

Recharge

for a Shared
Future

Strategic Progress

Insights into how we
execute strategy to
create value

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

Business Review

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



The World in 2021

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

Geopolitics

1

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

Economy

2



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

Oil

3

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



The World in 2021

Oil



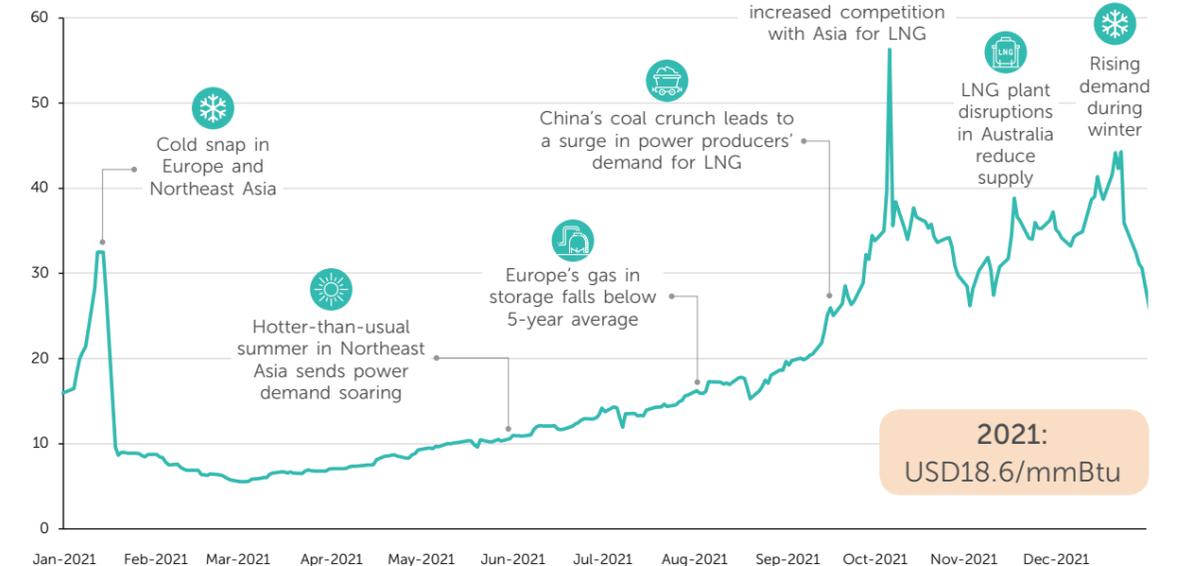
Gas and Liquefied Natural Gas (LNG)

4

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

Northeast Asia gas price

Unit: USD/mmBtu

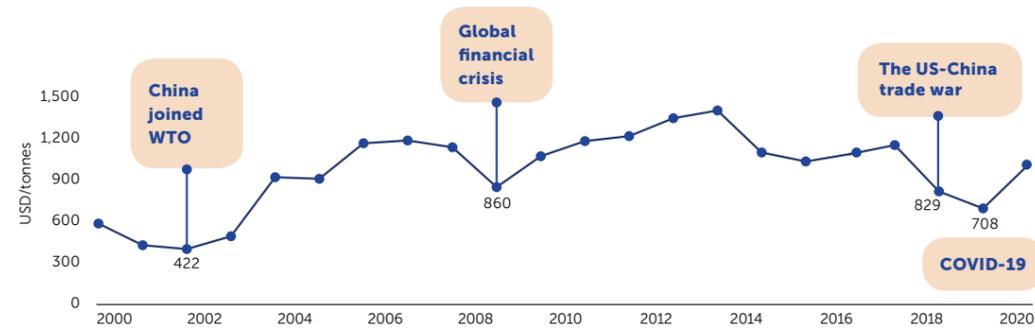


The World in 2021

Chemicals

5

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



Ethylene Prices, Southeast Asia

Upstream

6

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

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

Alternative Energy

7

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

The World in 2021

2022 Outlook: What the Future Holds

Geopolitics

1

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

Economy

2

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

Oil

3

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

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



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

The World in 2021

Gas and LNG

4



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

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

Chemicals

5

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



The World in 2021

Upstream

6

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

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

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

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

Alternative Energy

7

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

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

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



Material Topics

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

Materiality Assessment Process

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

Step
1

Identification

We identified a list of potential material topics that are important to our stakeholders and PETRONAS via an in-house desktop analysis based on a range of internal and external sources, as follows:

- Reporting frameworks and standards (GRI, Ipieca, TCFD, World Economic Forum's Stakeholder Capitalism Metrics, and SDGs).
- Internal strategies, policies, processes and documentation (Anti-Bribery and Corruption Manual, Whistleblowing Policy, Code of Conduct and Business Ethics).

- Relevant legislations in the countries we operate.
- National industry-specific trends and surveys outcome.
- ESG rating and benchmarking agencies.
- Peer benchmarking.
- Internal and external audits.
- Reputation Issue Analysis, Reputation Strength Index and internal Sustainability Survey.

Based on this analysis, a total of 52 potential material topics were identified.

Step
2

Stakeholder Engagement

We then conducted a validation process via interviews and surveys with external and internal stakeholders to assess the impact of these topics.

The stakeholders engaged include:

- Employee representatives including union leaders.
- Government and regulatory bodies.
- Embassies, high commissions and foreign representatives.

- Communities and customers.
- Media.
- Investors, credit rating agencies and financial institutions.
- Industry partners, alliances and business councils.
- Non-government organisations (NGOs) and special interest groups.
- Learning institutions.

We also conducted interviews and surveys with internal subject matter experts and the leadership team to assess the impact of the identified topics on our business.

Step
3

Prioritisation

We prioritised the identified topics based on two key areas – their importance to stakeholders and their impact on our business.

For 2021, the prioritisation criteria also included material topics across several areas:

- Occurrence in grievances.
- Topics highlighted by investors and rating agencies in their assessment of PETRONAS.
- Discussions at Board and Executive Leadership Team meetings.
- Items identified as significant risks to the company.

Through this process, a total of 14 material topics were identified.

Step
4

Endorsement and Approval

We submitted the materiality matrix for endorsement to the Sustainability Council, which was then approved by the Vice President and Chief Sustainability Officer.

Strategic Progress

Material Topics

Materiality Matrix



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

Management Approach to Material Topics

Lens 1: Continued Value Creation

Economic Contribution

What It Means	Why It Is Important	Risks	Opportunities
<p>Generating economic value from capital contribution to the economy through generation of products and services, servicing of capital, payment of wages, taxes, and community investment. Ensuring that PETRONAS is responsible and transparent in tax practices, governed by applicable local or regional tax regulations.</p>	<p>The long-term success of our business goes hand-in-hand with the prosperity of the markets and communities in which we operate. Our ultimate goal is to drive economic development that benefits all segments of society.</p>	<ul style="list-style-type: none"> • Impacted business performance due to economic recession. • A weak economy impacts the expansion of our market reach. 	<ul style="list-style-type: none"> • Prioritising local employment increases the community's socioeconomic performance. • Responsible and transparent tax payments contribute to economic growth and stakeholder trust.
Our Response			
<ul style="list-style-type: none"> • Substantial rise in revenue driven by a rebound in demand for our products and cost optimisation measures allows us to continuously contribute to the Government, amounting to RM48.2 billion in 2021. • In the face of evolving stakeholder expectations and global pressure to identify and manage ESG impacts, we intensify our planning for capital allocations, including the introduction of Green CAPEX, in preparation for our NZCE 2050 aspiration. • Yayasan PETRONAS introduced various academic, skills and entrepreneurship training programmes to uplift and empower the low-income communities and improve their income level and be self-sustaining in the long term. 			

Material Topics

Innovation and Circularity

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

Our Response

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

Capitals: Risks: Strategic Thrusts: Stakeholders: SDGs:

Sustainable Supply Chain

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

Our Response

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

Capitals: Risks: Strategic Thrusts: Stakeholders: SDGs:

Material Topics

Lens 2: Safeguard the Environment

GHG Emissions

What It Means	Why It Is Important	Risks	Opportunities
Assessing and addressing climate-related risks and opportunities to guide PETRONAS' strategic decisions. Measuring and monitoring greenhouse gas (GHG) emissions and intensity from our business operations, and reducing GHG emissions through reductions in flaring and venting, improvements in energy efficiency in operations, utilisation of renewable energy solutions, CCS and others. Additionally, improving measurements and mitigating methane emissions from operations to limit the impact of GHG emissions over a more immediate period, as well as participating in collaborative initiatives with industry peers. Demonstrating a clear understanding of energy consumption within the company and throughout our value chain to support our emission mitigation efforts.	Climate change poses a risk to our business growth, societal well-being and shared prosperity. Thus, it is important to minimise our global emissions to mitigate the worst impacts of climate change.	<ul style="list-style-type: none"> Inability to achieve climate targets may lead to loss of stakeholder trust. Failure to mitigate emissions from operations may result in financial and non-financial penalties. 	<ul style="list-style-type: none"> Lower resource consumption leads to better cost management and financial performance. Future proofs our business against new risks, such as regulatory changes.

Our Response

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

Capitals: Risks: Strategic Thrusts: Stakeholders: SDGs:

Physical Climate Risk and Adaptation

What It Means	Why It Is Important	Risks	Opportunities
Strengthening PETRONAS' resilience to the physical impacts of climate change and building business sustainability, while reducing potential asset damage.	The rise in extreme weather events exposes our assets and operations to significant damage and disruptions. We need to build our climate change resilience to continue meeting society's long-term energy needs.	<ul style="list-style-type: none"> Inability to protect assets may impact financial performance and reputation. Failure to manage climate change impact could cause injuries and fatalities. 	<ul style="list-style-type: none"> Regular asset monitoring improves asset reliability and reduces repair cost. Increase in digitalisation of assets improves efficiency, safety and lowers carbon footprint.

Our Response

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

Capitals: Risks: Strategic Thrusts: SDGs:

Material Topics

Environmental Management

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

Our Response

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

Capitals:  	Risks:     	Strategic Thrusts: 	Stakeholders:    	SDGs:    
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Renewable Energy

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

Our Response

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

Capitals:  	Risks:  	Strategic Thrusts:  	Stakeholders:   	SDGs:    
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Material Topics

Biodiversity and Ecosystem Services

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

Our Response

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

Capitals:  	Risks:  	Strategic Thrusts: 	Stakeholders: 	SDGs:   
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Lens 3: Positive Social Impact

Safety Management

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

Our Response

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

Capitals:  	Risks:     	Strategic Thrusts: 	Stakeholders:    	SDGs:  
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Material Topics

Health and Well-Being

What It Means	Why It Is Important	Risks	Opportunities
Protecting all employees and contractors from work-related hazards and promoting good health and well-being in our workforce and the wider community, through risk assessments and implementation of adequate controls, while providing a range of health and wellness programmes which address both physical and mental well-being.	As the backbone of our organisation, employees' health and well-being directly impact our long-term performance. It is important to create a safe and conducive work culture that protects their overall well-being.	<ul style="list-style-type: none"> Poor employee morale and health may impact overall productivity. Unhealthy and toxic work environment lead to high employee turnover. 	<ul style="list-style-type: none"> Continuous risk assessments and adequate controls increase productivity levels. A wide range of health and wellness programmes attracts and retains top talent.

Our Response

- Implementing risk assessments and adequate controls for employees' good health and well-being.
- Providing a range of health and wellness programmes for both physical and mental health in the face of the COVID-19 pandemic, including remote working arrangement, paid leave for employees who obtained vaccination, provision of oximeter and COVID-19 self-test kits, financial assistance and reimbursements for vaccinations and others.

Capitals:  	Risks:    	Strategic Thrusts: 	Stakeholders:  	SDGs:  
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Employee Attraction, Retention and Development

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

Our Response

- Investing in the cultivation of high-potential and high-performing talents by equipping them with future-ready skills through on-the-job training, leadership and core skill programmes, as well as a self-learning platform to promote self-driven culture.
- In ensuring we have quality future talents, we support them through sponsorship and industrial programmes.

Capitals:  	Risks: 	Strategic Thrusts: 	Stakeholders: 	SDGs:   
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Material Topics

Human Rights

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

Our Response

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

Capitals:  	Risks:   	Strategic Thrusts: 	Stakeholders:   	SDGs:        
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Material Topics

Lens 4: Responsible Governance

Anti-Bribery and Corruption

What It Means	Why It Is Important	Risks	Opportunities
Preventing bribery and corruption among employees and business partners throughout the value chain, including suppliers, contractors, and other intermediaries, with internal controls, responsible business practices, and other processes in compliance with PETRONAS' Anti-Bribery and Corruption Policy and Guidelines and other applicable laws.	A strong foundation of ethics and integrity are important to create shared and equitable values for stakeholders. We have a moral and business obligation to protect our operations from any corrupt and unethical activity.	<ul style="list-style-type: none"> Bribery and corruption within the supply chain lead to regulatory and reputational risks. Disputes and legal proceedings may cause operational disruptions, reputational damage and value deterioration. 	<ul style="list-style-type: none"> Enhanced policies, procedures and risk practices improve reputation among stakeholders. Strong culture of integrity enhances our position as a top employer.

Our Response

- Ensuring consistent adherence to PETRONAS' Anti-Bribery and Corruption Policy and Guidelines, Whistleblowing Policy and other applicable laws by practising zero tolerance for malpractices and non-compliance.
- Joining collective initiatives such as the World Economic Forum's Partnership Against Corruption Initiative to increase public trust in business, deliver fair markets and level the playing field by fighting corruption.

Capitals:	Risks:	Strategic Thrusts:	Stakeholders:	SDGs:
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Corporate Governance

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

Our Response

- Incorporating sustainability discussions as part of the strategic review and planning cycle led by the PETRONAS Board of Directors.
- Engaging with external sustainability experts and undergoing various sustainability-related training as part of the Board of Directors and top management's upskilling programmes.

Capitals:	Risks:	Strategic Thrusts:	Stakeholders:	SDGs:
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Risks Linked to Creating Value

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

Preserving Value Through Effective Risk Management

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

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

Roles and Responsibilities



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

Risk Management Committee (RMC)

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

Risk Management Functions

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

How We Manage Risks

PETRONAS Risk Policy

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

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

PETRONAS Risk Policy and PETRONAS Resiliency Model

PETRONAS is committed to become a risk resilient organisation.

PETRONAS shall continuously strive to implement:

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

Managing risk is everyone's responsibility.

Enterprise Risk Management

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

Crisis Management

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

Business Continuity Management

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

Enterprise Risk Management (ERM)

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

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

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

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

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

ERM Framework



Crisis Management (CM)

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

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

CM Framework



Business Continuity Management (BCM)

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

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

BCM Framework



Risks Linked to Creating Value

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

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

Market Risk

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

Impact on Value

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

Risks Linked to Creating Value

Mitigation Strategies

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



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



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



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

Risks Linked to Creating Value

Financial Liquidity Risk

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

Impact on Value

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

Risks Linked to Creating Value

Mitigation Strategies

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



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

Legal and Regulatory Risk

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

Impact on Value

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

Mitigation Strategies

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



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



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



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

Risks Linked to Creating Value

Health, Safety, Security and Environmental (HSSE) Risk

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

Impact on Value

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

Mitigation Strategies

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:

- Financial Capital:** HSSE incidents can result in penalties, damaged assets, and disrupted business operations, impacting the Group's financial position.
- Social and Relationship Capital:** HSSE incidents can lead to loss of trust and reputational damage among key stakeholders.
- Natural Capital:** HSSE incidents can affect the natural environment where we operate, undermining our efforts to be responsible stewards of natural resources.
- Human Capital:** HSSE incidents can cause reputational damage to our status as a favourable employer.
- Manufactured Capital:** HSSE incidents can cause significant damage to key assets.

Risks Linked to Creating Value

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

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

1. Operation Green Bubbles

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

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

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

2. PETRONAS Immunisation Programme Taskforce

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

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

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

Offshore Outreach Programme

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

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

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

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

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

4. Staff Mental Health and Well-being Programmes

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

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

Risks Linked to Creating Value

Geopolitical Risk

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

Impact on Value

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

Risks Linked to Creating Value

Mitigation Strategies

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:

- **Financial Capital:** Geopolitical issues can lead to disruptions that lower returns from key assets.
- **Manufactured and Human Capitals:** Escalated geopolitical incidents can compromise the safety of staff and assets.
- **Social and Relationship Capitals:** Inability to manage key relationships in foreign countries may deteriorate trust among key stakeholders.

Hydrocarbon Reserves and Resources Risk

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

Impact on Value

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

Mitigation Strategies

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:

- **Financial Capital:** Inability to monetise resources can compromise the financial stability of the Group as it is the core activity.
- **Manufactured and Intellectual Capitals:** Inability to develop new technologies and innovate will result in low-value assets that may not perform to the required standards.

Risks Linked to Creating Value

Technology Risk

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

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

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

Impact on Value

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

Mitigation Strategies

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

Risks Linked to Creating Value

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:



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



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

Risks Linked to Creating Value

Execution Risk

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

Impact on Value

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

Mitigation Strategies

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

Risks Linked to Creating Value

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:

- Financial Capital:** Inability to execute growth strategies will affect the Group's long-term financial position.
- Intellectual Capital:** Inability to properly execute targets may lead to obsolete intellectual property due to a lack of innovation.

Human Capital Risk

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

Impact on Value

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

Mitigation Strategies

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

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

Link to:

Strategic Thrusts:



Material Topics:



Capitals:

- Human and Social and Relationship Capitals:** Inability to position PETRONAS as the desired workplace will result in reputational damage, loss of stakeholder trust and inability to attract and retain top talent.
- Intellectual and Manufacturing Capitals:** Inability to recruit, train and match talents to fit business needs will result in poorly executed strategies, leading to lower quality intellectual and manufacturing capital.

Strategic Performance Review

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



THEME 1: Operational Excellence – Strong Foundation for Growth

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

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

Strategic Performance Review

THEME 2: Growth – Seizing New Opportunities

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

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

Strategic Performance Review

THEME 3: Sustainability – Progress in a Responsible Manner

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

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

Strategic Performance Review

2022 Strategy Outlook

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

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

and at the same time accelerate the momentum towards decarbonisation.

