

Advancing Sustainability

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Introduction

Advancing sustainability is crucial in ensuring sustainable economic growth, while protecting the environment and conserving natural resources. During the review period of the Twelfth Malaysia Plan, 2021-2025 (Twelfth Plan), several measures were undertaken to implement a low carbon, clean and resilient development, manage natural resources, strengthen the enabling environment, ensure energy sustainability and transform the water sector. Despite these efforts, various issues continue to persist, including challenges in addressing climate change and environmental degradation as well as loss of biodiversity and unsustainable use of natural resources. In addition, low implementation of sustainable development goals (SDGs) and low adoption of environmental, social and governance (ESG) as well as challenges in accelerating energy transition need to be addressed.

In the remaining Twelfth Plan period, more efforts will be focused on advancing environmental sustainability, while accelerating a just energy transition. Among the strategies are to accelerate the implementation of low carbon, clean and resilient development as well as manage natural resources more efficiently. Focus will also be given to advance the implementation of SDGs and adoption of ESG principles as well as strengthen the enabling environment. Through these efforts, it will ensure sustainable and inclusive development for planetary health, safeguard natural endowments and address environmental challenges towards achieving net-zero aspiration as early as 2050. These efforts are also consistent with the 2030 Agenda for Sustainable Development (2030 Agenda).

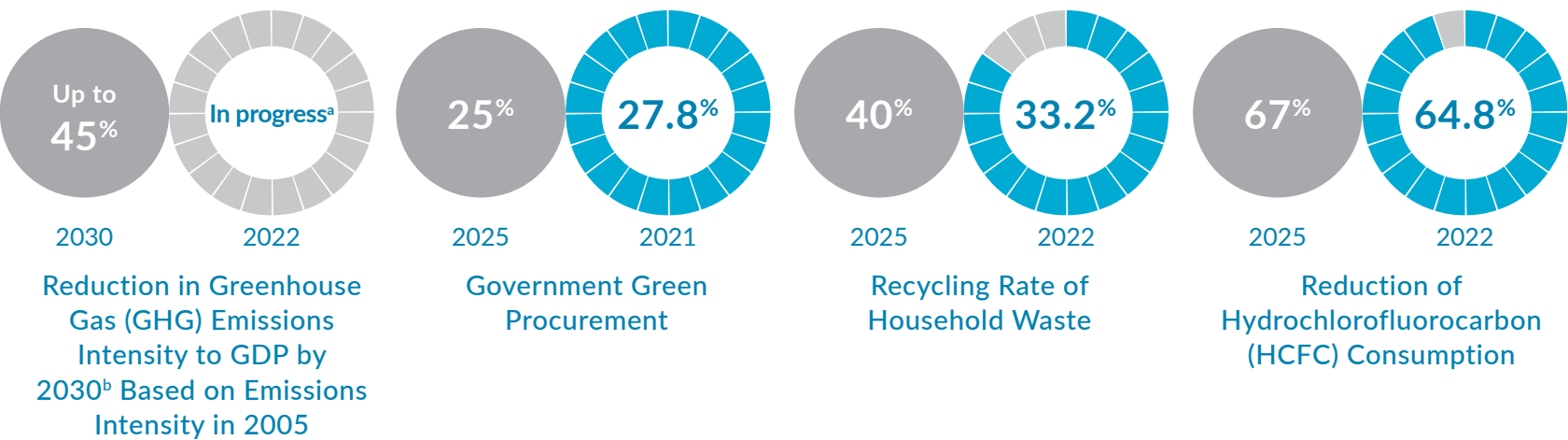
Progress, 2021-2022

A total of 19 targets were set in advancing sustainability. During the review period, three targets were achieved, while the remaining are still in progress. The performance of these targets is as shown in *Exhibit 8-1*.

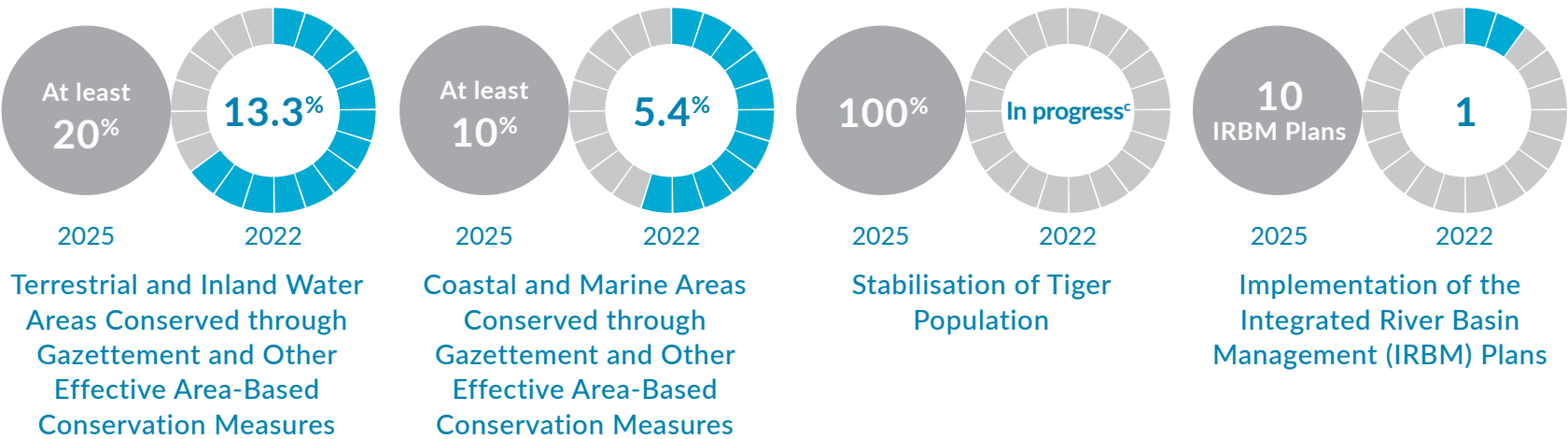
Exhibit 8-1

Performance of Selected Targets

Low Carbon, Clean and Resilient Development



Managing Natural Resources Efficiently

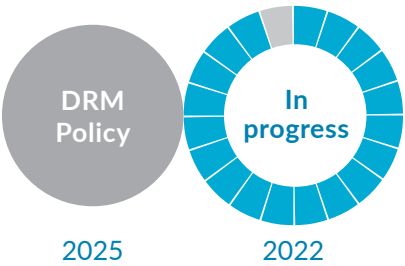


Notes: ^a Latest progress will be published in the Biennial Transparency Report Malaysia in 2024.

^b Malaysia's Nationally Determined Contribution to the Paris Agreement of the United Nations Framework Convention on Climate Change to reduce up to 45% greenhouse gas (GHG) emissions intensity to GDP by 2030 based on emissions intensity in 2005.

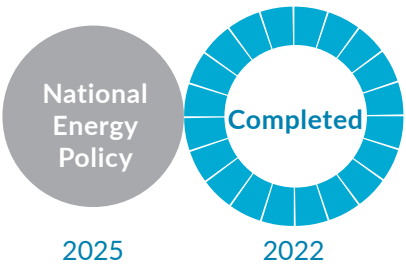
^c Malayan Tiger Population indicator will be concluded in 2025.

Strengthening the Enabling Environment for Effective Governance

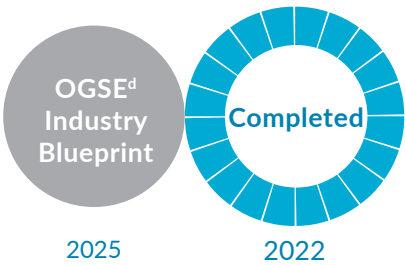


Introduction of the Policy on Disaster Risk Management (DRM)

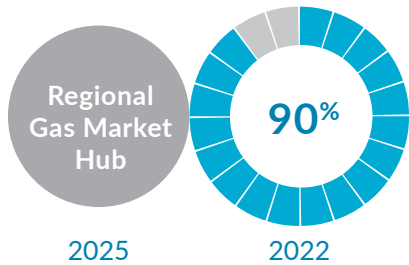
Ensuring Sustainable Energy



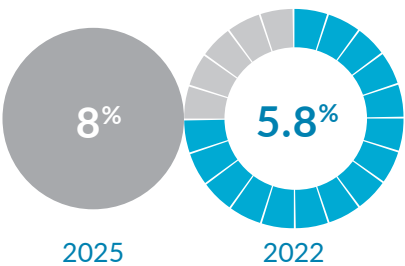
Introduction of a Comprehensive National Energy Policy



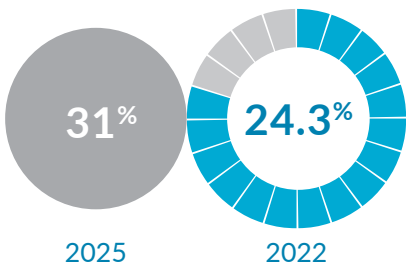
Formulation of OGSE Industry Blueprint



Framework for Establishment of Regional Gas Market Hub



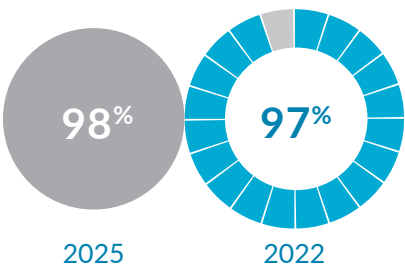
Reduction in Electricity Consumption



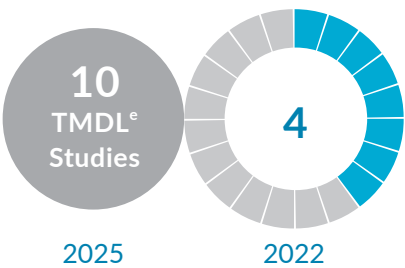
Renewable Energy of Total Installed Capacity

Note: ^d Oil & Gas Services and Equipment.

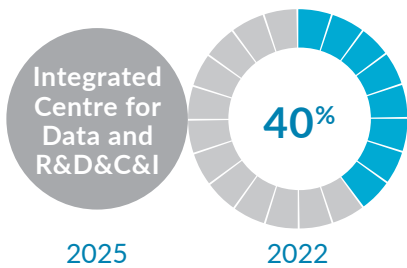
Transforming the Water Sector



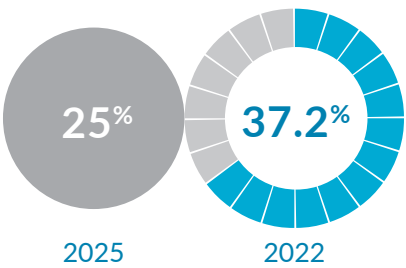
Coverage of Access to Clean and Safe Water in Rural Area



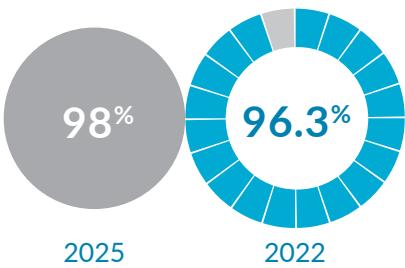
Total Maximum Daily Load Study Conducted for Critical Rivers



Establishment of an Integrated Centre for Water Data and R&D&C&I



Percentage of Non-Revenue Water



Coverage of Safely Managed Sanitation System in Rural Area

Note: ^e Total Maximum Daily Load.

Achievement by Priority Area



Focus Area A: Implementing a Low Carbon, Clean and Resilient Development

Strategy A1: Moving towards a Low Carbon Nation	
Promoting Green and Resilient Cities and Townships	<ul style="list-style-type: none">• The National Low Carbon Cities Masterplan launched in 2021
Enhancing Green Mobility	<ul style="list-style-type: none">• The Low Carbon Mobility Blueprint 2021-2030 approved in 2021• Road tax exemption for electric vehicles (EVs) from 2022 until 2025
Expanding the Green Market and Government Green Procurement	<ul style="list-style-type: none">• Green Jobs Malaysia Portal<ul style="list-style-type: none">◦ Launched in 2021◦ 537 companies registered and 560 jobs offered as at end 2022• <i>Pekeliling Perbendaharaan Malaysia - Dasar Perolehan Hijau Kerajaan</i> (PK 1.9) enforced in 2022
Strategy A2: Accelerating Transition to Circular Economy	
Creating an Enabling Ecosystem for the Circular Economy	<ul style="list-style-type: none">• The Malaysia Plastics Sustainability Roadmap, 2021–2030 completed in 2021
Strategy A3: Promoting Sharing of Responsibility in Pollution Prevention	
Prioritising Environmental Health	<ul style="list-style-type: none">• The Hydrochlorofluorocarbon Phase-Out Management Plan Stage 2 completed in 2022
Strategy A4: Increasing Resilience against Climate Change and Disasters	
Implementing Evidence-Based and Risk-Informed Actions	<ul style="list-style-type: none">• Six Flood Hazard Maps developed for reference
Enhancing Early Warning Systems and Disaster Response	<ul style="list-style-type: none">• The Flood Forecasting and Early Warning System for 22 river basins completed in 2022
Enhancing Disaster Preparedness and Recovery	<ul style="list-style-type: none">• 14 flood mitigation projects completed• Three coastal erosion prevention and rehabilitation projects completed• 15 flood mitigation projects and five coastal erosion projects nationwide approved



Focus Area B: Managing Natural Resources Efficiently to Safeguard Natural Capital

Strategy B1: Conserving Natural Ecosystems

Enhancing Conservation Measures for Terrestrial and Inland Water Areas

- Gazettement of Permanent Reserved Forest (PRF)
 - 676.5 hectares in Pulau Pinang
 - 176.7 hectares in Perlis
 - 23.8 hectares in the Federal Territory (FT) of Kuala Lumpur
- Gazettement of Totally Protected Area within the Heart of Borneo
 - Sabah: 1,459,181 hectares in 2021 compared to 551,879 hectares in 2007
 - Sarawak: 554,280 hectares in 2021 compared to 362,860 hectares in 2007

Enhancing Conservation Measures for Coastal and Marine Areas

- 299 square kilometres of water surrounding seven islands and four rocks in Johor waters gazetted as marine parks in 2022
- 294.4 hectares of coastal areas planted with more than 342,000 mangroves and other suitable species

Mainstreaming Natural Ecosystem Science and Approaches into Development Planning

- The Master Plan for Ecological Linkages Central Forest Spine completed in 2022
- *Rancangan Fizikal Zon Persisiran Pantai Negara-2* published in 2022

Strategy B2: Protecting and Conserving Species and Genetic Resources

Strengthening Species Management and Conservation

- The National Tiger Conservation Task Force established in 2021
- 13 freshwater sanctuaries established as at end 2022
- The Malayan Tapir Conservation Action Plan approved in 2022

Strategy B3: Ensuring Sustainable Utilisation and Benefits Sharing

Strengthening Sustainable Utilisation of Natural Resources

- Five geoparks recognised as national geoparks

Enhancing Mineral Resources Management

- 52% of mines and quarries attained at least 3 stars based on the Sustainability Rating of the Mining Sector in 2022
- Three standard operating procedures (SOP) for mining activities and export of bauxite developed in 2021

Diversifying Conservation Funding

- RM70 million allocated for the Ecological Fiscal Transfer for Biodiversity Conservation in 2022
- RM16 million worth of conservation projects and activities funded by the National Conservation Trust Fund for Natural Resources as at end 2022

Ensuring Equitable Benefit Sharing from Natural Resources Utilisation

- 158 research & development & commercialisation & innovation (R&D&C&I) projects on forestry and forest biodiversity conducted in 2021
- 61 new research projects worth RM37.6 million financed through sponsorship approved in 2021

Strategy B4: Enhancing Conservation of Water Resources

Strengthening Water Resources Governance

- The National Water Balance Management System adopted in seven river basins

Addressing Water Pollution

- 489 out of 670 rivers categorised as clean based on the Water Quality Index in 2021



Focus Area C: Strengthening the Enabling Environment for Effective Governance

Strategy C1: Strengthening Environmental Governance

Improving Policy and Legislation

- The National Forestry (Amendment) Act 2022 enacted
- The Sarawak Forest (Amendment) Ordinance 2022 enacted

Strengthening Institutional Framework and Human Capital

- The National SDG Centre established in 2022
- The establishment of the National Greenhouse Gas (GHG) Centre approved in 2022

Strategy C2: Scaling-up Green Financing and Investments

Enhancing Domestic Green Financing and Investments

- The Sustainable and Responsible Investment Taxonomy developed in 2022
- The Financial Sector Blueprint 2022-2026 launched in 2022
- The Climate Change and Principle-based Taxonomy (CCPT) document introduced in 2021
- RM1 billion allocated to small and medium enterprises (SMEs) under the Low Carbon Transition Facility (LCTF) in 2022

Leveraging Bilateral and Multilateral Financing

- US\$21.9 million allocated for Malaysia under the Global Environment Facility 7
- US\$10 million granted under the Nature-based Climate Adaptation Programme for the Urban Areas of Penang Island in 2022

Enhancing Environmental Economic Instruments

- The National Guidance on International Voluntary Carbon Market Mechanisms developed in 2022
- The world's first *Shariah*-compliant voluntary carbon exchange launched in 2022

Strategy C3: Instilling Sense of Ownership and Shared Responsibility

Increasing Awareness to Steer Behavioural Change

- The Greening Malaysia Programme through the 100 Million Tree-Planting Campaign launched in 2021
- *Kampus Lestari* study completed in 2022



Focus Area D: Ensuring Sustainable Energy

Strategy D1: Enhancing the Energy Sector

Formulating a Comprehensive National Energy Policy

- The National Energy Policy, 2022-2040 (DTN) launched in 2022

Strategy D2: Ensuring Sustainable and Progressive Oil and Gas Subsector

Attracting High Value Investment in the Petrochemical Industry

- Pengerang Integrated Petroleum Complex recorded
 - RM5.1 billion committed investment
 - RM4.2 billion realised investment

Scaling Up Biofuel Usage

- The Front End Engineering Design and Detailed Engineering Design studies completed in 2022

Enhancing the Capability of Local Players in Oil & Gas Services and Equipment (OGSE) Subsector

- The National OGSE Industry Blueprint 2021-2030 launched in 2021
- RM8.5 million allocated to 36 companies under the OGSE Development Grant

Developing a Comprehensive Natural Gas Roadmap

- The Regional Gas Market Hub study completed in 2022

Strategy D3: Enhancing the Electricity Subsector

Creating a Resilient Electricity Supply Industry

- The Malaysian Electricity Supply Industry 2.0 study completed in 2022

Strengthening Electricity Supply System in Sabah

- Three out of 10 transmission projects under the Sabah Special Project Delivery Unit completed in 2022
- The System Average Interruption Duration Index for Sabah improved to 286.2 minutes/customer/year in 2022, from 332.1 minutes/customer/year in 2021

Enhancing the Grid System	<ul style="list-style-type: none">Construction of gas-fired power plants<ul style="list-style-type: none">The Edra Melaka Power Plant with a capacity of 2,242 megawatts (MW) completed in 2022The Pulau Indah Power Plant with a capacity of 1,200 MW started in 2021The construction of 500 kilovolt (kV) electricity transmission lines from Ayer Tawar-Bentong South-Lenggeng commenced in 2022
Expanding Rural Electricity Coverage	<ul style="list-style-type: none">The rural electricity coverage as at end 2022<ul style="list-style-type: none">Peninsular Malaysia: 99%Sabah: 96.6%Sarawak: 95.7%
Increasing Renewable Energy (RE) Installed Capacity	<ul style="list-style-type: none">The Green Electricity Tariff Programme introduced in 2021The Corporate Green Power Programme introduced in 20229.8 gigawatt (GW) RE installed capacity available as at end 2022
Enhancing Energy Efficiency	<ul style="list-style-type: none">RM27.5 million total rebates provided under the Sustainability Achieved Via Energy Efficiency (SAVE) 2.0 Programme in 2021RM35.8 million total rebates provided under the SAVE 3.0 Programme in 2022



Focus Area E: Transforming the Water Sector

Strategy E1: Empowering People	
Implementing Comprehensive Awareness, Advocacy and Capacity-Building Programmes	<ul style="list-style-type: none">Four modules on Awareness, Advocacy and Capacity-Building for academicians, businesses and industries, community, and government agencies completed in 2022
Expanding Community-Driven Conservation Programmes	<ul style="list-style-type: none">670 Friends of River community-driven programmes conducted as at end 2022
Strategy E2: Enhancing Capability in Data-Driven Decision-Making	
Enhancing Capacity of Water Industry Players and the Scientific Community	<ul style="list-style-type: none">322 Indah Water Konsortium (IWK) operational staffs received <i>Sijil Kemahiran Malaysia</i> in 2022

Strategy E3: Ensuring Sustainable Financing	
Strengthening Financial Sustainability of Water Services Providers	<ul style="list-style-type: none">Tariff adjustment for non-domestic and special category consumers in Peninsular Malaysia and the FT of Labuan came into effect in 2022
Strategy E4: Developing Sustainable Infrastructure with Cost-Effective Technology	
Adopting Alternative System for Water Services in the Rural Area and Island	<ul style="list-style-type: none">Additional 12,838 houses supplied with treated water under the Rural Water Supply ProgrammeWakaf Air fund received RM4.4 million contributions<ul style="list-style-type: none">Funded 50 projects worth RM2.2 million, benefitting 5,034 houses
Optimising Water Resources through Cost-Effective Infrastructure	<ul style="list-style-type: none">The National Groundwater Mapping and Development Project in Kedah commenced in 2021
Implementing Circular Economy in Water Sector	<ul style="list-style-type: none">Non-core businesses of IWK involving water and biosolid recycling for industrial purposes commenced in 2022



Issues and Challenges

In the review period, various measures were undertaken to enhance the sustainability of the environment, as well as energy and water sectors. Nevertheless, several issues and challenges continue to persist and need to be addressed, including climate change, environmental degradation, biodiversity loss and unsustainable use of natural resources. In addition, implementation of SDGs is still low and ESG principles are still not widely adopted in the business sector, while environmental governance is ineffective.

Challenges in Addressing Climate Change and Environmental Degradation

- Absence of integrated and comprehensive policy and regulatory framework
- Challenges to comply with international standards and regulatory requirements
- Unsustainable consumption and production patterns
- Lack of integrated plan and strategies in accelerating energy transition
- Low deployment and adoption of RE
- Lack of comprehensive planning in optimising natural gas resources
- Inadequate financing as well as R&D&C&I for sustainable practices

Low Implementation of SDGs and Adoption of ESG

- Low appreciation and awareness of SDGs
- Lack of conducive ecosystem in supporting ESG adoption by the corporate sector

Loss of Biodiversity and Unsustainable Use of Natural Resources

- Fragmented and incomprehensive policy and legislation on natural assets
- Sprawling conurbation and uncontrolled development
- Conflicting priority between development and conservation
- Ineffective natural resources management and enforcement mechanisms
- Limited understanding on the economic value of ecosystem function and services
- Insufficient alternative funding for sustainable projects

Ineffective Environmental Governance

- Lack of commitment among stakeholders
- Ineffective and unintegrated coordination and monitoring at all levels
- Ineffective communication, education and public awareness (CEPA) programmes



Way Forward, 2023-2025

During the remaining Plan period, focus will continue to be given on advancing sustainability in addressing climate change and other environmental challenges, including in the energy and water sectors. This will be undertaken by accelerating the implementation of low carbon, clean and resilient development, managing natural resources more efficiently, advancing the implementation of SDGs and adoption of ESG principles as well as strengthening the enabling environment. These strategies underscore the need to advocate the just transition principle towards a green, fair and inclusive economy, creating decent work opportunities and leaving no one behind. The energy transition will be accelerated by further reducing dependency on fossil fuels, adopting new technologies in renewables, ensuring energy supply security as well as enhancing inclusivity in the oil and gas industry. In addition, the implementation of water sector transformation will be strengthened to ensure a secure and safe water supply for the *rakyat*.



Focus Area A: Accelerating the Implementation of Low Carbon, Clean and Resilient Development

Strategy A1:

Strengthening Actions towards a Low Carbon Nation

Strategy A2:

Accelerating Transition to Circular Economy

Strategy A3:

Sharing Responsibility in Pollution Prevention

Strategy A4:

Increasing Resilience against Climate Change and Disaster



Focus Area B: Managing Natural Resources More Efficiently

Strategy B1:

Conserving Natural Ecosystems

Strategy B2:

Protecting and Conserving Species and Genetic Resources

Strategy B3:

Ensuring Sustainable Utilisation of Natural Assets

Strategy B4:

Strengthening Water Management



Focus Area C: Advancing the Implementation of Sustainable Development Goals and Adoption of Environmental, Social and Governance Principles

Strategy C1:

Intensifying the SDGs Implementation

Strategy C2:

Advancing the Adoption of Environmental, Social and Governance Principles



Focus Area D: Strengthening the Enabling Environment

Strategy D1:

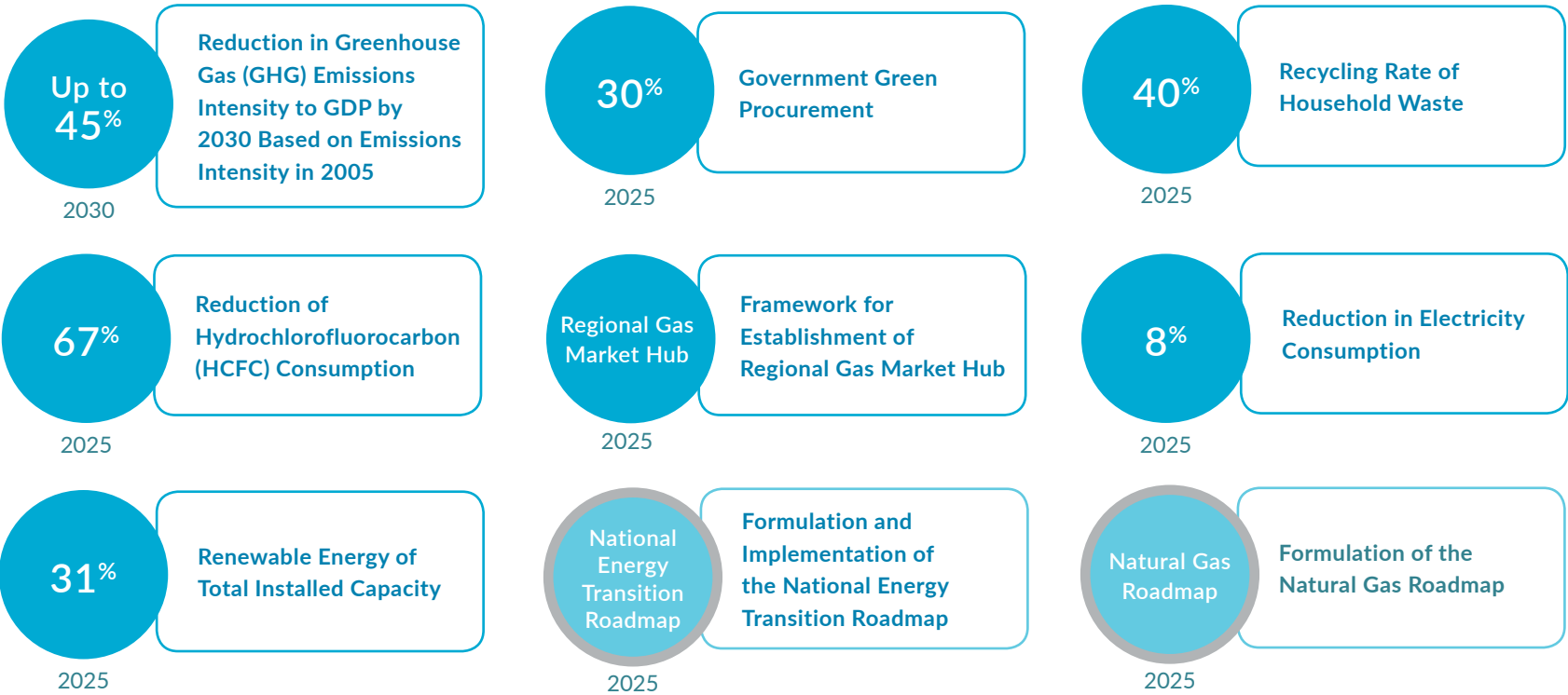
Strengthening Sustainability Governance

Strategy D2:

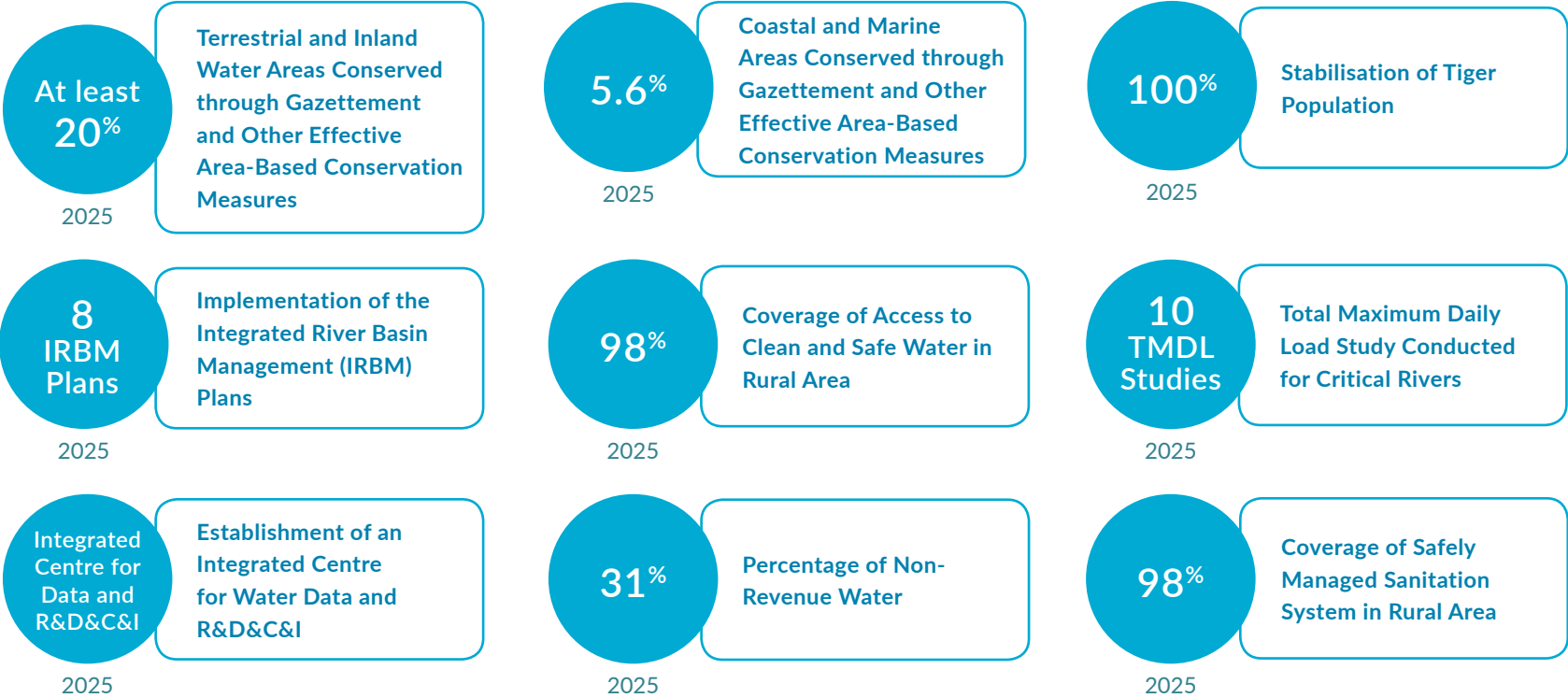
Instilling Sense of Ownership and Shared Responsibility

Selected Targets, 2021-2025

Accelerating the Implementation of Low Carbon, Clean and Resilient Development



Managing Natural Resources More Efficiently



Strengthening the Enabling Environment



Focus Area A: Accelerating the Implementation of Low Carbon, Clean and Resilient Development

It is imperative to accelerate implementation of a low carbon, clean and resilient development in ensuring planetary health and sustainable socioeconomic growth. Efforts will be undertaken in strengthening actions towards achieving a low carbon nation, accelerating transition to circular economy, sharing responsibility in pollution prevention and increasing resilience against climate change and disaster. These strategies will address environmental vulnerabilities due to the impacts of climate change and challenges related to sustainable development.

Strategy A1

Strengthening Actions towards a Low Carbon Nation

Strategy A2

Accelerating Transition to Circular Economy

Strategy A3

Sharing Responsibility in Pollution Prevention

Strategy A4

Increasing Resilience against Climate Change and Disaster

Strategy A1: Strengthening Actions towards a Low Carbon Nation

Enhancing Mechanisms for Climate Action

A long-term low emissions development strategies (LT-LEDS) and a nationally determined contributions (NDC) roadmap will be developed to enhance mechanisms for climate action. These initiatives will outline strategies and

actions needed to achieve Malaysia's climate actions targets. Through these efforts, Malaysia will be better equipped in identifying opportunities and addressing challenges in the transition towards a low carbon nation.

A feasibility study on carbon pricing, which include carbon tax and emissions trading system will be conducted. This study will provide suitable recommendations for implementation of carbon pricing. The development of LT-LEDS and carbon pricing will support the implementation of Big Bold Energy Transition-based Industry. In addition, the online trading platform for the Bursa Carbon Exchange (BCX) will be developed to enable trading of standardised carbon credit contracts. In supporting BCX implementation, efforts will be undertaken to publish a voluntary carbon market (VCM) handbook, establish a VCM directory and organise VCM awareness programmes on a regular basis. In addition, a climate change legislation that takes into account the recent development at domestic and international levels will be formulated to regulate the implementation of national climate change policies and obligations.

Enhancing Low Carbon Mobility

Measures will be implemented to expand infrastructure for EVs in increasing accessibility to EVs. In addition, local authorities will be encouraged to adhere to the Active Mobility Planning Guideline. These measures will promote low carbon transport options by consumers and the development of green transport infrastructure.

Developing Regulatory Framework for the Implementation of Carbon Capture, Utilisation and Storage Initiative

A regulatory framework in governing carbon capture, utilisation and storage (CCUS) will be developed, in line with the energy transition Big Bold. This framework will include a regime to coordinate the implementation of CCUS at national and state levels as well as address transboundary movement according to the international protocol. In addition, a coordination unit will be established to drive the planning, implementation and monitoring of CCUS. The investment value in the CCUS industry in Malaysia is expected to reach US\$200 billion within 30 years. The industry also anticipated to create up to 200,000 job opportunities per annum.

Expanding the Implementation of Government Green Procurement

In boosting green market to support sustainable growth, the implementation of the Government Green Procurement (GGP) will be expanded to the construction sector through the GGP Works initiative. In this regard, a pilot project under the GGP Works will be carried out to identify suitable mechanisms in implementing green procurement for physical projects. This initiative will spur the development of green products for the construction sector.

Formulating the National Energy Transition Roadmap

A national energy transition roadmap (NETR) an initiative under the energy transition Big Bold, is being formulated to support the operationalisation of the National Energy Policy, 2022-2040 (DTN) in decarbonising the energy sector. This initiative will contribute towards achieving the commitment of Malaysia in reducing up to 45% of GHG emissions intensity to gross domestic product (GDP) by 2030 based on emissions intensity in 2005. The NETR will enhance the competitiveness of Malaysia as the world transitions to a low carbon future through various decarbonisation pathways. The NETR implementation will give priority to high-impact flagship projects, financing, technology adoption and capacity building, while promoting policies that support net-zero commitment. The proposed flagship projects and initiatives which cover energy efficiency, RE, carbon capture and storage, hydrogen, bioenergy and green mobility are projected to attract initial investment of more than RM25 billion. A summary of the plan for a just energy transition in Malaysia is as shown in Box 8-1.



Box 8-1

Powering Malaysia's Future through Just Energy Transition

Energy is at the heart of climate agenda because it accounts for 73.2% of greenhouse gas (GHG) emissions worldwide according to the International Energy Agency (IEA). In achieving the 1.5°C frontier, IEA's pathway stated the world economy needs to consume 7% less energy than today, as the world economy is expected to expand by 40% by 2030. This requires a massive push in fossil fuels phase-down, energy efficiency and renewables. The transition away from a carbon-intensive system is difficult for many countries, including Malaysia. The reliance on coal in electricity generation, stems from it being the cheapest, relative to other sources such as natural gas and renewables.

The Twelfth Malaysia Plan has set the target to become a net-zero GHG emissions nation as early as 2050. This underscored the need for Malaysia to accelerate energy transition, while balancing the energy trilemma of security, affordability and sustainability.

The National Energy Policy, 2022-2040 (DTN) defines energy transition as a structural shift of energy systems towards cleaner sources. DTN's Low Carbon Nation Aspiration 2040 sets to transform Malaysia's primary energy supply towards clean and renewable energy (RE). With this policy, the transition is expected to occur at an accelerated pace, driven by rapid technological progress and strong climate change policies. The energy transition will be based on the principles of just, inclusive and orderly, which emphasises on opportunities for decent work for all, active community participation and effective governance.

The Government is developing a national energy transition roadmap (NETR) to operationalise the DTN and accelerate energy transition. In this regard, NETR aims to identify investment opportunities in six energy transition levers, namely energy efficiency, RE, hydrogen and ammonia, bioenergy, green mobility as well as carbon capture and storage. To date, 10 flagship projects and initiatives that are ready to be implemented have been identified. NETR will also feature key energy transition pathways, energy mix and emission reduction targets. Malaysia is an ardent proponent of just energy transition that protects the *rakyat*, creates opportunity and supports innovation, with a coordinated whole-of-nation approach.

Accelerating Adoption of Renewable Energy

Advancement in energy storage system, smart grid infrastructure and sustainable material consumption will be leveraged to optimise energy use and reduce environmental impacts. The capacity of RE sources, particularly solar, hydrogen, biomass and hydropower will be enhanced to generate clean energy as one of the initiatives under the energy transition Big Bold. In addition, feed-in tariff schemes and competitive bidding processes will be continued to attract investments in RE projects. Meanwhile, the current tariff structure will also be reformed to align with system costs, protect vulnerable segments, and reposition commercial and industrial tariffs. The tariff reform will enable increase in RE penetration, ensure cost-reflective prices and enhance economic advantage to support the Big Bold Targeted Subsidies implementation. These efforts will benefit domestic market and position Malaysia as a regional leader in green technology.

RE trading across borders is expected to expand domestic RE implementation. The share of RE in installed capacity mix will be retargeted from the original target of 40% in 2040 to 70% in 2050. An electricity exchange system for RE trading will be introduced as an initiative under the energy transition Big Bold. In addition, the expansion of RE implementation through a self-contained system will pave the way for the development of RE zones that maximise the potential of solar energy and battery storage facilities. These efforts will reduce dependency on fossil fuel-based electricity generation, create new economic opportunities and attract multinational companies, especially RE100¹ companies to operate in Malaysia. Furthermore, Malaysia will continue to leverage on the growing demand for clean and RE in the region in becoming a hub for the trading and supply of clean and RE under the ASEAN Power Grid initiative.

Ensuring Energy Efficiency

Existing policies and programmes aimed at promoting energy efficiency and implementing energy-saving measures in the industrial, commercial and residential sectors will be enhanced. Various initiatives under the National Energy Efficiency Action Plan, 2016-2025 will be further pursued, including the implementation of the Minimum Energy Performance Standards, Energy Audit Conditional Grant Programme and Building Energy Index Labelling. In addition, the legislation on energy efficiency and conservation will be enforced on high-intensity electricity users in the industrial and commercial sectors, while the energy efficiency legal framework will be strengthened.

¹ The global corporate renewable energy initiative bringing together hundreds of large and ambitious businesses committed to 100% renewable electricity.

Optimising Natural Gas in Energy Transition

A natural gas roadmap will be formulated to address the challenges of energy security, affordability and sustainability. This roadmap, which is identified as one of the initiatives under the energy transition Big Bold will guide in optimising the value of indigenous gas resources and increasing the utilisation of natural gas resources as a cleaner alternative to reduce carbon emissions. An additional liquefied natural gas storage in Pengerang, Johor will be developed to support gas market liberalisation and supply availability. Meanwhile, availability of indigenous gas resources will be sustained by leveraging advanced technology to effectively develop marginal and deepwater gas fields, and decarbonise upstream gas production.

Enhancing Sustainability in the OGSE Businesses

A national OGSE sustainability roadmap will be formulated to promote sustainability practices and develop simplified reporting standards. More SMEs in OGSE businesses will be able to comply with ESG principles and improve the consistency and comparability of sustainability reporting for better access to competitive financing with this roadmap. Wider adoption of sustainability practices among OGSE businesses will support the climate aspirations of the oil and gas industry.

Strategy A2: Accelerating Transition to Circular Economy

Developing Circular Economy Policy Framework

In accelerating the transition towards the circular economy, an overarching framework will be developed to provide a long-term vision for the circular economy implementation. The framework will be supported by various mechanisms, particularly in the manufacturing sector, the biomass industry and solid waste management. In the manufacturing sector, a circular economy policy framework will be developed to improve the competitiveness of the industry and the marketability of the products internationally. Meanwhile, a national biomass action plan will be developed for energy and agro-based material production that will reduce reliance on fossil fuels and promote environmental sustainability. In addition, the ongoing study on circular economy for solid waste will provide strategies and action plans towards a more comprehensive solid waste management. These efforts will maximise resources efficiency and minimise waste to support green growth initiative.

Strategy A3: Sharing Responsibility in Pollution Prevention

Establishing a National Chemical Governance Committee

A national chemical governance committee will be established to address the gaps in the current chemical-related acts and guidelines to prepare for emergency response related to chemical risks at the national level as well as ensure compliance with international requirements. In promoting sharing of responsibility in pollution prevention, this committee will adopt the whole-of-nation approach to coordinate involvement of various related agencies. The committee will also facilitate the development of an integrated and holistic chemical management database. A more comprehensive approach in chemical management will mitigate risks associated with chemicals to protect human health and environment.

Strategy A4: Increasing Resilience against Climate Change and Disaster

Formulating National Adaptation Plan

A national adaptation plan will be formulated to address current and future vulnerabilities on the impacts of climate change. The plan will consist of adaptation measures in five priority areas, namely public health, agriculture and food security, forestry and biodiversity, water resources and security, as well as infrastructure and cities. These measures will bolster adaptive capacities in the priority areas and strengthen climate-resilient society.

Strategies to manage heat-related impacts, such as heat stress, heat stroke and heat exhaustion will be incorporated into the national adaptation plan. Among the initiatives to be implemented include increasing green spaces and tree coverage, improving urban planning to reduce urban heat island effect as well as evaluating all activities in managing heat-related impacts. In addition, heat action plans and early warning systems will be covered in the national adaptation plan to enhance the resilience of vulnerable communities.

Strengthening Flood Management

Flood mitigation programmes will be given greater emphasis to cover more flood-prone areas. In this regard, a study to assess the effectiveness of nature-based solutions will be conducted to identify alternatives to

structural-based approach in mitigating flood. In addition, alternative and sustainable financing for flood mitigation will be explored.

Strengthening Disaster Management

An assessment on the impact of disasters on affected groups will be conducted. In addition, the development and sharing of flood and slope hazard maps will be continued to cover more critical areas throughout the country. In this regard, a landslide early warning system (SAATR) for Federal roads will be developed to improve disaster management. Meanwhile, a national geological disaster centre will be established by expanding roles of the existing institution. Strategies to enhance community preparedness will also be developed to complement the national disaster risk reduction. Additionally, the capacity of the community response team will be enhanced to assist in the post-recovery process.

Focus Area B: Managing Natural Resources More Efficiently

Measures will be continued to manage natural resources more efficiently. New initiatives will be introduced in halting biodiversity loss and improving planetary health. In this regard, efforts will be undertaken by conserving natural ecosystems, protecting and conserving species and genetic resources, ensuring sustainable utilisation of natural assets as well as strengthening water management.

Strategy B1

Conserving Natural Ecosystems

Strategy B2

Protecting and Conserving Species and Genetic Resources

Strategy B3

Ensuring Sustainable Utilisation of Natural Assets

Strategy B4

Strengthening Water Management

Strategy B1: Conserving Natural Ecosystems

Strengthening the Management of Protected Areas

In the effort to protect Malaysia's biodiversity and conserve the ecosystem, species and genetic diversity, a national framework for protected areas will be developed to strengthen the management of the areas. This will include, among others, the gazettment of new protected areas. Meanwhile, states in Peninsular Malaysia will be encouraged to increase the forested areas to 50% by the year 2040, in line with the Fourth National Physical Plan. State governments will implement a moratorium on the approval of new forest plantation development in the PRF areas in Peninsular Malaysia for a period of 15 years.

A blueprint for marine protected areas (MPA) will be completed in 2024 to strengthen the planning for the expansion of MPA. In addition, a system on fisheries resources that consolidates data on marine ecosystems and biodiversity, including maps and spatial information will be completed in 2025. The system will facilitate the identification of potential locations for the establishment of MPA corridors.

Strategy B2: Protecting and Conserving Species and Genetic Resources

Leveraging Technology Advancement in Enforcement

The use of artificial intelligence will be explored for effective surveillance and enforcement to enhance the survival of the species, especially the endangered ones. Meanwhile, electronic permit system for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)² in Malaysia or MyCITES will be developed. The automation of CITES processes is crucial to ensure safe trade, increase transparency as well as reduce opportunities for misconduct.

² An international agreement between governments. CITES aims to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.

Enhancing Protection and Conservation of Species

New sanctuaries will be established to conserve the freshwater aquatic species in natural habitat, such as *kelah* and *temoleh*. In addition, the SOP for turtle management and national plan of action for endangered species will be reviewed, while Labuan Marine Park sustainable management plan will be developed by the end of 2023. Meanwhile, the Fisheries Act 1985 [Act 317] will be reviewed to include additional provisions. The review will focus on undertaking fisheries impact assessment for coastal and marine development projects as well as regulating transshipment at sea. In addition, the review will also involve improvement on marine park provisions and raise in penalties, particularly for offences related to marine habitat and species.

The National Elephant Conservation Action Plan and National Tiger Conservation Action Plan will be revised to better conserve elephants and tigers in Peninsular Malaysia. In addition, future road and highway development designs will incorporate safe wildlife crossing structures and effective ecological linkages. The National Policy for Biological Diversity will also be reviewed to align with the commitment under the Kunming-Montreal Global Biodiversity Framework.

Strengthening Biosafety Management

Malaysia aims to ratify the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress by 2025. In this regard, a comprehensive regulatory framework and an effective system on biosafety management will be developed. The Biosafety Act 2007 [Act 678] will be revised to enhance the effectiveness of biosafety management. This revision will address emerging issues related to advanced biotechnology, including through the labelling of living modified organisms (LMO) products. In addition, the development of MyBiosafety 2.0 system as a one-stop centre for applications, approvals and other transactions involving LMO will be completed by 2025.

Strategy B3: Ensuring Sustainable Utilisation of Natural Assets

Valuing Economic Benefits for Terrestrial and Marine Areas

The current total economic value (TEV) assessments in coastal areas along the states of Johor, Melaka, Negeri Sembilan, Pulau Pinang and Selangor will be completed in 2023. The TEV assessments will be expanded to other

states in Peninsular Malaysia in the remaining Twelfth Plan period. Similar initiative will be implemented to other natural ecosystems in the terrestrial and marine areas. These assessments will support evidence-based policy formulation in the conservation of natural ecosystem towards sustainable utilisation.

Preparing a National Forest Inventory

The sixth National Forest Inventory (NFI), which will be completed in 2024 will facilitate better planning, development, management and conservation of forest resources. In addition, a special NFI for the mangrove forest will be prepared to document the available natural assets in the forest. These inventories will also be leveraged for carbon stock assessment.

Developing Mineral Industry and Promoting Geological Heritage

The National Mineral Policy 2 will be reviewed to provide a more holistic direction to drive the mineral industry development, including non-radioactive rare earths element (NR-REE), bauxite, tin, silica and kaolin, based on sustainable and responsible principles. The review which is one of the initiatives under the Big Bold Rare Earths Industry will incorporate policies on mining activities in permanent forest reserve, environmentally sensitive areas and protected areas. It will also emphasise on R&D&C&I, another initiative under the rare earths Big Bold. It is estimated that the non-radioactive rare earths industry will create 6,550 jobs and contribute RM9.5 billion to GDP by 2025. Additionally, development and implementation plans for geopark will be introduced to further develop geoparks in Malaysia. These efforts are expected to revitalise the mineral subsectors, generate economic benefits and promote natural resources conservation.

Strategy B4: Strengthening Water Management

Improving Water Resources Governance

A holistic policy on water will be introduced, in line with the Water Sector Transformation Agenda 2040 to ensure sustainable management of water. The policy, anchoring on the source-to-source approach, will incorporate various concepts, including the circular economy and green economy in promoting the use of water resources sustainably and efficiently. Meanwhile, the governance of the IRBM will be strengthened to enable better coordination as well as accelerate and monitor the implementation of the IRBM.

Addressing Water Pollution

In managing effluent from the industries, a study on the establishment of a centralised industrial wastewater treatment plant is being conducted. The study will propose initiatives to ensure effluents from multiple sources in an industrial area are treated and released into the river from one point source. In addition, the Environmental Quality Act 1974 [Act 127] and the Water Services Industry Act 2006 [Act 655] will be reviewed. The amendment for both Acts which include new emerging environmental issues and heavier penalties, will be tabled in the Parliament in the remaining Twelfth Plan period.

Enhancing Water Security

In ensuring water security, alternative water sources from groundwater abstraction, rainwater harvesting and off-river storages will be further explored through the construction of cost-effective infrastructure. The approach for the National Non-Revenue Water Programme will be expanded and revised to deliver continuous and holistic solutions for non-revenue water reduction. The water and sewerage tariffs will be periodically reviewed according to market segments. These initiatives will strengthen financial capability of water operators in ensuring efficient, equitable and sustainable water management.

Focus Area C: Advancing the Implementation of Sustainable Development Goals and Adoption of Environmental, Social and Governance Principles

In realising the nation's aspiration to achieve net-zero GHG emissions as early as 2050, initiatives on SDGs and ESG will continue to be strengthened. Efforts will be focused on intensifying the SDGs implementation at local level. Meanwhile, measures to promote ESG adoption by businesses will be accelerated, in realising the energy transition Big Bold. A conducive ESG ecosystem will be established to accelerate ESG adoption and disclosure by businesses, particularly among SMEs. The ecosystem will include policy direction and regulatory framework as well as financial and technical support to promote sustainable business practices. These efforts will promote sustainable development for planetary health towards the attainment of the 2030 Agenda.

Strategy C1**Intensifying the SDGs Implementation****Strategy C2****Advancing the Adoption of Environmental, Social and Governance Principles**

Strategy C1: Intensifying the SDGs Implementation

Localising the SDGs

Efforts will be undertaken to empower state governments, authorities and communities at local level in localising the SDGs implementation to achieve the 2030 Agenda. The SDGs Roadmap Phase 2, 2021-2025 will guide the localisation of SDGs, while ensuring policy coherence across all levels of governments. This will intensify SDGs implementation through a comprehensive top-down and bottom-up approach at local level. The summary of the SDGs Roadmap Phase 2, 2021-2025 is as shown in Box 8-2.

Enhancing the SDGs Reporting

The SDGs reporting will be strengthened to document and highlight all initiatives undertaken by multi-stakeholders as well as serve as a guide for policy intervention and implementation by ministries and agencies. The National SDGs Progress Monitoring System, known as SDGs Dashboard will be the single data source to coordinate the compilation of data based on SDGs indicators. A mechanism to report the SDGs performance at the subnational level to the National SDG Council will be established. The SDGs achievement at the subnational level will also be presented at the United Nations High-Level Political Forum on Sustainable Development via the publication of the Voluntary Subnational Reviews (VSR) or Voluntary Local Reviews (VLR). All states will be encouraged to produce at least one VSR or VLR to strengthen SDGs localisation. All these achievements will be collated for the next Malaysia Voluntary National Review report scheduled in 2025.



Box 8-2

The Sustainable Development Goals Roadmap Phase 2

The 2030 Agenda for Sustainable Development (2030 Agenda) is a global commitment towards sustainable, resilient and inclusive development, with 17 sustainable development goals (SDGs) and 169 targets. It is a call for action to end poverty, protect the planet and ensure that all people live peaceful and prosperous lives. Malaysia is committed to the implementation of the SDGs in three phases, between 2016 and 2030. Phase 1 coincided with the Eleventh Malaysia Plan, 2016-2020 and Phase 2 with the Twelfth Malaysia Plan, 2021-2025, while Phase 3 will coincide with the next plan.

The SDGs Roadmap Phase 2 provides a clear direction on the contextualisation and implementation of the 2030 Agenda for the period of 2021-2025. This Roadmap captures efforts undertaken in the first two years of Phase 2 and will outline the initiatives in the remaining Twelfth Plan period. It provides an essential guidance to shift the economy towards a high-income, high-productivity and sustainable nation and serves as a primary reference for the SDGs implementation in Malaysia, with the emphasis on localising SDGs. In strengthening the SDGs implementation, the Roadmap provides specific action plans with clear objectives and quantitative targets, while aligning and integrating with national policies. The aspiration of Malaysia MADANI is embedded in the Roadmap Phase 2, in line with the principle of leaving no one behind.

The inputs to develop the SDGs Roadmap Phase 2 was derived from multiple stakeholders through a whole-of-nation approach, whereas the detailed mapping of the SDGs, targets, and indicators were based on existing Malaysia's development policies. The Roadmap was built upon and complements the SDGs Roadmap Phase 1, 2016-2020, the Voluntary National Reviews in 2017 and 2021, various SDGs Indicator Reports, and the United Nations Common Country Analysis.



Strategy C2: Advancing the Adoption of Environmental, Social and Governance Principles

Formulating National ESG Policy Framework

A national ESG policy framework will be formulated to provide clear direction on ESG implementation among stakeholders. The policy framework will enable coordination and acceleration of ESG disclosure among businesses as well as increase confidence among investors. The CCPT, Principles-based Sustainable and Responsible Investment Taxonomy as well as the Principles of Good Governance for Government-Linked Investment Firms will lay the groundwork in formulating this framework.

Introducing Guideline for ESG Disclosure

In encouraging and facilitating SMEs on ESG reporting, a guideline with the 11 themes developed by Bursa Malaysia will be introduced for ESG disclosure. The emissions management theme under this guideline will be made as a minimum requirement for ESG disclosure by the businesses. The introduction of a standard guideline for ESG will reduce inconsistent reporting practices and lack of comparability between businesses. In addition, companies subjected to global ESG obligation will be required to facilitate the SMEs along the local supply chain in adhering to the compliance.

Ensuring Sustainable Financing for ESG Adoption

Sustainable financing is crucial to promote ESG adoption and facilitate the growth of sustainable and socially responsible initiatives in business practices. The SMEs will be encouraged to utilise the special funding facilities for SMEs, including the LCTF as well as High Tech and Green Facility to accelerate the transition to sustainable practices. A multi-pronged outreach and communication programmes in collaboration with various stakeholders will be implemented to increase awareness on sustainable financing.

Establishing a Centralised Sustainability Reporting Platform

A centralised sustainability reporting platform will be established to assist in streamlining reporting by the multinational corporations, public listed companies and companies along the supply chains. This will allow ESG data collation towards interoperability and informed decision making for potential investment. In addition, the platform will enhance access to funding facilities for businesses, especially SMEs, enable businesses benchmarking and facilitate banks in developing suitable sustainable financing products. Initiative in driving businesses towards ESG adoption is as shown in Box 8-3.

Box 8-3

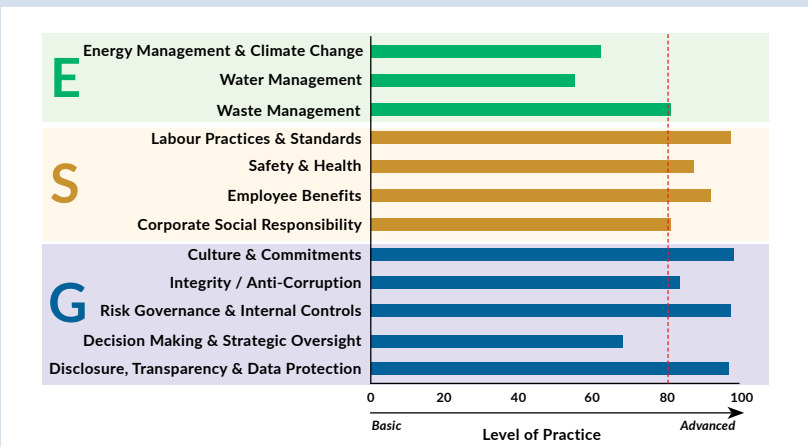
Driving Businesses towards
Environmental, Social and Governance
Adoption as the Catalyst for a Sustainable
Economy

Environmental, social and governance (ESG) is a framework that guides stakeholders to understand performance, risks and opportunities of an organisation for business sustainability. There is an increasing expectation and requirement for businesses to embrace sound ESG practices and disclosures due to issues related to climate change, social aspects of employment and demand for good governance. The extensive adoption of ESG among businesses will position Malaysia as a competitive trading partner in the international market.

A survey by UN Global Compact (UNGC) Network Malaysia & Brunei in 2022 indicated 45% of companies in Malaysia did not allocate budget for sustainability initiatives. Another survey by SME Corporation Malaysia in 2022 revealed that approximately 40% of micro, small and medium enterprises (MSMEs) were aware of ESG practices. Nevertheless, MSMEs lack information, talents and funds, with the environmental principle lagging behind social and governance principles, as shown in *Figure 1*.

Figure 1

ESG Implementation among MSMEs by
Selected Indicators



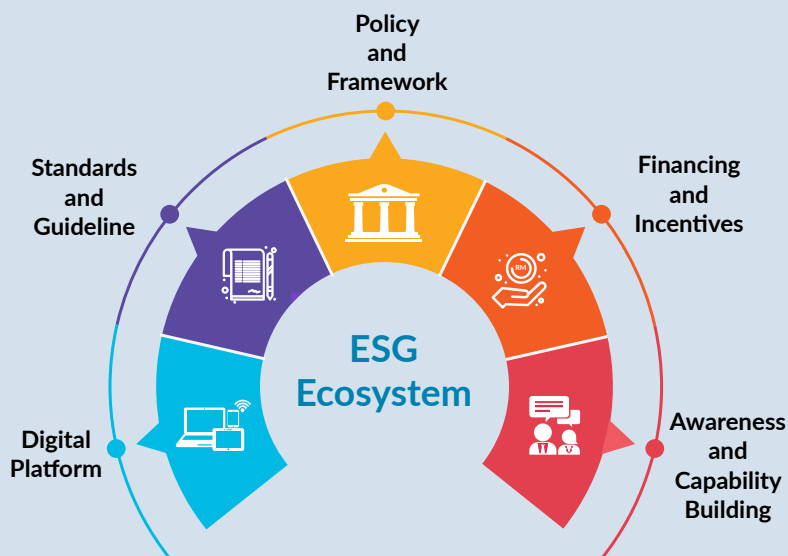
Source: SME Corporation Malaysia, 2022

The roll-out of Financial Times Stock Exchange-Russell Group (FTSE4Good) Index by Bursa Malaysia in 2014 includes ESG ratings for selected companies that demonstrate sound ESG practices. The Index currently listed 98 companies that met the stringent criteria set by FTSE Russell and consistently outperformed other counters. In addition, all 954 public listed companies (PLCs) in the Main Board and Access, Certainty, Efficiency (ACE) markets have already produced ESG disclosures. These PLCs are further required by Bursa Malaysia to comply with the enhanced sustainability disclosures by 2024 for the Main Board, followed by ACE markets in 2025.

Multinational companies and PLCs are at the forefront on ESG disclosure, while small and medium enterprises (SMEs) are still grappling with ESG adoption and disclosure. Therefore, the Ministry of Investment, Trade and Industry (MITI) is developing a national ESG industry framework for the manufacturing sector. Bank Negara Malaysia has rolled out the Low Carbon Transition Facility to support the SMEs in adopting sustainable and low carbon practices. Meanwhile, Bursa Malaysia is working with the London Stock Exchange Group to develop the Centralised Sustainability platform to facilitate greater transparency and consistency in sustainability disclosures, while providing wider access to green financing products. In addition, various initiatives including engagement and upskilling programmes are being undertaken by SME Corporation, UNGC and private sector to promote companies at all levels in preparing the ESG reports. Meanwhile, the Ministry of Economy will drive various initiatives undertaken by ministries and agencies as well as regulators and private sector in establishing a conducive ESG ecosystem, focusing on SMEs.

The commonly used ESG ecosystem is as shown in *Figure 2*. The ecosystem is based on the guiding principles, namely leveraging existing solutions with minimal efforts to transition, providing minimum common guideline for ESG disclosure, increasing utilisation of existing financing and incentives as well as establishing an internationally recognised single reference data point on ESG. This ecosystem will promote ESG compliance, which will eventually increase competitive advantage for Malaysian companies and be the catalyst for a sustainable economy.

Figure 2
Common ESG Ecosystem



Focus Area D: Strengthening the Enabling Environment

Strengthening the enabling environment is crucial for Malaysia's progress in advancing sustainability. A supportive and conducive environment will ensure the effectiveness of policies and strategies implementation. In the remaining Twelfth Plan period, strategies will be focused on strengthening sustainability governance as well as instilling sense of ownership and shared responsibility. These strategies will require collaborative efforts of various stakeholders in addressing environmental issues and challenges.

Strategy D1

Strengthening Sustainability Governance

Strategy D2

Instilling Sense of Ownership and Shared Responsibility

Strategy D1: Strengthening Sustainability Governance

Strengthening Biodiversity Governance

The establishment of a national centre of excellence on biodiversity conservation and management by enhancing the existing institution, will be explored to strengthen biodiversity governance. Meanwhile, the Malaysian Platform for Business and Biodiversity, driven by the private sector will be leveraged to encourage companies in adopting ESG for biodiversity conservation. These efforts will contribute towards fulfilling commitments under the Kunming-Montreal Global Biodiversity Framework.

Bolstering the SDGs Governance

The National SDGs Centre will continue to spearhead efforts in ensuring effective coordination and collaboration among various stakeholders in supporting the United Nations Decade of Actions to accelerate SDGs implementation in Malaysia. Under the auspices of the National SDGs Council, the working committees will be entrusted to play a more significant role in coordinating, monitoring and reporting of SDGs implementation at all levels. The implementation of SDGs will be further intensified by empowering a lead ministry to champion each goal based on respective indicators and targets. These efforts will ensure timely achievement of the 2030 Agenda.



Strategy D2: Instilling Sense of Ownership and Shared Responsibility

Intensifying Collaboration among Stakeholders

Collaboration and partnership among stakeholders will be intensified to promote collective action and shared responsibility towards environmental sustainability. This will be realised through the adoption of quadruple helix model to enable greater cooperation among the society, industry, academia and government. Cooperation and policy dialogues on sustainable development at the regional and international levels will be enhanced, while community involvement at local level will be encouraged to promote knowledge sharing and social innovation. These measures will foster a better collaborative effort in addressing and mitigating issues related to sustainability.

Enhancing Communication, Education and Public Awareness Programmes

In the remaining Twelfth Plan period, CEPA programmes on SDGs, ESG, environment, natural resources and energy transition will be further enhanced to increase public awareness, sense of ownership and shared responsibilities. This initiative will also create opportunities for businesses to grow towards sustainable economy. In order to increase awareness, enhance knowledge and skills as well as promote sustainable practices, new media will be leveraged. CEPA programmes will be carried out with the collaboration and involvement of various stakeholders, including civil society organisations, media outlets and local communities to nudge behavioural shift among the *rakyat*.

Conclusion

Advancing sustainability is crucial for Malaysia's long-term development and wellbeing. During the review period of the Twelfth Plan, several measures were undertaken to implement a low carbon, clean and resilient development, manage natural resources including water and strengthen the enabling environment. Despite the progress made in various areas, there are still challenges to be addressed in advancing the nation's sustainability. In the remaining Twelfth Plan period, efforts will be focused on accelerating the implementation for low carbon, clean and resilient development, managing natural resources more efficiently, advancing the implementation of SDGs and adoption of ESG principles as well as strengthening the enabling environment. These concerted efforts and effective measures will accelerate the advancement of green growth in achieving sustainable development.



The background of the image consists of several overlapping, wavy bands of different shades of blue, ranging from a light sky blue at the top to a deep navy blue at the bottom. The waves flow from the left towards the right, creating a sense of movement and depth.

Beyond

2025