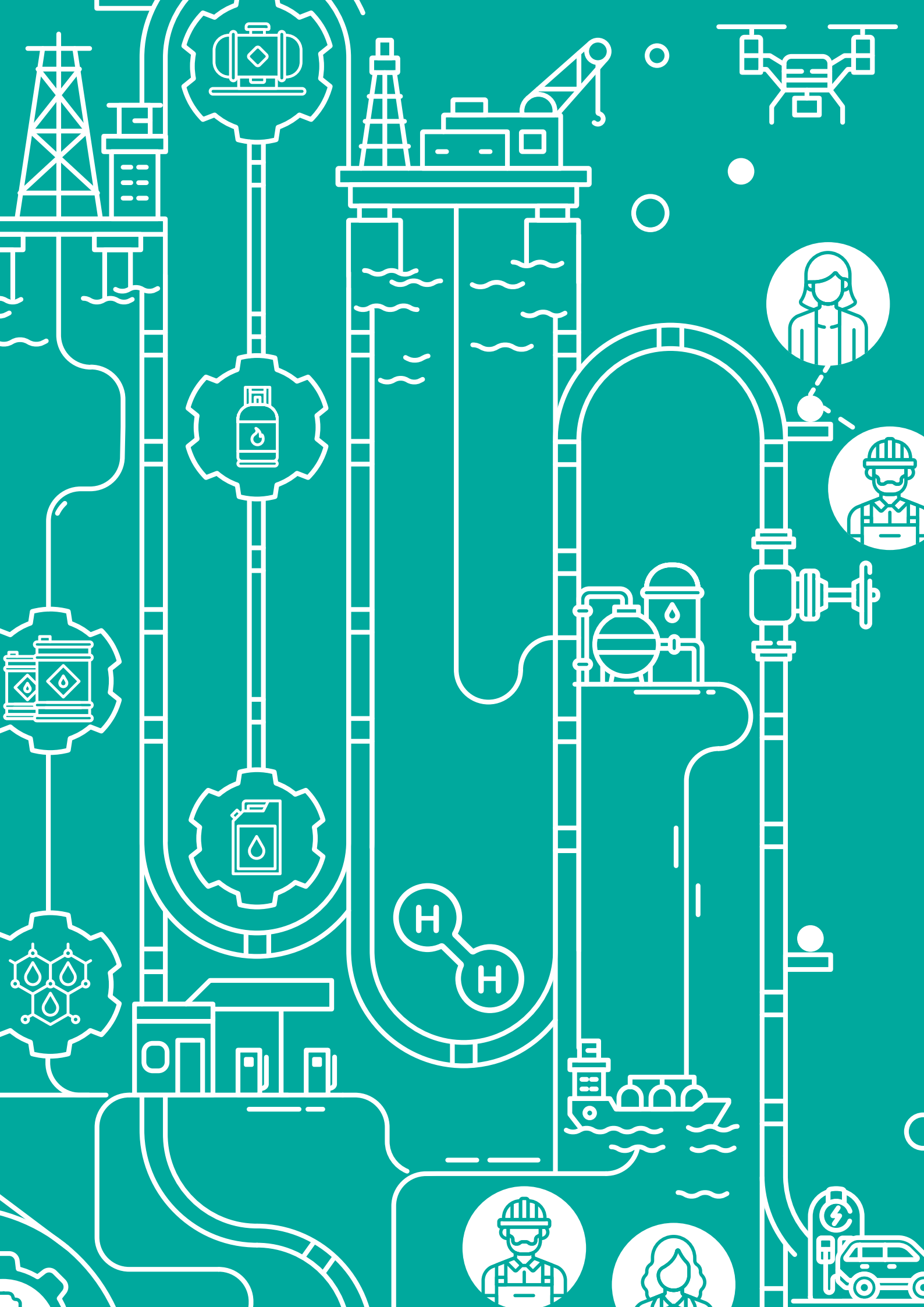
when capability meets collaboration

In the Spotlight


H
H

Forging Ahead

Collaborating to Win with Energy Transition

The upstream industry in Malaysia remains vibrant and continues to attract investors, as evidenced by the substantial capital and operating expenditure channeled by investors, also known as the Petroleum Arrangement Contractors (PACs). Their investments have been brought in for activities in production operations, assets and field development projects, exploration drilling and seismic acquisitions.

Furthermore, in the wake of a healthy rebound following the COVID-19 pandemic, Malaysia Bid Rounds have witnessed enthusiastic responses. Close to 80 per cent of Malaysia's acreages are now fully awarded in the form of production sharing contracts to PACs, setting the pathway towards long-term investment and growth in hydrocarbon production.

PETRONAS, through Malaysia Petroleum Management (MPM) as the upstream oil and gas industry shaper, regulator and investment enabler, continues to transform the industry to becoming lower-cost and lower-carbon amidst the energy transition. The long-term focus is to pursue and achieve sustainable value-driven production growth in keeping with our Net Zero Carbon Emissions by 2050 pathway, monetise oil and gas resources, strengthen core capabilities and continually build upon each of these competencies. Malaysia's production currently stands at about 500 thousand barrels per day (kb/d) of liquids and 7,000 million standard cubic feet per day (MMscf/d) of gas. This achievement is underpinned by a substantial investment of over RM700 billion spanning the period since PETRONAS' inception in 1974.

A Promising Outlook

PETRONAS' future is anchored on a long-term target to sustain and grow Malaysia's oil and gas production of two million barrels of oil equivalent per day (MMboe/d) by 2025 and beyond. This will be supported by various oil and gas projects in the pipeline such as Kasawari, Jerun, Rosmari-Marjoram and Lang Lebah in Sarawak, Gumusut-Kakap Redev and Belud Clusters in Sabah, and Bekok Oil Redev, Tabu Redev and Seligi Redev in Peninsular Malaysia, amongst others.

With numerous ongoing and upcoming projects in the pipeline, a large amount of job opportunities is expected for OGSE providers. These opportunities span across various upstream activities, within the different phases of Life of Field (LoF), including exploration, development, production and decommissioning.

Exploration activities include extensive seismic, non-seismic and geological studies that must be carried out to enhance the prospectivity of acreages as well as meticulous planning of exploration drilling. For the next three years, more than 25 wells are forecasted to be drilled each year with a focus on shallow water wells in Peninsular Malaysia and Sarawak, and deepwater wells in Sabah to sustain and spur exploration growth in the country. Service providers are expected to contribute to the success of the exploration activities by applying the latest technology and expertise in this area.

The development phase, which encompasses advanced subsurface studies and efficient execution and delivery of development projects to drive resource maturation and monetisation, is another pivotal facet of upstream operations. Within the next three years, more than 45 upstream projects are expected to be executed; four Central Processing Platforms (CPPs) are projected to be fabricated; three onshore facilities are expected to be constructed and approximately 1,130 km of pipelines are expected to be fabricated and installed. In this area, PETRONAS and the PACs expect OGSE and industry players to provide the essential products and services required to drive the success of these development projects to be on time, on budget, on scope and on value (OTOBOSOV).

PETRONAS plays a pivotal role in overseeing petroleum operations in Malaysia, primarily to maximise production efficiency and sustainability of oil and gas supply. To sustain production volume and operability of the producing assets, an average of about 300 Facilities Improvement Plans (FIPs) have been planned to be carried out each year for the next three years. These include rejuvenation projects, gas turbine and gas generator change-out activities and other major maintenance activities, which will be carried out to eliminate bottlenecks and maximise hub capacity. FIPs also play a crucial role in curbing flaring activities at new onshore facilities, thereby contributing to decarbonisation efforts. The strength of OGSE industry across various disciplines such as logistics, maintenance and supplies ensure production operations continue without disruption, efficiently and safely.

Another significant aspect in Upstream Malaysia operations is the decommissioning activities for matured assets. In line with driving decommissioning execution to restore the area to a safe and environmentally stable condition, disused assets are assessed for potential reuse or repurpose. For the next three years, decommissioning plans include the plugging and abandonment of about 130 wells and the abandonment of about 50 facilities.

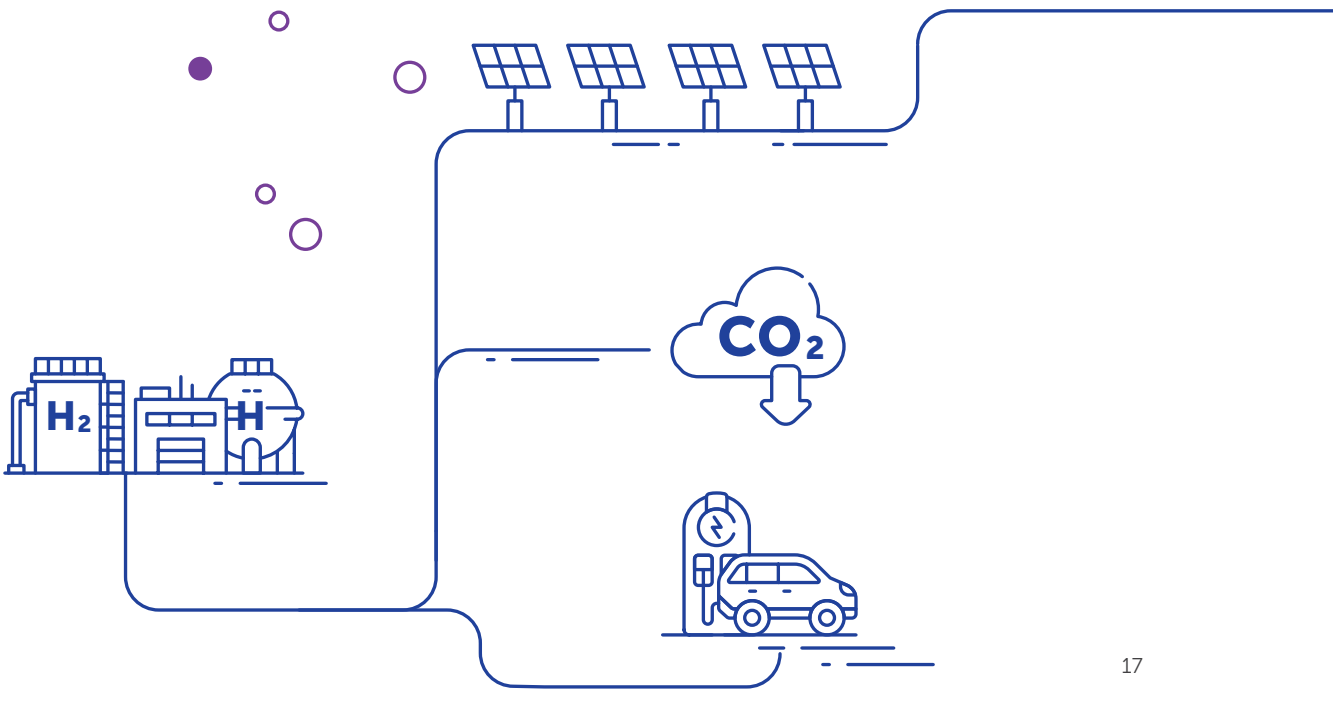
A strong and balanced ecosystem is vital for the sustained growth of Upstream Malaysia. Key to this equation is the optimal performance of service providers to ensure the successful delivery of projects. It is imperative that OGSE players continue to operate and align to industry benchmarks to ensure efficiency, safety and reliability in its operations. This is significant as it will cultivate a capable and competitive pool of service providers who not only meet but exceed these benchmarks, contributing to the continued success of Malaysia's upstream industry.

In addition, service providers must prioritise and invest in health, safety and environmental protocols to not only safeguard the workforce but also minimise adverse environmental impact. In tandem, they must demonstrate the ability to adapt to the ever-changing oil and gas landscape. Staying abreast with technological advancements and consistently enhancing processes are imperative to sustaining production at a competitive price.

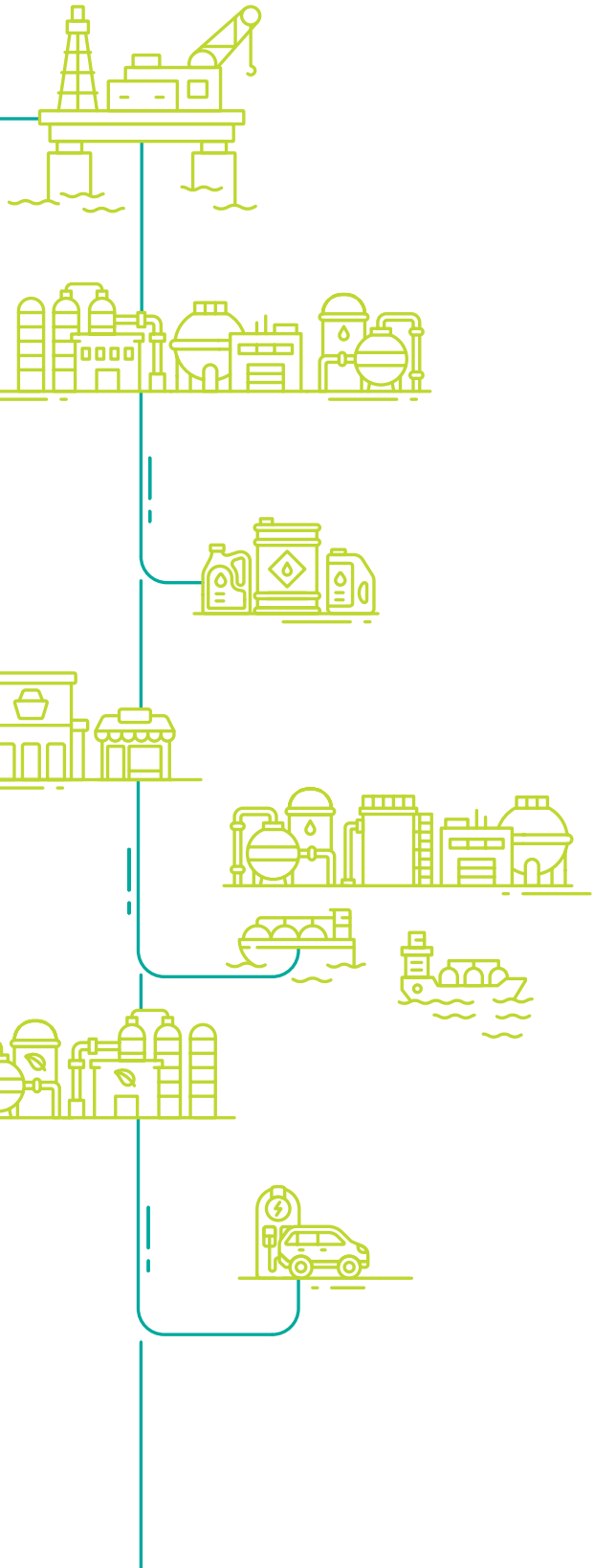
A Sustainable Future

The continued growth of Malaysia's upstream sector will hinge on the combined efforts of various industry stakeholders; PACs, OGSE and business partners. To excel in this field, it is imperative for all facets of the ecosystem to work together and collaborate to improve in several key areas, including prioritising health and safety, and boosting our commitment to initiatives that will allow us to achieve sustainability, adopt technological innovations and enhance workforce skills.

PETRONAS via MPM is always open to fostering more extensive collaborations and partnerships with all players of Upstream Malaysia. Together, we can achieve a secure, resilient, cost-effective and lower-carbon future.



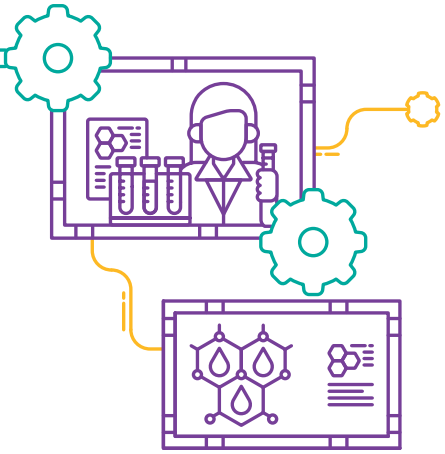
Downstream and New Business Opportunities



PETRONAS' Downstream business focuses on enhancing the value of our energy resources, transforming them into high quality, value-added products that are distributed to over 100 countries worldwide.
Our operations include refining, marketing and trading crude oil and petroleum products, along with manufacturing petrochemical and specialty chemicals.

With a network of over 1,000 PETRONAS stations in Malaysia, we offer high-quality fluids, lubricants and innovative non-fuel offerings like Setel and Kedai Mesra in 800 locations. Additionally, you can also find over 40 Café Mesra outlets operating beyond PETRONAS stations, providing premium coffee and pastries for customers on-the-go.

Expanding the Downstream business into cleaner energy initiatives, we are venturing into biofuels, circular economy, Liquefied Natural Gas (LNG) bunkering and next-gen fluids with PETRONAS Iona Range and the installation of Electric Vehicle (EV) charging facilities at PETRONAS stations. This aligns with our Net Zero Carbon Emissions 2050 (NZCE 2050) Pathway and the country's goal of achieving net zero emissions by 2050.



Petrochemicals

PETRONAS Chemicals Group Berhad (PCG) is guided by its Two-Pronged Strategy that drives its business growth, while enhancing its role in sustainability to support NZCE 2050. The first prong focuses on sustaining strength in basic petrochemicals, while the second prong encapsulates stepping-out opportunities through selectively diversifying into derivatives, specialty chemicals and solutions.

Under its second prong, PCG's specialty chemicals segment offers a wide range of focused segments that include: Resins and Coatings, Engineered Fluids, Animal Nutrition, Advanced Materials, Silicones and Lube Oil Additives and Chemicals to the market, with a commitment to ongoing growth.

Focused Segments

- Resins & Coatings
- Advanced Materials
- Engineered Fluids
- Silicones
- Animal Nutrition
- Lube Oil Additives & Chemicals

A collaboration to expand these market segments will only enhance resilience within PCG. Let's join hands and explore collaborative opportunities across these segments to cultivate growth.

Did You Know?

PCG is also driving the circular economy transition through the construction of one of Asia's largest advanced chemical recycling plant.

With a capacity of 33,000 tonnes per annum, this plant converts end-of-life plastics into pyrolysis oil that can be used as chemical feedstock for the production of sustainable plastics. This effort drives innovation across the plastics value chain and creates opportunities for all parties - from waste collectors to manufacturers - to jointly contribute to the circular plastics economy.

Biofuel

PETRONAS is committed to fuel innovation and sustainability by venturing into biofuel production through a greenfield biorefinery and co-processing at existing facilities. With used cooking oil (UCO) as the main feedstock, PETRONAS will have the capability to produce Sustainable Aviation Fuel (SAF) and Hydrogenated Vegetable Oil (HVO) or renewable diesel.

PETRONAS is actively purchasing UCO from the public and plans to expand our collection network across the nation. The initiative is aligned with the green framework set by the International Civil Aviation Organisation (ICAO), namely Carbon Offsetting and Reduction Scheme (CORSIA) to reduce the impact of carbon footprint and meet the carbon neutral growth target for the international aviation sector.

Advanced Fluid for EV

PETRONAS, through PETRONAS Lubricants International, continues to innovate next-generation e-fluid solutions with our PETRONAS Iona range, making us one of the pioneers in the industry to introduce a dedicated range of automotive fluid solutions for electric vehicles (EVs) and other thermal management applications across diverse sectors.

As partners to premium original equipment manufacturers (OEMs), PETRONAS is committed to co-engineering the best advanced fluids through our Fluid Technology Solutions™, delivering custom-made solutions for our customers to help us use energy more sustainably and efficiently.

Expansion of EV Charging Network

Through strategic collaborations with relevant industry players, PETRONAS Dagangan Berhad (PDB) aspires to expand its charging infrastructure for electric vehicles at PETRONAS stations, signaling our commitment to accelerate the adoption of electric mobility. PDB has also introduced battery swap stations for electric two-wheelers and is actively seeking for collaborations with suitable players to support the growth of green mobility.

Did You Know?

Expanding Beyond Fuel

PDB has expanded into non-fuel portfolios to adapt to the ever-changing business landscape.

Auto Expert

PDB is expanding its AutoExpert network to boost SMEs and local economic growth.

Setel

PDB expands its Setel ecosystem through digital innovation and new features for a seamless customer experience.

Café Mesra

Café Mesra expands beyond PETRONAS stations with standalone kiosks and new café formats.

Pengerang Integrated Complex (PIC)

The Pengerang Integrated Complex (PIC) is a petrochemical park that plays an essential role in meeting rising energy and downstream derivatives demand, while supporting the energy transition towards net zero carbon emissions. Its multi-train refinery, processes imported crude oil into top-quality fuels and supplies feedstock for the adjacent steam cracker complex, producing premium products used in high-end consumer goods.

Built for Energy Efficiency

PIC is designed with groundbreaking facilities that ensure supply reliability for seamless processes and business continuity. Strategically located near major shipping routes, it stands as one of the leading petrochemical hubs in the region. The highly integrated complex where innovation and technology work hand-in-hand, creates value chain synergy that optimises cost.

Sustainability is embedded across PIC's growth aspiration and we welcome partners that promote circular economy and carbon footprint reduction. Explore a wide range of business opportunities at PIC and we look forward to partnering with you for a better future.

Associated Facilities and Utilities

Supporting PIC's operations to ensure its self-sufficiency and reliability.

Centralised Utilities

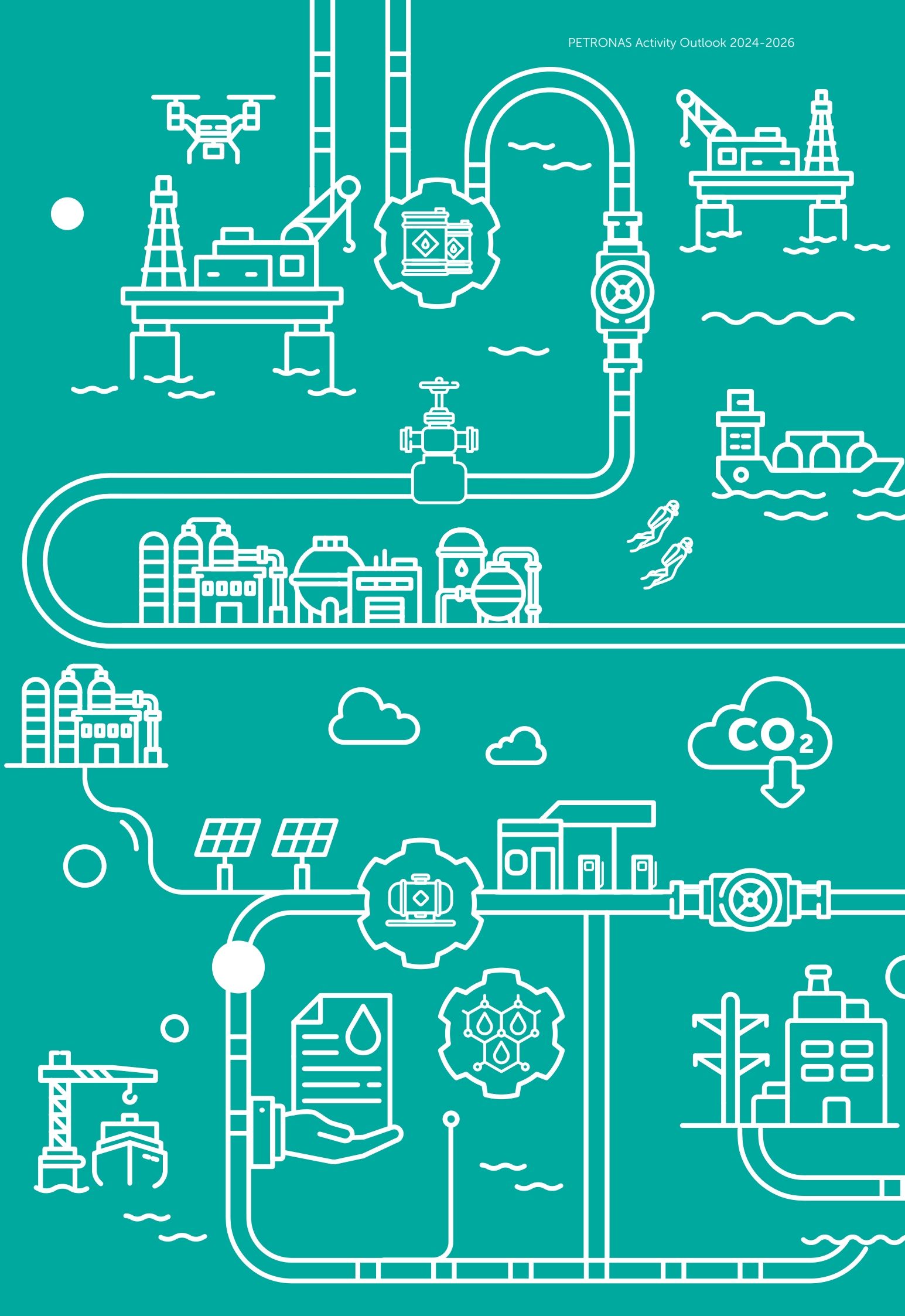
Raw Water Supply Facility

Deepwater Terminal

Liquified Natural Gas Terminal

Co-Generation Power Plant

Air Separation Unit

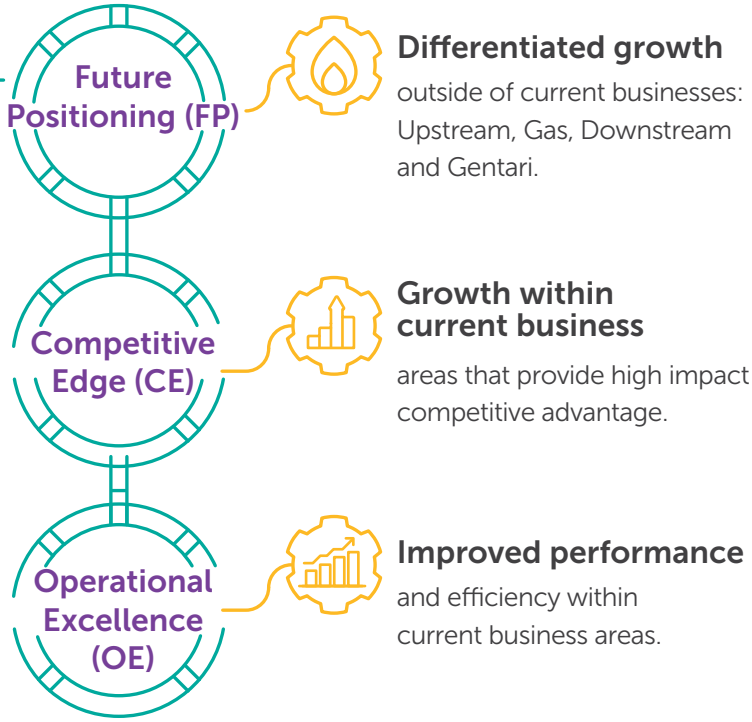

CO2

Innovation Gateway @ PETRONAS: Driving Technological Evolution

At PETRONAS, we see technology as a strategic differentiator to help us stay ahead. Innovation Gateway @ PETRONAS (iG@P) is PETRONAS' pioneering initiative, leveraging technology to drive competitive advantage and innovation. It acts as a crucial bridge, connecting operational challenges to cutting-edge solutions.

Strategic Focus Areas

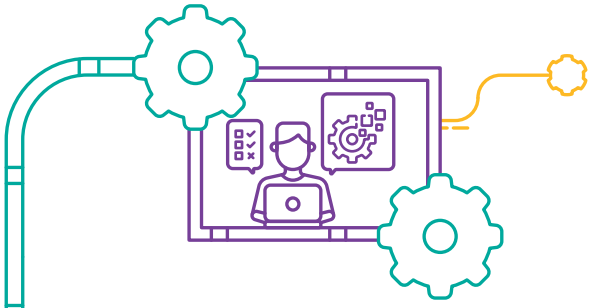
PETRONAS' technology agenda focuses on three key areas: Future Positioning (FP), Competitive Edge (CE) and Operational Excellence (OE). In the realm of FP and CE, the emphasis is on pursuing technological advancement through innovative and fast-paced research and development (R&D) efforts. Conversely, OE places its focus on tapping into the knowledge of established and mature solution partners through the Innovation Gateway @ PETRONAS (iG@P).



Differentiated growth
outside of current businesses: Upstream, Gas, Downstream and Gentari.

Growth within current business
areas that provide high impact competitive advantage.

Improved performance
and efficiency within current business areas.



iG@P: An Overview

iG@P is a dynamic open innovation portal and online crowdsourcing platform that provides stakeholders with off-the-shelf, easy-to-access and diverse technology solutions. It facilitates the swift co-creation, deployment and partnership of technological advancements for operational excellence at PETRONAS.

Technology Submission and Evaluation Process:

iG@P provides an online platform for technology providers to submit solutions. These submissions undergo rigorous evaluation by Subject Matter Experts for suitability within PETRONAS' operations.

Enhancing Operational Excellence:

iG@P is aimed at enhancing operational excellence, encompassing aspects such as asset integrity, data management, energy efficiency and more. It caters to diverse needs across the Upstream, Gas, Downstream and Gentari businesses.

Benefits of iG@P

Industry

- Single point submission
- Prioritised technology
- Opportunity to mature technology
- Global success-story sharing

PETRONAS

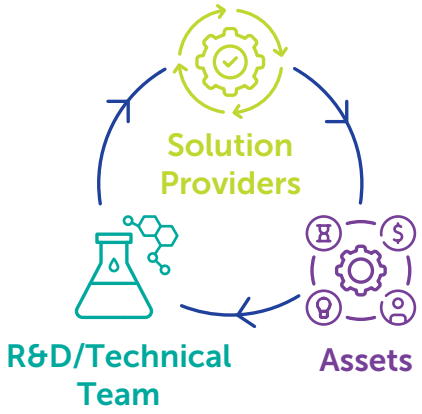
- Access to innovation
- Best solutions in market
- Potential IP sharing
- Complete technology database

Upstream

Downstream

Gas

Gentari



Solutioning Co-Creation for Operational Excellence Needs

Collaboration and Knowledge Sharing:

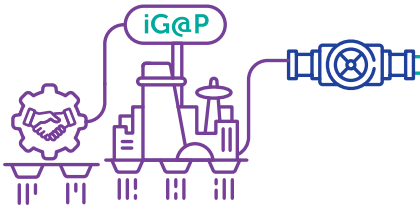
Collaboration within iG@P fosters a sharing environment among technology providers, R&D and asset teams, ensuring the co-creation of the most suitable technological solutions for operational needs.

Structured and Transparent:

An online portal to receive and assess technology solution submissions; creating a transparent, responsive and traceable process.

Protection of Intellectual Property:

iG@P safeguards the intellectual property of submissions, ensuring the secure submission of ideas and solutions from technology providers, instilling confidence and trust in the process.



Future Vision for iG@P:

iG@P envisions an integrated, engaging platform that holistically manages technological ideas and solutions, creating a unified ecosystem conducive for secure tech submissions.

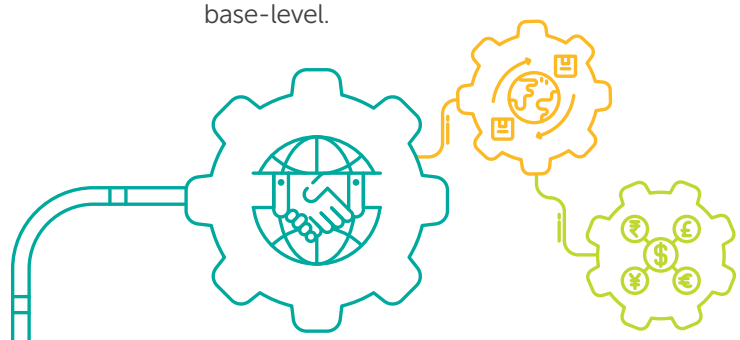
Join us and start your iG@P journey at https://innovation.petronas.com

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

Free Trade Agreement (FTA)

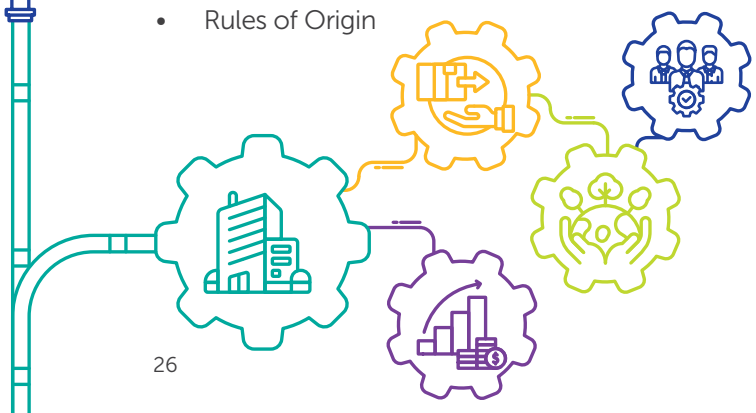
The FTA is an agreement between two or more countries that promotes seamless cross-border trade. It aims to foster:

- Market access of foreign goods and services.
- A transparent and impartial investment environment, regardless of nationality.
- Review mechanisms – generally, all FTAs contain a review mechanism which may lead to a 'levelling up' of commitments from the base-level.



The FTA comprises multiple "Chapters" that outline key provisions by subject area (varies based on the FTA). The standard chapters with direct implications to PETRONAS include:

- State-Owned Enterprise (SOE)
- Trade in Sustainable Development
- Investment
- Trade in Services
- Trade in Goods
- Rules of Origin

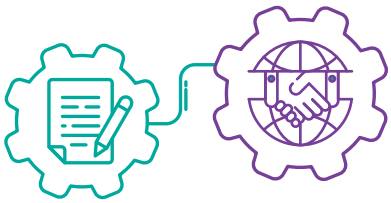


The Trans-Pacific Partnership Agreement (TPP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

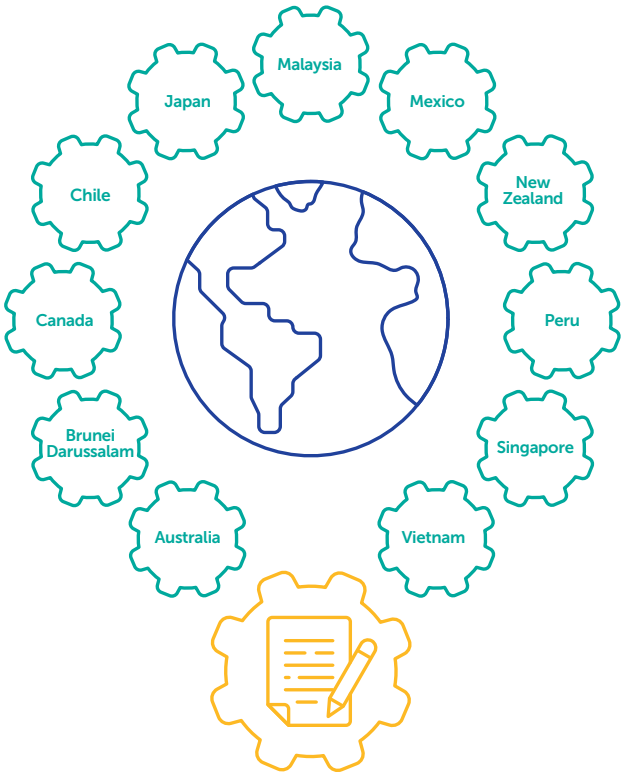
- The TPP is a trade agreement between 12 Pacific Rim nations: Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States and Vietnam signed on 4 February 2016 in Auckland, New Zealand.

- In January 2017, President Trump decided to withdraw the US from the TPP, thus, the agreement as it stands cannot enter into force without the United States.

- In November 2017, Ministers of the 11 TPP countries reached an agreement on the core elements, the text of the agreement and way forward to implement the TPPA, which was renamed as the CPTPP.



- The CPTPP was signed by all 11 participating countries - Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam on 8 March 2018 in Santiago, Chile. Signing the agreement is an indicates all 11 countries accepted the outcome of the negotiations and will start their domestic process to enable their ratification of the CPTPP in order to bring the agreement into force.



Ratification of Participating Countries

- All of the 11 participating countries have completed the ratification process, and the agreement has entered into force in all of the participating countries.

- On 16 July 2023, the United Kingdom became the first non-original signatory and European country to sign the CPTPP agreement, with entry into force by Q3 2024.

Ratification of Malaysia

- The Ministry of Investment, Trade and Industry (MITI) announced on 5 October 2022 that Malaysia has successfully ratified CPTPP on 30 September 2022. The CPTPP entered into force (EIF) effective 29 November 2022 (60 days after ratification). Malaysia will now practise open trade as per CPTPP's obligations with the 11 countries.

Net Benefit to Malaysia's key economic sectors

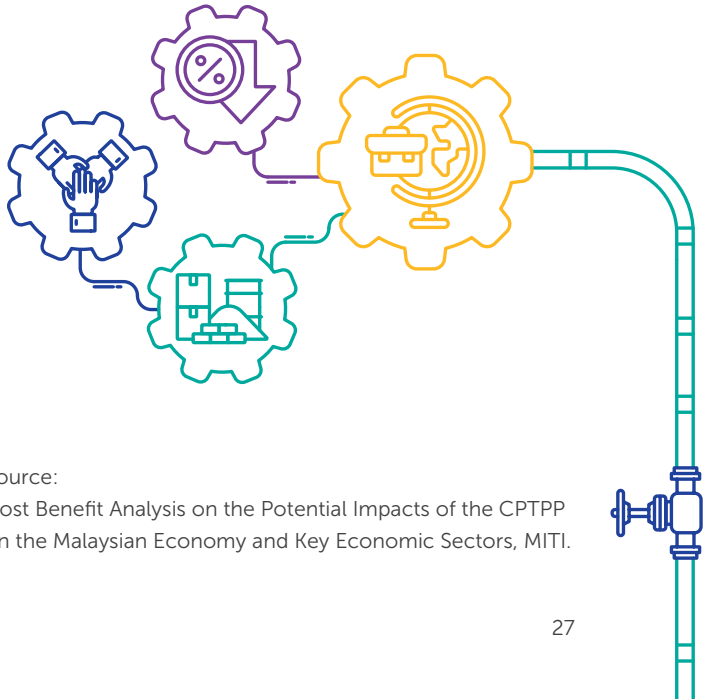
There are gain opportunities under the CPTPP including:

- Market access to Canada, Peru, Mexico, and the United Kingdom which Malaysia does not have an FTA with.

- Lower costs and ease of exporting due to customs cooperation, harmonisation and transparency.

- Wider sourcing channels for raw materials at competitive prices.

- Local capability development through cooperation and capacity-building activities with other CPTPP countries.



Source:
Cost Benefit Analysis on the Potential Impacts of the CPTPP on the Malaysian Economy and Key Economic Sectors, MITI.

Navigating the Talent Transition:

Challenges and Opportunities in the OGSE Industry

The changing landscape presents both challenges and opportunities for the OGSE industry, including the journey towards energy transition with new business models, digital technology integration and lower-carbon alternatives. As environmental and sustainability issues gain prominence, the need for qualified talents is becoming increasingly urgent, while competing with gig economies and other industries. Talents with both broad and specialised expertise are required to have new skill sets and capabilities to perform in the current landscape, as failure to do so may hinder productivity. This will further affect the industry's competitiveness.

In order to remain competitive in this volatile environment, the OGSE industry must prioritise attracting and retaining the right talent with the right capabilities.

The Oil and Gas Talent Landscape Grapples with a Growing Capability Gap and Capacity Shortage

In Malaysia's dynamic oil and gas industry, the successful hiring and retaining of relevant top talents is paramount to sustain growth and competitiveness. However, an internal survey conducted by PETRONAS revealed widespread challenges in hiring and retaining skilled professionals, citing competency gaps and competing job offers in the industry.

A mismatch of workforce skills may impact operational efficiency, productivity and jeopardise safety. This could lead to poor asset integrity, compromised health, safety and environmental compliance and hinder the OGSE industry's competitive edge.

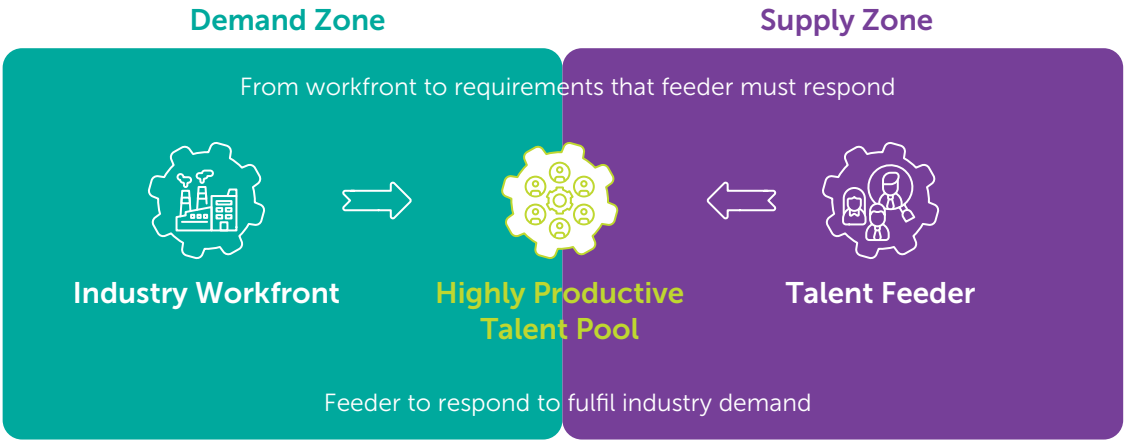
Talent Integrity Remains Essential in the Oil and Gas Industry

It is imperative that the industry have talents who adhere to the highest integrity standards that are crucial for generating and sustaining corporate value. Talents must have the necessary competencies and knowledge to uphold asset integrity and process safety especially in high-risk environments such as offshore operations or processing plants to avert unfavourable situations or accidents. This involves the management of people, systems, processes and technologies to ensure high productivity of assets that operate safely with zero risks to employees, the public and the environment. Having the right talent that does not compromise on integrity is a major step towards achieving success in today's business environment.

Tomorrow's Talent: Are We Ready for the Future?

One of the key items highlighted during the Energy Asia 2023 conference was that despite commitments, advancing technology and adequate funding, there is a considerable talent gap in the energy industry. This poses a significant challenge to transition towards net zero energy systems effectively and efficiently. Filling this gap requires the creation of about 30 million new jobs worldwide, including 200,000 in Malaysia alone[1] to ensure the sustainability of the nation's oil, gas and energy industry.

Attaining a future-ready talent pipeline requires rewiring the talent strategy ecosystem, including sourcing, retaining and elevating talent value propositions via upskilling and reskilling. Having a comprehensive line of sight on talent demand and supply within the industry ecosystem will ensure an industry-ready workforce. Facilitating the integration of the industry's existing fragmented initiatives will contribute towards a robust talent outlook.



Brief talent supply and demand within ecosystem re-imagined framework for illustration purposes only

The industry must have visibility to the dynamics of talent demand (what skills and roles are needed by the industry) and talent supply (the available pool of talents with needed skills and qualifications). This will enable the industry to analyse and respond timely to the current and future needs for specific skills and the availability of talents.

Fulfilling industry demand is important as it ensures sustainability and ability to contribute positively to the nation's oil, gas and energy industry.

Source:

[1] Experts: New talent needed for transition to renewable energy | The Star

To ensure a consistent supply of talent, the industry must collectively work together to entice the masses as early as during school level towards the interest of science, technology, engineering and mathematics (STEM). This can be done through collaboration with schools and universities to allow students to be exposed to industry demands, as well as the range of jobs available to them. Using real-world examples and experiences, the curriculum can be tailored for students to carry out industry-based experiments, make observations, ask questions, test ideas, think creatively and use their intuition, which will one day lead to solutions for the industry.

Did You Know?

We Shape Tomorrow's Bright Talents

PETRONAS has been nurturing talents through robust education and training initiatives, devoting resources to Malaysia's human capital development to meet the country's requirements and the energy industry's demand.

PETRONAS Powering Knowledge Initiatives:

1. Discover PETRONAS @Schools (DPS)

2. Education Sponsorship

3. Vocational Institutions Sponsorship and Training Assistance (VISTA)

*List is non-exhaustive

Did You Know?

Embracing a collaborative strategy towards a forward-thinking and strategic move can yield benefits not only for an individual organisation but also for the broader oil, gas and energy industry. It's time for industry players to co-create a talent pool in addressing talent challenges.

Get on board! Join the industry collaboration today as we work together to enhance the visibility of talent demand and supply and drive top-notch workforce productivity by scanning the QR code below before 30 June 2024.

The industry is also urged to promote and support Technical and Vocational Education and Training (TVET) graduates to fulfil the demand for talents. Collaboration between all stakeholders is crucial to ensure the right certification and training modules are made available for the right qualification. Additionally, during his keynote speech at the Oil and Gas Asia 2023 (OGA) conference, Datuk Bacho Pilong, PETRONAS' Senior Vice President, Project Delivery and Technology (PD&T) also urged industry players to tap into TVET institutions to align both talent and industry needs.

Visibility over the demand-supply of talent is still not enough. Visibility alone will only enable action towards capacity, but not capability. The industry must address the capability to drive long-term competitiveness which requires a conscious and concerted effort from everyone involved.

From the training perspective, the industry is urged to increase awareness of incentives provided by the Human Resource Development Corporation (HRD Corp) on levies for specific soft-skills trainings and local professional development programmes. Referring to the same survey analysis conducted by PETRONAS this year, 80 per cent of the respondents were aware of the levies. However, only 52 per cent were registered with the government agency. Notably, small and medium-sized enterprises (SMEs) indicated lower utilisation of HRD Corp benefits, compared to others. 18 per cent of SMEs are still unaware of the initiatives HRD Corp provides. Inputs from the industries, HRD Corp and relevant government agencies are vital to assess retraining programmes of industry skill sets, especially those which are expected to decline.

Nurturing OGSE Talent: A Collective Responsibility

Addressing the talent demand-supply gap is crucial for long-term sustainability of the oil and gas industry as a driver to the country's economic growth. It requires a concerted effort by everyone in the industry to step up to enhance productivity and competency. Investing in the industry's talent development through enhancing capability, capacity and productivity norms as well as collaborating with policymakers, training providers and educators will ensure the OGSE industry becomes more globally competitive, attracting foreign investors while forging a path towards sustainability.

Every small effort is a significant step forward, not only for the industry's success but also to advance the broader goals of responsible business practices, while ensuring a sustainable and resilient OGSE ecosystem to drive the industry forward amid the energy transition. The time to act is now. Failure to do so will undoubtedly hinder growth of the energy industry.

Did You Know?

PETRONAS has collaborated with HRD Corp and the Malaysian Oil, Gas and Energy Services Council (MOGSC) to address talent development needs within respective industries through the development of the second edition of the Industrial Skills Framework.

This initiative helps to channel levy and training grants timely to the right talent through competent training providers and aims to increase the number of Malaysian skilled workforce timely as required by the industry.

The second edition of the Industrial Skills Framework covers core and in-demand skill sets in the OGSE sector and critical focus areas have been identified and enhanced. A new addition as well as certification schemes have also been incorporated. With the proposed enhancements, there are several skill sets such as:

1. Welding Inspection
2. Hydro-Jetting
3. Insulation
4. Blasting and Painting

*List is non-exhaustive

For more details on the Industrial Skills Framework, please scan the QR code.

Navigating Energy Transition

The world is transitioning to a low-carbon future, making decarbonisation a strategic imperative for Malaysia's OGSE sector. The industry must ensure it is prepared for this transition so that it may not only participate, but also be able to compete on a global scale. By doing this, the sector can remain an important driver of Malaysia's economic growth and contribute to national sustainable development priorities. However, this will require the OGSE sector to adapt, innovate and collaborate so that it can grow sustainably.

In 2023, the International Renewable Energy Agency forecasted ASEAN's Gross Domestic Product (GDP) growth to be 3.4 per cent higher per year from 2021 to 2050 if the world can curb man-made emissions and achieve the goals of the Paris Agreement. Cumulatively, this would add around USD 13.1 trillion to the region's economies. Curbing emissions can partly be achieved by developing and deploying new technologies and value chains which present exciting business opportunities for partnerships, collaboration and co-creation. In 2022, global investments in clean energy reached USD 1.1 trillion, matching the amount spent on fossil fuel production. By the end of 2023, clean energy investments are expected to reach USD 1.7 trillion, surpassing those in fossil fuels[1]. PETRONAS itself has pledged to spend up to 20 per cent of its total capital expenditure (2022-2026) to intensify its decarbonisation efforts and pursuits in cleaner energy solutions.

To further facilitate the needed energy transition, other regions are responding with policy and regulatory measures such as the European Union (EU)'s Carbon Border Adjustment Mechanism (CBAM) and the United States' Inflation Reduction Act (IRA) that are shaping the future global energy system. These measures, along with others that may follow from other regions, present both risks and opportunities for Malaysia's OGSE sector, which employs one in four workers[2]. PETRONAS is responding to this call for accelerated change and is committed to leading the transition as it looks to produce energy in a more responsible manner, contributing to the socio-economic growth of Malaysia.

In response to the energy transition and increasing customer demand for cleaner energy sources, PETRONAS will need to manage the emissions throughout its entire value chain. This includes introducing bold and proactive actions to ensure sustainable practices within the Malaysian OGSE sector. PETRONAS will continue to work with its suppliers to help build their capabilities to effectively serve and create opportunities in the energy transition.

Malaysia's Net Zero Aspiration

The Malaysian Government sees significant opportunities in the energy transition, as a whole-of-nation approach that is result-oriented and ensures employment creation, economic growth and sustainable development.

The government conducted a mid-term review of the 12th Malaysia Plan (2021-2025) to assess the progress made as part of broader development efforts. It also outlines actions for the final two years to reduce emissions by 45 per cent against GDP by 2030 and achieve net zero greenhouse gas (GHG) emissions by 2050, based on the Nationally Determined Contribution (NDC). These actions include:

- Implementation of a national carbon policy and a carbon pricing mechanism.
- Development of a regulatory framework for carbon capture, utilisation and storage.
- Creation of a long-term low emissions development strategy (LT-LEDS)
- Publication of a national OGSE sustainability roadmap to promote sustainability practices and develop simplified reporting standards.

The above will supplement the government's NETR, the New Industrial Master Plan and the National Energy Policy 2022-2040. All these plans provide clear signposts, near, medium and long-term for the Malaysian OGSE sector's journey towards sustainability. In doing so, the sector can be at the forefront of change, enabling it to remain globally competitive as world economies transition to low-carbon energy systems .

PETRONAS' Pathway to Net Zero

As Malaysia's oil and gas resources custodian, PETRONAS will support efforts to decarbonise economic development and deliver reliable energy that enables progressive growth.

It is committed to reduce emissions from its operations and diversify into new energy transition businesses that are cleaner, less carbon intensive and aligned with changing consumer and market preferences. These commitments are prescribed in the PETRONAS NZCE 2050 Pathway which stipulates emissions reduction from operations and growth ambitions for cleaner energy solutions, both of which present opportunities for investors and suppliers.

Emissions reduction will be achieved through four main levers:

- Zero Routine Flaring and Venting
- Energy Efficiency
- Electrification
- Carbon Capture and Storage (CCS)

In support of its NZCE 2050 Pathway, PETRONAS is working towards capping operational emissions in Malaysia at 49.5 million tonnes of carbon dioxide equivalent by 2024.

The target covers Scope 1 (direct emissions directly from its own operations) and Scope 2 (indirect emissions from energy purchased for its operations). PETRONAS has set a target to reduce 25 per cent of absolute carbon emissions groupwide by 2030, including Scope 1 and Scope 2 emissions.

In addition, PETRONAS has set a target to achieve a 50 per cent reduction in methane emissions from its groupwide natural gas value chain by 2025. This supports Malaysia's ambition to reduce methane emissions by 30 per cent by 2030, in line with the Global Methane Pledge. The groupwide target for 2030 is 70 per cent and 50 per cent for Malaysia's natural gas value chain respectively.

Source

[1] National Energy Transition Roadmap

[2] World Energy Investment 2023 – Analysis - IEA

Energy Value Chain

To achieve its NCZE 2050 Pathway quickly and widely, PETRONAS needs to reduce emissions significantly and rapidly across the value chain. New low-carbon energy value chains will need to be created and existing ones redesigned.

Moving forward, PETRONAS will continue to improve its Scope 3 (indirect emissions across the value chain) reporting efforts to identify opportunities for impactful climate action across its value chain. PETRONAS' Scope 3 emissions represent the majority of its GHG emissions, therefore close collaboration will be required with both of its industrial customers and vendors, as well as small and medium enterprises (SMEs) to minimise the risks and maximise the benefits from emissions reduction efforts.

However, according to the PETRONAS OGSE Survey 3.0 2023, its vendors and suppliers are not well prepared for decarbonisation efforts, as only 25 percent of respondents have adopted environmental, social and governance (ESG) initiatives, while 82 per cent are unaware or barely aware of ESG incentives, programmes or support mechanisms that they can access. Accessing resources such as Bursa Malaysia's Sustainability Reporting Guide and Toolkits and the Human Resource Development Corporation's ESG training courses is vital in building the capacity of Malaysian OGSE SMEs and will improve transparency across the energy value chain.

The energy transition goes beyond investment in decarbonisation technology. The associated large-scale investments are also a unique opportunity to reverse nature loss and strengthen social progress.

Nature and Biodiversity

PETRONAS' position on nature and biodiversity aims to take a proactive approach to support the well-being of natural ecosystems through five key action areas:

1. Establishing voluntary exclusion zones.
2. Managing nature and biodiversity risk.
3. Promoting nature and biodiversity through partnerships and collaborations.
4. Supporting public policy that aims to protect nature and biodiversity.
5. Promoting high-quality nature-based climate solutions.

All this support the Malaysian and other host governments' commitments to biological conservation, as outlined in the Kunming-Montreal Global Biodiversity Framework (CBD COP15).

Our efforts are integral in supporting nature-based carbon offsets which are part of our aspiration to achieve NZCE by 2050. To this aim, in 2023 PETRONAS signed a Memorandum of Understanding with the Malaysia Forest Fund to explore, develop and invest in high-quality nature-based solutions projects in Malaysia.

Just Transition and Human Rights

A just transition incorporates the social dimensions of climate action, taking into account that the expected prosperity brought on by the transition will be enjoyed by all. During 2023, PETRONAS convened a series of roundtables to foster conversation and engagement on what the energy transition could mean for the Malaysian energy sector, including workers, suppliers and communities. Some key takeaways include uplifting overall awareness on sustainability, providing clarity on expectations, having targeted solutions and actively engaging stakeholders to identify and respond to their needs. Further information on this activity is available on PETRONAS Global website.

PETRONAS also remains committed to upholding human rights within its operations and throughout its value chain. This includes strengthened due diligence on human rights management using surveys, assessments and monitoring of adherence to PETRONAS' human rights policies and guidelines as well as ensuring that there is an effective grievance mechanism in place as part of its Whistleblowing Policy.

Workforce

The energy transition is rapidly changing the energy landscape – continuous adaptation and transformation will be necessary, especially for the workforce. Upskilling and reskilling the workforce will be vital for the Malaysian OGSE sector to reap the benefits from the broader global trend towards a low-carbon economy which is expected to create millions of new jobs in ASEAN[1]. Interdisciplinary and multidisciplinary skills that are necessary for driving decarbonisation and growth in new energy chains will be in high demand as innovative thinking and approaches will be vital in addressing the scale of the challenges that lie ahead.

In conclusion, the energy transition presents both challenges and opportunities for Malaysia's OGSE sector, which must adapt, innovate and collaborate to grow sustainably and remain globally competitive. PETRONAS remains committed to working collaboratively with its suppliers to build their awareness, capacity and skills to ensure that they too, can benefit from the opportunities that the energy transition can provide.

Source

[1] Renewable Energy Statistics 2023