a recession emphasises a need to collectively address global challenges.

OPERATING ENVIRONMENT AND OUTLOOK

ENERGY, MATERIALS & FEEDSTOCK PRICE UNCERTAINTIES

OVERVIEW

Russia-Ukraine conflict pushed energy and feedstock prices soaring as supply was disrupted. In 2022, oil prices surged further from USD87/barrel in January 2021 to their highest in June 2022 at USD124/barrel. In July, the crude oil prices decline but remained above USD90/barrel throughout the second half of 2022 due to the Russia-Ukraine war amidst robust demand and OPEC+ maintaining production cut. As Russia curtailed gas supply to Europe, European gas prices in 2022 jumped by 163% from 2021 levels.

Overall, petrochemical prices in 2022 fared better than 2021. Our key ethylene-based price products, Polyethylene (PE) and Mono-Ethylene Glycols (MEG) saw average prices improve by 9% in the first half of 2022 compared to 2021 levels in line with recovery in the global economy and the manufacturing sector supported by higher energy and feedstock prices. However, prices of crude oil and naphtha trended downward in the second half of 2022 but it showing sign of strengthening in early 2023 as demand catches up with supply, thus influencing the movement of petrochemical prices.

Urea prices soared by 31% from 2021 on strong demand from the agriculture sector and food security needs, tight supply from major exporters and high feedstock costs. Methanol price remained elevated but stayed at almost the same level as 2021.

Similarly, specialty chemicals have also not been spared by the uncertainties in the macro environment fueled by post pandemic risk of new variants, prolonged Russia-Ukraine conflict derailing recovery, and high inflation. This has led to higher energy, material and feedstock prices. However, with the value adding nature of specialty chemicals to our customer coupled with pricing excellence we managed to mitigate the impact of the volatile market.

HOW IT IMPACTED OUR STRATEGY

Higher raw material prices and logistics costs pushed cost of production higher. However, higher petrochemical prices in tandem with the elevated energy price and supply-demand imbalance also pushed our revenue to an all-time high. We are also taking the opportunity to conduct turnaround optimisation as well as shifting some of our products to premium market.

HOW WE RESPONDED

- Upheld our ability to maintain competitive costs and maximise value and production, resulting in commendable profits
- Continuously monitored, reviewed and managed our feedstock contracts to optimise feedstock value



Customers

- Deployed optimisation of logistics costs, such as product co-loading, contract optimisation for inland distribution and haulage service, time-charter, and the expansion of our China domestic distribution infrastructure for methanol and polymers



Suppliers & Vendors

- Close collaboration through regular coordination meetings to secure stable feedstock supply and maintain a high utilisation rate in our plants
- Coordinated shutdowns with feedstock suppliers to maximise end-to-end value chain from upstream to downstream
- Clear PETRONAS Standard Operating Procedures (SOPs) shared with vendors for better deployment of resources



Shareholders & Investment Community

- The Group declared two interim dividends of 25 sen and 16 sen per ordinary share during the year, representing a dividend payout of 51.9% of Profit After Tax and Non-Controlling Interests (PATANCI) amounting to RM3.3 billion

OUTLOOK

We have seen a rally of commodity prices, including chemical prices during most of the first half of 2022, while in the second half, chemical prices took divergent paths as ethylene prices traced the downward trend of crude oil and naphtha prices while urea prices were higher due to the ongoing Russia-Ukraine conflict.

While OPEC+ is expected to actively control its production, other major oil exporters may continue to increase output. Petrochemical prices are expected to move in tandem with crude oil prices amidst global economic uncertainties.

To stay resilient against market volatility, PCG will continue to diversify and extend further in the downstream value chain by venturing into derivatives and specialty chemicals. With more specialty chemicals in our portfolio, we will continue to move into segments with higher growth potential and less volatility in relation to crude oil prices.

OPERATING ENVIRONMENT AND OUTLOOK

INTENSIFIED SUSTAINABILITY

OVERVIEW

Continuing from 2021, the scrutiny and call for action by policymakers, regulators, financiers, investors, consumers and pressure groups on sustainable business practices has intensified further. As key economies begin translating their net zero commitments into policy and legislation, investments into low-carbon pathways have intensified and accelerated peak oil demand which will pose risks to an industry that generally operates on thin margins. For PCG, we aspire to leverage the opportunities brought about by these developments to continue delivering value to our stakeholders.

HOW IT IMPACTED OUR STRATEGY

The increasing importance of sustainability practices brings additional considerations to our strategies and plans, especially with our Sustainability Agenda. This includes more scrutiny from regulators, investors, customers and the public. At the same time, by deeply embedding sustainability commitments into our operations and portfolios, we become more resilient to market volatilities. With this in mind, we continue to take a proactive approach in embedding Sustainability at the Core of PCG.

HOW WE RESPONDED

- Detailed out executable action plans with all PCG operating units for their respective short, mid, and long-term Net Zero Carbon Emissions (NZCE) 2050 pathways
- Aligned with PCG operating units on operational optimisation to reduce Scope 1 & Scope 2 emissions as well as scaling up renewables and low-carbon solutions
- Continued dedication to sustainable development driven by the expansion of Economic, Environmental, Social and Governance (EESG) practices
- Continued to channel financial capital into sustainability initiatives, such as carbon emission reduction, New Plastics Economy (NPE) and community well-being
- Aligning with DJSI and FTSE4Good to assure our stakeholders that we are on the right track in materialising our Sustainability Agenda



Customers

- Collaborated with technology partners in producing circular and sustainable products



Shareholders & Investment Community

- Enhanced disclosure and direct engagements to discuss sustainability initiatives and progress



Government & Regulators

- Release of our inaugural Task Force on Climate-Related Financial Disclosures (TCFD) report in September 2022 which already met the Malaysian stock exchange's newest requirements for listed entities to report on TCFD-aligned disclosures before December 31, 2025



Communities

- Raised public awareness on environmental sustainability through educational programmes and modules

OUTLOOK

New regulations, investor expectations, fiscal policies, consumer behaviour and sustainability reporting requirements will remain at the forefront of our Sustainability Agenda. We remain committed to channelling our resources to enable us to operate in an environmentally and socially responsible manner. This includes assessing opportunities in sustainable chemicals, NPE, community well-being, and climate change mitigation and adaptation. Our continued dedication to sustainable development will be driven by our commitment to economic, environmental, social and governance (EESG) best practices.

OPERATING ENVIRONMENT AND OUTLOOK

SUPPLY CHAIN DISRUPTIONS

OVERVIEW

Alongside surging energy and materials costs, businesses must deal with continued supply chain constraints, labour issues and higher wage pressures. Any supply disruption can trigger price escalation. Supply-side strains arising from COVID-19-related shutdowns, export restrictions, inclement weather, and surging shipping and energy input costs have been compounded by Russia's decision to invade Ukraine, which has disrupted global supplies of commodities including oil, gas, minerals, grains and fertilisers.

HOW IT IMPACTED OUR STRATEGY

The commodity chemicals market continued to be impacted by supply chain disruptions. Learning from the previous year, we deployed solutions to overcome the impact of global supply chain issues. Through our operational resilience, effective coordination with feedstock supplier, effective maintenance and spare parts management, as well as implementation of advanced digital tools in managing plant reliability and Commercial Excellence, we faced minimum disruptions.

HOW WE RESPONDED



Customers

- Deployed optimisation of logistics activities, such as product co-loading, contract optimisation for inland distribution and haulage service, time-charter, and overseas subsidiaries tank distribution
- Deployed digital tools where we also enhanced our marketing and sales productivity, quicken response time and improve integrated marketing communications with customers



Suppliers & Vendors

- Close collaboration through regular coordination meetings to secure stable feedstock supply and maintain a high utilisation rate in our plants
- Coordinated shutdowns with feedstock suppliers to maximise end-to-end value chain from upstream to downstream
- Effective adoption of PETRONAS SOPs by vendors for better deployment of resources
- Implemented advanced digital analytics to detect risky driving behaviours of our transporters since 2019 under PETRONAS' Integrated Vision for Operational Excellence Transformation (PIVOT) Transport Safety. It is a transportation safety solution that is holistic and preventive, based on a vehicle monitoring system, driver behaviour analytics and an integrated and digitalised database

OUTLOOK

As the post-COVID-19 recovery continues, more countries are opening up their economies and with fewer disruptions expected, and the impact of supply constraints is expected to ease further moving forward. However, to remain resilient, PCG will be making sure that the overall supply chain ecosystem is more responsive and agile to manage unexpected disruptions while maintaining profitability.

OPERATING ENVIRONMENT AND OUTLOOK

ACCELERATED DIGITALISATION

OVERVIEW

Over the last few years, manufacturers and industrial organisations around the world have been investing more in digital programmes and initiatives to help accelerate IT-optimised smart manufacturing. Enhanced digitalisation of systems and technologies brings convenience and efficiency which enables new business models, revenue streams and value creation opportunities. COVID-19 and the post-pandemic era has led to a new norm as people, organisations, industry and governments have willingly adopted digitalisation and digital platforms to cope with the disruptions to our lives, societies, and businesses. As part of our Commercial Excellence initiatives, we continue to embark on digital solutions which provide convenience and a better customer experience.

HOW IT IMPACTED OUR STRATEGY

Digitalisation increases our risk and exposure towards cyber threats and attacks that may impact operations, delay delivery of customer products and lead to financial loss, reputational damage and regulatory impact.

Nonetheless, low utilisation of digital application tools could cause slower realisation of benefits and return on our investment as unreliable infrastructure and inefficient assets will lead to disruptions in our operations, product delivery and services.

Hence, it is our corporate responsibility to accelerate digital adoption and protect the business and stakeholders from any malicious cybercrime.

HOW WE RESPONDED

- In 2022, we accelerated our journey from a product-centric to a customer-centric business with our digital Customer Relationship Management (CRM) portal, PETRONAS360. With PETRONAS360, we envisioned to enable our frontliners to delight customers with bespoke and seamless experience. At the same time, we plan to further entice customer loyalty by liberating crucial information and serve customers all year round through the portal
- Through Cyber Security Business Impact Assessment and Legal & Regulatory Assessment (CSBIA-LRA), we identified top priority digital tools (business critical system assets) which we utilise to deliver reliable, efficient and effective services to customers
- We implemented digital tools such as Enterprise Optimisation, PIVOT to improve operational efficiency
- Leveraged digital tools on plant operations, such as Asset Performance Monitoring (APM) and Advanced Analytics (AA) which translate into total cost saving and avoidance of RM25 million
- Utilised the latest tracking technology to enhance fleet monitoring compliance and safety including utilisation of 24-hour CCTV and drones
- To increase cyber resilience and assurance, we have adopted and applied the Enterprise Cyber Security Governance Framework, established Cyber Security Operations Centre (SOC) that enables 24/7 monitoring of any cyber risks, vulnerabilities and attacks globally to protect our business systems and data
- Developing our people to be human firewall

OUTLOOK

Industries will continue to adopt digitalisation and accelerate smart manufacturing as technologies enable new business models, revenue streams and value creation opportunities. We are committed to expanding and prioritising digital tools and platforms to ensure operational efficiency and reliability and deliver reliable, efficient and effective services to customers and other stakeholders. In addition to the rollout of Commercial Excellence projects such as the Price Management Tool, Customer Delivery Excellence, PETRONAS 360, PIVOT Transport Safety and Enterprise Optimisation, we are also planning to implement price forecast advance analytics in 2023 to enhance our pricing capabilities.

STAKEHOLDER ENGAGEMENT



EMPLOYEES

Employees are the backbone of the Group. Their competencies, leadership and commitment are central to achieving our strategic priorities.

Number of Employees:

6,288



CUSTOMERS

The trust and support of customers is the reason we exist. Our ability to deliver innovative products and solutions that meet their evolving needs is key to our sustainable growth.

Number of product stewardship and technical seminars:

13



SUPPLIERS & VENDORS

A resilient value chain is essential for our continuous operations. Therefore, we create strong relationships with our suppliers and vendors that benefits everyone across the supply chain.

Percentage of local* suppliers and vendors:

80%

* local suppliers of Malaysian operations



BUSINESS PARTNERS

We form strategic partnerships and joint ventures (JVs) with other industry players to exchange ideas and expertise, as well as further expand our business.

Number of JVs:

13



SHAREHOLDERS & INVESTMENT COMMUNITY

As essential providers of financial capital, we regularly engage with our shareholders and investors so that they can make fair and informed decisions.

Number of Shareholders:

18,901 (as at 31 December 2022)



GOVERNMENT & REGULATORS

With a wide international presence, we work closely with relevant authorities to navigate regulatory challenges, ensure consistent compliance and attract Foreign Direct Investments.

Number of Engagement Sessions:

58*

* Data only represent high level engagement in both local and international level



COMMUNITIES

The long-term health of our business is linked to the health of the communities we serve. We strive to create meaningful and inclusive contributions for everyone impacted by our operations.

Number of volunteer hours

1,683



MEDIA

Our media partners help share essential and transparent information with our other stakeholders, such as the public, investors, regulators and others, protecting our business from misinformation and unfair perceptions.

Media mileage

RM18.7 million

STAKEHOLDER ENGAGEMENT

Our long history in the chemicals industry is built on the trust and support of our stakeholders. Therefore, an essential aspect of our sustainability efforts involves maintaining open communication with our key stakeholders to keep them informed and updated, while understanding how to create value for them in the many years to come. Our strategy and decisions are based on their feedback and expectations.


FREQUENCY OF ENGAGEMENT

- Daily
- Weekly
- Monthly
- Alternate Month
- As Required
- Quarterly
- Annually
- Bi-Annually
- Bi-Monthly

QUALITY OF ENGAGEMENT

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

EMPLOYEES



ENGAGEMENT PLATFORM

- Virtual townhalls
- Digital communication
- Staff engagement and appreciation sessions
- HSE campaigns
- Organisational Culture Survey

WHY WE ENGAGE

We have 6,288 skilled and dedicated employees to drive our business objectives and execute our world class manufacturing operations.

KEY CONCERNS

- Health, safety and environment
- Cybersecurity
- Well-being and mental health
- Work-life balance
- Human rights

RESPONSE

- Implement more initiatives on employee's well-being and mental health
- Provide a safe working environment to our employees
- Offer flexible working arrangements

CUSTOMERS



ENGAGEMENT PLATFORM

- Meetings with customers
- Customer satisfaction surveys
- Feedback management system
- Customer appreciation programmes
- Product stewardship seminars

WHY WE ENGAGE

Our customers play an integral role in our business growth. In order to deliver quality value-added products, we need to understand their expectations which will, in turn, build customer loyalty.


KEY CONCERNS

- Product quality and delivery
- Plastic and waste management
- Product pricing and credit terms

RESPONSE

- Design distinct value propositions for each customer segment
- Integrate product stewardship into the Research & Development process to develop safe and sustainable products
- Collaborate with strategic partners to create high performance and competitive products

SUPPLIERS & VENDORS



ENGAGEMENT PLATFORM

- Regular meetings
- Day-to-day interactions
- Forums
- Site visits

WHY WE ENGAGE

Our suppliers and vendors support us in delivering high-quality products and services, which will in turn enable us to create value for our own products. This relationship means we also provide suppliers with the right support to thrive in the market.


KEY CONCERNS

- Health, safety and environment
- Human rights
- Ethical business practices
- Sustainability in supply chain

RESPONSE

- Implement stringent policies that protect suppliers' well-being
- Provide robust grievance mechanisms for suppliers
- Incorporate environmental and social standards in our procurement process
- Conduct governance-related sharing sessions

BUSINESS PARTNERS



ENGAGEMENT PLATFORM

- Periodic meetings
- Day-to-day interactions
- Strategic dialogues
- Conferences and forums

WHY WE ENGAGE

Our business partnerships - largely created through joint ventures, joint operations and associates - provide beneficial support to the growth of all respective businesses.


KEY CONCERNS

- Company performance
- Ethical business practices
- Good governance
- Continuous value creation

RESPONSE

- Closely monitor and build upon partnership benefits
- Strengthen good governance by leveraging each shareholders' governance practice
- Provide a reliable supply of feedstock to partner ventures

SHAREHOLDERS & INVESTMENT COMMUNITY



ENGAGEMENT PLATFORM

- Investors and analysts briefings
- Meetings and conferences
- Annual reports
- Annual general meetings
- Announcements via Bursa Malaysia
- Company website

WHY WE ENGAGE

With the financial capital from our shareholders and investors enabling our sustainable growth, we are required to maintain their confidence in our ability to generate sustainable financial returns in a responsible manner.

KEY CONCERNS

- Sustainable value creation
- Company's operational, commercial and financial performance
- Growth project progress and deliverables
- Environmental management
- Corporate governance

RESPONSE

- Access to board members and senior management
- Increase communication frequency utilising available communication platforms such as conference calls, virtual conferences and one-on-one meetings
- Improve communication materials including easy website navigation
- Ensure compliance of disclosure guidelines
- Timely disclosure on key topics

STAKEHOLDER ENGAGEMENT

STAKEHOLDER ENGAGEMENT

GOVERNMENT & REGULATORS	COMMUNITIES	MEDIA
<p>ENGAGEMENT PLATFORM</p> <ul style="list-style-type: none"> Regular reporting to relevant agencies Joint working committee with state governments Regular meetings and briefings with agencies/regulators 	<p>ENGAGEMENT PLATFORM</p> <ul style="list-style-type: none"> Social Impact programmes Briefings and engagement with local communities 	<p>ENGAGEMENT PLATFORM</p> <ul style="list-style-type: none"> Virtual press conferences Press releases
<p>WHY WE ENGAGE</p> <p>Our strong relationship with the government and regulators ensures that we operate within legal requirements and stay on top of any of the changing regulations.</p> <p>KEY CONCERNS</p> <ul style="list-style-type: none"> Regulatory compliance Environmental management <p>RESPONSE</p> <ul style="list-style-type: none"> Establish transparent communication with relevant bodies Collaborate with relevant agencies with common objectives 	<p>WHY WE ENGAGE</p> <p>Our operations may directly or indirectly impact communities; therefore, community engagement is important for us to understand their concerns. This will also highlight our social citizenship and instil public trust.</p> <p>KEY CONCERNS</p> <ul style="list-style-type: none"> Safety of plant operations Quality of air and water emissions Jobs and other income-generating opportunities <p>RESPONSE</p> <ul style="list-style-type: none"> Adopt stringent HSE best practices at PCG manufacturing plants Regularly monitor air and water quality surrounding operations Invest in community development programmes 	<p>WHY WE ENGAGE</p> <p>The media is an integral communication link between our business and our stakeholders. It is a key player when it comes to distributing significant information about our business and brand reputation.</p> <p>KEY CONCERNS</p> <ul style="list-style-type: none"> Business performance Environmental management and sustainability efforts New innovation and technology <p>RESPONSE</p> <ul style="list-style-type: none"> Foster open and transparent communication with the media Provide a speedy response to media enquiries on business developments Organise rapport-building activities

MATERIAL MATTERS

Material matters are key sustainability issues from the Economic, Environmental, Social and Governance pillars that are significant to our business, as well as stakeholders. Identifying material matters will enable us to better understand industry trends and challenges, apart from identifying the risks and opportunities of the material matters.

At PCG, we conduct an extensive materiality assessment involving internal and external stakeholders once every two years to ensure that our sustainability material matters remain relevant and timely. Our most recent in-depth materiality assessment, which included an online survey and interviews with stakeholders, was conducted in 2021*. As a result, 14 material matters were identified, of which five were of high priority.

In 2022, we reviewed the 14 material matters through a desktop validation to ensure that our material matters are updated from our last full materiality exercise in 2021. The material matters were aligned against local, regional and global industry peers, as well as national and international guiding principles such as Sustainability Accounting Standards Board (Chemicals), International Petroleum Industry Environmental Conservation Association (IPIECA) and UN Sustainable Development Goals (UN SDG). We also aligned our material matters against the 11 common material matters listed by Bursa Malaysia in its enhanced Main Market Listing Requirement's sustainability disclosure requirements.

While the validation process showed that almost all of our material matters are aligned with industry peers and the selected guiding principles, we incorporated Customer Relationship Management into Innovation & Product Stewardship. This is because we go beyond providing the usual customer relationship management and are focused on providing innovative and bespoke products and solutions that meet customer needs. In conclusion, we retained 13 material matters, which were presented to the Sustainable Development Working Committee and the management before being endorsed by the Board.

* Read more about the process of our materiality assessment from pages 12 to 19 in PCG's Sustainability Report 2022.

PCG'S MATERIAL MATTERS FOR 2022

ECONOMIC	ENVIRONMENTAL	SOCIAL
<ul style="list-style-type: none"> Innovation & Product Stewardship Supply Chain Management Strategy Purpose & Financial Resilience Plant Operations Cybersecurity & Digitalisation 	<ul style="list-style-type: none"> Climate Change Environmental Stewardship New Plastics Economy (NPE) 	<ul style="list-style-type: none"> Workplace & OSH Community Engagement Talent Development Human Rights

GOVERNANCE

- Corporate Governance

Sec 5 How We Create Value

VALUE CREATING BUSINESS MODEL

STATEMENT OF PURPOSE

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

VISION

To be the preferred chemical company providing innovative customer solutions

SHARED VALUES

Our shared values are deeply embedded in our culture to ensure we operate with integrity at all times while contributing to the well-being of people in every nation where we have presence.



LOYALTY



INTEGRITY



PROFESSIONALISM



COHESIVENESS

OUR CAPITALS

CAPITAL INPUTS

NATURAL

- Natural gas:**
 - Methane 109 million mmbtu
 - Ethane 1,243 ktpa
 - Propane 801 ktpa
 - Butane 272 ktpa
 - Heavy Naphtha 607 ktpa

MANUFACTURED

- 30 production plants owned
- Subsidiaries and representative offices in 29 countries

HUMAN

- 6,288 total number of employees
- RM24.4 million invested in employee training & development

INTELLECTUAL

- 7 Research and Development (R&D) laboratories
- 631 proprietary chemical formulations

SOCIAL & RELATIONSHIP

- 1,738 suppliers
- 1,683 volunteer hours for community engagements

FINANCIAL

- As at 1 January 2022*
- RM34.9 billion in shareholders' equity
 - RM16.4 billion in cash and cash equivalents
 - RM7.0 billion in free cash flow

* Certain financial information and its corresponding financial ratios have been restated in line with amendments to MFRS 116 Property, Plant and Equipment

ENABLE OUR BUSINESS TO CREATE

BUSINESS ACTIVITIES

MANUFACTURING

Our 19 world-class chemical manufacturing sites worldwide produce a range of commodities and specialty chemicals that are used by customers in different sectors - from agriculture to automotive, and packaging to personal care - to manufacture items that enhance our daily life.

[More Information on Pg 69.](#)

OPERATING ENVIRONMENT

- Economic Recovery
- Energy, Materials & Feedstock Price Uncertainties
- Intensified Sustainability
- Supply Chain Disruptions
- Accelerated Digitalisation

* Read more about Operating Environment on pg 56.

OUR STRATEGY

TWO-PRONGED STRATEGY

FIRST-PRONG

Sustain strength in basic petrochemicals
through Operational Excellence & Commercial Excellence in Maximising Cash Generation from existing business

SECOND-PRONG

Selectively diversify into derivatives, specialty chemicals and solutions
through Growth Delivery Excellence via Expanding Core & Stepping-out opportunities

Strategic Thrusts

OE OPERATIONAL EXCELLENCE

CE COMMERCIAL EXCELLENCE

GE GROWTH DELIVERY EXCELLENCE

COMMERCIAL

We market and sell integrated chemical solutions, including specialty products and chemical derivatives of the future. Through innovative products and solutions, we deliver best-in-class commercial value to our customers globally.

[More Information on Pg 71.](#)

PRINCIPAL RISKS

- | | | |
|--|------------------------------------|---------------------------------------|
| H Health, Safety and Environment Risk | S Strategic Investment Risk | SS Sustainability Risk |
| P Project Execution Risk | CY Cybersecurity Risk | |
| CO COVID-19 Risk | O Operational Risk | F Feedstock and Utilities Risk |
| M Market Risk | TA Plant Turnaround Risk | R Regulatory Risk |

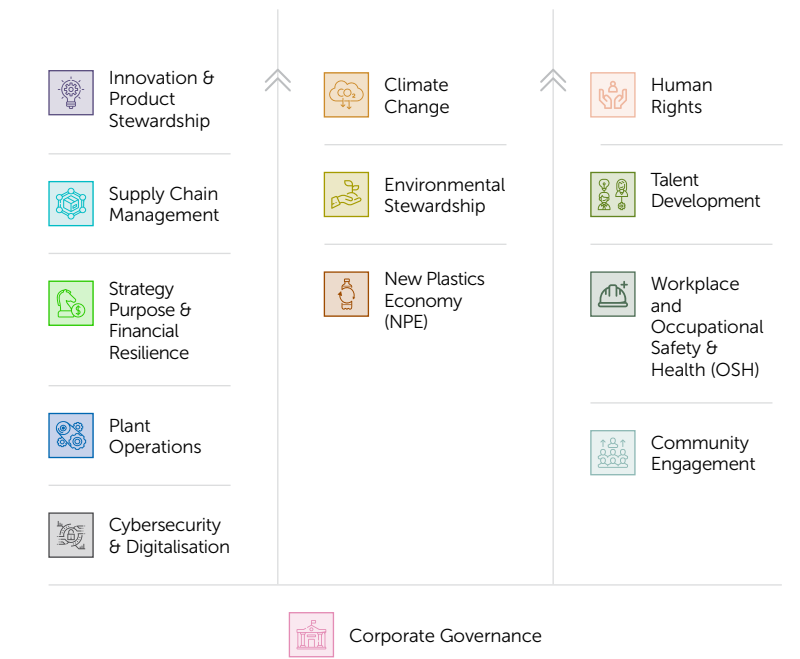
GOVERNANCE

Supported by strong governance and effective Board leadership - **Robust Corporate Governance Ecosystem**

SUSTAINABILITY AT THE CORE



MATERIAL MATTERS



VALUE FOR OUR STAKEHOLDERS

OUTPUTS

PRODUCTION & SALES

- 10.4* million tpa production volume
- 8.3* million tpa sales volume
- 89% plant utilisation

* including BRB Group & Perstorp Group

INNOVATION & TECHNOLOGY

- 15 new products
- 12 co-created solutions
- 283 technical solutions

ENVIRONMENTAL FOOTPRINT

- 0.70 tonne CO₂e/tonne GHG emissions intensity
- 29.4 kilotonne hazardous waste generation
- 0.02 tonne/kilotonne wastewater discharge intensity

OUTCOMES

NATURAL

- More than 108,000 tCO₂e reduced since 2019
- 17.08 GJ/tonne energy intensity

MANUFACTURED

- RM27.2 billion worth of property, plant and equipment

HUMAN

- Zero fatalities or major safety incidents
- 84% Employee Engagement Score
- 10.2 average training man-days per employee

INTELLECTUAL

- 13 product stewardship & technical seminars

SOCIAL & RELATIONSHIP

- 70% total procurement spending for Malaysian business sourced from local suppliers
- Over 300,000 community members reached

FINANCIAL

- RM8.1 billion in EBITDA
- RM3.3 billion dividend payout

TRADE-OFFS

NATURAL CAPITAL

We have developed a comprehensive Net Zero Carbon Emissions (NZCE) 2050 Roadmap to demonstrate our unwavering commitment to climate action. While implementing this roadmap will require additional Financial Capital to reduce our emissions, we are confident that it will ultimately minimise future carbon costs and contribute to our long-term sustainability.

MANUFACTURED CAPITAL

Despite the initial impact of the Perstorp Group acquisition on our near-term Financial Capital, our expanded production capabilities and focus on sustainable products will not only replenish our Financial Capital, but generate significant long-term value. Additionally, it will not only strengthen our customer relationships, but also support investments that contribute to our Intellectual, Human, and Social & Relationship Capitals.

HUMAN CAPITAL

We prioritise the health and safety of our employees by investing in measures that promote a safe work environment, as well as adopting flexible working arrangements to support employee well-being. Additionally, we recognise the importance of investing in our employees' development to ensure they are prepared for the future. While these investments may impact our near-term Financial Capital, they ultimately lead to more productive and high-performing employees, strengthening our Human Capital and creating long-term value for the company.

INTELLECTUAL CAPITAL

Our customer-centric approach drove our focus on delivering innovative products and solutions, resulting in increased customer satisfaction and a rise in Social & Relationship Capital and trade off- Financial Capitals.

SOCIAL AND RELATIONSHIP CAPITAL

We are able to achieve positive results in both our Financial and Social & Relationship Capital through the timely delivery of products to our customers and our continued engagement in community development programs. Strengthened our branding as a responsible corporate citizen and acquired feedback and input to improve our Intellectual Capital.

FINANCIAL CAPITAL

To achieve a balance between short-term financial interests and longer-term growth objectives, our business implements cost optimisation practices and discipline to efficiently manage working capital.

STRATEGY REVIEW

The Two-Pronged Strategy was formulated for PCG to remain competitive, resilient and adaptable. This proved crucial, especially in the past two years with the pandemic, on top of an already rapidly changing landscape and industry. With the aim towards delivering sustainable value to all our stakeholders, this strategy builds towards our growth aspirations while considering the external macro-environment, risks and opportunities and material matters.

TWO-PRONGED STRATEGY

Our strategy propels the Group towards achieving our vision of becoming The Preferred Chemical Company Providing Innovative Customer Solutions.



Our Strategic Thrusts:

OE

OPERATIONAL EXCELLENCE

Achieve sustainable world-class plant performance focusing on:

- HSE Excellence
- Plant reliability & efficiency
- Plant turnaround excellence
- Optimise value chain
- Digital transformation & solutions

CE

COMMERCIAL EXCELLENCE

Increase value by looking through our customers' lens focusing on:

- Customer focus
- Sustain and enhance market position
- Marketing and sales capabilities
- Innovative solutions
- Innovation culture

GE

GROWTH DELIVERY EXCELLENCE

Diversify into higher value-adding products focusing on:

- Extend value chain
- Build specialty platform
- Create optionality for growth

To further build resilience against market volatility and emerging risks, this strategy expands our value chain from basic petrochemicals into derivatives and specialty chemicals. Driving our strategy's success are the three strategic thrusts, executed through initiatives and propelled by performance targets.

STRATEGIC REVIEW

OPERATIONAL EXCELLENCE

Our core focus has always been delivering optimum productivity while ensuring our people and working environment remain safe. Delivering Operational Excellence is essential to ensure optimum cash generation from existing assets in supporting PCG's growth strategy while operating efficiently to support PCG sustainability journey. In 2022, we continued to record commendable Health, Safety and Environment (HSE) performance premised on our culture of HSE Excellence. We maintained our record of zero fatalities and to date, we managed to cumulatively reduce more than 108,000 tCO₂e of emissions from our operations.

PCG has also invested time and resources to improve plant reliability through effective execution of rectification of major plant issues and plant rejuvenation during our four planned turnarounds that were executed in 2022. We also strengthened our reliability strategy in addressing plant challenges and we are leveraging on digitalisation to provide fast and accurate analysis to improve plant reliability. In addition, we managed to optimise our operations through improved feedstock and utilities supply supported by our good collaboration with the key stakeholders within the supply chain.

Headline KPI	2018	2019	2020	2021	2022	2023 target	Mid-Term Target (2024-2027)
Number of Major Safety Incidents	1	0	0	0	0	0	0
Lost Time Injury Frequency (LTIF)	0.13	0.08	0.14	0.07	0.17	0.13	0.13
Number of Tier-1 Process Safety Event	1	2	3	1	1	0	0
GHG Emission (million tonne of CO ₂ e)	7.08	7.02	7.10	7.00	7.05	6.96	≤6.98

Headline KPI	2018	2019	2020	2021	2022	2023 target	Mid-Term Target (2024-2027)
Production Volume (million tpa)	10.4	10.4	10.7	10.4	10.4*	>10	>10
Plant Utilisation (%)	92	92	94	93	89	>90	>90

* including BRB Group & Perstorp Group

Health, Safety and Environment (HSE) Excellence

KEY INITIATIVES

- Ensuring strong commitment to HSE Excellence, particularly in the execution of turnaround activities which involves thousands of contracts workers who are new to our working environment. This was implemented through strict discipline and adherence to our HSE rules and regulations, as well as COVID-19 SOPs
- Continuing the Felt Leadership Programme, Focused Learning (Learning from Incidents) and adopting HSE Balance of Consequence, to ensure HSE goals are met
- Inculcating a culture of HSE Excellence by enforcing a robust HSE framework
- Improving our OSH and environmental practices via the Mandatory Control Framework

HOW WE HAVE PROGRESSED

- Recorded zero fatalities and fire incidents despite of heavy plant activities (Turnaround & planned maintenance) across the year
- Recorded a Lost Time Injury Frequency (LTIF) of 0.17 against industry benchmarks of 0.22
- Uninterrupted operations as 99% of our employees have been vaccinated and we maintained SOPs adhering to Ministry of Health (MOH) guidelines

Reliable Plant Performance

KEY INITIATIVES

- Intensified the monitoring and implementation of our equipment reliability strategy (ERS) which include our plant threats and bad actors' equipment through key reliability projects

HOW WE HAVE PROGRESSED

- All PCG's operating units were running at optimum at Plant Utilisation levels above 90% except for ASEAN Bintulu Fertilizer (ABF), PC Methanol and PC Aromatics (PCARO)
- Rectified most of the plant threats and commissioned new boiler unit at ABF to improve plant reliability
- Implemented Plant Asset Rejuvenation (PAR) projects at PC Methanol Plant 2 during turnaround in addressing major plant issues and bad actors identified prior to the turnaround activities
- PCARO key reliability challenges were addressed during the turnaround execution

Key Capitals



Material Matters



Key Stakeholder Groups



STRATEGIC REVIEW

Digitalisation Journey

KEY INITIATIVES

- Focus on ensuring reliable plant performance through our ERS and the establishment of a reliability improvement programme which leverages digital tools that give us visibility of potential threats to our critical equipment

HOW WE HAVE PROGRESSED

- Optimised chemical injection and operating parameters to address compressor fouling issue at PC Ethylene through PIVOT Advance Analytic (AA): CGC Fouling-Improved compressor reliability with early prediction through predictive analytics at most PCG facilities using PIVOT Advance Analytic (AA): Machinery Monitoring, Prescriptive, Diagnostic (MMPD). The above initiatives resulted in cost savings amounting to RM25.0 million

Reliable Feedstock Supply

KEY INITIATIVES

- Collaborated with feedstock and utilities suppliers through a range of targeted programmes to optimise feedstock and utilities supply availability to PCG assets, in line with production requirements and sales targets to ensure our commitment to customers are met. Continuous collaboration among members of the Additional Methanol Task Force (AMT) and Additional Ethane Task Force (AET) was crucial in our success here

HOW WE HAVE PROGRESSED

- Commissioned a 3.5 km ethylene transfer line, enabling the increase of the export volume of ethylene that has helped to optimise the production of ethylene at PC Olefin which allow our ethylene crackers to receive its highest amount of ethane feedstock supply and translated into PCG's highest ethylene production volume and value creation of USD21.0 million to PCG

VALUE CREATED FOR STAKEHOLDERS

EMPLOYEES:

- Providing safe working environment to our staff and contractors is our utmost priority
- Ensure basic rights are given based on the principles of dignity, fairness, respect and equality to our people, contractors

CUSTOMERS:

- Reliable supply of products to meet customers' production requirements

BUSINESS PARTNERS:

- Due to the integrated nature of our operating units with our business partners (JVs), we are able to maximise the overall value chain through operational optimisation

GOVERNMENT & REGULATORS:

- Strengthened regulatory collaborations for better plant operation through
- Periodic engagements with relevant authorities at state and national levels
- Providing necessary and frequent reports to relevant authorities
- Ensuring plant operations were equipped with reasonable safeguards and necessary monitoring tools (e.g., PETRONAS Risk Based Inspection (PRBI), Continuous Emission Monitoring Systems (CEMS))

COMMUNITIES:

- Ensured the surrounding environment and ecosystems are free of industrial contamination through periodic engagements with local communities for a more comprehensive understanding of the impacts of our operations

Turnaround Excellence

KEY INITIATIVES

- Executed turnaround (TA) activities with enhancement on TA work process, contractor management and utilisation of digital tools
- Collaborated with Department of Occupational Safety and Health (DOSH) to optimise statutory shutdown activities including participation in DOSH's risk-based Special Scheme of Inspection and Self-Regulation approach

HOW WE HAVE PROGRESSED

- Safe execution of four statutory turnarounds with a total of 3.5 million man-hours
- Optimised run length of PC Olefin and PC Ethylene beyond the normal three-year cycle for turnaround activities

LOOKING AHEAD

- To continue driving timely execution of reliability improvement projects in addressing plant challenges to achieve world class plant utilisation rate
- Ensure the safe execution of turnarounds by strengthening basics through enhancement of work process and contractor management supported by intensifying utilisation of digital tools in 2023
- Intensifying utilisation of digital tools in managing reliability programme as well as reporting and communication process
- Strengthening collaboration with stakeholders across value chain to optimise production volume
- Expanding our commitment to embedding sustainability within our operations with various initiatives to reduce our carbon emissions and reduction of water usage

COMMERCIAL EXCELLENCE

We continue to deliver value to our customers through a diversified product portfolio, understanding what our customers want and more than ever, going the extra mile to ensure availability of our products. In the year under review, we achieved a very high order fulfilment reliability rate, received the fewest number of customer complaints and further strengthened our domestic distribution network in China. In addition, we have put customer centricity front and centre through co-creation initiatives and the introduction of various digitalisation initiatives to make the sales process more seamless and convenient.

Headline KPI	Target & Results	2019	2020	2021	2022	2023	Mid-Term Target (2024-2027)
Sales Volume (million tpa)	Target	8.0	8.3	8.1	8.2	10.2	>10
	Results	8.4	8.3	8.2	8.3		
Order Fulfilment Reliability (OFR) (%)	Target	95	95	95	95	95	95
	Results	97	97	87	95		
Number of new/enhanced products	Target	2	5	3	2	3	10
	Results	6	11	16	15		
Number of co-created applications solutions	Target	15	20	14	20	15	15
	Results	13	21	16	12		
Number of technical solutions	Target	100	350	200	200	200	200
	Results	183	545	301	283		

Sales Performance

KEY INITIATIVES

- Maximise sales volume for existing business
- Ensure timely product delivery to customers
- Maintain favourable customer feedback

HOW WE HAVE PROGRESSED

- Sustained our sales volume at over 8.3 million MT
- Achieved 95% in Order Fulfilment Reliability (OFR), an improvement from 2021's performance of 87%
- Achieved highest Customer Feedback (Sigma) at 5.4 sigma (against 6 sigma) with lowest number of complaints (9) since inception, as a result of process improvement at internal sites as well as our service providers
- Expanded the China Domestic Distribution (CDD) programme for methanol with a new satellite tank in Fujian, Eastern China which saw the arrival of its maiden cargo in October 2022. The Methanol CDD programme was first established in Taichang in 2020
- Expanded CDD programme for polymer to Shanghai and Ningbo, Eastern China. The polymer CDD programme was first established in Huangpu, Southern China in 2021

Promote Safe Handling of Chemicals & Reduce Our Carbon Footprint

KEY INITIATIVES

- Conduct Product Stewardship session & technical talks
- Key products Life Cycle Assessment (LCA)

HOW WE HAVE PROGRESSED

- Conducted 13 sessions, higher than the 12 sessions organised in 2021
- Completed 84% of LCA which is on track for full completion in 2023

Key Capitals



Material Matters



Key Stakeholder Groups



STRATEGIC REVIEW

Sustain Land Transport Safety

KEY INITIATIVES

- Conduct effective Felt Leadership sessions with transporters
- Continued implementation of Road Transport Operational Guidelines (RTOG)

HOW WE HAVE PROGRESSED

- Zero fatalities recorded since 2019
- Achieved Total Vehicle Accident Rate (TVAR) at 0.08, improvement from 2021's performance of 0.20

Address Customers Pain Points & Optimise Value

KEY INITIATIVES

- Drive Enhanced Product Development & Co-Created Solutions

HOW WE HAVE PROGRESSED

- Commercialised 12 new products
 - Launched the tolling of Compacted NPK (CNPk) Fertiliser with the National Farmers Organisation for supply to the palm oil sector and other crops in Northern Malaysia. The use of CNPK can help reduce labour, logistics and storage costs as it does not need to be applied as frequently as conventional fertiliser. This also marks our first foray into the palm oil sector as we saw an opportunity to assist our customers given the tight labour market the industry currently faces due to the lingering effects of the pandemic
 - LLDPE MI 7 for Caps & Roto Moulding (LL3870UA)- To provide solution to improve productivity for caps and closures producers due to the easy-to-process material
 - **BRB Group**
 - Si-COAT 460RC Silicone Roof Coating
 - CSL 429 Construction adhesive and air barrier sealant
 - Personal care
 - BRB SG 250
 - BRB 6340 (reformulated and commercialised under same name)
 - Water repellent
 - BRB Siloen 882
 - BRB 5022WR
 - BRB Siloen HJS-DSG5
 - Car care and home care
 - BRB SF 1802
 - Lube oil additives
 - Viscotech 368L
 - **Perstorp Group**
 - Resins & Coatings - Polyurethane Dispersion (PUD)
 - Ymer™ 90
 - Ymer™ 180
 - Synthetic Lubricants
 - Isononanoic Acid (Iso-C9 Acid)
 - Animal Nutrition
 - Gastrivix™ Avi
 - Co-creation solutions: 12

Digitalisation Journey

KEY INITIATIVES

- Enhanced segmented/dynamic pricing and sales negotiation
- Implement digital solutions that improve efficiency and productivity

HOW WE HAVE PROGRESSED

- Finalisation of various digital project within Commercial
 - a. Pricing Management Tool (PMT)
 1. PMT system is a deal and pricing management tool that maximises potential value by utilising structured and standardised pricing policies, while enforcing governance and approval workflow
 2. PMT now caters to all products including those from the petrochemical plants in Pengerang Integrated Complex (PIC) and Oversea Subsidiary (OS). PMT was also upgraded from an On-Premise database to a Cloud-Server Database to ensure the system design meets Cyber Security Compliance Protocol
 - b. Customer Delivery Excellence (CDEX) : In 2020, we started with loading completion notifications via email to customers for inland deliveries enabling customers to be ready to receive their products. In 2022, CDEX provide the same visibility for customers with marine orders and later to be integrated with PETRONAS360 Customer Portal. The plan moving forward is to further enhance the system based on the feedback received from users to ensure seamless experience for customers
 - c. Expanded the scope of the Enterprise Optimisation (EO) project to other non-Kertih value chains under EO Phase 2. The EO project was first developed in 2019 for Kertih value chains to enable improved enterprise optimisation activities for optimum value creation based on prevailing feedstock availability, market information and manufacturing and commercial capability
 - PETRONAS360 : In 2022, we started our journey from a product-centric to a customer-centric business with our digital Customer Relationship Management (CRM) portal, PETRONAS360. With PETRONAS360, we aspire to enable our frontliners to delight customers with a bespoke and seamless experience. At the same time, we plan to further improve customer loyalty through greater transparency and the ability to serve customers all year round through Customer Portal

These initiatives resulted in value creation of RM26 million

STRATEGIC REVIEW

VALUE CREATED FOR STAKEHOLDERS

EMPLOYEES:

- Provided flexible work arrangement for staff's work-life balance
- Management conducts regular engagements with individual departments for staff's mental health and well-being

CUSTOMERS:

- Timely product delivery to customers
- Introduced innovative chemical solutions and co-created application solutions to support customers' business growth
- Resolved customer pain points through effective feedback management
- Engaged customers through product stewardship and technical talks to promote safe handling of chemicals and maximise product value
- Competitive product pricing and fair credit terms

SUPPLIER & VENDORS:

- Reliable supply chain and minimal operational disruptions
- Lower number of safety incidents with advanced digital analytics

BUSINESS PARTNERS:

- Ensured good governance in all business projects
- Close collaboration and partnership to avoid value leakage

SHAREHOLDERS & INVESTMENT COMMUNITY:

- Timely and transparent disclosure of company performance
- Sustainable shareholder return through stable dividend payment

GOVERNMENT & REGULATORS:

- Strengthened regulatory collaborations through periodic engagements with relevant authorities at state and national levels
- Providing necessary and frequent reports to relevant authorities
- Ensuring commercial operations were equipped with reasonable safeguards and necessary monitoring tools (e.g., Product & Trade Regulatory Compliance Monitoring, Regulatory Threat Register)

LOOKING AHEAD

- Commercialise products from Pengerang Integrated Complex (PIC)
- Continue to drive the enhanced product development
- With rising sustainability requirements across markets, we will also support customers' business growth through low-carbon, sustainable solutions, which aligns with PCG's Sustainability Agenda

STRATEGIC REVIEW

STRATEGIC REVIEW

GROWTH DELIVERY EXCELLENCE

Our growth journey has moved into the next stage of maturity following the landmark acquisition of Perstorp Group, a niche specialty chemicals player, which has strengthened PCG's overall earnings potential and future-proofed the business against the cyclical nature and volatility of our industry. This diversification play is very much a part of our business sustainability strategy. In the year under review, we have also extended our value chain by adding value to our existing molecules, created further options for growth and invested in advancing the circular economy as part of our Sustainability Agenda.

Extend Value Chain

KEY INITIATIVES

- Steered the execution of growth projects that had achieved Final investment Decision (FID)
- Evaluated opportunities to expand the value of molecules from existing business and value chain into higher-margin products

HOW WE HAVE PROGRESSED

- Ongoing projects under execution:
 - Specialty Ethoxylates & Polyols in Kertih, Terengganu and Nitrile Butadiene Latex in Pengerang, Johor: Currently in construction stage progressing as planned. They are also well on track for the plants to be ready for startup (RFSU) in second half of 2023
- Sanctioned the development and construction of:
 - A melamine plant in Gurun, Kedah, making PCG the sole melamine producer in Southeast Asia (SEA)
 - An expansion of 2-EHA plant in Gebeng, Pahang through our JV company - BASF PETRONAS Chemicals Sdn. Bhd. (BPC) with enhancements to produce better quality product and valuable by-products
- Both projects are currently in engineering and construction stage with both plants targeted to come on stream in 2024

Build Specialty Platform

KEY INITIATIVES

- Acquired specialty chemicals companies for portfolio diversification
- Continued to grow value contribution from acquired specialty chemicals companies

HOW WE HAVE PROGRESSED

- Completed the acquisition of specialty platform, Perstorp Group, a niche specialty chemicals player for Resins & Coatings, Engineered Fluids, Advanced Materials and Animal Nutrition in fourth quarter 2022
- Execution of Post-Merger Integration (PMI) is currently in progress
- Growth for BRB Group
 - Commenced operation of a new lube oil additives and chemicals (LAC) manufacturing facility at Echt, Netherlands, which will serve as a LAC hub for global market
 - Incorporated a South Korean subsidiary to capture the maximum value through full market presence with current BRB Group business portfolio and new portfolio from ongoing growth projects
 - Obtained Halal and Kosher certification for its range of food grade, MeSTI Certificate and Free Sale Certificates (China)
 - Secured board approval to establish a UK subsidiary

Create Optionality for Growth

KEY INITIATIVES

- Technology Research: Progressed with our bio-based chemicals projects and refined the technology development

HOW WE HAVE PROGRESSED

- Our first Bio-Monoethylene Glycol (Bio-MEG) pilot plant is currently in operation with on going refinement to improve product quality meeting customer's requirement for polyester grade
- Completed basic engineering design for a bio-based specialty surfactant pilot plant for continued research studies in enabling decision to proceed with the technology development at scale and commercialisation under BRB Group to further enhance Household, Industrial & Institutional (HI&I) and personal care product offerings. The pilot plant will be the first phase of PCG's Specialty Chemicals Technology Centre. Several technology development potential encompassing PCG, BRB Group and Perstorp Group portfolio have been identified to be part of the technology centre

KEY INITIATIVES

- Corporate Venture Capital (CVC): Assessed and evaluated potential disruptive technologies from start-up companies

HOW WE HAVE PROGRESSED

- Completed preliminary study to produce bio-waste chemical fertiliser leveraging Anuvia Plant Nutrient's novel technology, a start-up company based in Florida USA
- Completed the development of customer, solution and business validation inclusive of the execution of first and second phases of crop trials in Malaysia
- Signed Distribution and Manufacturing Service Agreement with Anuvia to initiate the market seeding programme in SEA as initial entry to build the market base, strengthen and sharpen route-to-market play

Invest in Sustainability

KEY INITIATIVES

- Conducted various feasibility studies for sustainability-related growth projects

HOW WE HAVE PROGRESSED

- Progressed to the next stage for the plastic waste chemical recycling plant, including:
 - Signed Memorandum of Understanding (MOU) for feedstock supply with KDEB, One Biosys, Alam Flora and E-Idaman
 - Signed MOU with ExxonMobil for potential technology licensing of advance plastic recycling plant and product off-take
- Completed preliminary study to diversify feedstock from sustainable source. Currently the project is under feasibility study which will include pre-screening of economics, market validation, business alignment as well as risk and uncertainties identification

VALUE CREATED FOR STAKEHOLDERS

EMPLOYEES:

- Strengthened employees capability in project management, project delivery and knowledge transfer between technology provider, business partner and our technical and commercial team

CUSTOMERS:

- Delivered innovative solutions and diversified product offerings to customers, including sustainable solutions that meet rising requirements/expectations

BUSINESS PARTNERS:

- Provided business development opportunities through collaborative partnerships and innovative solutions

SHAREHOLDERS & INVESTMENT COMMUNITY:

- Created sustainable financial returns by investing our financial resources effectively in pursuing our growth plans

GOVERNMENT & REGULATORS:

- Advocated Foreign Direct Investment (FDI) by securing strategic collaborations with government bodies

COMMUNITIES:

- Created employment opportunities to the surrounding communities

LOOKING AHEAD

- Commercialise our investments in specialty ethoxylates & polyols and nitrile butadiene latex plants in 2023
- Continue progressing the engineering and constructions stage for melamine and 2-Ethylhexanoic Acid (2-EHA) plants as per milestone
- Commission Perstorp Group's investment in Pentaerythritol (Penta) plant in Sayakha, India by the second quarter of 2023
- Realise synergies and long-term value creation from acquired specialties assets
- Continue technology refinement study to improve Bio-MEG product quality to polyester grade and progress with the construction of bio-based specialty surfactant pilot plant under PCG's Specialty Chemicals Technology Centre first phase
- Continue with the final stage of feasibility study for the plastic waste to circular naphtha plant in Malaysia
- Continue to explore opportunities for sustainable growth in the derivatives, bio and specialty chemicals space in line with our aspiration
- Several opportunities to extend value chain are currently at various stages of feasibility studies

Key Capitals



Material Matters



Key Stakeholder Groups



RISK OVERVIEW

RISK OVERVIEW

PCG continues to navigate the challenges of operating a global integrated chemicals player with our well-established risk management framework, consisting of Enterprise Risk Management (ERM), Crisis Management (CM) and Business Continuity Management (BCM). These management frameworks have enabled the organisation to remain resilient through a host of uncertainties such as the pandemic and volatile market conditions. In addition, these frameworks and the risk appetite evaluations and specific deliberations on high impact business matters that we conduct have given us the latitude to pursue our growth agenda in a prudent and sustainable manner.

Besides addressing our risks and emerging risks in the year under review, PCG paid particular attention to advancing our Sustainability Agenda in the context of risk management and oversight. In May 2022, the Board of Directors endorsed the enhancement of the Board Risk Committee to the Board Sustainability and Risk Committee (BSRC), giving oversight of sustainability matters to the committee. Similarly at the management level, purview of sustainability matters has been embedded into the Sustainability and Risk Management Committee (SRMC), formerly known as the Risk Management Committee.

EMBEDDING CLIMATE-RELATED RISKS INTO RISK MANAGEMENT

Most significantly, the Group released its first standalone Task Force on Climate-Related Financial Disclosures (TCFD) report in September 2022, which articulates the risks and opportunities surrounding the impact of climate change on our business. To underscore our commitment to producing a report that meets the requirements of the TCFD, departments that were directly involved in producing the report attended a full-day practical workshop on TCFD conducted by an external subject matter expert. Members of the BSRC, SRMC as well as the HSE and Finance departments were primed on the various TCFD pillars, conducted simulated scenario analysis and were also given a deeper understanding on how PCG could better align its reporting practices with TCFD recommendations.

KEY WORKSHOP OBJECTIVES



To enhance understanding of TCFD elements:

- Governance
- Strategy
- Risk Management
- Metrics and Targets



To present gap analysis on PCG's current TCFD disclosure

against leading peers, with recommendation of good practices.



Understand climate scenario modelling

to better manage identified risks and opportunities.



To gain an overview of the sustainability disclosure standards

outlined within the Exposure Draft IFRS S1 and S2.



RISK OVERVIEW

IDENTIFYING OUR CLIMATE-RELATED RISKS

In preparing the TCFD report, our risk management approach comprised defining the range of scenarios and identifying the climate-related risks and opportunities that are relevant to the business, with inputs obtained from the Sustainable Development Working Committee (SDWC).

We then evaluated business impacts across different time horizons and scenarios, after which we identified potential strategic response measures.

The risks were identified and prioritised based on the following considerations:

1. The complexity, hazards and integrated nature of our manufacturing process;
2. The market environment and the cyclical nature of the chemicals industry;
3. Material topics identified by stakeholders;
4. PCG's growth agenda; and
5. Other external events that pose a significant impact on our business sustainability.

Some of the key climate-related risks we have identified include current and emerging regulations, technology, legal, market, reputation, and acute and chronic physical risks. Whether or not a risk poses a substantive financial or strategic impact on the business is evaluated based on the likelihood of occurrence and the impact of the risk. Impact is quantified and considered substantive when there may be a reduction of Profit Before Tax of more than 8% and requires intervention from the Board or the MD/CEO.

Identified risks are then evaluated based on their likelihood of occurrence and the impact they will have. The risks are then rated or classified as Very High, High, Medium, or Low. Subsequently, these risks are mapped into our Corporate Risk Profile and presented to the Board who will deliberate and provide their views. We then bring in our risk appetite metrics, which establishes the level of risk that PCG is willing to accept in pursuit of our strategy and objectives. Altogether, this determines our response to the risk, such as controls and assurance activities, to manage the risk.

Risks are presented to the Board on a quarterly basis for deliberation and risks that are rated Very High and High are discussed in detail at Board meetings in the context of mitigation updates and progress of implementation. Overall, climate change and circular economy are included under sustainability risk and rated High.

Following this comprehensive process, we have identified that emerging regulation on carbon pricing mechanisms as well as water scarcity pose the highest financial risk to PCG and we are moving towards mitigating the impact. Conversely, we have also identified a set of opportunities that can be realised by pursuing resource efficiency, investments in research & development, energy efficiency and development of low carbon products and services.

To read our inaugural TCFD report, please visit: https://www.petronas.com/pcg/sites/default/files/2023-02/PCG%20TCFD%20Report%202022_Website.pdf

Details of our risk management framework and governance oversight structure can be found on pages 140 to 155, under the Statement on Risk Management and Internal Control (SORMIC).

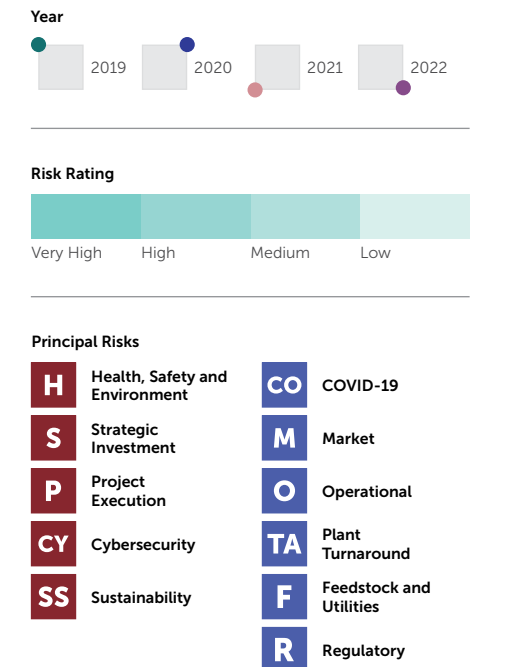
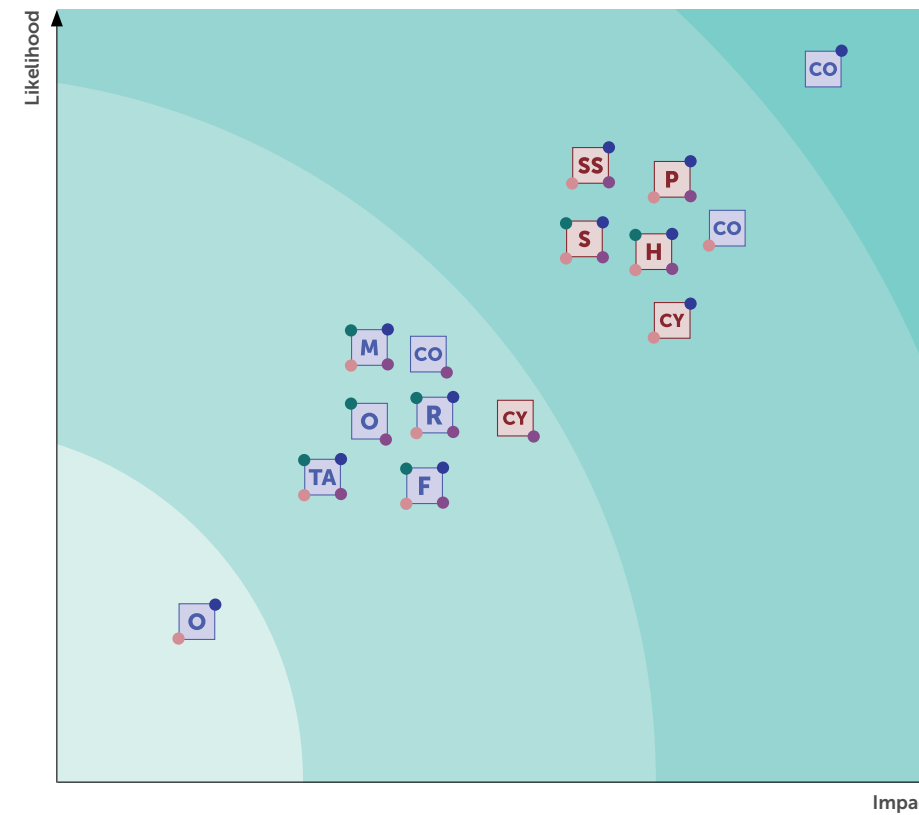
PRINCIPAL RISKS 2022

The principal risks that were identified during the year are aligned with our business strategies and material matters, ensuring that we are delivering value in the most prudent and sustainable manner underpinned by our strong governance practices.

During the year under review, the COVID-19 risk was revised from 'high' to 'medium' risk in alignment to Malaysia's transition into endemic, border reopening and adherence to PETRONAS Preparedness Response Team (PPRT) Directives. In addition, the improvement in risk rating was also attributed to PCG's robust financial, operational and commercial performance in FY2020 and FY2021.

RISK OVERVIEW

RISK MOVEMENT



HEALTH, SAFETY AND ENVIRONMENT RISK H

DESCRIPTION OF THE RISK
 Exposure to HSE incidents is an intrinsic expectation in chemical manufacturing.

Major HSE breaches in our plants may impact our people and business, with the highest impact arising from process safety incidents such as chemical spills and fire.

IMPACT ON PCG

- Physical harm to employees, contractors and/or nearby communities
- Pollution and environmental degradation surrounding operations
- Asset damage that leads to plant slowdown or shutdown
- Legal litigation and stop-work orders by regulatory bodies
- High recovery costs from injuries and accidents
- Impact on PCG's reputation as a public listed company

MITIGATION MEASURES

- Tracked the compliance of the Felt Leadership Programme
- Institutionalised Rakan HSE programme throughout the Group
- Enforced 'Process Safety 8 Golden Rules' at PCG Operating Units (OPUs)
- Executed Balance of Consequences (BoC) for HSE non-compliance
- Strengthened the competency in Road Transport Operational Guidelines (RTOG) applications for the roles of PCG employees and transporters
- Implemented Focused Learning guidelines at PCG OPU's
- Monitored plant operations within operating limits as set by the Department of Environment (DOE), Malaysia

Strategy
 OE CE

Material Topics

Capitals

Stakeholders

RISK OVERVIEW

RISK OVERVIEW

STRATEGIC INVESTMENT RISK S	
<p>DESCRIPTION OF THE RISK Growth projects and new business ventures carry risks such as low returns and loss of business opportunities.</p> <p>As we extend our value chain into specialty chemicals, these risks become more prominent.</p>	<p>Strategy OE CE GE</p> <p>Material Topics </p> <p>Capitals </p> <p>Stakeholders </p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> • Diminishing financial capital and shareholder returns • Unable to obtain margins as planned • Missed business opportunities and loss of customers • Inability to realise our business strategy to grow in specialty chemicals • High employee turnover and costs from talent acquisition 	
<p>MITIGATION MEASURES</p> <p>Extend Value Chain (EVC)</p> <ul style="list-style-type: none"> • Continuous and thorough scanning of the project and technology pool • Executed project implementation in line with project management systems and plans for business and operational readiness • Ensured robust talent management for critical positions, through early talent scouting from internal and external markets • Conducted regular engagements and collaborations with relevant stakeholders for new investments <p>Merger & Acquisition (M&A)</p> <ul style="list-style-type: none"> • Reviewed inorganic growth strategy • Developed supplementary pool of target companies aligned with PCG's growth strategy • Developed and executed post-acquisition integration plans <p>Corporate Venture Capital (CVC)</p> <ul style="list-style-type: none"> • Collaborated with PETRONAS' capital ventures companies for quality deal flow and investment considerations within PCG's preferred segments • Assessed opportunities of venture capital start-ups and conducted strategic fit assessment focusing on technology, market, and regulations • Collaborated or partnered with technology start-up companies 	

PROJECT EXECUTION RISK P	
<p>DESCRIPTION OF THE RISK Project delivery issues that impede the construction, operation, commercialisation and stabilisation of new plants may impact our value capture. For instance, as the petrochemical plants in Pengerang Intergrated Complex (PIC) gears up for commercialisation, it is critical to achieve operational and commercial readiness for smooth execution.</p>	<p>Strategy OE CE GE</p> <p>Material Topics </p> <p>Capitals </p> <p>Stakeholders </p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> • Lower returns to shareholders and investors • Missed business opportunity and loss of customers • Reputational damage based on poor project delivery 	
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> • Closely monitored and strengthened contractor management • Secured minimum volume on a term basis • Offtake products on equity or tender basis 	

SUSTAINABILITY RISK SS	
<p>DESCRIPTION OF THE RISK PCG is taking proactive steps to address sustainability related risk vis-à-vis climate change, Greenhouse Gas (GHG) emission and circular economy.</p> <p>This risk is likely to continue to exist if governments and businesses fail to enforce, enact or invest in effective climate change adaptation and mitigation measures, preserve ecosystems, protect populations and transition to a Net Zero Carbon economy.</p> <p>With global awareness of the circular economy increasingly shaping stakeholder expectations, aggressive environment pushes by policymakers and environmentalists may affect our business performance, reputation and long-term growth. For this PCG is embarking into circular economy and embracing these opportunities.</p>	<p>Strategy OE CE GE</p> <p>Material Topics </p> <p>Capitals </p> <p>Stakeholders </p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> • Higher operational costs due to the development of costly low-carbon technology and increased cost of borrowing • Asset damage due to physical risks such as extreme weather, flood and lightning • Exposure to litigation, penalties and fines • Loss of market share due to shifts in customer preferences • Diminishing interest from investors and other financiers • Reputational damage and loss of stakeholder trust 	
<p>MITIGATION MEASURES</p> <p>Climate Change</p> <ul style="list-style-type: none"> • Developed and implemented the Net Zero Carbon Emissions (NZCE) 2050 Roadmap • Established a baseline and periodically monitored GHG emissions intensity • Embarked on sustainability-related projects • Applied Internal Carbon Price (ICP) for all new projects • Conducted product life cycle assessments for PCG products • Conducted material physical and transition climate risk assessments following the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations • Strategised crisis and business continuity management and other relevant responses • Increased communication to broadcast various social contribution undertaken by PCG <p>Circular Economy</p> <ul style="list-style-type: none"> • Collaborated with innovative technology providers • Established partnerships and collaborations for an effective, sustainable waste recovery system • Delivered an educational module on plastic and sustainability education to primary and secondary schools in Malaysia • Enhanced awareness for environmental care through Reduce, Reuse, Recycle (3R) and Social Impact activities • Collaborated with key stakeholders through circular economy initiatives 	

RISK OVERVIEW

CYBERSECURITY RISK CY	
<p>DESCRIPTION OF THE RISK We are at a high risk of cybersecurity threats due to a vulnerable operating technology (OT) environment coupled with enhanced digitalisation. Major infrastructure failure or cyber breaches may potentially cripple operations.</p>	<p>Strategy OE CE GE</p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> Breaches in shareholder's information/data Loss of critical business data Business disruption from critical system shutdowns Reputational damage and loss of stakeholder trust 	<p>Material Topics </p>
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> Established an Enterprise Cyber Security Governance framework Implemented Privilege Access Management (PAM) to ensure only authorised access allowed to the system Reinforced Cyber Defense via Enterprise-wide Incident Response Procedure (IRP), Security Operations Centre (SOC), Vulnerabilities Management, Data Leakage Protection, Forward Proxy and Network access control (NAC) Deployed Real-Time OT (RTOT) and OT Asset Management (OTAM) for all PCG facilities Structured Change Management and Awareness programme including the Human Firewall campaign, assessment and engagement via a digital platform such as myLearningX and SWITCH 	<p>Capitals </p> <p>Stakeholders </p>

COVID-19 RISK CO	
<p>DESCRIPTION OF THE RISK The prolonged COVID-19 pandemic has jeopardised value chain; escalation of emerging issues and uncertainties will continue to impact business continuity and delay the achievement of business targets.</p>	<p>Strategy OE CE GE</p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> Low morale and engagement among employees Health-related issues from the virus outbreak Operational disruptions at manufacturing plants Reduced cash generation and revenue returns Lower shareholder returns 	<p>Material Topics </p>
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> Continuously monitored COVID-19 cases affecting our employees Readiness of crisis and business continuity plans Adopted Flexible Working Arrangements (FWA) Sustained plant operation and utilisation above 90% Rationalised plant turnaround schedule implementation during the pandemic situation Secured volume to non-traditional markets, increased allocations to current customers and diverted sales to China Monitored and assessed business performance 	<p>Capitals </p> <p>Stakeholders </p>

RISK OVERVIEW

MARKET RISK M	
<p>DESCRIPTION OF THE RISK The volatility of the chemicals market, including the impact of the prolonged pandemic, poses dynamic challenges to business sustainability.</p>	<p>Strategy OE CE GE</p>
<p>Adverse market conditions amidst lower global GDP growth, massive capacity addition and energy prices fluctuations, coupled with political tension, result in significant compressed margins.</p>	<p>Material Topics </p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> Inadequate cash generation and revenue from low sales/compressed margins Lower consumer demand due to cautious business and consumer sentiment Lower shareholder returns due to poor financial performance Plant slowdown/shutdown due to high inventory 	<p>Capitals </p>
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> Maximised netback through geo sales mix, sales channel mix and sales contract mix Executed and sustained price excellence Added value through product improvement or new product development Improved value proposition for local distribution in overseas subsidiaries Optimised cost to serve 	<p>Stakeholders </p>

OPERATIONAL RISK O	
<p>DESCRIPTION OF THE RISK Our highly integrated operations expose our plants to an array of risks, as the plants are highly dependent on each other.</p>	<p>Strategy OE CE</p>
<p>The planning and execution of operation and maintenance activities will also significantly impact the value chain if not properly managed, as a failure of one or more plants in the value chain will create a knock-on effect.</p>	<p>Material Topics </p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> Inability to meet customers' demand Loss of production volume Increase in maintenance costs 	<p>Capitals </p>
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> Implemented Operation Management, Asset Life Study, Bad Actor Management and Plant Reliability Threat programmes to optimise asset reliability and equipment performance Conducted regular maintenance and inspection programmes to minimise the risk of equipment failure and unplanned shutdowns Applied our human rights commitment to all employees, contractors and any third parties performing work on behalf of the Group Complied with all relevant labour laws that protect the right of employees, as well as provide competitive salaries and benefits Activated Business Recovery Plan (BRP) and Business Continuity Plan (BCP) for cases with prolonged interruption 	<p>Stakeholders </p>

RISK OVERVIEW

RISK OVERVIEW

PLANT TURNAROUND RISK TA

<p>DESCRIPTION OF THE RISK Ineffective execution of plant turnarounds (TA) lead to HSE, schedule, cost, and quality issues affecting plant operations as well as overall integrated product value chain and delivery to customers.</p>	<p>Strategy OE CE</p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> Inability to meet customers' demand Loss of production volume Increase in maintenance costs 	<p>Material Topics</p>
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> Reviewed turnaround scoping and equipment criticality to optimise manpower and resources Executed turnaround intervention strategies, developed contingency plans and expedited material delivery Intensified and conducted compliance monitoring on turnaround governance requirements Recruited experienced manpower for effective turnaround execution Applied alternative technology to minimise HSE exposure and improve quality of work 	<p>Capitals</p> <p>Stakeholders</p>

FEEDSTOCK AND UTILITIES RISK F

<p>DESCRIPTION OF THE RISK Our production plants require a reliable supply of feedstock and utilities to keep running. The continuity of our plants requires a consistent, timely and significant supply of feedstock and utilities.</p>	<p>Strategy OE CE</p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> Inability to meet customers' demand Business disruption for suppliers and JV partners Loss of production volume and revenue Increase in production costs 	<p>Material Topics</p>
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> Collaborated with feedstock and utility suppliers for reliable supplies Leveraged our Value Optimisation Model to optimise molecules along the value chain in case of supply limitation Activated a Business Recovery Plan (BRP) and Business Continuity Plan (BCP) for cases with prolonged interruption 	<p>Capitals</p> <p>Stakeholders</p>

REGULATORY RISK R

<p>DESCRIPTION OF THE RISK Compliance is becoming increasingly challenging as we expand our footprint globally, with more stringent laws and regulations.</p> <p>The provision of the Malaysian Anti-Corruption Commission Act (2009) imposes corporate liability for any failure to prevent bribery and corruption.</p> <p>Any regulatory changes may impact our operations or future investment opportunities.</p>	<p>Strategy OE CE GE</p>
<p>IMPACT ON PCG</p> <ul style="list-style-type: none"> Non-compliance costs arising from penalties, summons and/or imprisonment Legal action from affected stakeholders Reputational damage and loss of stakeholder trust Reduced profit and loss of business or market share 	<p>Material Topics</p>
<p>MITIGATION MEASURES</p> <ul style="list-style-type: none"> Implemented PETRONAS Legal Compliance Framework Implemented Guidelines on Adequate Procedures based on TRUST principles for Corporate Liability Adhered to PETRONAS' Human Rights Commitment, which is in line with the UN's Guiding Principles on Business and Human Rights Conducted periodic engagements with local authorities, service providers and customers on laws and regulation updates Updated legal register to reflect new regulatory requirements Conducted regular communication on business activities to ensure constant compliance Performed audit and assurance to evaluate the adequacy, effectiveness and compliance 	<p>Capitals</p> <p>Stakeholders</p>

TURNAROUND RISK ASSESSMENT PROCESS

At PCG, we also apply the risk management process to our turnaround activities given its importance to our business operations. To conduct turnarounds safely and successfully, we implement a Plan Execute Turnaround (PETA) management system which is essentially a detailed process workflow covering strategy, initiation, planning, execution and closing. Focus areas include Health, Safety and Environment (HSE), Quality, Contractor Management and Material Management.

Turnaround activities are complex and involve numerous stakeholders, processes and variables, thereby exposing it to 14 key turnaround risk elements. Therefore, we conduct a seven steps Turnaround Risk Assessment (TARA) to assess, identify and mitigate these risks to ensure that the turnaround activities are being executed successfully.

<p>Step 1: Operational Review We first conduct a review of business processes or guideline documents to determine key activities and functional expectations, thereby providing the scope for risk analysis.</p>
<p>Step 2: Identify Risk We then perform a "what-if" analysis on functional expectations and list out the expected consequences as well as "if-then" statements to describe risk events. Credible causes are defined using the 5M (Man, Machine, Medium, Mission and Management) model. From this, credible risk events with causes and consequences are then outlined.</p>
<p>Step 3: Assess Risk Risk is then quantified in terms of its probability and impact. A base risk rating is then determined using a risk matrix. Risk appetite is also determined. This process helps to produce a risk assessment ratings database.</p>
<p>Step 4: Analyse Risk Control Measures Risk appetite is then evaluated against base risk rating and if the base risk rating is greater than risk appetite, new mitigation options are developed, or existing ones enhanced.</p>
<p>Step 5: Make Control Decision A Cost Benefit Analysis is conducted to ensure the cost effectiveness of control measures. Mitigation measures are then harmonised by common characteristics, prioritised after which the most cost-effective option is selected. This gives PCG a list of preventive action plans.</p>
<p>Step 6: Implement Risk Control A single point of responsibility is defined and accountability and performance metrics are drawn up for all preventive action plans, serving as the implementation plan for mitigation activities.</p>
<p>Step 7: Supervise and Review The implementation plan is monitored and progress documented at predefined intervals. The residual risk rating is evaluated against the initial base risk rating. These actions help to assess the effectiveness of control options.</p>

RISK OVERVIEW

The top four elements that we have identified following the above process are:

Element	Key Issue	Mitigation	Result
HSE	Fatigue Management	Improvement on the gate access programming aligned with fatigue management record for all employees and contractors	No HSE incident related to fatigue management during the execution of TA
Objective, Target & Strategy	TA integration with value chain key activities	Alignment of shutdown integration was done at least a year before the actual execution of TA	All shutdown was conducted with full integration and eliminated multiple shutdown activities
	Unavailability of OEM and Licensor	Utilisation of digital tools and virtual discussion via on site camera if required	The activities which require OEM/ Licensor was done without any issue
Approval Process	Approval process of worklist and Emergent Work Request (EWR)	Enforcement of freeze date for all key activities for better focus and shall be deliberated at TA Steering Committee if any	All additional task list was evaluated at TA Steering Committee prior to the execution during TA
	Approval process for Work Permit for Sabah	Close collaboration with Sabah Immigration to ease the process of work permit application	All the manpower required for the activities, obtained the work permit timely
Contractor	<ul style="list-style-type: none"> Incompetent/ insufficient manpower to execute the TA Delay in work execution due to work quality 	Implementation of Turnaround Main Mechanical and Maintenance Mechanical Static (TA4MS) on the contract management. Benefits for TA4MS are as follows; <ul style="list-style-type: none"> Contractor knowledge and experience in managing daily maintenance helps to make the Integrated Planning more effective as well as smoothen work coordination during TA execution Contractors have more time to be familiar with specific plant requirement or practices Main Mechanical contractor appointment can be done at an early stage. Plants can perform situational assessment, identify the potential gaps and draft the mitigation plan accordingly Plants can make a strategic decision such as contractor allocation based on the latest/ current contractor performance at other plant's TA Long-term contract duration encourages contractors to invest in their equipment and new technology 	TA Mechanical Days was executed as planned for all TA

RISK OVERVIEW

EMERGING RISKS

PCG continuously scans the industry environment using the PESTEL (Political, Economic, Social, Technology, Environment, Legal) analysis framework alongside input from our engagements with stakeholders to identify emerging risks and economic, environmental, and social topics that might substantively affect the company's ability to create value over the medium and long term.

The establishment of emerging risks is pivotal for PCG's proactive risk strategic planning efforts to minimise the negative effects or capitalise on the potential opportunities that emerging risks may present. Failure to manage these emerging risks may lead to increased operational costs, higher financial losses, and severe reputational damages that could impact our business sustainability.

The Board and management team monitor emerging risks such as geopolitics, environment and economic, and their mitigations to protect the business.

Geopolitics

This risk entails the potential impact from the prolonged Russia-Ukraine conflict and escalating tensions in other region where PCG operates and do business. Some of the impacts include supply chain disruptions and delays, volatile energy prices, higher bunkering cost, insurance premium and laytime costs. Elevated raw material costs for items such as steel, aluminium and precious metals will also affect PCG's ongoing growth projects and plant operations. PCG mitigated the impact by factoring in the increase in logistics and insurance premiums, reviewing our procurement strategy to optimise cost and close monitoring of the situation that threatens our position. In terms of opportunities, this gives us the feasibility of supplying fertiliser on an adhoc basis to ease the shortage of supply from Russia and Europe as a result of the Russia-Ukraine conflict.

Environment


This risk entails the slower pace of the transition to net zero due to divergent interests at the country level, different accounting and reporting standards and low adoption rates by corporations. The impact will include a resurgence of coal consumption by developing countries as an alternative to the rising cost of cleaner energy. The prioritising of short-term goals, such as energy security over environmental concerns, may also slow the transition. PCG mitigated this by executing our GHG Reduction Pathways plan and by implementing the details in the NZCE 2050 roadmap which includes a clear energy transition pathway. This also gives us the opportunity to advocate for sustainability-related projects.

Economic

This risk entails the looming global recession impacting the ASEAN region as a result of higher commodity prices, rising interest rates, volatile currency and supply chain disruptions. The potential impact includes higher interest rate payments/ cost of funds for future growth projects via external funding as well as lower revenue. We mitigated this by performing scenario planning and incorporating contingencies into plans and budgets, while enhancing market strategies to cushion the recession impact. In addition, we will continue to implement effective pricing and Foreign Exchange (FX) strategies to preserve product margin and perform overall revisions on procurement strategy to optimise costs. In terms of opportunities, this gives us the chance to reap FX gains from the USD to MYR conversion.

Risks and Opportunities Associated with the Perstorp Group Acquisition

In the year under review, PCG successfully completed the landmark acquisition of niche specialty chemicals company, Perstorp Group. The acquisition has helped to elevate our specialty chemicals portfolio and opens up a range of positive opportunities for PCG, but also comes with risks that are commensurate with such a large acquisition. Prior to the acquisition, we identified the risks and opportunities and put in place the appropriate mitigations to ensure the smooth integration of Perstorp Group with PCG's business.

 Detail of risks associated with the acquisition can be referred to pages 16 to 18, under Circular to Shareholders and Notice of Extraordinary General Meeting available online: <https://www.petronas.com/pcg/sites/pcg/files/EGM/Circular.pdf>

 For more information on Perstorp Group's risks and opportunities, kindly refer to Segmental Review Specialty Chemicals on pages 42 of this <IR>.