



Thriving with Nature

Supporting Nature-based Solutions through community stewardship to restore ecosystems.



Our Material Topics

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| Nature and Biodiversity | 115 |
| Circular Economy and Resource Use | 121 |
| Environmental Management | 125 |

Nature and biodiversity are fundamental to sustaining life and ensuring the resilience of ecosystems that support communities, economies and industries, including the energy sector. As a responsible energy company, PETRONAS recognises that our operations depend and have an impact on natural ecosystems, and we are committed to addressing our environmental footprint.

NB Nature and Biodiversity

Why This Matters

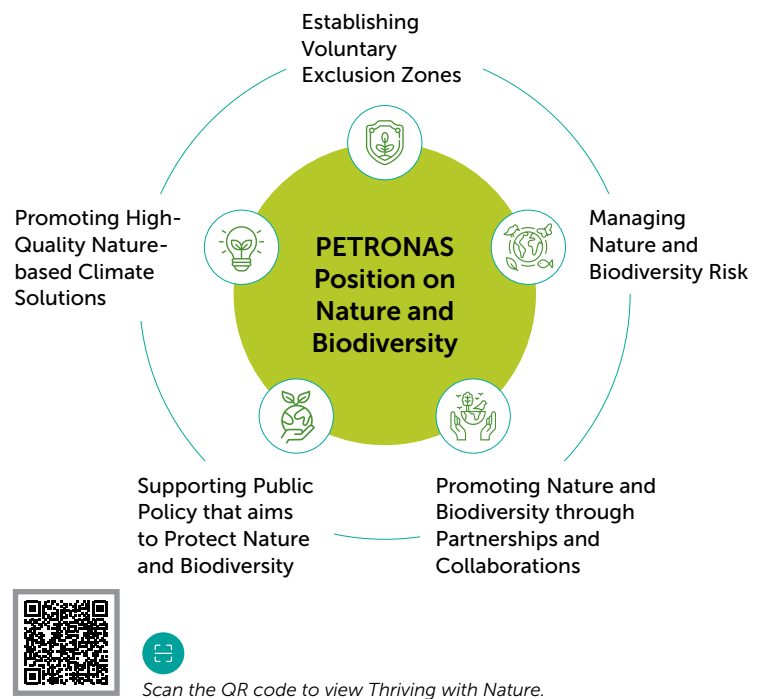
Healthy ecosystems provide essential services from healthy soils to clean water and a stable climate that sustain human well-being, livelihoods and economic activities. Disruption of any of these services, caused by biodiversity loss, could negatively impact many businesses, putting operations, supply chains and communities at risk. There is now a heightened stakeholder expectation for businesses to manage nature and biodiversity impacts.

We recognise that responsibly managing the impact of our operations on the environment is vital to maintaining long-term business continuity, strengthening resilience and creating enduring value.

Our Focus

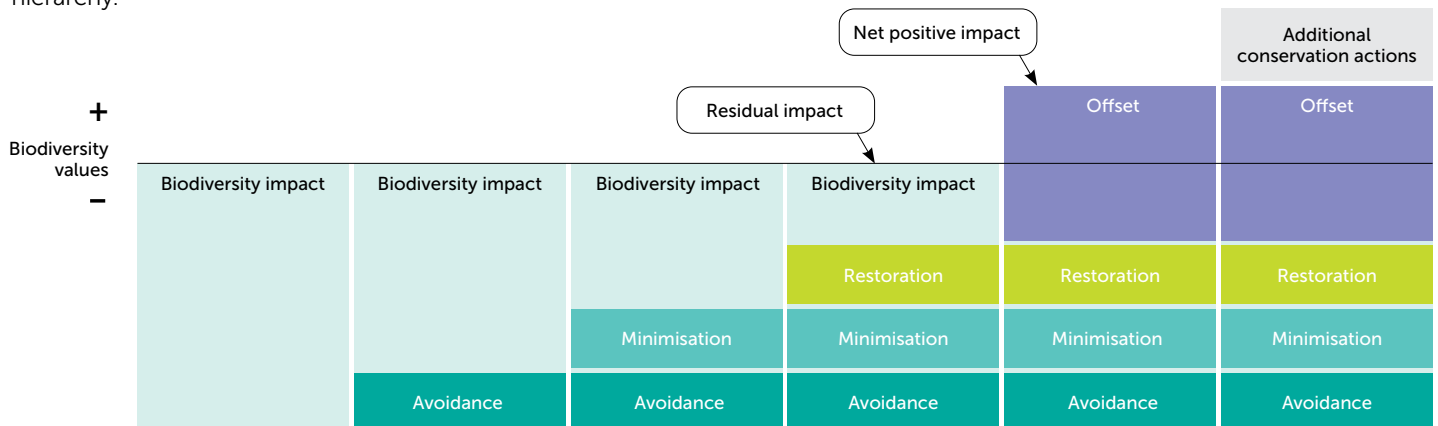
We aim to contribute to a future in which nature is protected and restored by minimising our negative impacts on the environment and, where feasible, supporting the rehabilitation of ecosystems in areas within our operational control. In support of this, we incorporate biodiversity concerns into our project planning and asset management. This also strengthens our ability to protect infrastructure and mitigate climate-related physical and transitional risks. Our efforts are guided by the Kunming-Montreal Global Biodiversity Framework and are informed by international and national developments.

The PETRONAS Position on Nature and Biodiversity sets out our commitments and approach to nature-related impacts associated with our activities and supports the delivery of our Net Zero Carbon Emissions (NZCE) by 2050 Pathway. It establishes a clear framework for us to integrate biodiversity considerations into our strategy, governance, and daily business practices.



Our Approach

In line with international best practices, our approach to managing nature and biodiversity impacts is guided by the mitigation hierarchy.



Note: Image adapted from the UN Global Compact and IUCN 2012 Publication: A Framework for Corporate Action on Biodiversity and Ecosystem Services.

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The PETRONAS Board exercises oversight of nature-related matters through their integration into the Board’s strategic deliberations and decision-making processes. In 2025, the Board was informed of the PETRONAS Nature Positive targets, by formalising medium- and long-term targets to support accountability and track progress. These targets provide clearer direction for embedding nature and biodiversity considerations into decision-making, project delivery and long-term transition planning across the Group.

PETRONAS Nature Positive Targets

- **No net loss of biodiversity for existing operations**
 - By 2030, we aim to have Biodiversity Action Plans for all existing sites within our operational control rated ‘Very High’ or ‘High’ risk, which include measures for ecosystem rehabilitation.
 - From 2030, we aim to maintain the habitat size for all sites within our operational control located in protected areas and/or key biodiversity areas. Where not feasible, we establish comparable areas to substitute the loss.
 - From 2030, our decommissioning plans or equivalent documents, will include ecosystem rehabilitation measures for operations/projects in protected areas and/or key biodiversity areas.
- **Net positive impact on biodiversity for new projects**
 - From 2024 onwards, we aim to demonstrate Net Positive Impact for all new projects in protected areas and/or key biodiversity areas.
 - For these projects, we pledge to demonstrate at least 30 per cent rehabilitation of natural habitat by 2050.

Our Progress

We strengthened our approach to nature and biodiversity by operationalising the PETRONAS Position on Nature and Biodiversity through the introduction of Nature Positive targets, supported by practical initiatives and enhanced internal awareness. These targets clarify how we contribute to protecting and restoring nature, including ambitions such as No Net Loss and, where appropriate, Net Positive Impact.

We prioritised initiatives that centre on managing biodiversity-related risks, supporting ecosystem rehabilitation and restoration, strengthening the evidence base for Nature-based Solutions (NbS) and embedding nature considerations into the energy transition.

A Taskforce on Nature-related Financial Disclosure (TNFD) gap assessment was undertaken in 2025 to evaluate our alignment with the TNFD’s recommendations. Moving forward, as we mature our approaches, we will focus on strengthening identified priorities and take actions on how TNFD could support the attainment of our objectives.

Collectively, these initiatives demonstrate how we translate strategic commitments into tangible, on-the-ground action that delivers value and enhances resilience.

Establishing Voluntary Exclusion Zones and Managing Nature and Biodiversity Risks



From January 2024 onwards, PETRONAS has committed not to undertake new operations within UNESCO World Heritage Sites. To ensure this, we use the Integrated Biodiversity Assessment Tool (IBAT) and the UNESCO World Heritage Online Map Platform during early-stage assessments. We also prioritise proximity screening to Protected Areas and Key Biodiversity Areas, which hold internationally recognised biodiversity value.

Over the past year, we have strengthened our management of nature and biodiversity through early reviews and risk-based assessments for both new projects and existing operations. These measures help us identify potential biodiversity considerations at the outset and determine where additional management actions may be required.

For existing operations, we assess biodiversity and ecosystem services risks and dependencies through a structured risk assessment process, namely the Biodiversity and Ecosystem Services Risk Assessment (BESRA). This begins with risk profiling based on desktop assessment on location and operational activities, followed by risk validation to evaluate existing mitigation measures, which may include on-site validation. Biodiversity Action Plans (BAPs) are developed for sites classified as ‘High’ or ‘Very High’ risk.

For new projects identified through proximity screening as being located within Protected Areas and Key Biodiversity Areas, Biodiversity Action Plans will be developed with the aim to achieve Net Positive Impact.

2025 Progress

Screened

200

proposed project sites against UNESCO World Heritage Sites, confirming no overlap with protected heritage areas.

Identified

1

project progressing to the development stage that may require a Biodiversity Action Plan to achieve Net Positive Impact, from 200 potential new project locations screened against Protected Areas and Key Biodiversity Areas.

In 2024-2025, we conducted risk-profiling for

105

existing international operational assets. Two sites were classified as 'High' or 'Very High' risk and are undergoing risk validation. Where risks remain elevated, Biodiversity Action Plans will be developed.

We initiated a periodic review of biodiversity risk assessments across our Malaysia operations, which is scheduled to conclude in 2026.

PETRONAS Existing International Operations¹ Within and Near Protected Areas and Key Biodiversity Areas

For operations located within Protected Areas and Key Biodiversity Areas, we plan to establish baseline assessments of habitat size before 2030 and embed ecosystem rehabilitation measures into decommissioning environmental plans.

| Type of Area Important for Biodiversity ^{2, 5} | Within the Boundary | Near (within 10km) ⁶ |
|---|---------------------|---------------------------------|
| Protected Areas ³ | 2 | 20 |
| Key Biodiversity Area ⁴ | 3 | 13 |

Notes:

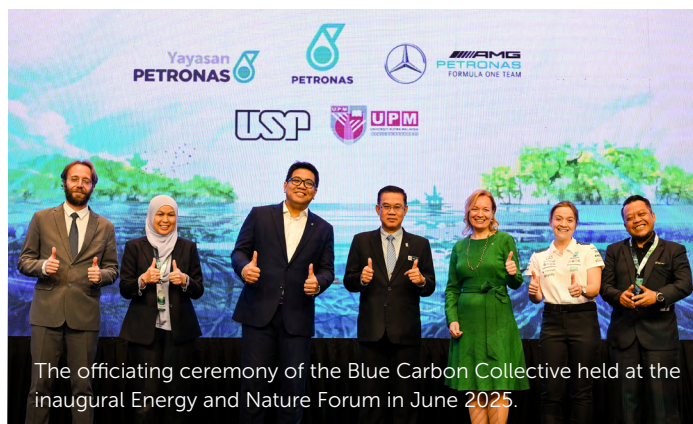
1. PETRONAS operations refer to operating sites with operational control.
2. Operating sites may be located within and/or near more than one type of area that is important for biodiversity. Where multiple types of biodiversity important areas occur within and/or near an operating site, the site is counted once under each relevant area type.
3. A Protected Area is a clearly defined geographical space that is recognised, dedicated and managed to achieve long-term conservation outcomes (Convention on Biological Diversity).
4. A Key Biodiversity Area is a site that contributes significantly to the global persistence of biodiversity (IUCN).
5. The assessment is conducted using the Integrated Biodiversity Assessment Tool (IBAT), developed by the IBAT Alliance (BirdLife International, Conservation International, UNEP-WCMC and IUCN).
6. For assessment purposes, PETRONAS defines 'near' as within 10 km of a designated Protected Area or Key Biodiversity Area.

Promoting Nature and Biodiversity through Partnerships, Collaborations and Public Policy Support



In 2025, PETRONAS, Yayasan PETRONAS and the Mercedes-AMG PETRONAS Formula One Team launched the Blue Carbon Collective, a five-year, multi-party initiative.

To strengthen research into mangroves, PETRONAS established a formal collaboration between Universiti Putra Malaysia and University of São Paulo, uniting tropical expertise from Malaysia and Brazil, two biodiversity rich nations. This South-South partnership aims to deepen scientific understanding, accelerate innovation and elevate the critical role of mangroves in climate resilience and Nature-based Solutions. The research will examine the impacts of land-use change, quantify carbon stocks and stabilisation mechanisms, assess soil quality indices and plant physiology, as well as monitor biodiversity dynamics within mangrove ecosystems.



The officiating ceremony of the Blue Carbon Collective held at the inaugural Energy and Nature Forum in June 2025.

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Advancing Research and Development

The Blue Carbon Collective aims to advance scientific understanding of carbon dynamics and ecosystem health in mangrove ecosystems, improve biodiversity outcomes and support science-backed restoration and conservation.

2025 Progress

- Universiti Putra Malaysia and University of São Paulo concluded a memorandum of understanding to cement research collaboration.
- Signed a research collaboration agreement with Mercedes-Benz Grand Prix and Universiti Putra Malaysia.

Building a Resilient Community

Restoration projects under the Blue Carbon Collective are designed to be locally led, with training and resources provided to surrounding communities. The association is largely made up of members from low-income communities, who may benefit directly from additional income streams generated through these planting initiatives. This initiative is expected to generate employment, enhance the capacity of community nurseries and support community members to establish, operate and manage nurseries to help foster long-term stewardship of natural resources.

Strengthening Restoration and Conservation

The Blue Carbon Collective supports Yayasan PETRONAS' One Million Trees Programme, an ecosystem restoration and community development initiative that will see 100,000 mangrove saplings planted at Sungai Santi Forest Reserve in Johor, Malaysia.

2025 Progress

- Around 40,000 mangrove saplings planted.
- High survival rate of around 86 per cent.
- Established new community nurseries to cultivate seedlings for the project and beyond.



Advancing mangrove restoration through community-led planting to strengthen coastal resilience and biodiversity.



Scan the QR code to find out more in the Information Booklet

Energy and Nature Forum 2025

Integrating nature considerations into strategies, decision-making and infrastructure design supports the development of energy systems that are mindful of both people and ecosystems, contributing to broader efforts in reducing biodiversity loss across the energy value chain.

PETRONAS convened partners and stakeholders at the Energy and Nature Forum 2025, a first-of-its-kind three-day event focusing on leadership to integrate nature considerations into the energy transition. The Forum convened over 300 leaders and practitioners from over 20 countries from the energy sector, government, civil society and academia. The engagement explored the links between energy systems and natural ecosystems, and how nature-related considerations can influence business models, innovation and investment decisions. The Forum encouraged cross-sector collaboration and the participation of Indigenous Peoples' representatives.

The Forum concluded in a high-level communiqué that highlighted the need for clear nature-related targets and the use of digital technologies and artificial intelligence (AI) in tracking and delivering measurable outcomes, informed by the Kunming-Montreal Global Biodiversity Framework. To build on the momentum, the Energy and Nature Forum communiqué was further deliberated at a side-event of the International Union for Conservation of Nature (IUCN) World Conservation Congress 2025, in Abu Dhabi, United Arab Emirates.

The Energy and Nature Forum 2025 helped drive alignment and action through:

- Strengthening shared understanding of the interconnections between energy systems and nature, and their implications across the energy value chain.
- Advancing shared ambition to integrate biodiversity and ecosystem considerations into business, innovation and investment decisions throughout project life cycles.
- Encouraging more coordinated, whole-of-society collaboration, including partnerships with Indigenous Peoples and local communities, aligned with the Kunming-Montreal Global Biodiversity Framework.
- Extending the energy and nature dialogue into global policy platforms through continued engagement at the IUCN World Conservation Congress 2025.



Scan the QR code to visit our official website.



Scan the QR code to view the post-event video.

Promoting High-Quality Nature-based Climate Solutions



Natural ecosystems play a critical role in supporting global net zero carbon emission ambitions. Protecting and restoring forests, mangroves and other carbon-rich landscapes can complement emissions reduction efforts, while contributing to biodiversity conservation and community well-being.

As part of PETRONAS' commitment to achieve NZCE by 2050, we recognise the interlinkages between natural ecosystems, operational resilience and long-term sustainability. NbS form part of our NZCE by 2050 Pathway. We intend to commence voluntary setting of residual Scope 1 and Scope 2 emissions through the procurement of, investment in and origination of high-integrity carbon credits. Our strategy is to build a diversified portfolio anchored in forest and mangrove conservation and restoration, as well as regenerative agriculture, complemented by other credible solutions that deliver measurable and durable climate outcomes. We prioritise environmental integrity, permanence and alignment with recognised certification standards. We also seek to ensure that carbon benefits are accompanied by biodiversity protection, equitable benefit sharing and meaningful engagement with Indigenous Peoples and local communities.

We focus on strengthening the domestic NbS ecosystem, complemented by selective participation in high-quality international opportunities. In 2025 and leading into 2026, progress was demonstrated in Malaysia and internationally through the Kuamut Rainforest Conservation Project offtake agreement and Brazil Innovation Challenge on Nature-based Solutions.

Kuamut Rainforest Conservation Project

We have made a strategic commitment to the Kuamut Rainforest Conservation Project, a NbS carbon project in Malaysia that is registered and issuing carbon credits. Located in Sabah, Malaysia, the project focuses on protecting and restoring degraded tropical rainforests, delivering climate-mitigation outcomes while conserving biodiversity and strengthening ecosystem resilience. The project is implemented through a long-term forest concession collaboration with Yayasan Sabah, a state-owned foundation with a mandate to support community well-being, alongside other local implementation and community partners, and includes sustainable livelihood programmes and inclusive engagement with local communities.

This engagement supports PETRONAS' approach to sourcing high-integrity carbon credits and contributes to the further development of the NbS ecosystem in Malaysia.

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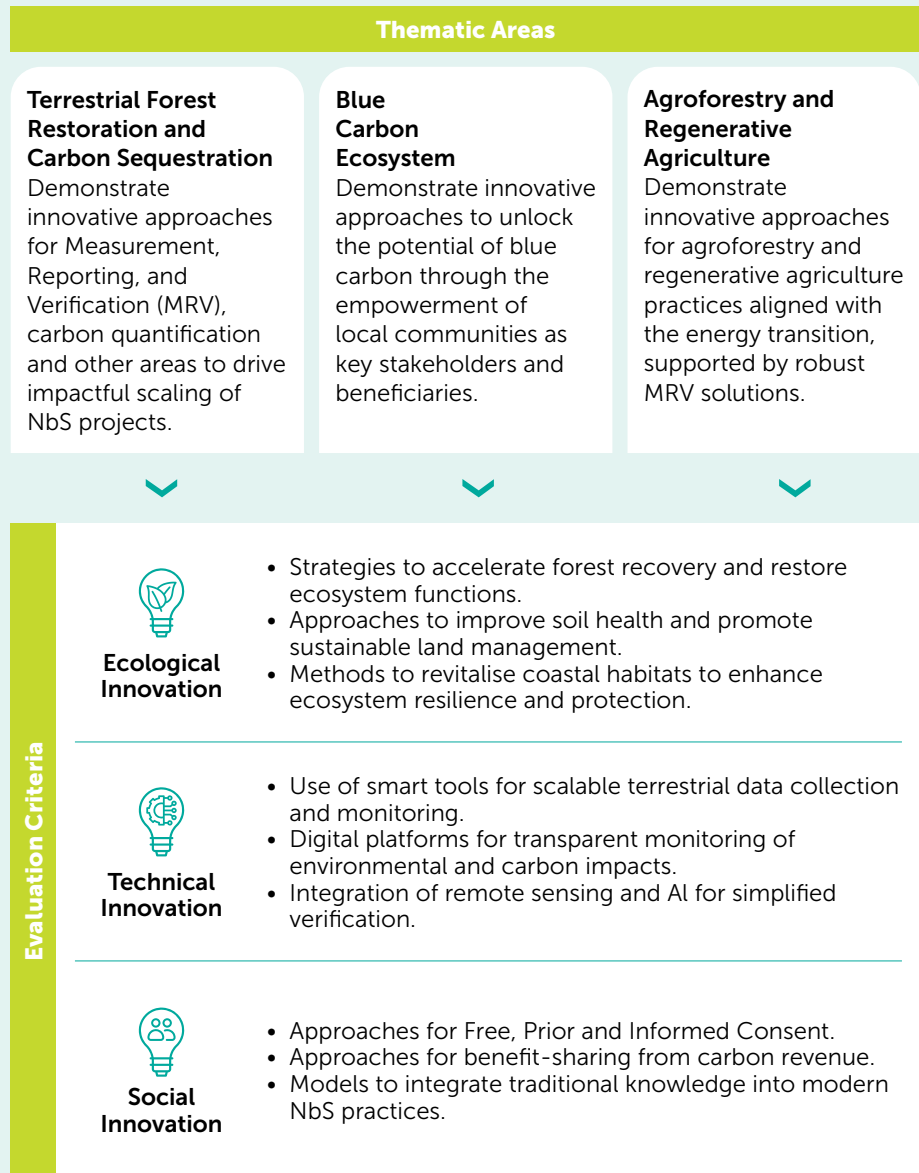
Brazil Innovation Challenge: Turning Nature into Climate Solutions

In November 2025, PETRONAS launched the Brazil Innovation Challenge, an initiative to invest in innovative NbS across forests, blue carbon and regenerative agriculture in Brazil.

The Challenge builds on PETRONAS Brazil’s research, development and innovation investments in NbS since 2023. Enabled by Brazil’s National Agency for Petroleum, Natural Gas and Biofuels within the ambit of energy transition, the Challenge invites universities, startups and developers to submit project studies with tangible environmental and social benefits, including greenhouse gas emissions reductions and removals through the conservation, protection, restoration and sustainable management of natural ecosystems.

From 2026 to 2029, selected studies are expected to develop scalable approaches supported by robust monitoring and inclusive community engagement, and to demonstrate potential pathways to high-integrity carbon credits.

As of early 2026, the Challenge received a total of 101 proposals across three thematic areas, reflecting strong participation from the Brazilian ecosystem, including universities, companies and public-private institutions. Shortlisting and award decisions are expected to be completed in 2026.



Sustainability Impact

Nature and biodiversity are critical to PETRONAS’ long-term resilience and value creation. In 2025, we strengthened our approach through medium- and long-term target setting, biodiversity screening and assessments, internal capability building and strategic collaboration. We also advanced NbS as part of our NZCE by 2050 Pathway, supporting measurable climate outcomes while contributing to nature and communities.

CER Circular Economy and Resource Use

Why This Matters

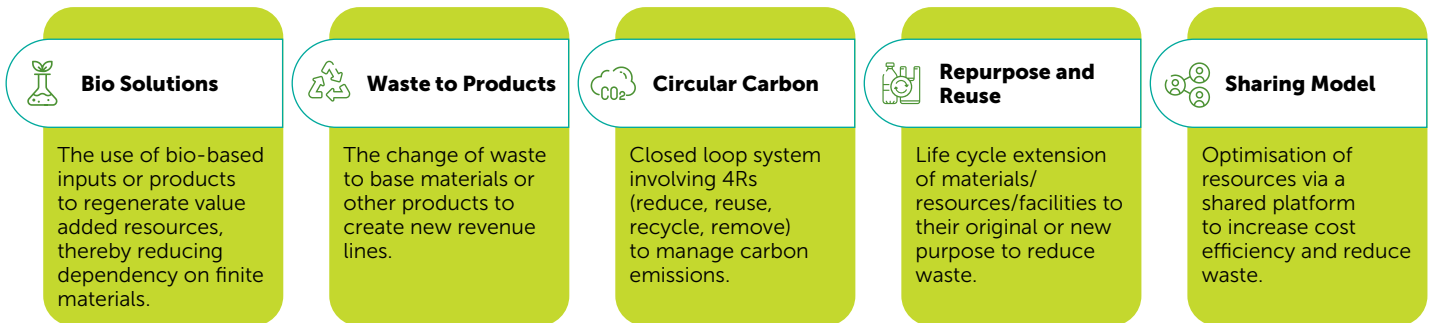
Circular economy and resource use focus on keeping materials, water and other inputs in use for as long as possible through better efficiency, reuse and recovery, rather than the traditional 'take-make-dispose' approach. This helps reduce the consumption of natural resources and lowers the amount of waste and by-products generated from operations. Around the world, circular economy practices are becoming an increasingly important expectation within sustainability standards and regulatory frameworks, as economies transition toward more responsible and resource-efficient models.

For PETRONAS, this is relevant because our operations use substantial amounts of resources, chemicals and specialised materials while also generating waste streams and by-products. By enhancing how we use, recover and reuse resources, we can reduce waste, make better use of materials, lower our dependence on freshwater in water-stressed areas and strengthen the reliability of our operations and supply chains.

Our Focus

We apply the PETRONAS Five Approaches to Circular Economy to operationalise our circular economy and resource use targets. These approaches establish a structured framework for the management, recovery and the repurposing of materials, natural resources, carbon and by-products.

PETRONAS Five Approaches to Circular Economy



Scan the QR code to view *Thriving with Nature*

Our Approach

We focus on strengthening circularity across our operations and value chain by improving how water, materials and waste streams are managed. This means reducing reliance on freshwater and virgin inputs, recovering useful value from by-products and waste, and keeping resources already within our system in productive use for longer. Through reuse, recovery, recycling and process optimisation, we aim to close resource loops and reduce losses at every stage of our activities.

To reinforce this circular approach, PETRONAS established resource efficiency targets for Malaysia operations in 2025. These targets define performance expectations toward 2030 and strengthen our accountability for water stewardship, material efficiency and waste circularity across our operations.

PETRONAS Resource Efficiency Targets

Waste

82% circularity rate for hazardous waste by 2030.

Water

14% reduction in freshwater withdrawals by 2030 for domestic operations in water stressed areas.

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Our Progress

As part of ongoing resource efficiency efforts, circular practices have been integrated into operations by improving how materials and water are sourced, used and managed throughout their life cycle. By streamlining processes and removing unnecessary inputs early on, we continue to support steady improvements in waste reduction and water management.

Turning Used Cooking Oil into Future Fuel



We are developing sustainable feedstock sources to support lower-carbon fuels and Sustainable Aviation Fuel (SAF) production, including preparation for the biorefinery in Pengerang Integrated Complex, Johor, Malaysia, which is targeted to begin operations in 2028.

Within this broader agenda, the Used Cooking Oil (UCO) Collection Initiative contributes to this effort by recovering waste cooking oil as a valuable, locally-sourced circular feedstock. Instead of being discarded into drains, landfills or waterways, used cooking oil is collected and prepared for processing into bio-based fuels. This initiative strengthens responsible waste management practices across Malaysian communities.

PETRONAS' retail stations serve as collection points nationwide, supported by community outreach and institutional participation. The programme connects households and businesses to a circular value chain and establishes a dependable local used cooking oil feedstock stream.

2025 Progress

749 tonnes

of used cooking oil collected nationwide.

100

PETRONAS' retail stations operated as collection points.

More than

332,000

individuals reached through participation and community outreach.

RM2.2 million

cashback returned to households, institutions and participating organisations.

Since its start in 2023, the initiative has demonstrated strong year-on-year growth. The used cooking oil collection volumes increased from approximately 132 tonnes in 2023 to 749 tonnes in 2025, representing a nearly six-fold increase. The number of our retail stations participating in the programme expanded from three stations in 2023 to 100 stations in 2025, while community participation grew from approximately 30,000 individuals in 2023 to over 332,000 individuals in 2025, representing an almost tenfold increase.

Advancing Circular Operations through Innovative Recovery Solutions



Subsea pipelines rely on monoethylene glycol (MEG) to prevent hydrate formation and ensure safe hydrocarbon flow. This requires a continuous supply of lean MEG (regenerated MEG suitable for use), leading to increased consumption over time.

To reduce reliance on fresh MEG, we adopted a repurpose and reuse approach by recovering and regenerating additional rich MEG (used MEG containing water and impurities) for continued use in the system. Excess rich MEG was collected, concentrated in an evaporation pond, filtered and routed back to the MEG Regeneration Unit using existing infrastructure. This process restored the rich MEG to lean MEG for continued operational use.

Through this approach, 3,399 cubic metres of rich MEG were processed, resulting in the recovery of around 1,580 cubic metres of fresh MEG equivalent and avoiding nearly USD2.0 million in procurement costs. Extending the usable life of this critical input reduced overall chemical demand while maintaining safe and reliable pipeline operations. The regeneration loop effectively transformed rich MEG from a consumable input into a managed, circulating resource within the facility.



Rich and lean MEG storage tanks supporting MEG regeneration, storage and reinjection to maintain effective hydrate control in the pipeline system.

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Advancing Circularity through Waste Recovery

Across our domestic operations, we prioritised reducing hazardous waste upstream through process optimisation and improved material efficiency, reducing reliance on downstream treatment and disposal while improving material productivity across our assets.

Reuse, recycling and recovery initiatives expanded, increasing the proportion of hazardous waste diverted from disposal and keeping waste streams in productive use as a recoverable resource.

Circularity efforts also extended across the value chain. Collaboration with suppliers focused on more sustainable packaging, improved material recovery and closed-loop practices. These initiatives reduced waste generation beyond our direct footprint and enhanced material flow efficiency across the broader ecosystem.

Based on a five-year running average, performance improved by 4 per cent, reflecting steady progress towards the Group's 2030 target and reinforcing our commitment to responsible waste management and sustainable resource stewardship.

[Refer to Environmental Management for more details on waste management on pages 125 to 131.](#)

Improving Resource Use through Water Efficiency

During the year, conservation initiatives implemented across selected assets included process optimisation and alternative sourcing solutions, promoting water circularity, particularly in water-stressed areas. The freshwater utilised in our operations is sourced from rivers, where 76 per cent is withdrawn from non-water stressed regions.

Supported by water stress mapping and global risk assessment tools, conservation efforts were prioritised to maximise environmental and operational impact to support the Group's target of a 14 per cent reduction in domestic water-stressed freshwater withdrawal by 2030.

[Refer to Environmental Management for more details on water management on pages 125 to 131.](#)

Strengthening Organisational Readiness

Beyond measurable outcomes, multi-stakeholder engagements strengthened organisational readiness for circular economy implementation. Through targeted workshops and forums, including the PETRONAS Hazardous Waste Circularity Workshop and Circular Economy Forum, internal teams and external partners aligned on high-impact opportunities and translated them into actionable plans supporting the 2030 targets.

More than 110 participants from Group functions, business divisions, operating units and external stakeholders took part in these sessions, creating a prioritised pipeline for future circularity and resource efficiency actions. We also continued assessing our international assets to identify where similar practices could be applied in different operating contexts.

Following the introduction of the Global Circularity Protocol (GCP) by the World Business Council for Sustainable Development during COP30 in Brazil, in November 2025, we continue to review our circularity approach and initiatives to align with the evolving international framework, guidance and industry best practices to create sustainable impact.

Sustainability Impact

Circular practices are progressively embedded into day-to-day operations and core business decisions, creating value that goes beyond operational efficiency. Recovery, reuse and alternative sourcing are increasingly managed as planned operational activities, lowering dependence on disposal capacity and replacement inputs.

Materials and water streams are increasingly managed as circulating resources within operations. This improves planning certainty, supports steadier execution across sites and reduces exposure to supply disruption, disposal constraints and water availability risks. The same practices also establish dependable recovery and feedstock pathways that support future lower-carbon fuel development.

EM Environmental Management

Why This Matters

Environmental management supports the reliable and compliant operation of our assets by ensuring emissions, effluent, waste and spill risks are consistently controlled across diverse sites. Clear standards, monitoring systems and accountability enable us to apply environmental controls effectively in different operating conditions and various regulatory environments.

This discipline helps sustain operational continuity, manage compliance obligations and protect the communities surrounding our assets. As regulatory expectations increase and operations span varied environments, consistent oversight and monitoring remain essential to maintaining stakeholder confidence and stable performance.

Our Focus

We focus on managing environmental and product-related impacts across our operations by controlling how water, waste, air emissions and spill risks are handled, while ensuring product-related environmental and health risks are addressed throughout the product life cycle. These areas represent where environmental risks most directly arise from our activities and products, requiring consistent oversight to maintain compliance and operational reliability.

Environmental Management Key Focus Areas



Water Management

Control freshwater withdrawal, discharge and effluent in line with regulatory requirements.



Waste Management

Segregate, handle, track and dispose of hazardous waste safely and in compliance with applicable regulations.



Air Emissions Control

Monitor and manage sulphur oxides (SOx) and nitrogen oxides (NOx) to prevent non-compliance.



Spill Prevention and Response

Prevent oil spills through control and spills management to mitigate impact.



Product Stewardship

Manage product-related environmental and health risks through compliance, toxicology and life cycle assessment.

Our Approach

Environmental management at PETRONAS is guided by our Health, Safety and Environment (HSE) Policy and implemented through the HSE Management System (HSEMS) which is aligned with the ISO 14001:2015 and 45001:2018. This framework establishes consistent standards, governance and accountabilities to identify, assess and control environmental risks arising from our operations and products.

Our approach is further informed by internationally recognised frameworks and guidelines, including those issued by Ipieca and the International Association of Oil & Gas Producers; the World Bank Group Environmental, Health, and Safety Guidelines; as well as applicable host country standards for the design and operation of pollution prevention and control equipment. Disclosures are aligned with the GRI Standards.

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We apply a risk-based Environmental Management approach to manage impacts from water use, waste generation, air emissions and spill risks, while also assessing product-related environmental and health risks across the product life cycle through our product stewardship practices.

Our approach is supported by:

| | | | | |
|--|--|--|--|--|
| 1 | 2 | 3 | 4 | 5 |
| Standardised environmental controls across water management, waste management, air emissions control and spill prevention. | Product stewardship integration, assessing environmental and health risks throughout product development, manufacturing and end use. | Digital monitoring systems, including the Environment, Social Performance and Product Stewardship Integrated and Centralised System (EPICS) and the PETRONAS Continuous Emissions Monitoring System (PCEMS). | Assurance and continuous improvement through audits, performance reviews and corrective actions under the Plan-Do-Check-Act cycle. | Shared accountability across our operating ecosystem, with environmental expectations extended to contractors, suppliers and partners. |

Our Progress

During the year, we strengthened how environmental management translates into day-to-day operational discipline across water, waste, air emissions and spill prevention, while advancing product stewardship practices to better manage environmental and health risks associated with our products. We advanced enterprise-wide controls through clearer governance, more consistent standards across operating units and contractors, and wider use of digital systems to improve monitoring, traceability and decision-making. Product stewardship considerations were further embedded into research and development, and regulatory compliance processes, strengthening how product-related risks are assessed early in the product life cycle.

Progress in hazardous waste recovery, freshwater use reduction and air emissions control reflects a shift from compliance-driven actions to more systematic risk management embedded in operations. These efforts improved visibility of environmental performance, supported regulatory readiness and reduced exposure to incidents and remediation, while recognising that site-specific constraints and project timing continue to influence the pace of improvement in certain locations.

2025 Key Highlights

| | | | |
|---|--|---|---|
| <p>Freshwater Withdrawal¹</p> <p>2025 76.7 ▼ <i>(2024: 82.6) million cubic metres</i></p> | <p>Hazardous Waste Sent for Reuse, Recycling and Recovery¹</p> <p>2025 62,828 ▲ <i>(2024: 58,583) tonnes</i></p> | <p>Sulphur Oxides Emissions 2025 52,681 ▼ <i>(2024: 59,400) tonnes</i></p> <hr/> <p>Nitrogen Oxides Emissions 2025 109,642 ▲ <i>(2024: 92,017) tonnes</i></p> | <p>Number of Hydrocarbon Spills into the Environment over One Barrel²</p> <p>2025 ZERO ▼ <i>(2024: 10) spillage</i></p> |
|---|--|---|---|

Notes:

- 1. Freshwater withdrawals and hazardous waste-related data by Universiti Teknologi PETRONAS are excluded.
- 2. One barrel is equivalent to 159 litres.

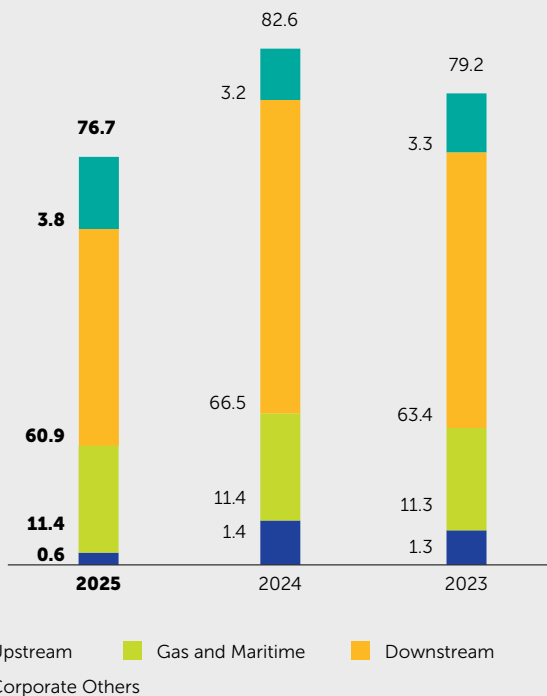
Water Management



Managing water responsibly across our operations requires close control of how freshwater is withdrawn, used and discharged back into the environment. Water withdrawal is tracked by source, including surface water, groundwater and third-party supply, to understand site-specific risks and apply appropriate controls, particularly in water-stressed locations. Effluent from operations is treated and continuously monitored to ensure discharged water meets regulatory quality standards and does not adversely affect surrounding environments.

In 2025, total freshwater withdrawal reduced to 76.7 million cubic metres from 82.6 million cubic metres in 2024, reflecting improved monitoring, operational controls and targeted site-level initiatives in selected facilities. These efforts supported more structured and effective water management, particularly in locations where water availability remains a key operational constraint, while maintaining compliance with regulatory requirements.

Freshwater Withdrawal
(million cubic metres per year)



Note:
 1. Totals may not add up due to rounding.
 2. Freshwater withdrawals by Universiti Teknologi PETRONAS are excluded.

Waste Management

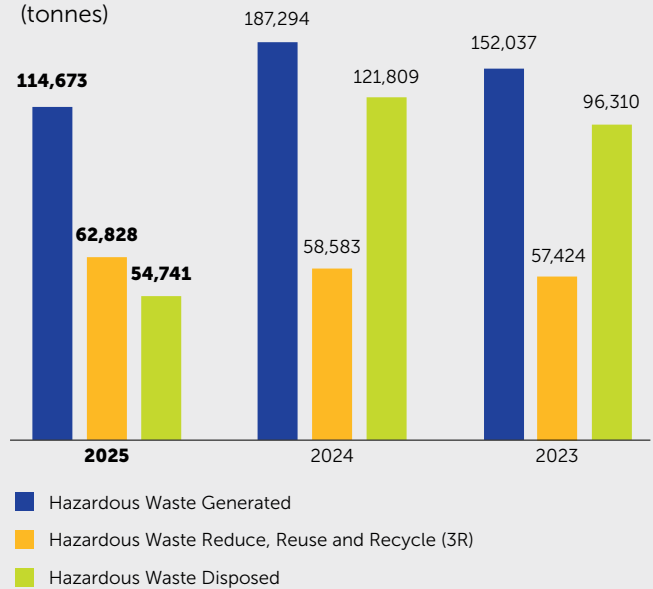


Managing hazardous waste requires consistent operational control, traceability and regulatory discipline across diverse sites. Our focus is on ensuring hazardous waste is properly segregated, handled and disposed of, in line with internal standards and regulatory requirements, supported by stronger governance and digital oversight.

During the year, we strengthened how hazardous waste is monitored and controlled through EPICS, which serves as a unified, end-to-end hazardous waste management platform and centralises waste data across operations, exemptions and offshore deliveries.

Standardised segregation practices, clearer contractor controls and improved workflows strengthened how hazardous waste is managed across operating units. In 2025, total hazardous waste generated decreased to 114,673 tonnes, compared with 187,294 tonnes in 2024, reflecting improved operational planning and waste minimisation efforts across selected facilities. At the same time, 62,828 tonnes of hazardous waste were reused, recycled or recovered, while 54,741 tonnes were disposed of, indicating continued progress in directing waste toward recovery pathways where feasible. These results demonstrate stronger operational discipline in waste handling while maintaining regulatory compliance and traceability across our operations.

Waste
(tonnes)



Note:
 Hazardous waste-related data by Universiti Teknologi PETRONAS are excluded.



Scan the QR code to visit Sustainability Performance Data for detailed information.

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Air Emissions Control

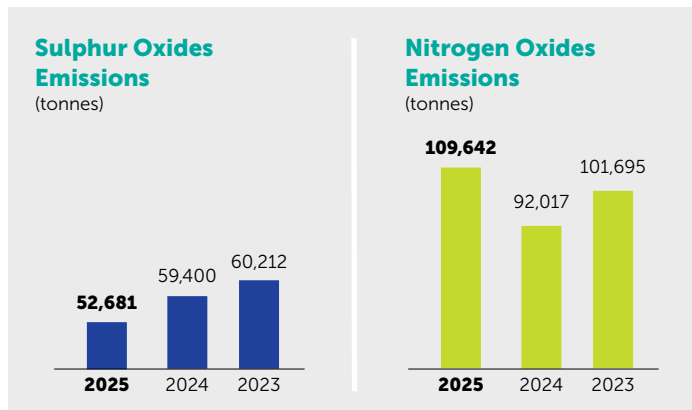


Managing air emissions requires continuous monitoring, prompt response and disciplined operational control to ensure pollutant releases remain within regulatory limits. By combining real-time data with predictive controls, we enhanced our ability to detect deviations early and take corrective action before breaches occur, supporting safe, compliant and resilient operations.

During the year, the PETRONAS Continuous Emissions Monitoring System (PCEMS 2.0) was deployed across major facilities to continuously monitor sulphur oxides (SOx) and nitrogen oxides (NOx) emissions using real-time sensors and analytics. Integration with process automation enables alerts and operational adjustments, such as combustion optimisation, fuel mix adjustments and activation of control equipment when required. These enhancements strengthened our ability to intervene early and maintain emissions within regulatory thresholds, supporting more consistent emissions management across our assets.

Air emissions are managed through established operational controls and performance monitoring frameworks, in accordance with applicable regulatory requirements. These measures bolstered regulatory compliance, reduce the risk of exceeding regulatory limits and potential environmental and health impacts on communities near our operational sites.

In 2025, NOx emissions increased, mainly due to turnaround activities and unplanned shutdowns that led to higher flaring at some petrochemical plants, as part of managing process safety and maintaining asset integrity during major maintenance cycles. Air emissions are managed through established operational controls and performance monitoring frameworks, in line with regulatory requirements.



Spill Prevention and Response

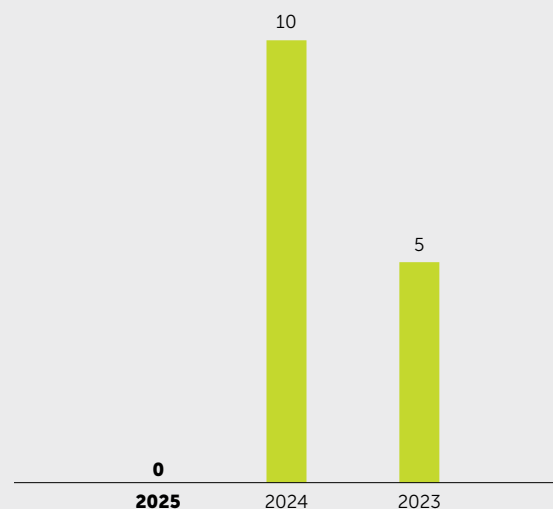


Spill risks are mitigated through preventive controls, continuous monitoring and response readiness across our operations. Asset integrity, engineering safeguards and competent personnel reduce the likelihood of releases, supported by procedures and on-site capability for early detection and containment.

Response capability was further enhanced through a structured preparedness programme. This included collaboration with regulators and industry partners through oil spill management, spill impact mitigation assessments and geographical response planning. Preparedness was also enhanced through strengthened requirements under our technical guidelines for oil spill management.

Continuous improvement remains central to our approach. Incident investigations, drills and lessons learnt are used to strengthen procedures, readiness and coordination across sites. Hydrocarbon spill incidents greater than one barrel decreased from 10 cases in 2024 to zero in 2025, reducing the risk of environmental harm and reinforcing operational discipline.

Number of Hydrocarbons Spills into the Environment over One Barrel



Note:
One barrel is equivalent to 159 liters.



Scan the QR code to visit Sustainability Performance Data for detailed information.

Environmental Management in Practice: Preparing for Safe and Compliant Operations in Brazil

In preparation for drilling activities in Brazil, PETRONAS Petróleo do Brasil Ltda. (PPBL) commenced Environmental Management preparation well in advance of operations. This encompassed structured studies, monitoring and stakeholder engagement to ensure all risks were understood, assessed and controlled in line with the country's stringent environmental and regulatory requirements.

To operate Block C-M-661 (MOLA-1 well), PPBL worked closely with the Brazilian Institute of Environment and Renewable Natural Resources (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis), the National Agency of Petroleum, Natural Gas and Biofuels (Agência Nacional do Petróleo, Gás Natural e Biocombustíveis), the Ministry of Labour and Employment (Ministério do Trabalho e Emprego) and the National Health Surveillance Agency (Agência Nacional de Vigilância Sanitária), together with other authorities overseeing Health, Safety, Security and Environment matters. In this effort, the team managed more than 2,300 legal requirements with regular monthly reviews and quarterly reporting.

Federal licensing required comprehensive Environmental Impact Studies and Reports, together with detailed technical assessments. By anticipating these requirements early, PPBL secured its licence six months before drilling began, an uncommon outcome in Brazil's stringent context. The Permit to Operate imposed 25 environmental conditions to guide safe and responsible execution.

Environmental controls were also visible on the ground. Teams underwent environmental education training, drilling fluids and cuttings were monitored through ecotoxicological testing, and proactive communication kept fishing communities and regulators informed throughout operations. A monitored 500-metre safety zone around the rig resulted in zero navigation interference incidents and no compensation claims.

In 2025, this approach was recognised as a benchmark during PETRONAS' Upstream Health, Safety and Environment (HSE) Regulatory Health Check. This experience shows how Environmental Management shapes operational readiness through early risk assessment, monitoring discipline and stakeholder engagement, enabling safe and compliant operations in complex environments.

Product Stewardship

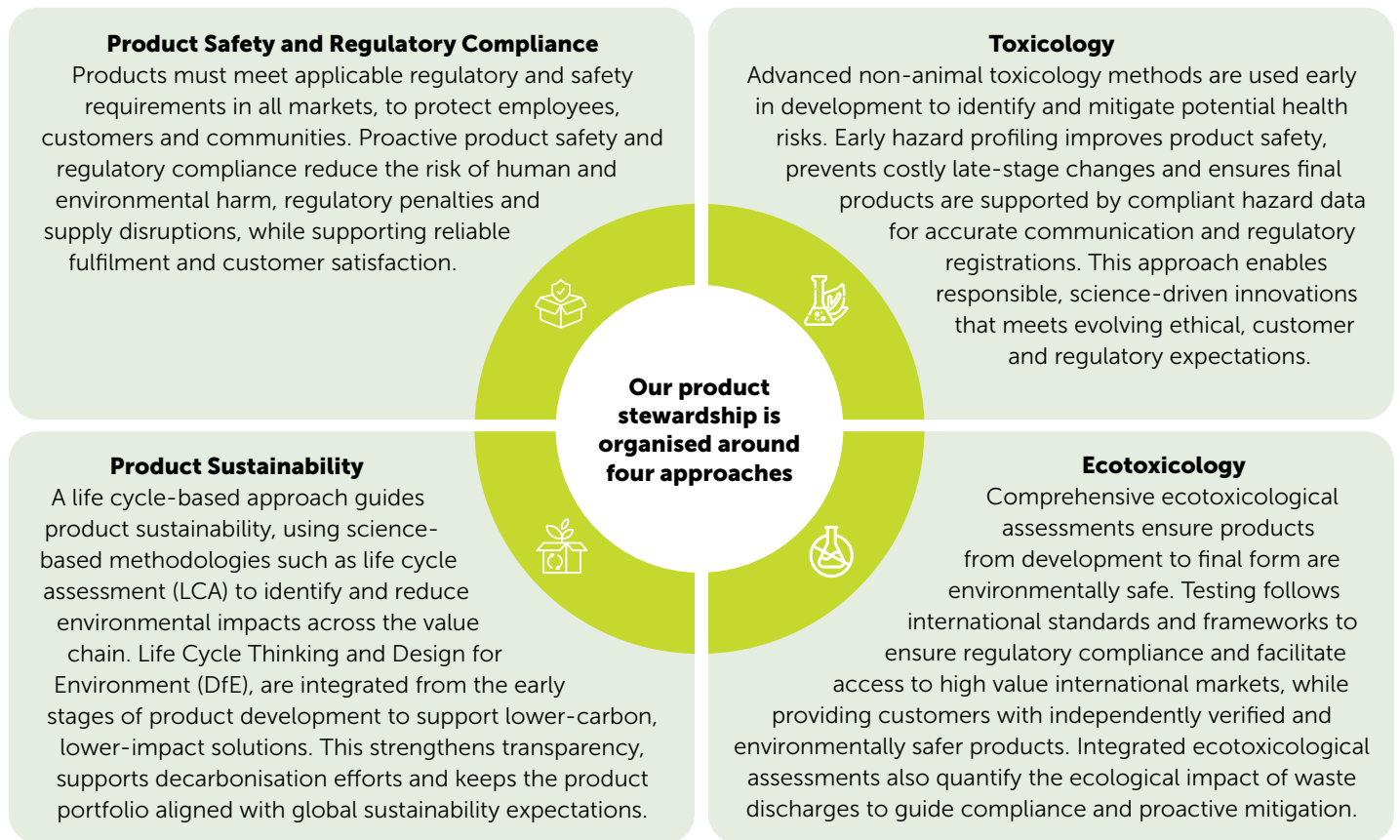


We manage product-related environmental and health impacts by embedding product safety and regulatory compliance, toxicology, ecotoxicology and life cycle assessments across the product life cycle, from research and development through manufacturing, marketing and end use. This approach safeguards people and the environment while ensuring compliance with evolving regulatory requirements across diverse operating environments. Early and consistent assessments throughout development help reduce late-stage reformulation and delays in market access, while guiding the design of safer, lower-impact products that meet regulatory and customer expectations and support sustainable business growth.

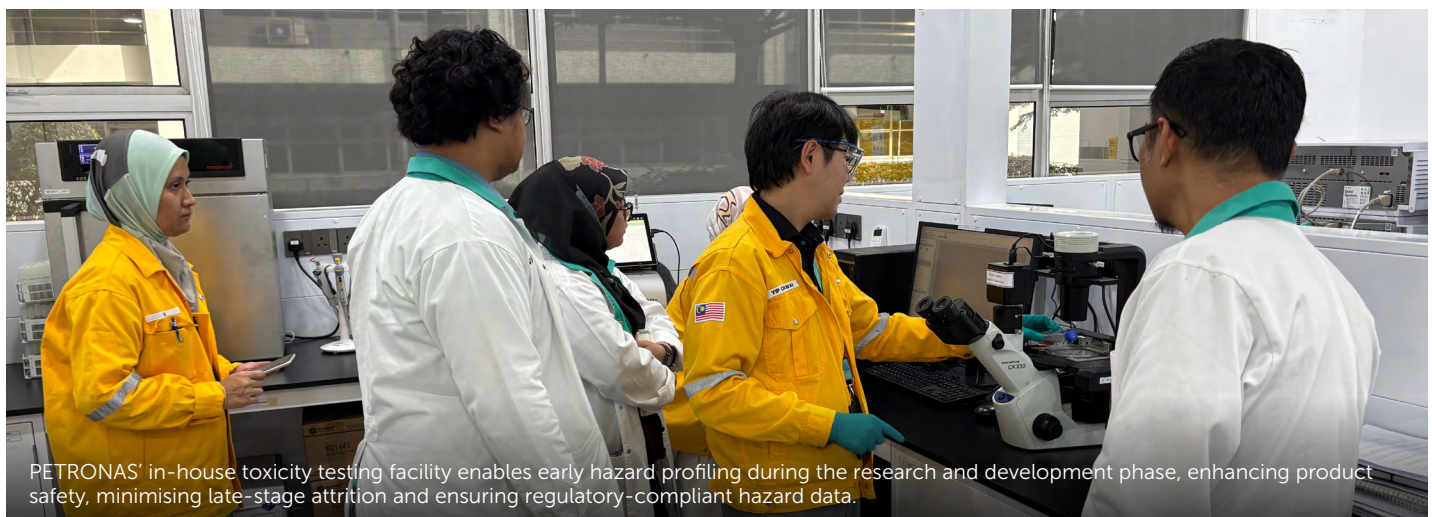


Assessing chemical research and development projects to identify and manage risks at the earliest (cradle) stage of the product life cycle.

Thriving with Nature







In 2025, we strengthened product stewardship through deeper, systematic integration of regulatory compliance, toxicology, ecotoxicology and sustainability considerations across the product life cycle.



PETRONAS' in-house toxicity testing facility enables early hazard profiling during the research and development phase, enhancing product safety, minimising late-stage attrition and ensuring regulatory-compliant hazard data.

2025 Key Initiatives

| | |
|--|--|
|  <p>Product Safety and Regulatory Compliance</p> | <p>Product Compliance System Enhancement Advanced the migration from SAP ECC6 to SAP S/4HANA to strengthen the integrity and reliability of Safety Data Sheets (SDS) and labels. Successfully completed compliance module testing, positioning the organisation for a 2026 go-live with enhanced, standardised SDS and label management capabilities.</p> <p>Product Stewardship Embedment into Research and Development Projects Embedded product stewardship assessment criteria across all chemical research and development (R&D) projects. Initiated product stewardship assessments for 16 R&D projects, integrating risk management at the earliest (cradle) stage of the product life cycle to support safer and more sustainable product development.</p> |
|  <p>Product Sustainability</p> | <p>Sustainable Product Development Completed life cycle assessments for key sustainable products, including Bio monoethylene glycol (BioMEG), Bio Polyol Ester, Recycled Plastic Modified Bitumen (RPMB) and bioemollients. Identified environmental hotspots and improvement opportunities to inform R&D decision-making and product optimisation.</p> <p>Renewable Energy and Fuels Conducted cradle-to-grave life cycle assessments for PETRONAS Dagangan Berhad biodiesel blends (B7, B10, B20). The studies were externally reviewed and validated, ensuring methodological robustness, credibility and compliance with international standards.</p> |
|  <p>Toxicology</p> | <p>Integrated In-House Toxicity Testing Based on Non-Animal Approach Established in-house toxicology test methods based on non-animal approaches. Implemented early-phase toxicity testing for R&D products to proactively identify risks and reduce late-stage product attrition.</p> |
|  <p>Ecotoxicology</p> | <p>Offshore Regulatory Market Access Achieved MG3DF Offshore Chemical Notification Scheme certification, securing regulatory approval and enabling expansion into selected offshore markets without the need for product reformulation.</p> |

Sustainability Impact

Stronger environmental management reduces exposure to environmental incidents, regulatory non-compliance and remediation liabilities across operations. More consistent controls and monitoring help prevent pollution, limit air and water impacts and protect surrounding ecosystems and communities. These practices also strengthen business resilience by enabling PETRONAS to operate confidently across diverse regulatory environments.

Greater clarity around environmental requirements improves planning certainty, safeguards the licence to operate and reinforces stakeholder trust in responsible operations. Product stewardship extends these benefits beyond operations to the products themselves. Safer product design and rigorous environmental assessments reduce environmental and health risks while enabling compliance with international regulatory frameworks. This supports access to regulated markets, improves predictability in product approvals and creates long-term value by aligning product innovation with rising environmental expectations.