

## Key Focus Areas and Results

### New Business – Capturing New Growth Opportunities

#### What We Did in 2022

- Intensified innovation to drive long term sustainability in key focus areas:
  - CCS
  - specialty chemicals
  - hydrogen
  - renewables
  - advanced materials
  - circular economy.
- Forged industry-wide partnerships to accelerate technology and digital transformation, talent development, knowledge transfer, solutions adoption and improve market penetration.
- Pursued new revenue streams through technology and digital products to drive competitive advantage.
- Elevated sustainability-driven competencies such as circular economy and waste management in driving operational excellence amid climate concerns.
- Identified new capabilities for talent development to support PETRONAS' ventures into growth businesses and ensure proper career transition for talents identified for redeployment.

#### Results

- Commercialised and marketed proprietary solutions to drive holistic cross-industry efforts towards decarbonisation and sustainability.
- Launched PETRONAS' Advanced Proton Exchange Membrane (PEM) Electrolyser, secured sales and established a new market for our electrolyser.
- Delivered 450kW electrolyser to Malaysia's first multi-fuel station and secured sales following the market launch of PEM Electrolyser.
- Partnered with industry players along the supply chain to create the right ecosystem and widen hydrogen adoption.
- Delivered 1kg/day Coke-to-Graphene (CtG) production unit reactor.
- Signed a Sales and Purchase Agreement with a paint manufacturer to use graphene-based paint additive with a contract value of USD1.6 million as market entry.
- Integrated Bio Hub Facilities completed the Front End Engineering Design for its pilot plant, marking a milestone in specialty surfactants development to capitalise on the demand for higher quality personal care, hygiene and beauty products.
- Delivered bio-polymer (from waste biomass) coated fertiliser prototype capable of reducing fertiliser application frequency and overall fertilising cost, with potential bioplastic applications in medicine, cosmetics, packaging and consumer goods.
- Deployed plastic bitumen road paving trials in collaboration with the Malaysian Public Works Department, utilising 790 kg of plastic waste for every 1km lay.
- Obtained acceptance from Sabah's Department of Fisheries for our Master Reefing Plan to improve future local seafood sources and reduce dependency on imported sources.

### NZCE – Pathway to Zero

#### What We Did in 2022

- Accelerated the decarbonisation of our assets.
- Strengthened emissions accounting in fulfilling PETRONAS' pledges to international ESG reporting.
- Leveraged technologies to reduce environmental footprints and HSSE risks.
- Embedded sustainability technical know-how in our capability inventory.

#### Results

- Established the Enterprise Decarbonisation unit to intensify and accelerate strategic groupwide decarbonisation encompassing multiple programmes across Upstream, Downstream and Gas assets.
- Progressively deployed the following:
  - Improvement of fuel gas utilisation baseline and forecasting.
  - iCON GHG modelling for enterprise transparency and granularity of emission data.
  - Methane emissions accounting and forecasting.
- Organised the Race2Decarbonise hackathon to spur ideation and crowdsource innovative solutions, the first to be conducted by an oil and gas company worldwide.
- Achieved first steel cut milestone for our Offshore Low-Speed Wind Turbine project.
- Bio-MEG pilot plant became the first GPM360-certified green project.
- Conducted the first field deployment of floating solar PV technology for open sea application at Pulau Redang and Tok Jembal, Terengganu.