



## New Business

Capturing New Growth Opportunities

### Focus Areas

PETRONAS' New Business strategy focuses on developing and scaling ventures beyond its traditional core activities to future-proof our business portfolio, enhance resilience and respond to evolving customer and energy-transition needs. These ventures progress through a combination of organic growth and selective inorganic opportunities, supported by partnerships, technology deployment and the development of new capabilities across the Group.

## Renewable Energy



*Regional integration is progressing across our businesses, supported by collaborations that enable clean energy solutions to extend beyond individual markets."*

**Sushil Purohit**

Group Chief Executive Officer, Gentari

### Scaling Global Renewable Capacity to 9.1 GW

We continued to expand our renewable energy footprint through our clean energy subsidiary, Gentari, reaching a cumulative installed and under construction capacity of 9.1 gigawatts (GW) across solar, wind and battery energy storage projects. Growth was driven by disciplined execution across priority Asia Pacific markets, supporting PETRONAS' Energy Transition Strategy through the delivery of commercially viable clean electricity solutions. Gentari's portfolio spans utility-scale and commercial and industrial renewable energy projects, integrated renewable-plus-storage facilities, and enabling infrastructure. These assets are designed to operate with existing power systems, contributing to grid flexibility and energy security while supporting customers' decarbonisation objectives.



India's first on-site hybrid (comprising solar, wind and battery), round-the-clock renewable energy project for UltraTech Cement Limited in Gujarat.



## Driving Tangible Steps towards Regional Power Interconnectivity

We participated in a Joint Development Agreement to explore renewable electricity exports from Vietnam to Malaysia and Singapore, advancing regional power integration across ASEAN. Through the MY Energy Consortium, established with Tenaga Nasional, the initiative evaluates Vietnam’s renewable energy potential, with an initial focus on offshore wind, and explores cross-border transmission frameworks to enable clean electricity trade.

This collaboration with PetroVietnam Technical Services Corporation and Sembcorp Utilities supports the development of regional power connectivity while expanding access to larger renewable electricity markets and strengthening energy diversification across Southeast Asia.



## Reaching Production Phase in Wind Energy

The Hai Long Offshore Wind Project achieved first power delivery to Taipower’s grid, marking a key milestone in Gentari’s offshore wind portfolio. The project progressed through construction and commissioning activities, including offshore and onshore substations and phased turbine connections, advancing towards full commercial operations.

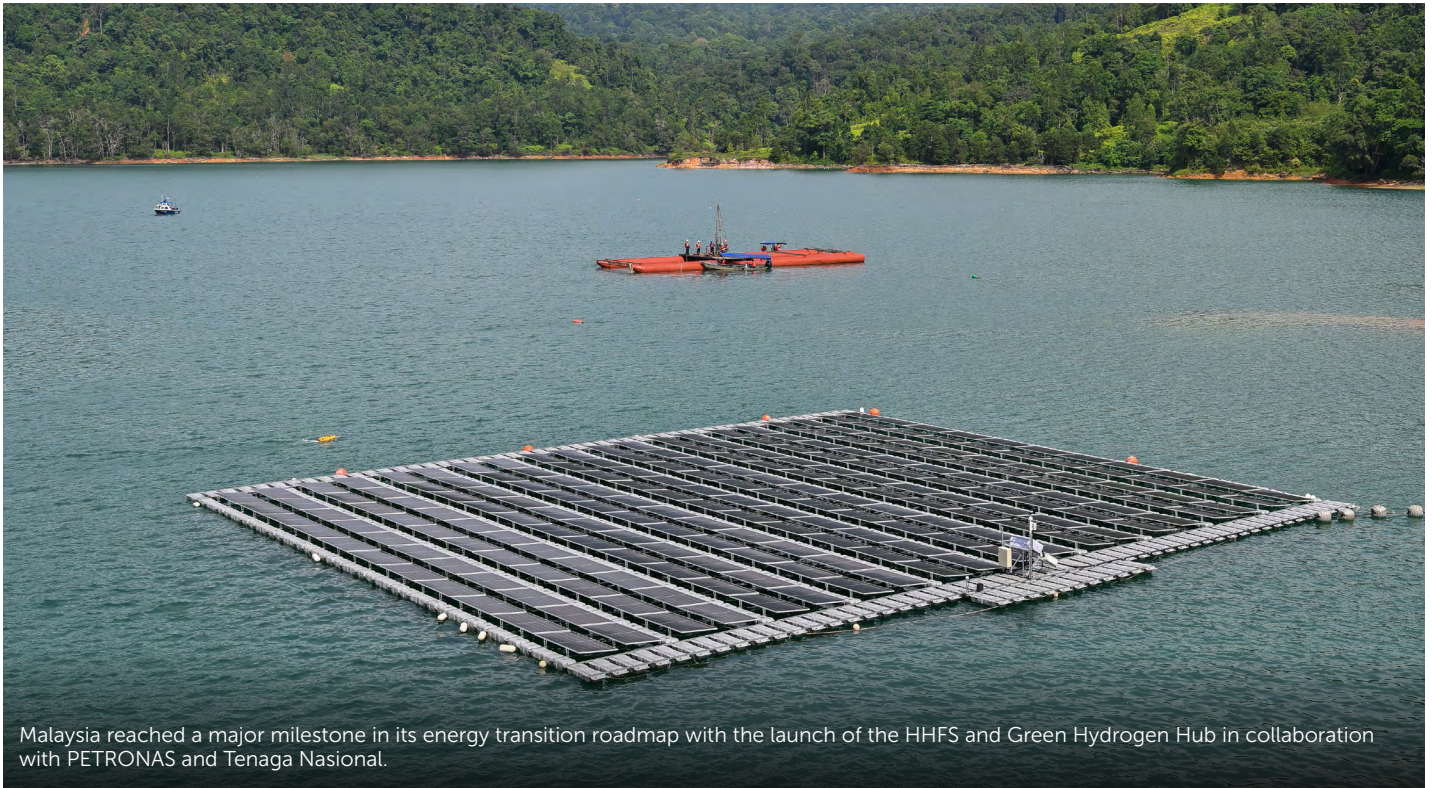
Our participation in one of Asia Pacific’s largest offshore wind developments strengthens Gentari’s execution capability in complex marine construction, grid integration and partnership delivery, supporting disciplined expansion into utility-scale offshore renewables.



## Hybrid Renewable Power

We supported the launch of Malaysia’s first Hybrid Hydro Floating Solar (HHFS) and Green Hydrogen Hub at Kenyir, Terengganu, Malaysia, integrating floating solar with existing hydropower infrastructure at the Sultan Mahmud Hydro Electric Power Station. Delivered in collaboration with Tenaga Nasional and Terengganu Inc., the HHFS initiative represents Malaysia’s first deployment of hybrid hydro-floating solar at this scale. The project explores hybrid generation by optimising the use of water surfaces while leveraging hydropower operations to support grid stability.

This pilot aligns with Malaysia’s National Energy Transition Roadmap (NETR) and Hydrogen Economy and Technology Roadmap (HETR) by advancing integrated clean energy pathways within a single site. It provides an operational reference for assessing the technical and system-level considerations of hybrid renewable solutions for potential future applications.

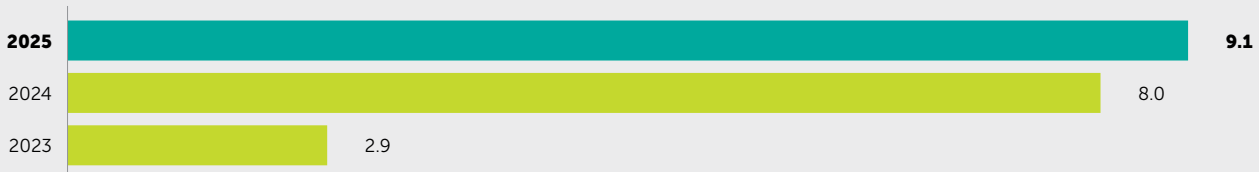


## 2025 Performance Metrics

### Renewable Energy Total Capacity

(gigawatt)

*Installed and under construction*



**Notes:**

1. For 2024 and prior, the measurement is renewable energy capacity only.
2. For 2025, the measurement is renewable energy and storage capacity.



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### Our Challenges and Opportunities

#### Market Context

Grid constraints, pricing volatility and growing demand for firm and dispatchable renewable power highlighted the need for scalable solutions that improve cost competitiveness, system flexibility and operational reliability.

#### Strategic Response

- Prioritised utility-scale renewable projects to improve cost competitiveness and reduce the levelised cost of electricity.
- Increased focus on hybrid configurations, including renewable-plus-storage solutions, to enhance dispatchability and time-shift value.
- Strengthened project delivery discipline to manage cost, schedule and supply chain pressures.
- Enhanced asset management practices to sustain operational performance and long-term value.

#### Impact

- Improved portfolio resilience against grid constraints and pricing volatility.
- Strengthened revenue stability through longer-duration and dispatchable renewable solutions.
- Maintained competitiveness amid supply chain pressures and cost inflation.
- Strengthened long-term asset performance and portfolio value.

### Our Outlook

#### Short-term

We continue to focus on strengthening delivery excellence in priority markets by progressing renewable energy projects from development into execution across Malaysia, India, Australia and the broader Asia-Pacific region as detailed below.

- Advancing the Large-Scale Solar (LSS) 5 project in Malaysia towards groundbreaking in 2026.
- Progressing the Karur Wind Power Project in India towards operations in 2027 under a long-term power purchase agreement.
- Delivering hybrid solar and battery energy storage system (BESS) solutions through the Maryvale Project in Australia to support grid stability.
- Advancing the Hai Long Offshore Wind Project off the Changhua coast following the achievement of first power delivery.

Efforts will continue to support rising demand for reliable, lower-carbon power, including from hyperscale data centres, through the deployment of LSS and BESS solutions. Key priorities include:

- Progressing the partnership with Gamuda under the Corporate Renewable Energy Supply Scheme (CRESS) framework to deliver up to 1.5 GW of solar and BESS capacity in Malaysia.
- Supplying wind power in India to support long-term clean energy requirements.
- Supporting national energy transition targets together with customers' decarbonisation needs.

#### Medium- to Long-term

We aim to expand customer-centric hybrid and BESS solutions through the rollout of co-located and standalone BESS between 2026 and 2028. This includes integrating storage capabilities into solar portfolios and capturing longer-duration, dispatchable value to support grid resilience, strengthen energy reliability and support more stable long-term revenue streams.

## Specialty Chemicals



*The continued strengthening of our specialty chemicals portfolio, through new innovations, closer customer collaboration and lower-carbon capacities, positions PCG to deliver safe, reliable and differentiated solutions for long-term resilience.”*

### Mazuin Ismail

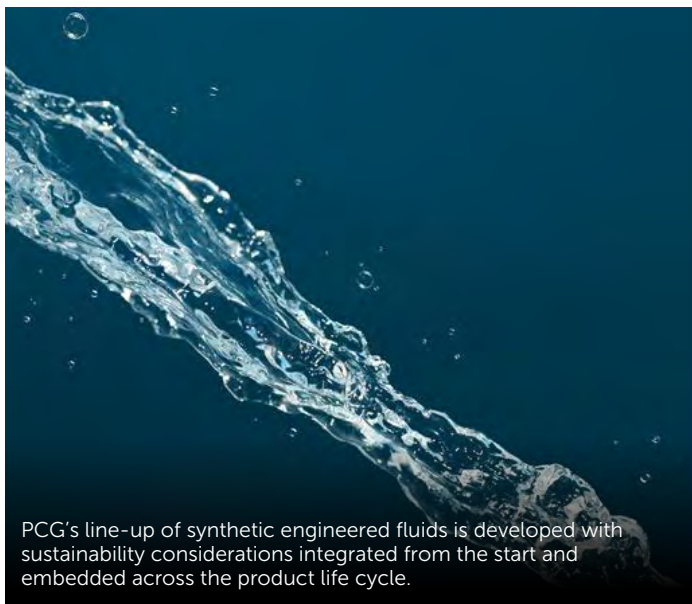
Senior Vice President and Managing Director/Chief Executive Officer, PETRONAS Chemicals Group

### Bringing Innovation Closer to Customers in Asia

PETRONAS Chemicals Group (PCG) further strengthened specialty chemicals capabilities in Asia with the launch of the PETRONAS Application Technology Centre in Shanghai, China. The facility places advanced testing, formulation and customer collaboration closer to key growth markets, enabling faster product development cycles and more responsive technical support. This move enhances PCG's ability to co-create high-performance solutions with customers across industrial lubricants, coatings, engineered fluids and more.



Specialty chemicals facility at the PETRONAS Application Technology Centre in Shanghai, China.



PCG's line-up of synthetic engineered fluids is developed with sustainability considerations integrated from the start and embedded across the product life cycle.

### Expanding High-Performance Synthetic Fluids Portfolio

We expanded our synthetic polyol ester portfolio within the Engineered Fluids Solutions segment, strengthening presence in high-performance thermal management applications. This expansion reinforces PCG's shift toward differentiated, technology-driven specialty segments that support more resilient margins while addressing evolving environmental standards.

#### Point of Interest



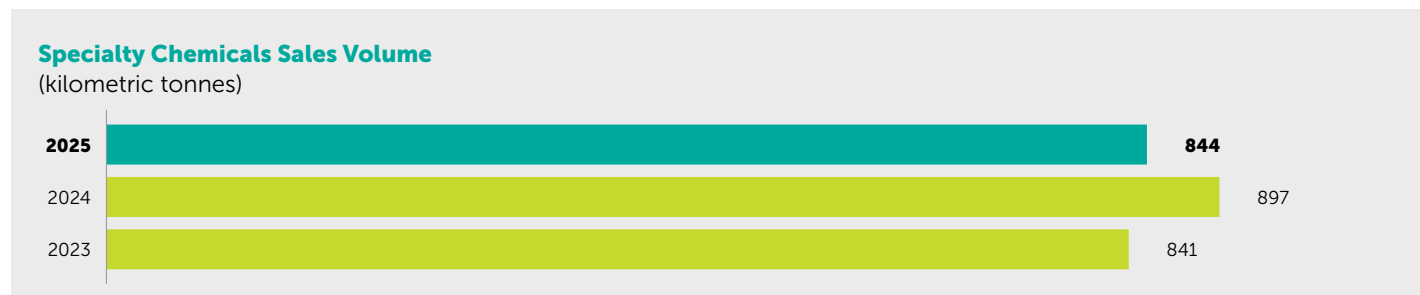
Synthetic polyol ester fluids are increasingly used in advanced thermal management systems for high-density electronics, electric vehicles and data centres. Their chemistry can also be engineered for improved biodegradability and low toxicity compared with conventional mineral-oil-based fluids.



## Broadening the Emfinity® Bio-Based Portfolio

Building on the introduction of Emfinity® CGSA 200B in 2024, we extended our reach in the bio-based personal care sector through the expansion of our Emfinity® portfolio with two new variants: CGSA 50B for haircare and CGSA 600B for cosmetics. The new products debuted at in-cosmetics Asia 2025 and scaled Emfinity® applications across a broader range of personal care formulations. Produced at PETRONAS Research Sdn Bhd’s pilot plant, the new variants are being introduced to selected customers to support early trials and adoption.

### 2025 Performance Metrics



### Our Challenges and Opportunities

#### Market Context

Volatile market conditions, margin pressure and rising demand for differentiated and sustainable solutions highlighted the need to strengthen portfolio quality and innovation-led growth.

#### Strategic Response

- Prioritised higher-value specialty segments and maximised value from established capabilities and expertise through BRB and Perstorp.
- Accelerated product innovation and application development through closer customer collaboration.
- Leveraged strategic partnerships to expand market access and strengthen technical capabilities.

#### Impact

- Improved resilience against market volatility and sustained demand in targeted segments.
- Strengthened competitive positioning through differentiated products.
- Supported more stable earnings and long-term portfolio strength.

### Our Outlook

#### Short-term

We continue to strengthen the portfolio by maximising value from existing capabilities, including through BRB and Perstorp. Our efforts will focus on identifying high-potential growth segments and applications to support more resilient earnings, accelerating product development and innovation to meet evolving customer requirements, and enhancing operational and commercial integration across specialty chemicals operating units to improve execution and time-to-market.

#### Medium- to Long-term

Our focus remains on expanding the specialty chemicals business beyond its current footprint through selective and strategic acquisitions, advancing priority growth projects to scale capabilities and broaden market presence, and implementing targeted market expansion strategies in selected geographies and end sectors. These efforts support the development of a robust pipeline of differentiated specialty products.

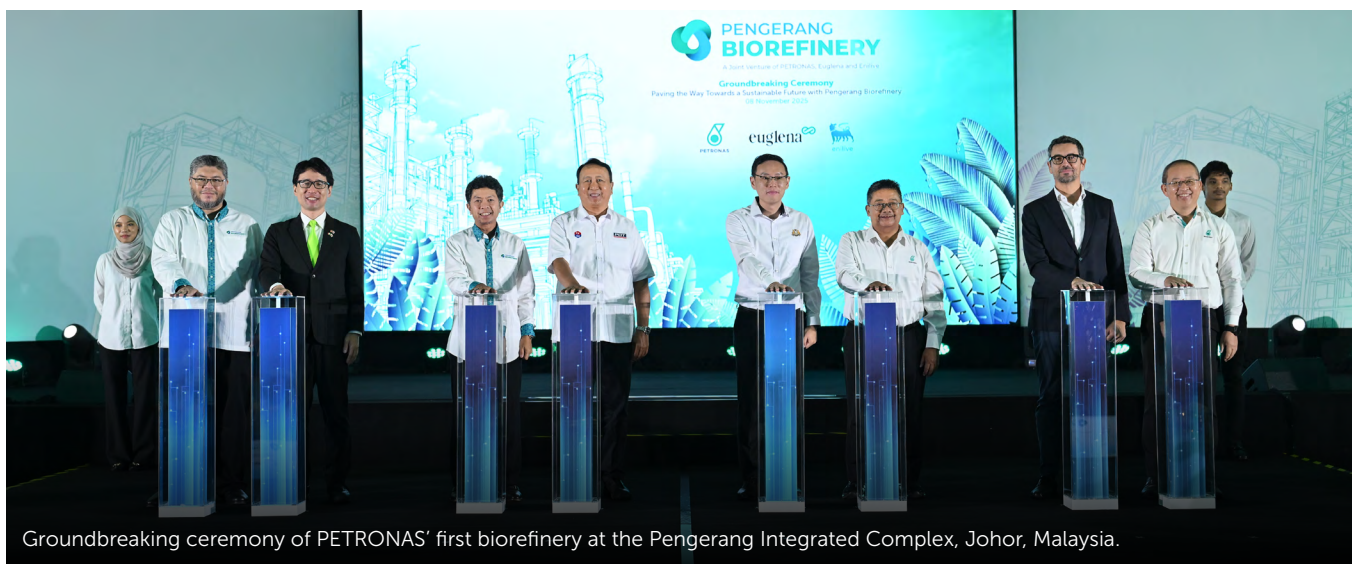
## Bio-Based Value Chain



*The development of our bio-based value chain reinforces PETRONAS' role as an enabler of Malaysia's net zero commitment while supporting the national energy transition through future fuels. The biorefinery provides a strategic platform to scale capabilities, build partnerships and strengthen market readiness. It also positions us to meet the rising demand for lower-carbon fuels with commercially viable solutions, particularly in the aviation and transport sectors facing increasingly stringent emissions requirements."*

**Jazlinawati Osman**

Vice President, Refining, Marketing and Trading



Groundbreaking ceremony of PETRONAS' first biorefinery at the Pengerang Integrated Complex, Johor, Malaysia.

### Breaking Ground on PETRONAS' First Biorefinery in Pengerang

We moved into the execution phase of our renewable fuels strategy with the groundbreaking of our first biorefinery at the Pengerang Integrated Complex (PIC), which is targeted to commence operations by the second half of 2028.

The biorefinery will convert renewable feedstock into Sustainable Aviation Fuel (SAF), renewable diesel (also known as Hydrogenated Vegetable Oil, or HVO) and bio-naphtha, expanding our portfolio into lower-carbon fuels.

Strategic partnerships with Enilive and Euglena strengthen technology readiness and support sustainable feedstock development. Enilive contributes bio-refining technology and operational expertise, while Euglena provides innovative feedstock development capabilities.

#### Point of Interest



With a planned processing capacity of 650,000 tonnes of renewable feedstock annually, the biorefinery is designed to leverage integration within PIC, supporting feedstock flexibility and product optimisation as market demand evolves.



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**Building Commercial Readiness for Sustainable Aviation Fuel**

We advanced commercial readiness for Sustainable Aviation Fuel (SAF) by delivering Malaysia’s first locally blended SAF to Kuala Lumpur International Airport (KLIA) for the Malaysia Aviation Group, enabled through its integrated supply chain. The fuel was blended at PETRONAS facilities and supplied through existing logistics and distribution infrastructure via Malaysian Refining Company’s multi-product pipeline, demonstrating end-to-end capability from blending to delivery. Certified to international sustainability and aviation standards, the delivery of SAF builds confidence in local supply capability. We undertook structured engagement with regional airlines, logistics providers and policymakers to align certification, offtake and deployment requirements, supporting greater SAF adoption across the aviation value chain.



Malaysia Airlines’ aircraft being refuelled with the country’s first locally blended SAF at KLIA.

**Our Challenges and Opportunities**

**Market Context**

Feedstock availability constraints, cost competitiveness of bio-based fuels and uneven market adoption underscored the need to build value-chain readiness ahead of scale-up.

**Strategic Response**

- Strengthened strategic partnerships to secure sustainable feedstock and support long-term sourcing reliability.
- Advanced commercial and operational readiness across supply, logistics and customer engagement.
- Focused market development on aviation and transportation segments with clearer regulatory drivers for lower-carbon fuels.

**Impact**

- Enhanced reliability in feedstock sourcing through strategic supply-chain partnerships and coordination.
- Improved readiness to scale bio-based operations through stronger integrated value chain ecosystem.
- Strengthened early positioning in priority markets and demand security for lower-carbon fuels.

**Our Outlook**

**Short-term**

We are building readiness for scale through strategic partnerships that secure sustainable feedstock and enable early market access. Efforts focus on advancing commercial and operational readiness for PETRONAS’ first biorefinery, strengthening positioning in priority markets with near-term demand for lower-carbon fuels, particularly across aviation, transportation and adjacent sectors, and developing foundational capabilities across supply, logistics and customer interfaces.

**Medium- to Long-term**

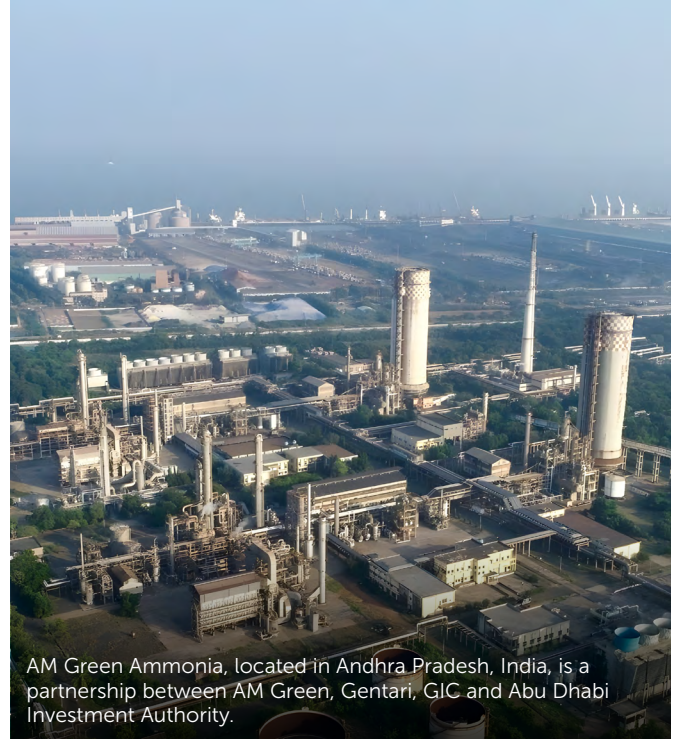
Our focus will remain on scaling the bio-based ecosystem through integrated value chain development. This includes securing long-term access to sustainable feedstock through structured sourcing arrangements and strategic collaborations, expanding market reach across aviation, transportation and adjacent sectors, and integrating bio-based offerings within PETRONAS’ broader downstream portfolio to support sustained growth and long-term value creation.

## Hydrogen

### Building Hydrogen Readiness Across Asia and Europe

In 2025, we advanced hydrogen as a longer-term growth platform, supported by key milestones including the offtake agreement with Uniper SE via our partner AM Green for green ammonia supply, alongside broader project development and collaborations across Asia and Europe. These activities aim to strengthen the technical, commercial and partnership foundations required for hydrogen development. This supports our Energy Transition Strategy and reinforces our long-term decarbonisation objectives.

Hydrogen activities during the year remained primarily at the early development stage across multiple markets. In Malaysia, we collaborated with state and national stakeholders to assess potential pathways for lower-carbon hydrogen production and downstream applications. Across the region, partnerships and project development initiatives strengthened market understanding, ecosystem formation and risk assessment, particularly for applications in industry, power generation and heavy mobility, where direct electrification remains challenging.



AM Green Ammonia, located in Andhra Pradesh, India, is a partnership between AM Green, Gentari, GIC and Abu Dhabi Investment Authority.

### Establishing a National Hydrogen Deployment Platform

We successfully delivered the Mobile Hydrogen Refuelling System (MHRS) project for NanoMalaysia, a business entity under the Ministry of Science, Technology and Innovation.

The project advances Malaysia's Hydrogen Economy and Technology Roadmap (HETR) by operationalising a practical hydrogen refuelling solution and contributing to national energy transition priorities.

Beyond its immediate deployment, the MHRS establishes a foundation for future hydrogen programmes by integrating policy alignment, technical assessment and structured implementation planning. This approach helps strengthen ecosystem readiness, reduce execution risks for future hydrogen projects and support broader investment interest in the hydrogen value chain.

The successful delivery positions PETRONAS to support future hydrogen initiatives, policy implementation and potential commercialisation opportunities as Malaysia's hydrogen ecosystem continues to evolve.

#### Point of Interest



The MHRS project was delivered four months ahead of the contractual schedule, meeting the customer's early launch requirements while maintaining assured delivery quality.



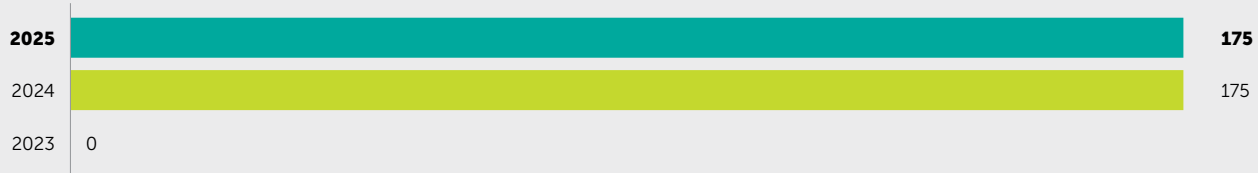
A mobile hydrogen refuelling station, under the MHRS, located at Presint 2, Putrajaya, Malaysia.



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**2025 Performance Metrics**

**Hydrogen - Matured Hydrogen Opportunities Achieved**  
(kilotonnes per annum)



**Our Challenges and Opportunities**

**Market Context**

Early-stage ecosystem development, policy momentum and emerging demand signalled opportunities to shape standards, develop reference projects and position hydrogen for future scale, while regulatory and offtake uncertainty required disciplined progression.

**Strategic Response**

- Delivered the MHRS foundational pilot project to establish technical and operational readiness in collaboration with government agencies and partners.
- Phased and disciplined capital deployment for large-scale hydrogen projects amid regulatory and offtake uncertainty.
- Advanced bilateral engagements and tender-based opportunities to develop offtake pathways in selected markets.
- Strengthened partnerships across the hydrogen value chain and assessed use cases including refinery integration and bunkering applications.
- Maintained a demand-led, commercially grounded approach while engaging stakeholders to support policy alignment across Asia Pacific.

**Impact**

- Reduced delivery risk for future hydrogen projects.
- Improved readiness for commercialisation as demand, infrastructure and policy frameworks mature.
- Reduced exposure to regulatory and offtake risks through phased investment and demand-linked development.
- Strengthened positioning to support the development of a viable regional hydrogen ecosystem, leveraging PETRONAS' gas and carbon capture and storage (CCS) strengths alongside emerging green hydrogen opportunities.

**Our Outlook**

**Short-term**

We remain focused on maturing and securing hydrogen offtake pathways to strengthen project bankability and support progression towards Final Investment Decision. Our near-term efforts will continue to centre on advancing offtake engagements and completing Front End Engineering Design (FEED) studies for green hydrogen and ammonia projects. We will also leverage strategic partnerships and relevant policy mechanisms to support investment de-risking and execution readiness.

**Medium- to Long-term**

As infrastructure and regulatory frameworks continue to evolve, we aim to enable accelerated project execution and support the transition from development to scalable deployment.

## Green Mobility

### Expanding a Regional Electric Vehicle Charging Network

Gentari continued to scale its green mobility platform by expanding its regional electric vehicle (EV) charging network to more than 1,100 charging points across Malaysia, Thailand and India. Deployment focused on selected highways, urban centres and high-utilisation commercial locations, improving charging availability in priority areas and supporting the broader electrification of mobility across markets.

Charging deployment during the year was progressed through partnerships with site owners, fleet operators and mobility stakeholders. These collaborations supported a disciplined approach to network expansion, with emphasis on operational reliability, interoperability and readiness to meet increasing EV demand as adoption evolves.



Gentari EV charging point at PETRONAS Bandar Baru Ayer Hitam, Johor, Malaysia.

### Enabling Cross-Border Electric Vehicle Roaming through Gentari Go™

Seamless cross-border charging access is an important enabler for EV adoption and regional connectivity. Through Gentari Go™, we enabled cross-border EV roaming across Malaysia, Thailand, Singapore and India, providing users with access to approximately 10,000 charging points via roaming partnerships with multiple charge point operators.

By integrating participating charging networks into a single digital interface, Gentari Go™ improves interoperability across operators and markets, and enhances user experience for EV drivers travelling across borders. The platform complements physical charging infrastructure by simplifying access, supporting cleaner mobility adoption and the practical use of EVs across selected regional markets.



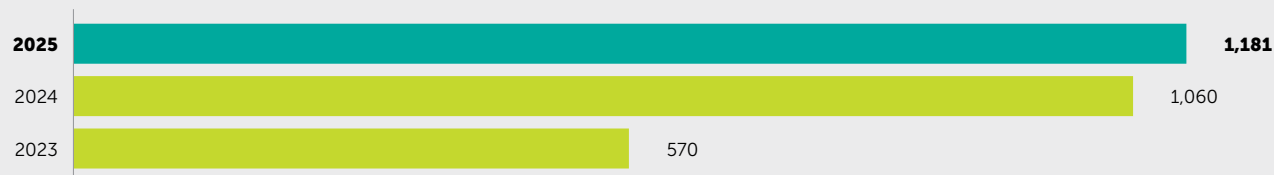


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**2025 Performance Metrics**

**Green Mobility**

(units of charging points globally\*)



**Note:**

\* Gentari's growing global network of charging points is now available in Malaysia, Thailand and India.

**Our Challenges and Opportunities**

**Market Context**

Diverging EV adoption trends, evolving charging technologies and changing customer expectations created opportunities to focus deployment where utilisation, customer experience and interoperability deliver the most value.

**Strategic Response**

- Prioritised Direct Current (DC) fast-charging deployment in selected Southeast Asian markets, particularly Malaysia and Thailand.
- Enhanced regional interoperability and user experience through Gentari Go™.
- Developed value-added digital services to improve utilisation and revenue per charging point.

**Impact**

- Strengthened utilisation rates and improved customer retention.
- Diversified revenue streams across the charging network.
- Positioned Gentari's green mobility portfolio for sustainable growth as EV adoption matures across the region.

**Our Outlook**

**Short-term**

We continue to adopt disciplined deployment strategies and improve utilisation across selected Southeast Asian markets, with emphasis on expanding DC fast-charging infrastructure and strengthening value-added services through Gentari Go™ to improve revenue. Amid uneven EV adoption, pricing pressures and evolving incentive structures, efforts remain centred on strengthening operational efficiency and ensuring charging infrastructure keeps pace with higher-voltage and fast-charging vehicle requirements.

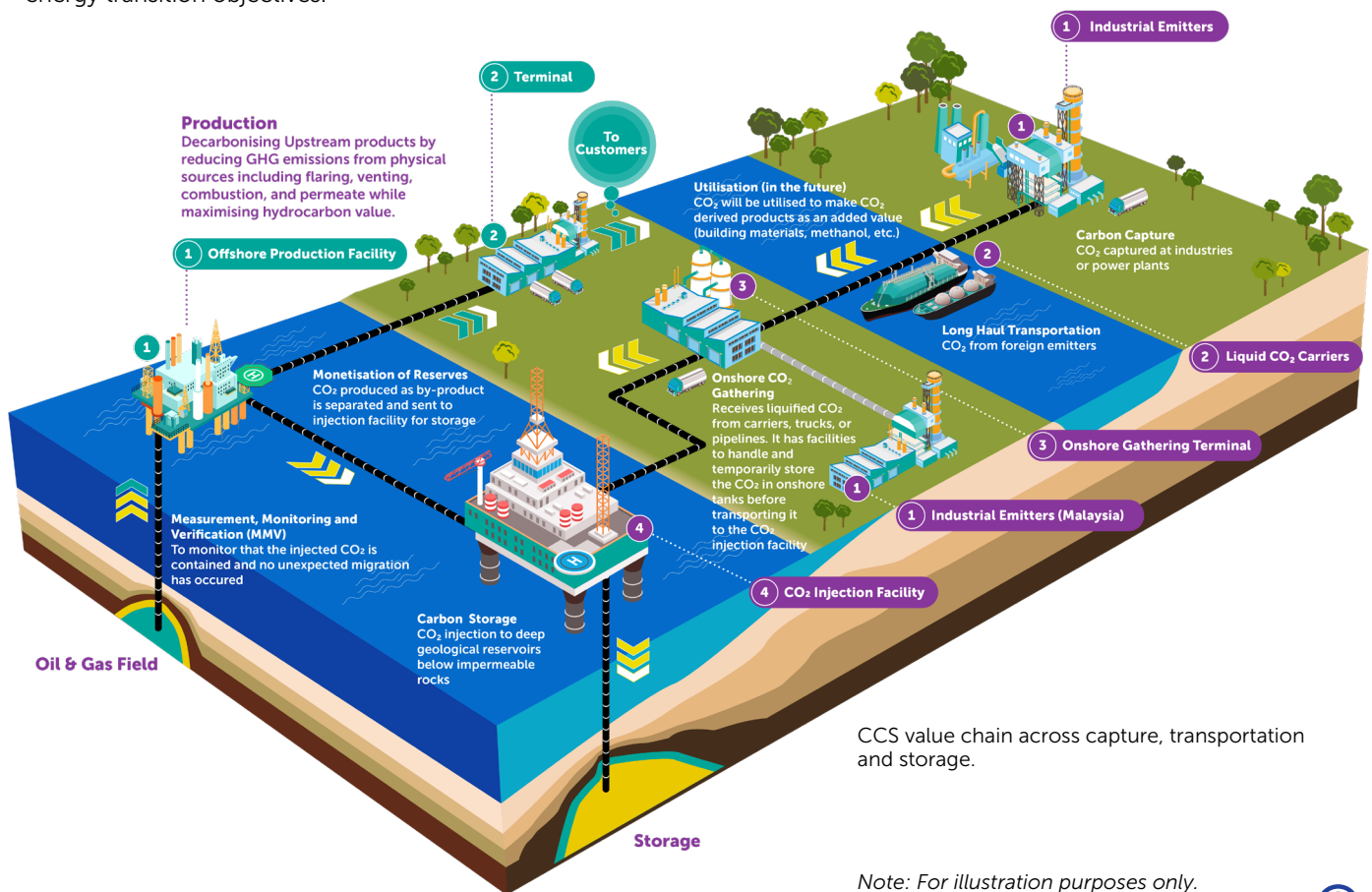
**Medium- to Long-term**

Focus remains on future-proofing the charging business through progressive technology upgrades and enhancements to business models across the EV ecosystem. This includes expanding fast-charging networks in markets with stronger demand, and strengthening digital and value-added service offerings to support customer experience, operational resilience and long-term revenue growth.

## Carbon Capture and Storage

### Malaysia's First Offshore Carbon Capture and Storage Permit Advances Duyong Storage Assessment

PETRONAS CCS Ventures (PCCSV) secured Malaysia's first offshore assessment permit for carbon capture and storage (CCS) under the newly enacted Carbon Capture, Utilisation and Storage (CCUS) Act 2025, granted by the Malaysia Carbon Capture, Utilisation and Storage (MyCCUS) Agency. The permit gives PCCSV exclusive rights to conduct comprehensive offshore geological assessments in the Duyong storage site off Peninsular Malaysia for detailed studies to evaluate the site's potential as a permanent carbon dioxide (CO<sub>2</sub>) storage location as part of the planned Southern CCS Hub. This initiative contributes to Malaysia's carbon management ecosystem and supports PETRONAS' role in enabling national and regional energy transition objectives.



#### Point of Interest

The first Offshore Assessment Permit issued under the Carbon Capture, Utilisation and Storage (CCUS) Act 2025 enables PETRONAS and our partners to systematically assess offshore geologic storage options, enhancing capabilities for long-term CO<sub>2</sub> storage in Asia Pacific while deepening understanding of CCS value chain coordination and commercial viability.

### Key Milestones in Driving Southern CCS Hub Readiness for Regional Decarbonisation

PCCSV entered into a Key Principles Agreement (KPA) with TotalEnergies and Mitsui & Co. to enable coordinated technical studies and Front-End Engineering Design (FEED) for the Duyong offshore carbon storage site. The agreement brings together complementary technical, project development and carbon management expertise to firm up detailed evaluation of Duyong's suitability as a permanent carbon dioxide storage location. It supports progression to the next development phase for the Southern CCS Hub, strengthening its readiness to deliver integrated carbon storage solutions for regional industries.



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## Scaling Carbon Capture and Storage from Proof to Commercial Deployment

Our CCS initiatives progressed from capture technology readiness toward integrated, deployable and commercially relevant solutions. Collectively, these developments advance CCS from assessment and technical readiness toward structured development, positioning it as a future scalable infrastructure platform capable of supporting industrial decarbonisation while creating monetisation pathways aligned with regional carbon management demand.

### Leading Malaysia’s National Carbon Capture (NCC) Project

- Collaborated with key industry and technical partners to conduct a feasibility study.
- The National Carbon Capture (NCC) Project serves as a testbed to evaluate the technical feasibility and economic viability of carbon capture in the steel sector, supporting Malaysia’s decarbonisation pathways under the New Industrial Master Plan 2030 (NIMP 2030).
- The project aims to establish an industrial reference case targeting approximately 200 tonnes of carbon dioxide capture per day from steelmaking operations. It establishes reference deployments for Membrane Box Contactor in Malaysia, building confidence for customers, partners, and future investments globally.
- The project contributes to advancing carbon capture, utilisation and storage (CCUS) solutions for hard-to-abate industries in Malaysia.

### Advancing Integrated Carbon Capture Solutions with Gas Turbine Original Equipment Manufacturer (OEM)

- Technical discussions are ongoing with gas turbine OEMs to explore integrated concept designs combining carbon capture with power generation systems for offshore and onshore applications, including Floating Production, Storage and Offloading (FPSO) facilities, cogeneration, and retrofit configurations.
- The collaboration focuses on assessing how modular carbon capture solutions can be integrated into power generation systems to enable emissions reduction across hard-to-abate sectors, including broader industrial power applications.

### Strengthened an Integrated CCUS Value Chain Article

- Linked CCUS capabilities across internal divisions and external partners to deliver end-to-end CCUS solutions for industrial customers.
- This integrated approach enhances monetisation potential, reduces execution complexity and differentiates PETRONAS as a single-solution provider for decarbonisation needs.

### Secured First Revenue-Generating CCS Engagement in North America

- Completed a paid engineering study for Tourmaline Oil together with PETRONAS Energy Canada covering a capture capacity of approximately 160 tonnes of carbon dioxide per day.
- This engagement validates technology applicability in an international operating environment and provides a platform for further commercial expansion.

## Our Challenges and Opportunities

### Market Context

Malaysia's ambition to become a regional CCS hub, backed by the Carbon Capture, Utilization and Storage (CCUS) Act 2025 and progress in Liquefied Carbon Dioxide (LCO<sub>2</sub>) shipping, presents a clear opportunity for PETRONAS to develop an integrated CCS value chain and grow its participation in emerging international carbon management markets, including Canada.

### Strategic Response

- Conducted independent technical validation through Energex and established structured project governance.
- Maintained active engagement with relevant regulators and industry stakeholders to support regulatory approvals and funding pathways.
- Advanced CCS activities to align with emerging regulatory frameworks in Peninsular Malaysia while maintaining progress on national initiatives.
- Leveraged PETRONAS' convening role to build strategic collaborations and advance cross-border CCS value chains.

### Impact

- Validated CCS technology readiness for pilot deployment.
- Strengthened regulatory readiness and project development pathways through sustained stakeholder engagement.
- Secured Malaysia's first CCUS Offshore Assessment Permit for the Duyong storage site, supporting future CCS projects and LCO<sub>2</sub> shipping opportunities.
- Advanced early international positioning through the Canadian engineering study.

## Our Outlook

### Short-term

Our focus remains on advancing CCS solutions towards Final Investment Decision readiness for the region's first-of-its-kind CCS project. These efforts support Malaysia's ambition to become a regional CCS hub while strengthening the foundations for a global CCS business portfolio.

### Medium- to Long-term

We aim to strengthen PETRONAS' position as a leading CCS hub for Malaysia and the region while expanding a global CCS business portfolio through cross-border projects, strategic partnerships and integrated decarbonisation solutions.



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*At PETRONAS, advancing a lower-carbon future is integral to how we operate. Driven by our strong commitment in expanding innovation ecosystem, technology remains the primary catalyst in our journey to Net Zero Carbon Emissions by 2050.”*

**Ir. Ts. Mohd Yusri Mohamed Yusof**

Senior Vice President, Projects, Engineering and Technology

### Research and Development Investment

Research and development (R&D) enables PETRONAS to address operational challenges, improve performance and prepare technologies for future deployment. R&D investments are allocated across Technology Readiness Levels to advance ideas from early research to commercial deployment across key technology clusters.

In 2025, the Group's R&D portfolio reflected a focused and strategic commitment to innovation that supports decarbonisation, unlocks climate-related opportunities, drives business growth and strengthens long-term competitiveness.

The largest allocation was to CCUS, highlighting its role as a key innovation pillar for emissions reduction, regulatory readiness and the development of new lower-carbon value streams.

Continued investment in Advanced Materials & Subsea Technology and Specialty Chemicals Technology further advance technology-driven innovation, enhancing asset performance, improving operational efficiency and creating value across the energy value chain.

Overall, lower-carbon technologies account for around 60 per cent of the Group's total R&D portfolio, which includes CCUS, Fluid Technology Solutions, Hydrogen, Renewable Energy and Renewable Oil. This portfolio positions PETRONAS to capture emerging climate-related opportunities while supporting a resilient and sustainable energy future.