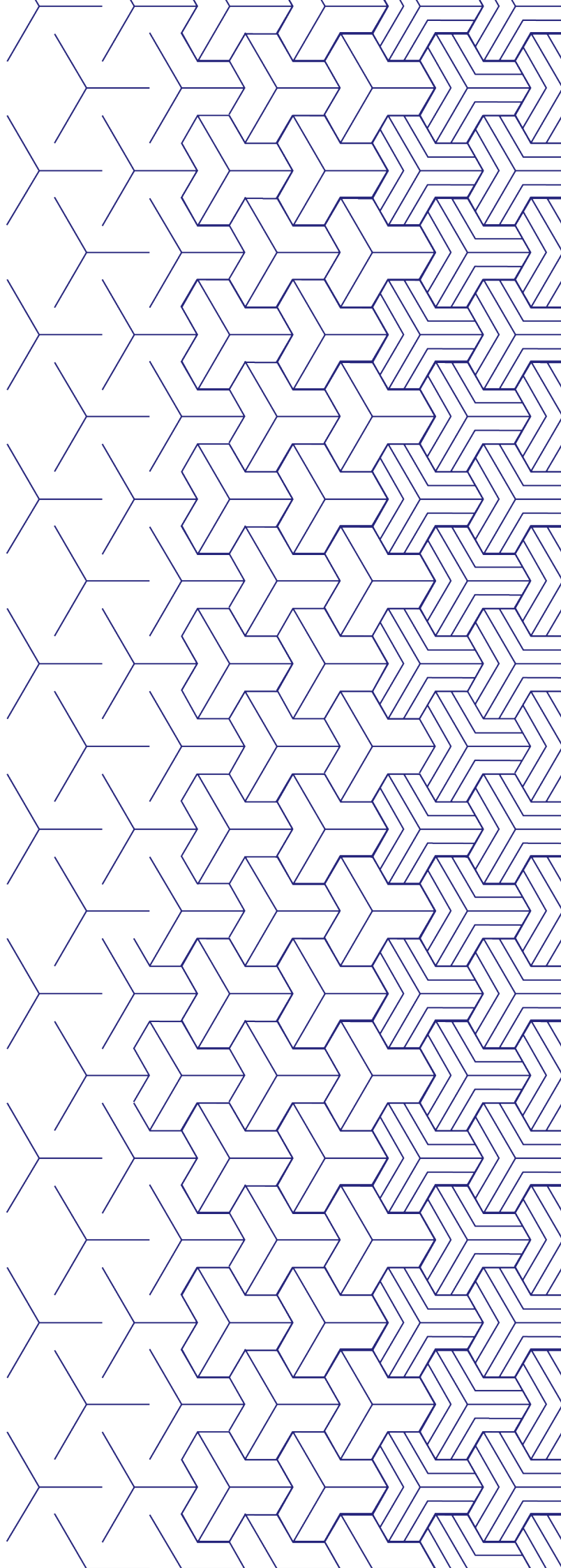
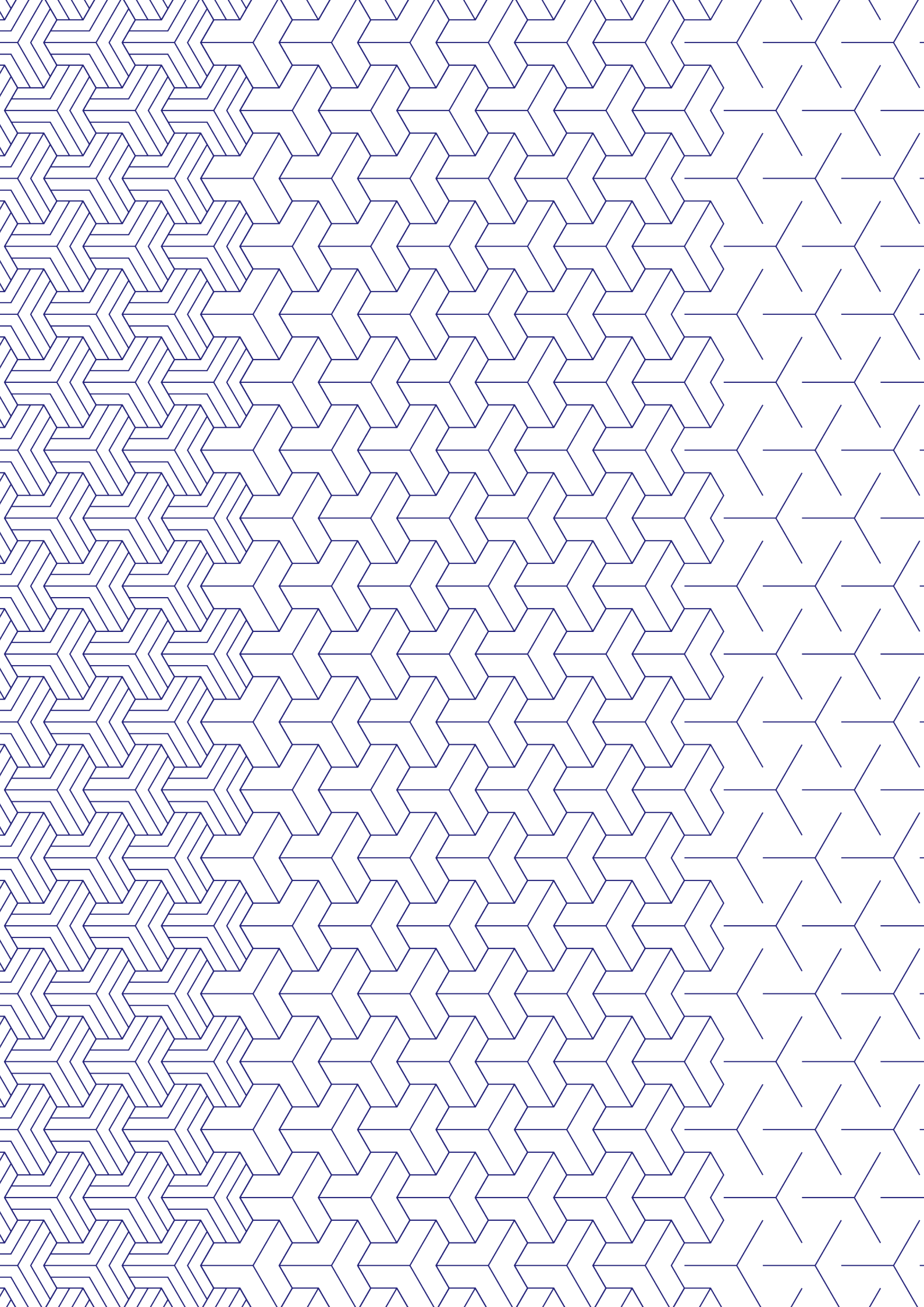
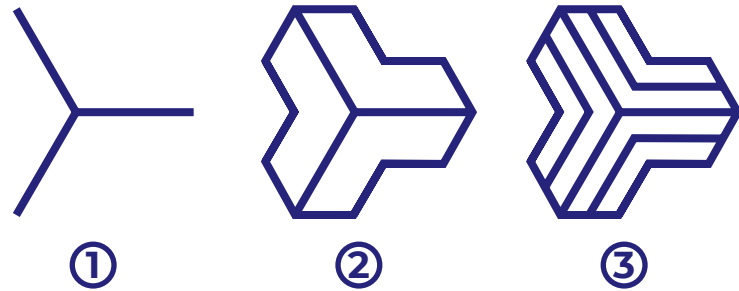


MINISTRY OF INVESTMENT,
TRADE AND INDUSTRY

NEW
**INDUSTRIAL
MASTER
PLAN
2030**







Design Rationale

The design of the New Industrial Master Plan 2030 (NIMP 2030) reflects the aspiration of the plan to propel Malaysia's industrial development in the new norms.

Pattern (1) represents direction and efforts in strengthening industries in Malaysia. Moving from left to right, pattern (2) becomes more complex and inter-connected to signify the integration and collaboration between industry players and Government, towards greater resilience. Pattern (3) conveys a futuristic element and highlights the importance of technology in steering Malaysian industries in the Fourth Industrial Revolution.

The different patterns signify Malaysia's clear direction for the industry, and the two implementation phases of the NIMP 2030 which are 'Strengthen Foundation' and 'Sustain Growth & Resilience'.

The colour blue was selected to express the Government's commitment in ensuring that industrial development encompasses inclusivity and embraces environmental, social and governance criteria.

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MITI, 2023

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NEW
**INDUSTRIAL
MASTER PLAN**
2030



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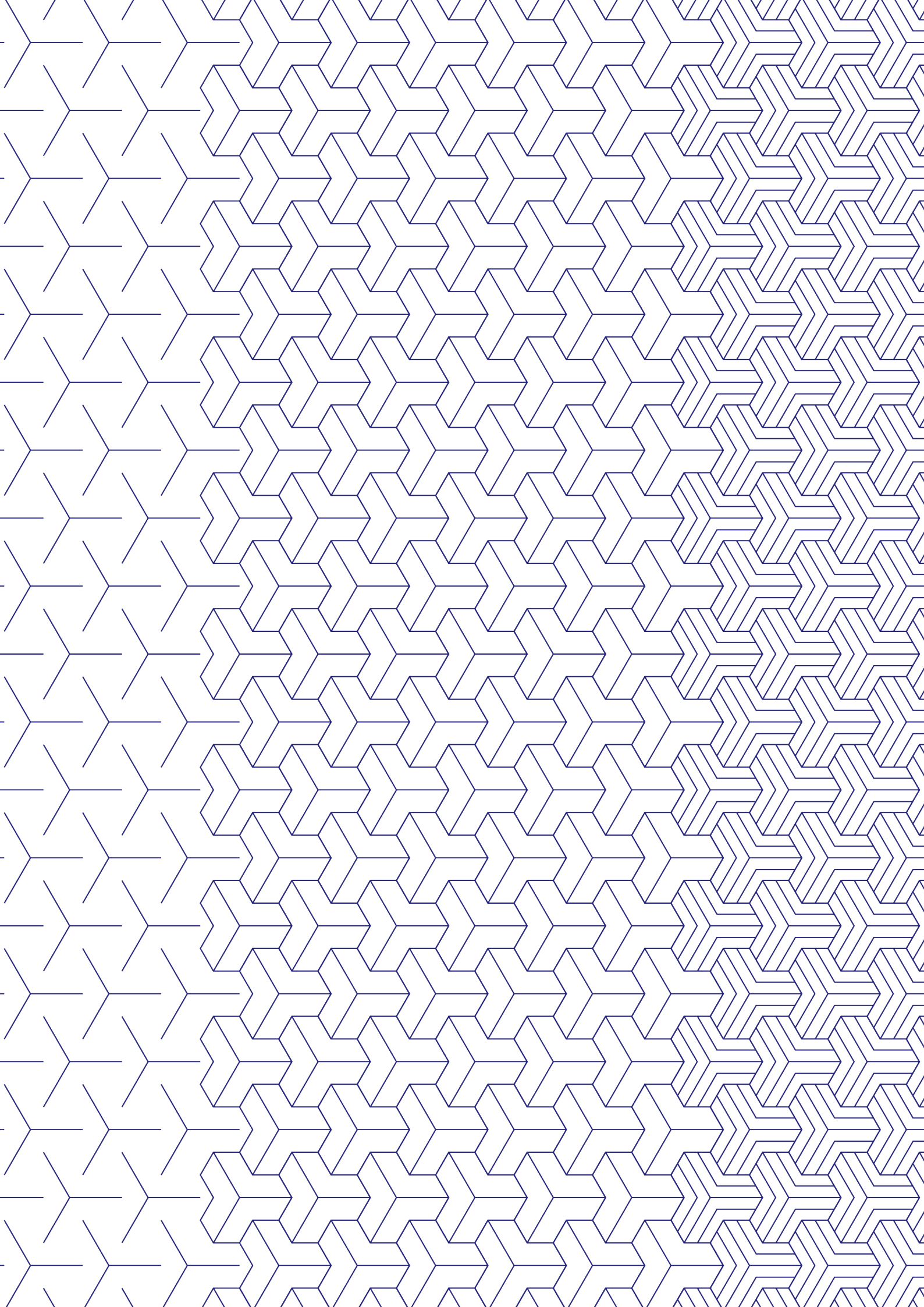
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FOREWORD**Prime Minister of Malaysia**

“

Malaysia's focus remains on creating a high-income and skilled workforce, where the Rakyat prosper and industries flourish.

”

ANWAR IBRAHIM

Prime Minister, Malaysia

Malaysia has progressed remarkably since the Third Industrial Master Plan (IMP3) between 2006 and 2020. During this period, the manufacturing sector had contributed approximately 24 per cent to Malaysia's Gross Domestic Product (GDP), demonstrating its significant role in shaping the nation's economy.

The Government's commitment to foster innovation and technology adoption, promote entrepreneurship and invest in human capital during the IMP3 period has solidified Malaysia's position as a leader in various sectors such as electrical and electronics (E&E), petrochemicals, palm oil, and the *halal* industry.

The New Industrial Master Plan 2030 (The NIMP 2030) is developed with the intent for Malaysia to emerge as a global leader in industrial development, extend the domestic linkages to create wealth across the nation from manufacturing activities as well as strengthen its position in the global value chain.

The NIMP 2030 places clear emphasis on reinvigorating economic growth and ensuring resiliency amidst growing challenges and megatrends, inspired by the core principles of Malaysia MADANI. The NIMP 2030 will be implemented through a whole-of-nation approach that not only involves the Government machinery but also the private sector by working together to achieve a common goal to position Malaysia as a high-income economy with a greater degree of economic complexity.

Malaysia recognises the importance of environmental preservation in our pursuit of industrial progress. Malaysia affirms our commitment to international agreements and conventions related to sustainability, including our aspiration towards achieving the Net Zero carbon emission target as early as 2050. This commitment requires all economic sectors, including manufacturing, to reconfigure their strategies and policies as they perform the obligatory role to ensure Malaysia is on track to achieve the goal.

As we embark on this journey, Malaysia's focus remains on creating a high-income and skilled workforce, where the *Rakyat* prosper and industries flourish. Technology plays a crucial role as a catalyst for growth and to increase labour productivity. As such, the advancement of technologies will empower the Malaysian workforce to enhance efficiency and accelerate innovative capability.

The NIMP 2030 also calls for a balanced regional development as this is a key driver towards safeguarding economic security and promoting inclusivity. In line with the *Ekonomi MADANI*, the Government acknowledges that economic prosperity must be accompanied by social progress and therefore, the plan includes strategies to address income inequality and promote balanced regional growth.

The journey to transform the industry requires swift action by all. It is imperative for both the public and private sector to strengthen our collaboration and implement the necessary measures to uplift Malaysia's competitiveness and build greater resilience.

"I am confident that the NIMP 2030 will provide the necessary guidance and clear direction for the development of the manufacturing sector to strengthen its position as a key driver to national economic growth and prosperity. The Government will ensure the plan is carried out diligently and benefit not only the private sector through better investment and trade prospects, but also the people through high-skilled and high-income job opportunities."

Let us embrace the NIMP 2030 and work together to build a vibrant economy for the future of our next generation.

FOREWORD

Minister of Investment, Trade and Industry



“

We believe that the strategic curation of the New Industrial Master Plan 2030 (NIMP 2030) – based on four key missions rather than sectors i.e. by nurturing higher economic complexity and aggressively embracing technology, underscored by sustainability and inclusivity principles – is set to reform Malaysia’s industries.

”

TENGGU ZAFRUL AZIZ

Minister of Investment,
Trade and Industry

Malaysia's manufacturing sector is a key contributor to the nation's economic growth, as well as its position in global trade. In 2022, it contributed 24 per cent to our GDP and 84 per cent to total exports, while providing employment opportunities to approximately 2.7 million of the *Rakyat*. In short, it is a fundamental factor for Malaysia's economic growth and resilience, as well as international competitiveness.

While the development of Malaysia's industrial policies had always been sector-driven – underscored by sustainable growth principles, and capacity-building for Malaysian companies to integrate better into supply chains globally – MITI recognised that a slightly different approach was required to transform our manufacturing industry and for Malaysia to achieve high-income status in the years to come.

This is where we believe that the strategic curation of the New Industrial Master Plan 2030 (NIMP 2030) – based on four key missions rather than sectors i.e. by nurturing higher economic complexity and aggressively embracing technology, underscored by sustainability and inclusivity principles – is set to reform Malaysia's industries. It also focuses on achieving broad-based growth, by ensuring that small and medium enterprises (SMEs) are well-integrated into value chains, both domestic and global, as well as by ensuring that the benefit of manufacturing development and activities is fairly spread across all States in Malaysia.

Apart from a robust stakeholder engagement session, the NIMP 2030 is also well-aligned with 32 related policies and roadmaps to ensure comprehensiveness and consistency in public policy. This alignment and stakeholder support are key to the effective implementation of the NIMP 2030 Strategies and Action Plans across Ministries, Agencies, Government-linked Companies and the private sector entities based on clear goals and objectives, as well as well-defined enablers.

NIMP 2030's horizontal four-mission policy and set of strong enablers are aimed at addressing domestic and global challenges premised on a whole-of-nation approach. As articulated by the Government's *Ekonomi MADANI*, NIMP 2030 also ensures clear cross-the-board

beneficiaries that include multinationals, SMEs and the *Rakyat*. A good case in point is when we nurture our manufacturing industry to produce more sophisticated and complex products or adopt higher production technology, this would also elevate our workforce in terms of skills and knowledge, which will, in turn, translate into higher wages for the people.

Further, as we attract more hi-tech and innovation-driven investments, including in green manufacturing and renewable sectors, we will not only enhance labour productivity and support our ESG goals, but also ensure that our exports enjoy continued access to ESG-sensitive markets.

I would like to thank everyone who has contributed to the development of the NIMP 2030. Your invaluable insights, expertise and unwavering dedication have helped shape a comprehensive master plan that is set to create a manufacturing powerhouse towards making Malaysia a more prosperous and sustainable economy.

The NIMP 2030 is an ambitious plan. I am, however, confident that with an effective implementation mechanism and support of all stakeholders, its objectives are highly achievable within the target time frame. Time is of the essence if we wish to realise a more inclusive, holistic and sustainable *Ekonomi MADANI* development for the greater good of the nation, and our future generations. MITI looks forward to the whole-of-nation effort to ensure the success of the NIMP 2030.

FOREWORD

Secretary General of The Ministry of Investment, Trade and Industry



“

Malaysia has distinctive value propositions to leverage, such as benefitting from being at the heart of the world's busiest trade route, an educated workforce providing a skilled labour pool for businesses and a robust rule of law which provides certainty and predictability for the business community.

”

ISHAM ISHAK

Secretary General of the
Ministry of Investment,
Trade and Industry

Malaysia's manufacturing sector remains a key driver of the country's economic growth, accounting for 24 per cent of GDP and 84 per cent of total exports. The sector continues to play an important role in domestic job creation, employing 2.7 million individuals or around 17 per cent of total employment in the country. Manufacturing has generated over RM35 billion in implemented capital investment as of 2022 and nearly RM853 billion in total from 2006 to 2022.

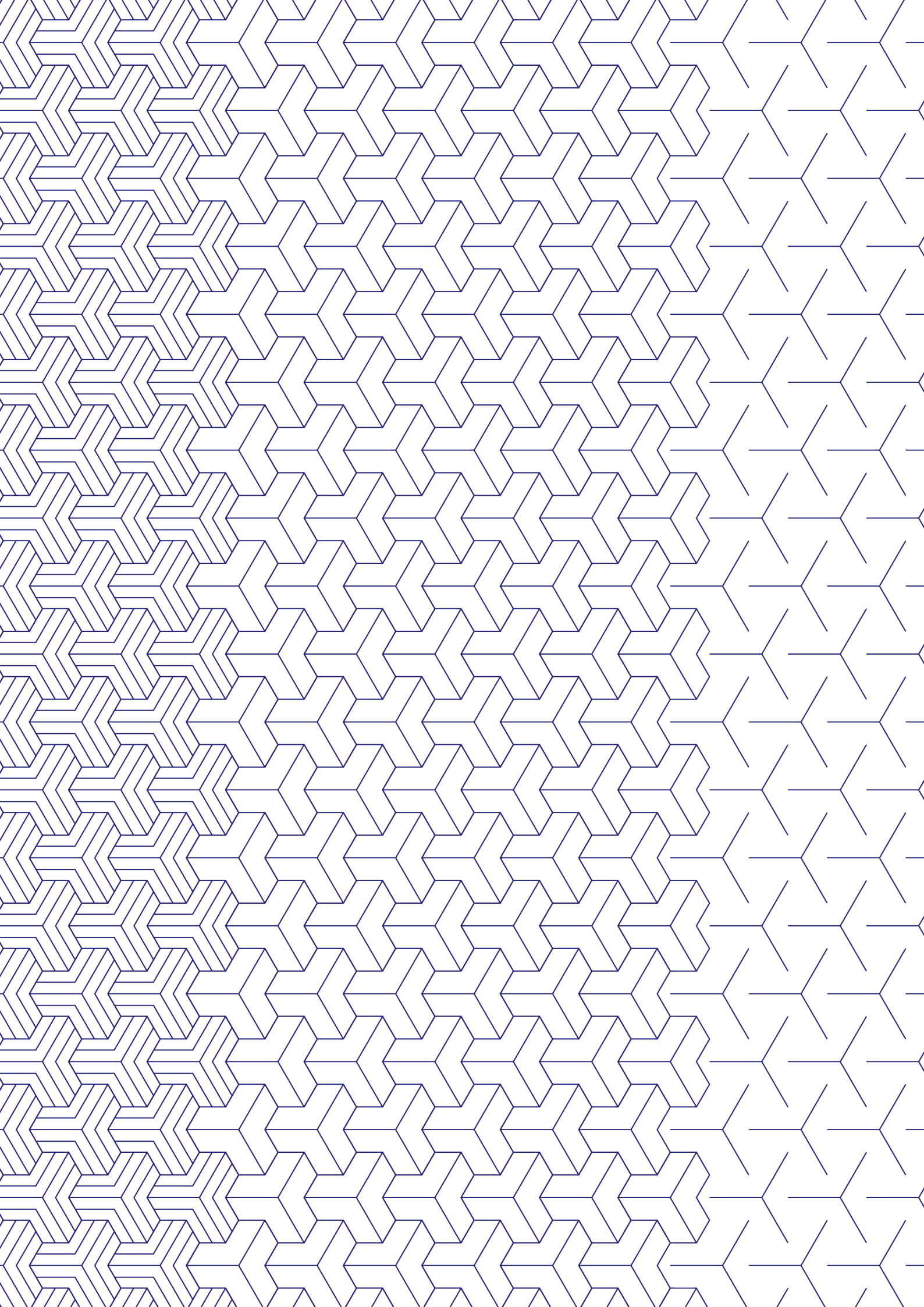
While Malaysia's industrial development has indeed come a long way, the Government is now setting its sights on the future through the NIMP 2030. MITI expects to accelerate industry transformation to achieve Malaysia's aspirations by 2030.

Malaysia has distinctive value propositions to leverage, such as benefitting from being at the heart of the world's busiest trade route, an educated workforce providing a skilled labour pool for businesses and a robust rule of law which provides certainty and predictability for the business community. Malaysia is also blessed with an abundance as well as diverse natural resources offering opportunities for downstream processing and notable high-quality infrastructures, enabling improved connectivity for efficient operations.

NIMP 2030 has outlined 21 Strategies and 62 Action Plans across the four Missions, supported by four key Enablers to build the ecosystem around its implementation. Nine Mission-based Projects (MBPs) have been identified to catalyse the Missions and MITI will work closely with the industry to identify more MBPs through the course of the NIMP 2030.

NIMP 2030 will be implemented in two phases. During the first phase in 2023, the focus is to strengthen existing industrial foundation to position Malaysia for the second take off. In the second phase, 2027 onwards to 2030, the NIMP 2030 will focus on sustaining the growth and resilience of the Malaysian economy, truly capitalising opportunities towards developing an advanced economy, while moving ahead in sustainability agenda.

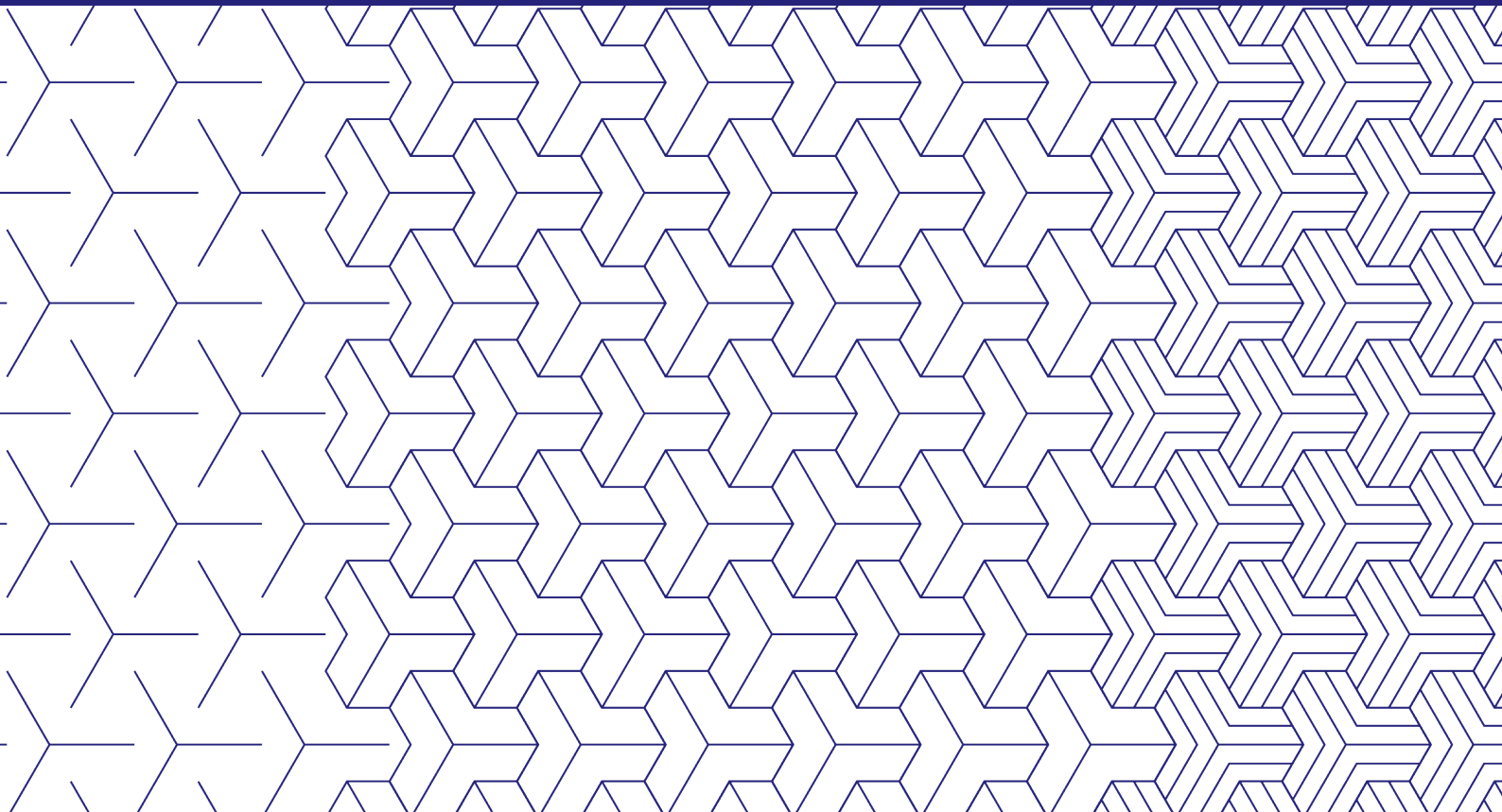
I would like to express my gratitude to all stakeholders for the collaboration and support with MITI throughout the development of the NIMP 2030. MITI will continue to provide our leadership in spearheading industrial development in Malaysia and I look forward to achieving the targets together.





1

INTRODUCTION



OVERVIEW OF THE NIMP 2030

Malaysia's strength in the manufacturing sector has been significantly driven by the implementation of robust and forward-thinking Industrial Master Plans, first launched in 1986.

The success of the IMP3 (2006-2020) was anchored on innovation, research and development (R&D) and human capital development to drive high value-added industries to transform Malaysia into a knowledge-based economy.

The journey towards formulating the NIMP 2030 is underscored by the need to build a robust industrial sector as an important prerequisite to achieve socioeconomic prosperity. Three previous iterations of the Industrial Master Plans have driven industrial development in Malaysia, with the Government adopting industrial development strategies relevant to the period to transform the economy. Malaysia flourished from a low-productivity agrarian-based economy and is heading towards achieving developed nation status, underpinned by robust manufacturing and services sectors. The strategy has successfully raised the living standards of the *Rakyat* and propelled remarkable growth in Gross National Income (GNI) per capita, increasing 34 times between 1967 to 2019, making Malaysia one of the fastest growing economies in modern history.

Industrial policies have since become more diverse and complex, incorporating new imperatives including the integration into

the global value chain (GVC), development of indigenous capabilities in a knowledge economy, evolution of environmental, social and governance (ESG) criteria and disruptions from the new industrial revolution. The question is not about the necessity of such policies, but rather what new policies are required and how to proceed.

Given the current challenging environment, benchmarking and learning from other country's experiences are no longer sufficient. Malaysia needs to embark on its own path into uncharted territory, to steer the nation into the challenging future. The combined impact of the new imperatives and the recent pandemic has compelled the Government to rethink Malaysia's industrial strategy.

With the NIMP 2030, Malaysia intends to transform the industry into greater heights, capitalising on emerging global trends, supply chain disruptions, current geopolitical landscape, digitalisation and ESG considerations. These trends are moving at an unprecedented pace and Malaysia has to act fast.

Therefore, the NIMP 2030 is designed to achieve the aspirations in a span of seven years and takes on a Mission-based approach for industrial development. This approach unites Malaysia by encouraging collaboration between the Government and the private sector to rally the industries.

PURPOSE OF THE NIMP 2030

The NIMP 2030 sets forth Malaysia's future direction in industrial transformation. It provides a national integrated plan for resilient industrial development until 2030 – setting the fundamentals for future policy development and enabling the industry at all levels. It articulates Malaysia's position and participation in the global economic environment.

The NIMP 2030 serves to:

- Provide national strategic direction to lead the industrial development policies;
- Be a conversation piece for investors and other economies on Malaysia's position and direction; and
- Feature the role of the Malaysian Government in shaping the economy.

SCOPE AND COVERAGE

The manufacturing and services sectors are the two largest sectors in Malaysia's economy. The manufacturing sector is a vital component of the economy, focusing on large-scale production of tangible goods, covering a diverse range of activities including the conversion of raw materials and components into finished products using machinery, labour and advanced technology.

The sector is supported by an array of services to assist in various aspects of the manufacturing process, providing essential support and expertise to enhance the efficiency, innovation and global competitiveness of Malaysia's manufacturing sector.

To ensure continuous growth of the manufacturing sector and related services, the NIMP 2030 outlines clear Missions to achieve the desired Goals, with consideration of:

- *Ekonomi MADANI* as the true north for Malaysia's economic development:
 - Positioning Malaysia as Asia's economic leader by building knowledge and innovation-based economy; and
 - Improving the quality of life for the *Rakyat* by prioritising the well-being of the people through high income jobs, equal opportunities and comprehensive social welfare.
- NIA, launched on 6 October 2022, where the NIMP 2030 Goals are aligned to the five key pillars with ESG as the overarching theme;
- The challenges for the nation to achieve the Goals – relevant to all sectors; and
- 32 existing and upcoming policies across the Government to ensure alignment (Appendix I).

The NIMP 2030 focuses on a whole-of-nation approach, aligned to the plans of other Ministries and ensures participation across all sectors for successful implementation. As the NIMP 2030 is an overarching policy that strategises and provides the guiding direction for Malaysia's industrial development, it takes into consideration the interconnectedness of all industrial-related policies and the various authorities involved. This fosters a common understanding and alignment among multiple stakeholders in the industrial ecosystem and ensure smooth implementation and coordination across Government machineries.

The NIMP 2030 represents a collaborative effort between the Government and the private sector, jointly owned to leverage the collective expertise and resources. It is a document to foster industrial growth and was developed through various industry consultations:

- Over 70 focus sessions and 313 stakeholders engaged with Ministries, Agencies, Regulators, Industry Associations and industry players;
- The NIMP 2030 consultation open day, which gathered industry feedback, attended by more than 650 attendees; and
- Strategic engagements with industry players as champions to drive the Mission-based Projects (MBPs). MBPs are key projects encompassing a wide range of areas critical to achieving the industrial development objectives.

The NIMP 2030 has enclosures of 21 Sectoral Plans included as supplementary references. These plans provide a view of the respective sectoral perspectives in the context of the NIMP 2030 document. The 21 sectors covered are:

Table 1.1: Sectors Covered in NIMP 2030

Sectors	Industry	Relevant Sector-specific Policies
Priority Sectors	<ol style="list-style-type: none"> 1. Aerospace 2. Chemical 3. Electrical and Electronics (E&E) 4. Pharmaceutical 5. Medical Devices 	<ol style="list-style-type: none"> 1. Aerospace Industry Blueprint 2010 2. Chemical Industry Roadmap 2030 3. Malaysia Plastics Sustainability Roadmap 2021-2030 4. E&E Roadmap 2021-2030 5. Malaysian National Medicines Policy
Sectors	<ol style="list-style-type: none"> 6. Digital and Information and Communication Technology (ICT) 7. Automotive 8. Food Processing 9. Global Services and Professional Services 10. Halal 11. Machinery and Equipment (M&E) 12. Manufacturing-Related Services (MRS) 13. Metal 14. Mineral 15. Palm Oil-based Products 16. Petroleum Products and Petrochemicals 17. Rail 18. Rubber-based Products 19. Shipbuilding and Ship Repair (SBSR) 20. Textile, Apparel and Footwear 21. Wood, Paper and Furniture 	<ol style="list-style-type: none"> 6. Industry4WRD: National Policy on Industry 4.0 7. Malaysia Digital Economy Blueprint 8. Malaysia National Artificial Intelligence Roadmap 9. National Automotive Policy 2020 10. National Agrofood Policy 2.0 2021-2030 11. Halal Industry Master Plan 2030 12. Foresight Study on the Iron and Steel Industry 13. National Mineral Policy 14. National Mineral Industry Transformation Plan 2021-2030 15. National Advanced Materials Technology Roadmap 16. National Agri-commodity Policy 2021-2030 17. Malaysian Rail Supporting Industry Roadmap 2030 18. National Timber Industry Strategic Plan 2021-2025

Additionally, there are four new growth areas identified in the NIMP 2030:

- Advanced Materials;
- Electric Vehicles;
- Renewable Energy; and
- Carbon Capture, Utilisation and Storage (CCUS).

Other Services (Scope not covered in the NIMP 2030)

The following services areas are not covered under the NIMP 2030, but their growth will continue to contribute significantly to the Malaysian economy, guided by the relevant ministries and policies:

- Banking and insurance;
- Construction services, guided by the National Construction Policy 2030;
- Utilities;
- Tourism, guided by the National Tourism Policy 2020-2030;
- Private healthcare, guided by the Malaysia Healthcare Travel Industry Blueprint 2021-2025;
- Private education, guided by the Higher Education Blueprint 2015-2025 and the Way Forward for Private Higher Education Institutions: Education as an Industry (2020-2025);
- Transport and logistics, guided by the National Transport Policy 2019-2030;
- Food and beverages; and
- Other unregulated services.



2

**MALAYSIA'S INDUSTRIALISATION
TODAY**



Malaysia's industrialisation landscape is shaped by the evolution of the manufacturing sector over the last few decades. The sector has been playing a pivotal role in driving economic growth by contributing approximately 24 per cent to the country's GDP and accounting for 84 per cent of Malaysia's total exports. Both GDP and exports of the sector have been growing at 6 per cent since 2000 and 2006 respectively. In parallel, the sector supports the livelihoods of 2.7 million individuals, representing approximately 17 per cent of total employment in Malaysia. Manufacturing therefore serves as a cornerstone for the nation's international competitiveness, economic resilience and human capital development.

In terms of the services sector, the rapid growth in services contributed to Malaysia's industrialisation development as it has a positive relationship to manufacturing performance¹. Access to services such as telecommunications, logistics and financing will impact the competitiveness of manufacturing firms.

PAST PERFORMANCE AND KEY CHALLENGES

The performance of the manufacturing and services sectors against IMP3's macro targets are tabulated below (Table 2.1)².

Table 2.1: Key Macro Targets for IMP3

Targets	Baseline (2005)	Target (2020)	Realised 2020	Realised 2022
GDP Value of manufacturing sector³	RM149.7 billion <i>(based on constant 2005 prices)</i>	RM187.6 billion <i>(based on 1987 real prices)</i>	RM307.8 billion <i>(based on constant 2015 prices)</i>	RM364.5 billion <i>(based on constant 2015 prices)</i>
Share of manufacturing sector (% of GDP)	31.4%	28.5%	22.3%	24.2%
Share of non-Government services (% of GDP)	50.5%	59.7 %	48.5%	49.1%
Share of Government services (% of GDP)	7.6%	6.8%	9.2%	9.1%
Implemented private Investments (cumulative)⁴	Total: RM464.5 billion	Manufacturing: RM412.2 billion Services: RM687.7 billion	Manufacturing: RM652.4 billion Services ⁵ : RM139.9 billion	Manufacturing: RM862.8 billion Services ⁶ : RM211.2 billion
External Trade	Exports: RM533.8 billion Total trade: RM967.8 billion	Exports: RM1.4 trillion Total trade: RM2.8 trillion	Exports: RM980.99 billion Total trade: RM1.77 trillion	Exports: RM1.55 trillion Total trade: RM2.48 trillion

Source: DOSM (Sectoral GDP); MIDA (Investments); MATRADE (Trade)

Although the share of manufacturing sector's contribution to GDP in 2020 was 6.2 percentage points lower than its IMP3 target, it has showed recovery post-pandemic and closed the gap further in 2022 to 4.3 per cent. In terms of value, manufacturing's GDP broadly doubled and exceeded its IMP3 targets. In 2020, Government services exceeded its target by 2.4 percentage points. However, non-Government services fell short of its IMP3 target by 11.2 percentage points.

In terms of the implemented private investments, the manufacturing sector performed above expectations and doubled the target set in IMP3 as of 2022. However, services fell short – its investment in 2022 stood at 30.7 per cent of the IMP3's target⁷. This may be explained partly by Malaysia's higher Services Trade Restrictiveness Index in most services compared to its peers⁸.

Malaysia's trade performance in 2022 was RM2.48 trillion. Although it was RM32 billion less than the IMP3 target, it grew by 2.5 times relative to its baseline value. Zooming in to exports specifically, Malaysia exceeded its target by RM569 billion. The growth is driven by the outstanding trade performance of E&E products, petroleum products, liquified natural gas, palm oil and palm oil-based agriculture products, machinery, equipment and parts – each recorded its highest export value ever, increasing by more than RM10 billion and registering double-digit growth.

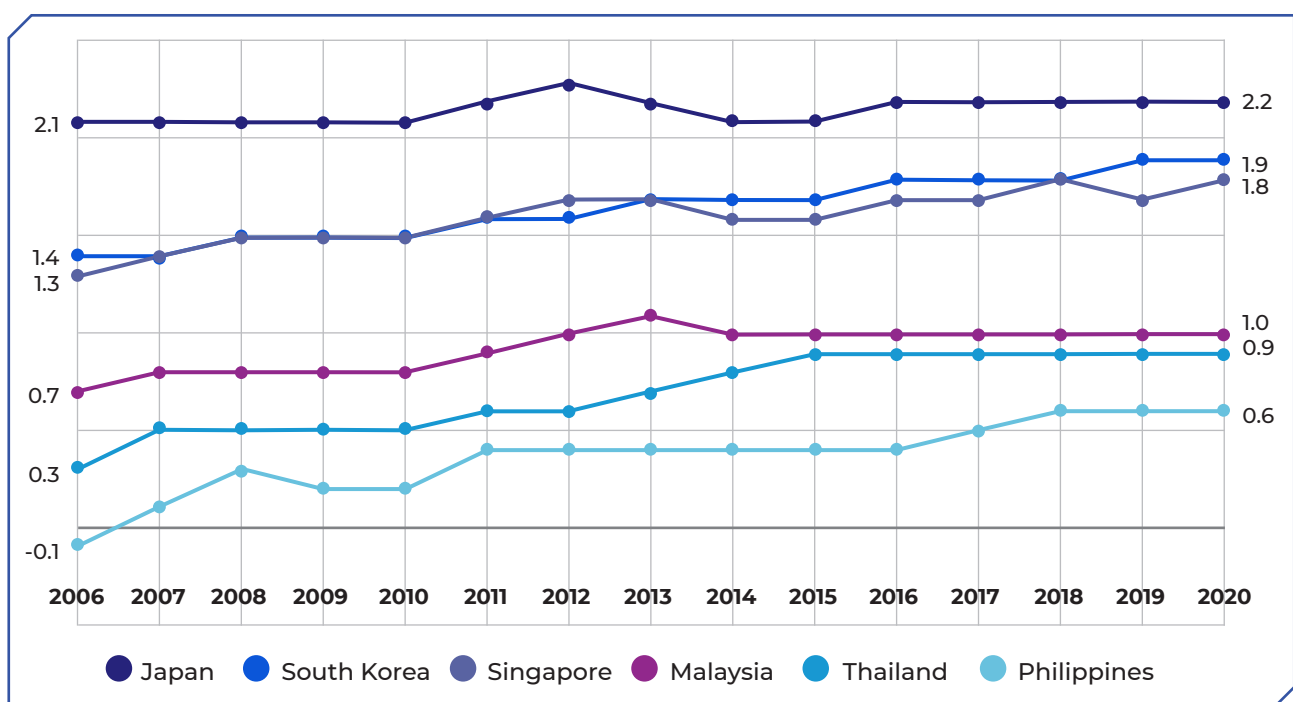
Although the manufacturing and services sectors have made some progress over the years, it is crucial to acknowledge that there are key challenges in industrialisation development in Malaysia:

Marginal improvement in economic complexity:

Malaysia's degree of economic complexity as measured by the Economic Complexity Index (ECI)⁹ peaked in 2013, dipped in 2014 and stagnated till 2020. Other Association of Southeast Asian Nations (ASEAN) countries, like the Philippines and Thailand, continued to grow in their respective economic complexities, closing in towards Malaysia's position. Overall, throughout the IMP3 period, Malaysia remained behind its aspirational target countries in East Asia such as South Korea, Japan and Singapore.

Higher levels of economic complexity are associated with higher levels of development and growth¹⁰. Crucially, a country's structural transformation is determined by its capacity to accumulate the capabilities that are necessary to produce a greater variety and more complex goods.

Figure 2.1: Economic Complexity Index of Malaysia and Selected Countries, 2006-2020



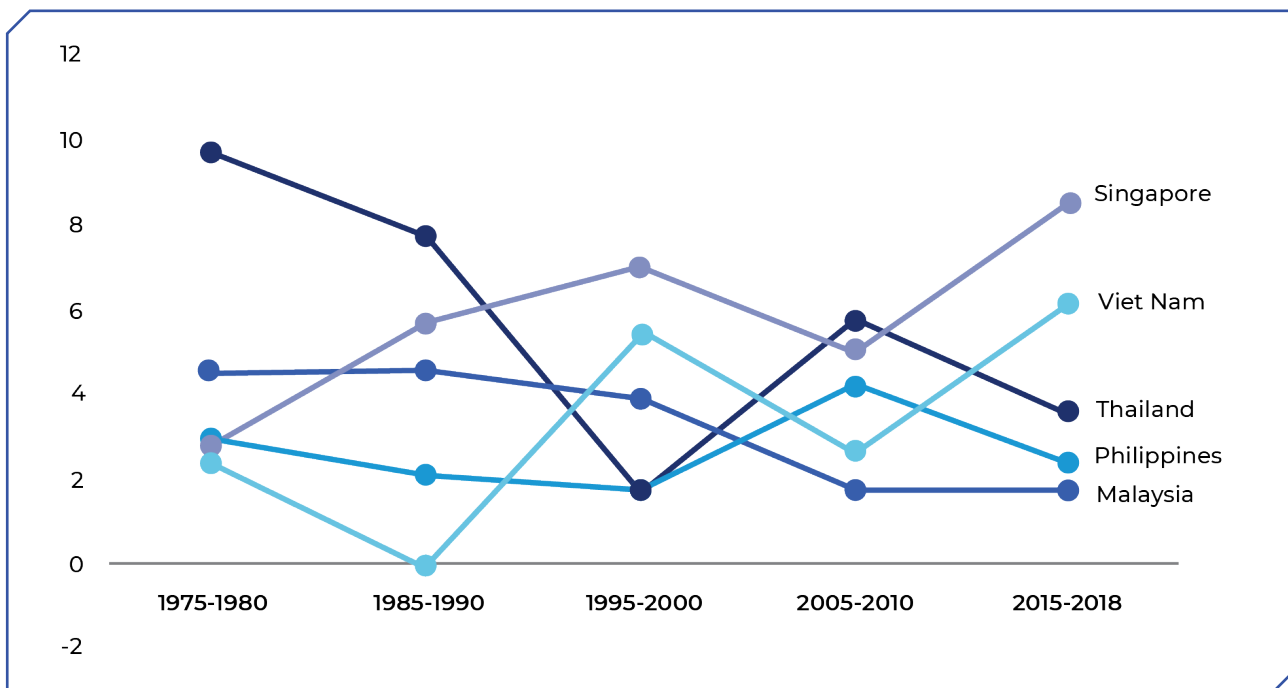
Source: The Observatory of Economic Complexity

Servicification¹¹ has a positive relationship on the manufacturing performance. For example, access to telecommunications, transport, distribution services and financial intermediation can affect the competitiveness of manufacturing firms. Malaysia's direct contribution of services to manufacturing value-added is much lower than the OECD average and neighbouring countries. Improving the use of MRS in Malaysia can help to facilitate better manufacturing performance by boosting the competitiveness of manufactured goods.

Stagnated labour productivity:

Labour productivity growth in Malaysia has significantly slowed down in the past three decades, particularly from 2011 to 2018. Malaysia's labour productivity growth has been lower than Singapore, Thailand and the Philippines since 2000, and even lower than Viet Nam since 2005 (Figure 2.2).

Figure 2.2: Labour Productivity Growth of Malaysia and ASEAN Peers, 1975-2018 (%)



Source: ASEAN Secretariat

This decline in labour productivity is explained by:

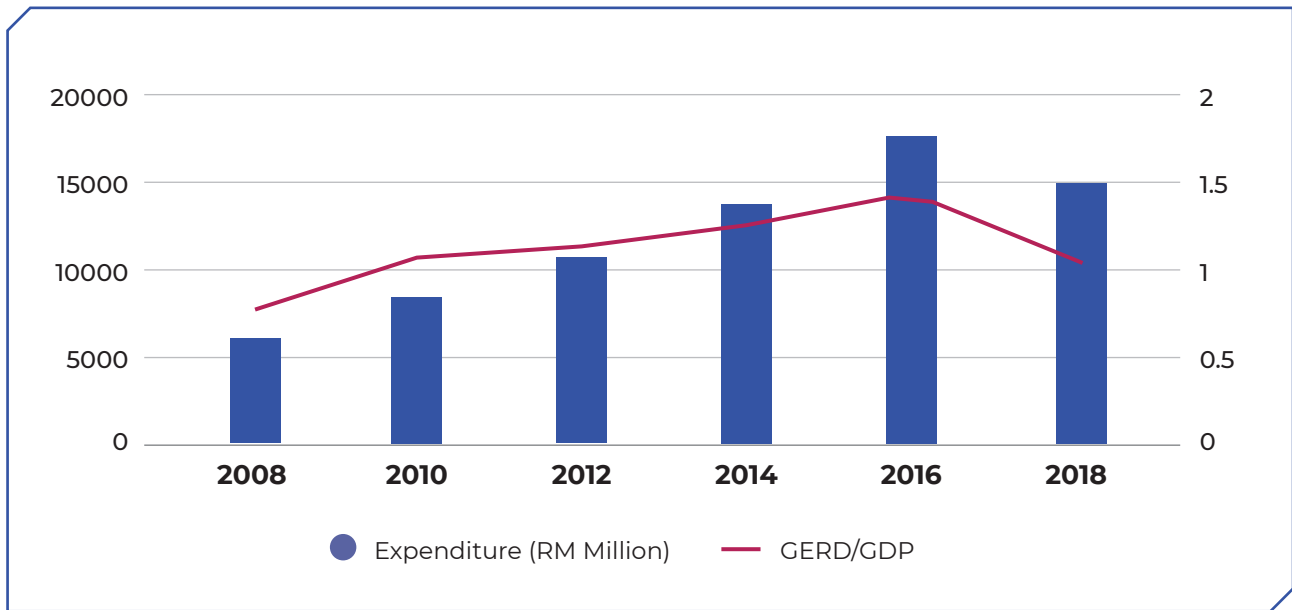
- **Prolonged use of low-skilled foreign workers in the manufacturing sector:**

Malaysia had early mover advantage as it opened up to FDI liberalisation with the establishment of the Bayan Lepas Free Trade Zone in 1971 and attracted FDI to establish export-oriented, labour-intensive manufacturing with the help of its relatively low labour costs at that time. Subsequently, other developing countries, like China, has opened up to FDI and attracted low labour-cost manufacturing, posing stiff competition for Malaysia. Malaysia prolonged its use of low-skilled foreign workers to stay on in labour-intensive manufacturing instead of moving on to more technology-intensive activities, which then delayed the upgrading of the Malaysian manufacturing sector.

- **Relatively low innovation performance:**

The country's investment in R&D¹² as a percentage of GDP has fallen since 2016 (Figure 2.3) and its Global Innovation Index¹³ fell from a peak of 46.9 in 2013 to a low of 38.7 in 2022. This has constrained the development of high value-added manufacturing activities.

Figure 2.3: R&D Expenditure in Malaysia, 2008-2018



Source: National Survey of Research and Development (R&D) in Malaysia 2019 (MOSTI)¹⁴

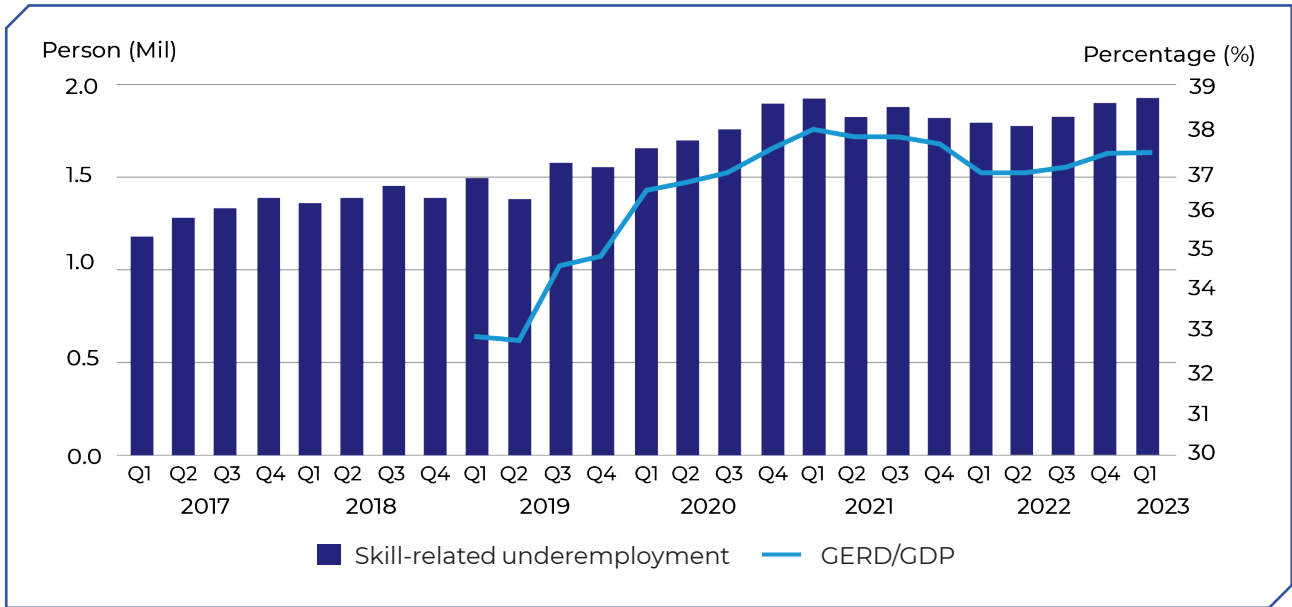
This decline may be attributed to a possible factor where researchers in higher learning institutions (HLIs), which were the main driver for R&D activities in Malaysia, did not pursue research areas related to manufacturing or to meet industrial needs. According to Malaysia's National Survey of R&D in 2019, a bigger proportion of the Basic Research R&D expenditure came from the HLIs (65 per cent) whereas the Business Enterprises focused on Applied Research and Experimental Development, indicating a mismatch.

World Bank found that the main source of mismatch between suppliers of research from HLIs and industry demand, lie in the emphasis on scientific publications for promotions in HLIs¹⁵. The researchers in the HLIs are not incentivised to engage in technology transfer and entrepreneurial activities such as commercialising their R&D activities as these were deemed less important for career advancements in the HLIs.

Skills mismatch and talent shortage:

Skill-related underemployment¹⁶ in Malaysia continues to rise by 6.9 per cent annually since 2017 (Figure 2.4). This indicates the labour market's inability to absorb all higher education graduates – more than a third of employed persons with tertiary education were in the semi- and low-skilled occupations. Semi-skilled wage growth is lower compared to skilled jobs. This underscores the need for high-skilled jobs, to improve workers' welfare and expand middle-class society.

Figure 2.4: Skill-related Underemployment, 2017-2023



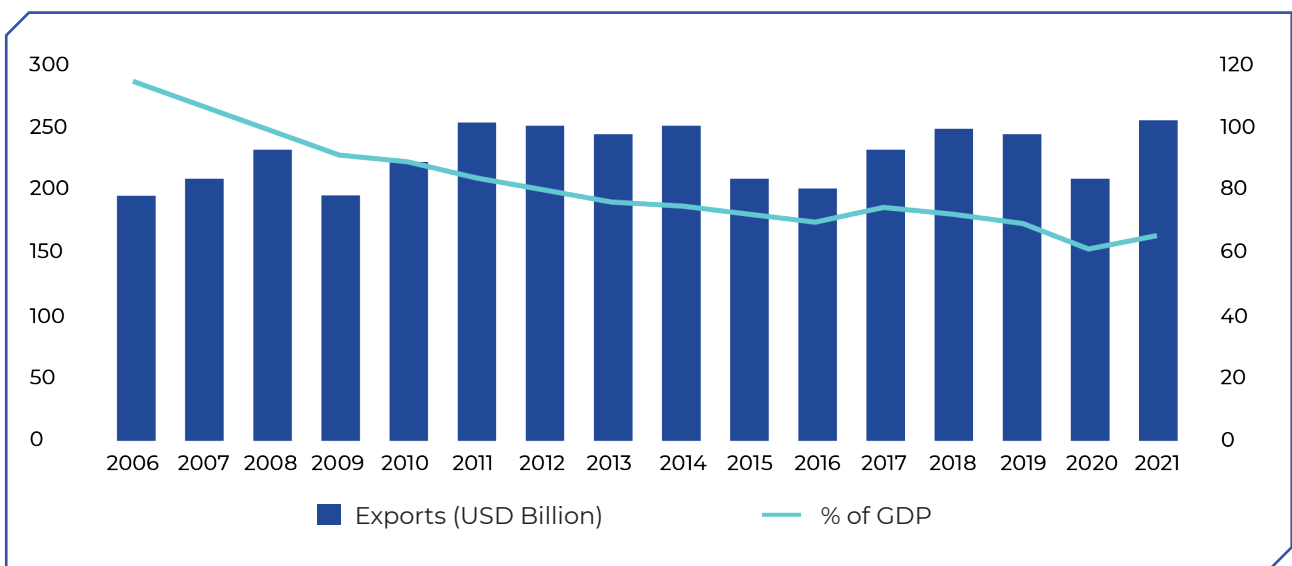
Source: DOSM; Note: Rate of skill-related underemployment for 2017 to 2018 is unavailable as employed persons with tertiary education data was not available publicly.

The number of graduates in science, technology, engineering and mathematics (STEM) is still below its aspirational target of 60 per cent¹⁷. Malaysia is facing a talent shortage, especially as the World Economic Forum expects nine out of the Top 10 emerging jobs in 2025 to be STEM-related¹⁸. The talent shortage is further exacerbated by local talents preferring overseas jobs due to the promise of higher pay and the difficulty in hiring skilled foreign workers.

Increased reliance on re-exports as export growth driver:

Exports as a share of GDP fell steadily throughout the IMP3 period as growing exports was facilitated by growing imports (Figure 2.5).

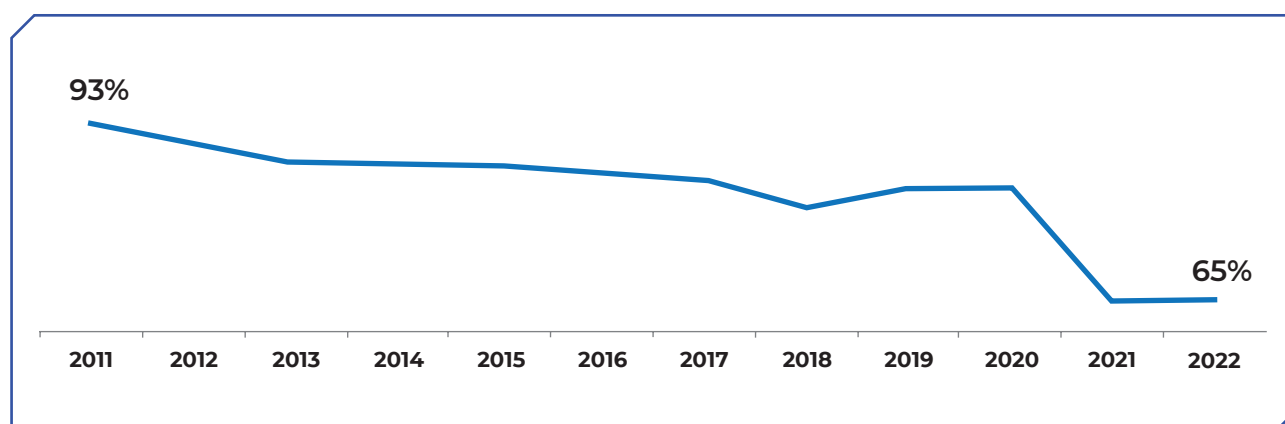
Figure 2.5: Exports USD billion and % of GDP



Source: World Bank

In terms of exports composition, the share of domestic exports to total exports declined continuously since 2011, driven by a higher proportion of re-exports¹⁹ (Figure 2.6).

Figure 2.6: Share of Domestic Exports to Total Exports (%), 2011-2022



Source: DOSM

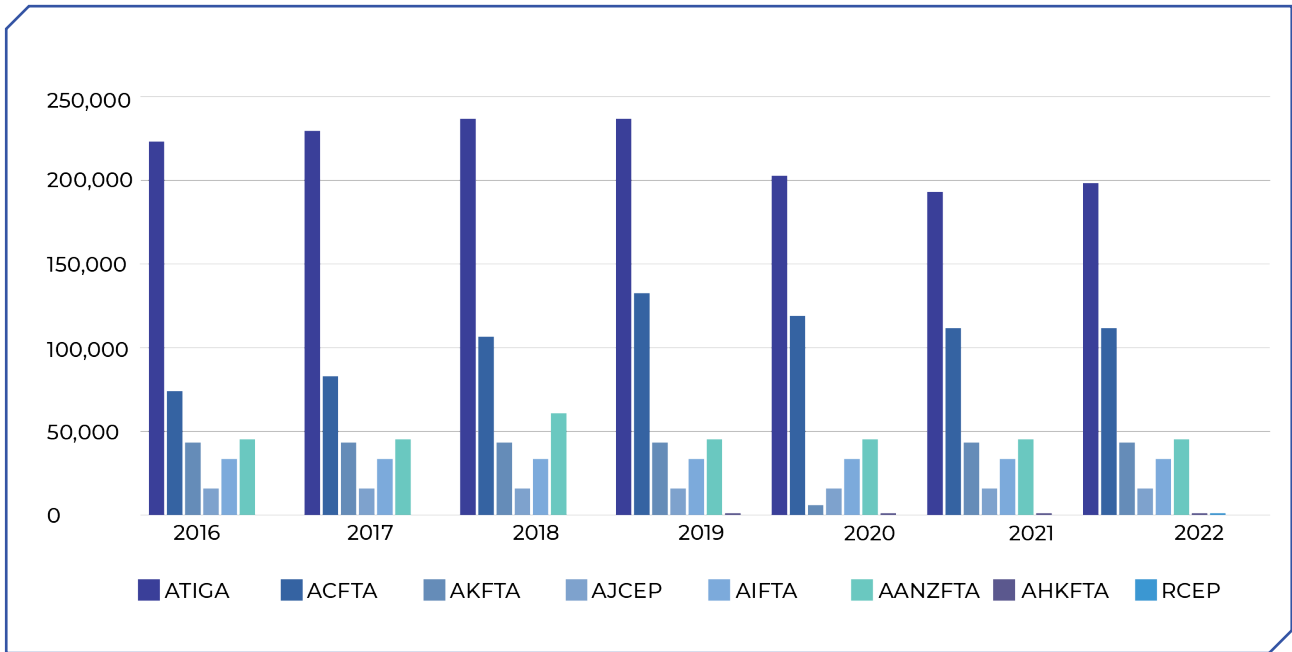
Malaysia's top exports have remained largely in integrated circuits, refined petroleum, palm oil, rubber apparel and petroleum products, and the main export destinations continue to be China, ASEAN and the US. E&E garnered the largest share in manufactured exports for Malaysia, but its share of the global exports has stagnated and fallen due to loss of competitiveness vis-a-vis China.

Low utilisation of free trade agreements (FTAs) by local companies:

Effectively utilised FTAs help stimulate inward Foreign Direct Investment (FDI) by enhancing the predictability of the member countries' investment climate²⁰. Malaysia has signed 16 FTAs to date – seven bilateral trade agreements and nine regional trade agreements²¹.

Total FTA utilisation has declined since COVID-19 pandemic and yet to recover (Figure 2.7). ATIGA, ACFTA and AANZFTA are amongst the oldest FTAs and have had higher utilisation compared to other FTAs. More recent agreements such as the AHKFTA and RCEP are less utilised as firms are only beginning to use it. Despite being the largest FTA by total GDP, RCEP was used by fewer than 900 firms in 2022, the year it entered into force.

Figure 2.7: FTA Utilisation by Number of Companies, 2016-2022



Source: MITI

Modern FTAs go beyond tariff liberalisation and include among others, trade and investment facilitation, services liberalisation, and other features such as competition policy, government procurement and intellectual property protection. FTAs can improve the location-specific factors of its signatories by enhancing the predictability of the investment climate of member countries through the provisions in the agreement.

Empirically, a study on the impact of ASEAN FTAs with six countries, namely China, India, Japan, Korea, Australia and New Zealand from 2002-2012, concluded that ASEAN and ASEAN Plus Agreements tend to stimulate inward FDI besides other traditional variables such as strong institutions, good physical infrastructure, and low costs of doing business²². For Malaysian manufacturing, it was found that the ASEAN Free Trade Area (AFTA) and bilateral trade agreements have a significant positive impact on Malaysia's non-resource-based exports that are associated with production sharing²³.

Box Article 2.1: Success Stories of FTAs Attracting FDIs



Expansion of the Malaysia-Turkiye Free Trade Agreement (MTFTA) to include trade-in services, investment and e-commerce

- 17 Apr 2014** ● MTFTA signed between Malaysia & Turkiye
- 13 Jul 2021** ● Joint Declaration on the Expansion of the FTA signed
- 28 Sep 2022** ● First Protocol to amend the MTFTA signed

What are the benefits of the MTFTA expansion?



Transparent & predictable operating conditions



Removing key barriers to trade in services



Enhancing accessibility of investments



Improving mobility for professionals between Malaysia & Turkiye

Examples: Turkiye companies that have invested in Malaysia



TUSAS Malaysia Sdn. Bhd.

- Wholly owned subsidiary of Turkish Aerospace Industries Inc, one of the leading companies in the global aviation industry
- Established in 2021 in Cyberjaya, Cyberjaya

Key Achievements



First Aerospace OEM Design Center in Malaysia



First engineering & design office in Southeast Asia



MOU signed with UniKL and UM – 10 students completed their internship program at The Turkish Aerospace HQ at Ankara, Turkiye



Evyap Sabun Malaysia Sdn. Bhd.

- Wholly owned subsidiary of Turkiye-based Evyap Group, a longstanding and well-established personal care product manufacturer
- Established in 2011 in Pasir Gudang, Johor

Key Achievements



Doubled total capacity from 200,000 to 400,000 tonnes per year



Invested in a full-scale oleochemical plant to sell specialty chemicals for personal care, food and industrial applications, besides soap



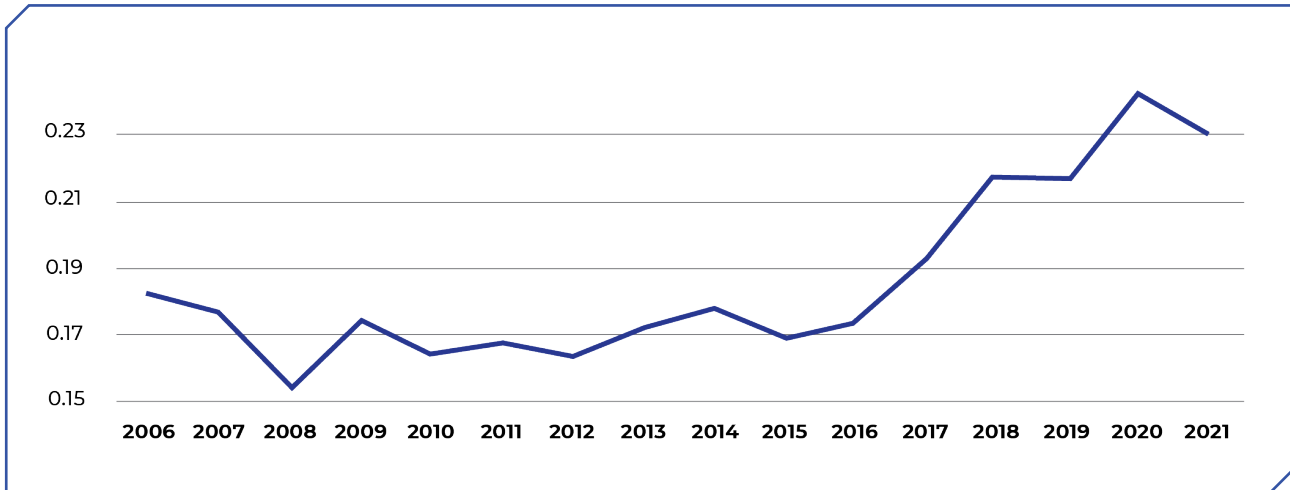
Offers tailor-made, specialty oleochemical solutions backed up by strong R&D capabilities

Source: MIDA, MIDA Investment Performance Report, Evyap Oleo, Bernama MREM

Marginal improvement in product and market diversification:

Malaysia's export concentration index increased since 2006 but tapered down slightly in 2021. This indicates increased vulnerability to external shocks as a decline in demand for a few key products could significantly impact Malaysia's export earnings. Continued products diversification, especially to include new and more complex products, is paramount to expand exports.

Figure 2.8: Export Concentration Index in Malaysia, 2006-2021



Source: United Nations Conference on Trade and Development (UNCTAD)

Increasing use of non-tariff measures (NTM):

NTMs include a diverse range of policies that countries apply to imported and exported goods that may affect trade by changing quantities traded, prices, or both. However, NTMs often serve a legitimate purpose as they are put in place for valid concerns such as food safety and environmental protection.

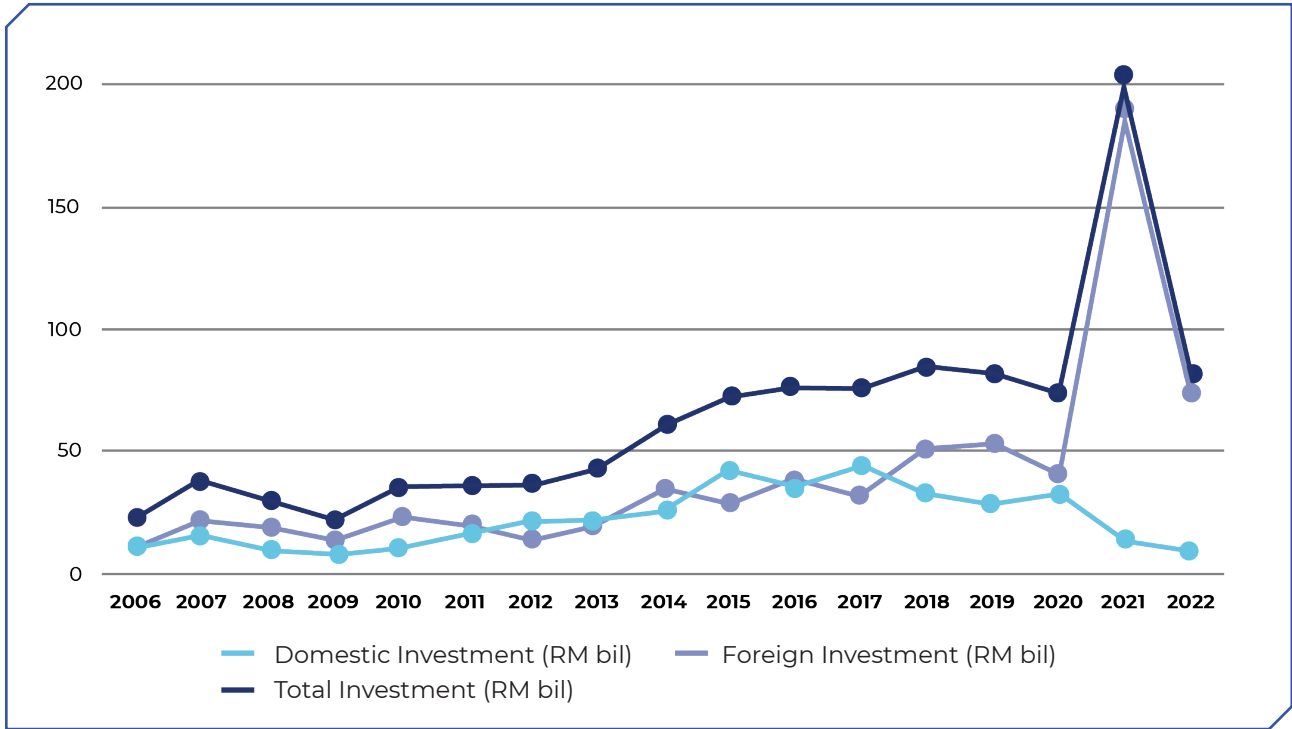
Malaysia issues up to 713 NTMs for over 5,000 products²⁴. The majority of NTMs comprises Sanitary and Phytosanitary (SPS) measures and Technical Barriers to Trade (TBT) totalling 82.9 per cent of the NTMs in the country with SPS at 36.3 per cent and TBT at 46.6 per cent.

NTMs can create unnecessary and burdensome regulations that impede trade and raise trade costs, though this may be unintentional. The review of Malaysia's NTMs must consider the need to achieve the least possible trade restrictions and distortions while meeting legitimate policy objectives.

Competition in FDIs hampering Malaysia’s participation in GVC²⁵ and downward Domestic Direct Investment (DDI) trend:

FDI rebounded sharply in 2021 following the drop in 2020 due to the pandemic. Although FDI in 2022 was lower compared to the previous year, the amount still outperformed the peak achieved during the IMP3 period of 2006 to 2020 (Figure 2.9).

Figure 2.9: Implemented Domestic and Foreign Investments, 2006-2022²⁶



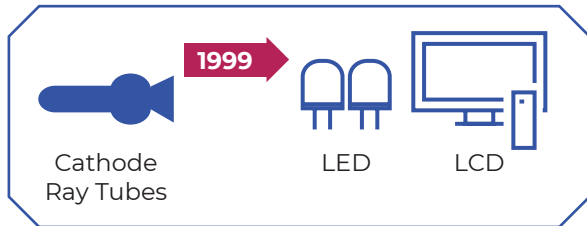
Source: MIDA

Box Article 2.2:

High Quality Investments in Malaysia

Samsung SDI Energy Malaysia Sdn. Bhd. (SDIEM)

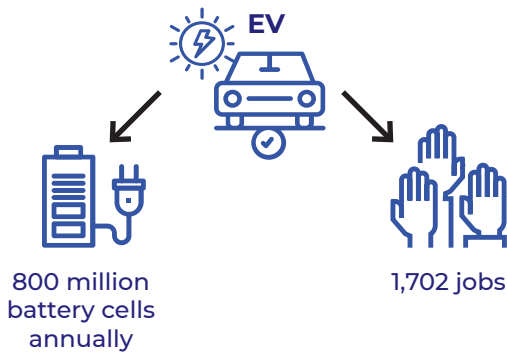
Started operations in Negeri Sembilan's industrial area in 1991 through Samsung Eletron Devices. Malaysia (SEDM)



A total investment of RM2.8 billion invested from September 2011 to May 2022 created:



SDIEM invested cumulatively **RM7 billion**, to build a state-of-the-art facility to manufacture batteries for EV creating.



EV manufacturer for electric pasenger vehicles to boost Malaysia towards Net Zero greenhouse gas (GHG) emission by 2050

Cell Tissue Technology Sdn. Bhd



Approved domestic investment of RM11.2 million in 2021 from Cell Tissue Technology Sdn. Bhd.

#1st

Tissue engineering firm in Malaysia and the commercial arm of Univeristy Kebangsaan Malaysia.

Focus area in tissue engineering & stem cell technology:

- 1 3D Bioprinting- production of artificial organs, which is the next frontier in medicine
- 2 Medical
- 3 Aesthetic
- 4 R&D

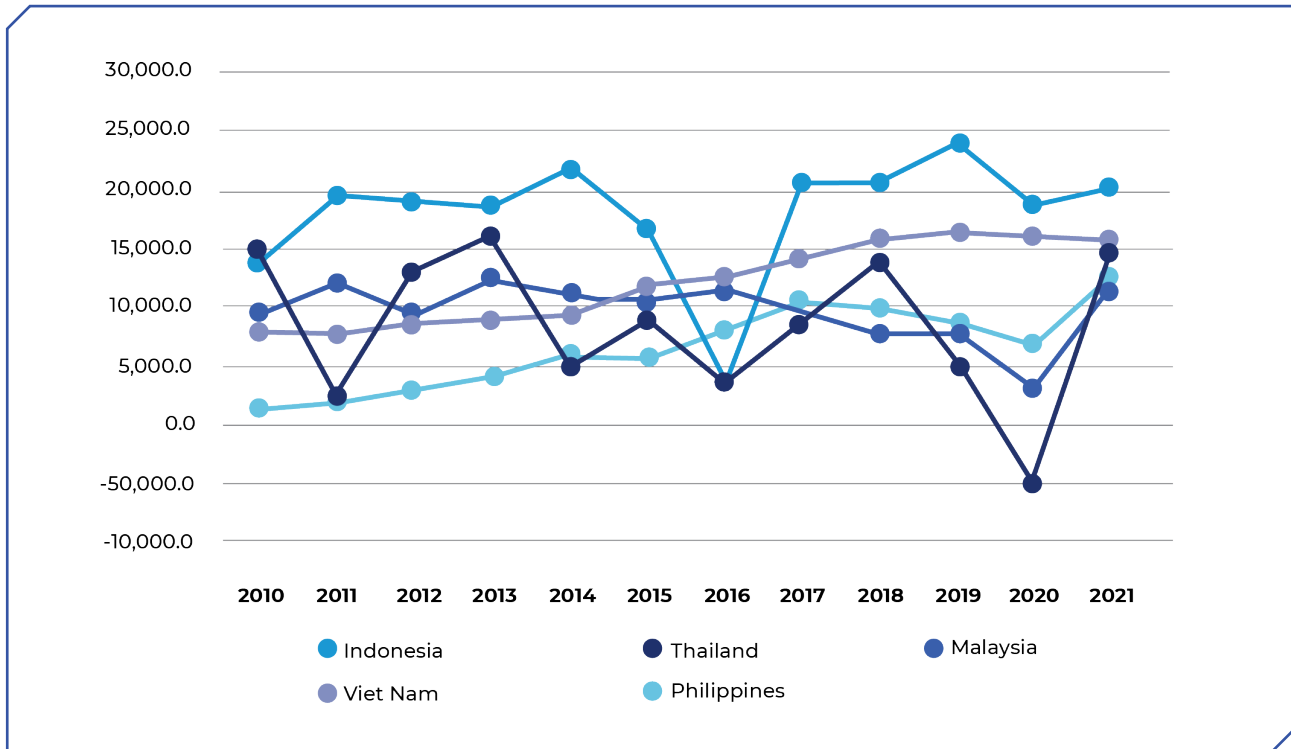


Aligned with Malaysia's emphasis on using industry 4.0 technologies capabilities, Intergrating Environmental Monitoring System (EMS) with Building Monitoring System (BMS), which can enhance production while ensuring quality.

Source: MIDA, SDIEM, Cell Tissue Technology

Despite the overall increase in implemented FDI into Malaysia, other countries in the region received more inward FDI in recent years. Indonesia, the Philippines, Thailand and Viet Nam outperformed Malaysia in terms of FDI inflows in 2021 (Figure 2.10).

Figure 2.10: Inflows of FDI into ASEAN-5, USD million



Source: ASEAN Secretariat

FDI has been an important driver to the growth of domestic value-added (DVA) because the activities of the subsidiaries and affiliates of multinationals are part of the domestic economy and thus contribute to the DVA. Even if multinationals do not have direct investments in the economy, their contractual relationships with local suppliers would likewise stimulate domestic economic activities.

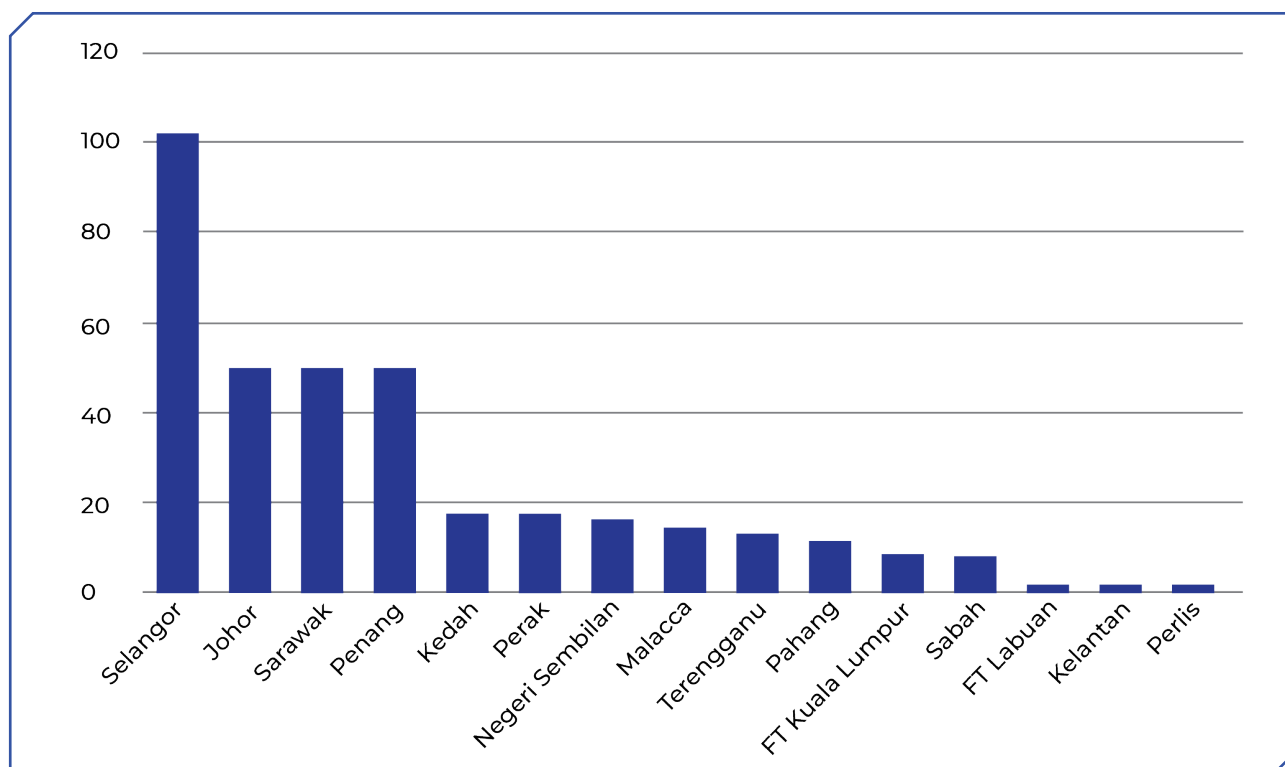
Malaysia joined the GVCs²⁷ by liberalising FDI through the Free Trade Zone Act 1971. FDI was brought into Penang through FTZ leading to the development of the E&E cluster in the state. Malaysia participates in GVCs mainly through backward linkage, measured by share of foreign value-added (FVA), rather than forward linkage (measured by indirect domestic value-added exports, or DVX). In 2019, the DVX share accounted for 29 per cent, up from 18 per cent in 1995. The share of FVA remained higher than the DVX, at 36 per cent in 2019.

Another challenge in investments is that DDI has been on a general downward trend since 2017, indicating the need for strategic measures to facilitate domestic investments.

Disparities in manufacturing activities across States hamper inclusive growth:

Manufacturing development is unevenly distributed throughout the different States in Malaysia. The three main States contributing to manufacturing value-added in the west coast of Peninsular Malaysia are Selangor, Johor and Penang, along with Sarawak in East Malaysia. Kelantan, Perlis and Sabah contributed the least to manufacturing value-added (Figure 2.11).

Figure 2.11: Manufacturing Value-added by State, 2021 (RM bil)



Source: DOSM

Limited GVC participation and financing in micro, small and medium enterprises (MSMEs) development:

The number of MSMEs in Malaysia almost doubled from 2010 to 2021, with micro enterprises forming the largest share. The services sector consistently accounted for around 80 per cent of MSMEs, while manufacturing made up around 5 to 6 per cent.

Malaysia's MSMEs did not achieve the export target set out in the SME Masterplan by SME Corporation Malaysia (SME Corp) (Table 2.2). Contribution of MSME to overall exports dropped by 5.1 percentage points due to COVID-19. However, non-MSMEs were less affected due to their strong GVC linkages.

The value-added per employment for MSMEs was consistently at approximately 20 per cent lower than the national labour productivity.

Table 2.2: Contribution of MSMEs to the Overall GDP and Overall Exports

Measure	Actual		Targets in 2020, under SME Masterplan
	2016	2020	
MSMEs' Contribution to Overall GDP (%)	37.3	38.1	41.0
MSME's Contribution to Overall Exports (%)	18.6	13.5	23.0
MSME's contribution to total employment (%)	47.0	48.0	62.0

Source: SME Corp

MSME development is further hampered by various challenges including financing, insufficient cash flow, high costs of doing business, digitalisation and e-commerce adoption and insufficient financing for exports²⁸.

Although there has been an increase in financing provided by financial institutions to MSMEs, accessing finance remains difficult due to insufficient collateral for securing bank loans. Many MSMEs, particularly unincorporated firms, cannot use movable or intangible assets as collateral, leading to frequent loan rejections. Improvements are needed to enable small and medium enterprises (SMEs) to access loans more easily in the future.

Insufficient financing for new growth ventures:

Malaysia is heavily reliant on traditional debt-based financing from banks for its industrial development. However, this financing method may not adequately meet the diverse needs of innovation and firms that seek new growth ventures.

This is because these firms often operate in emerging industries with unpredictable revenue streams and limited tangible assets for collaterals. Therefore, it is crucial to have greater access to a more diverse range of funding and financing instruments to complement the traditional bank-led debt financing and support growth of innovative firms.

Need to improve ease of doing business:

Although Malaysia's position in the International Institute for Management Development (IMD) World Competitiveness Ranking improved from 32nd place in 2022 to 27th place in 2023, making it second in Southeast Asia, Thailand and Indonesia are closing the gap.

According to IMD, regulatory reforms for ease of doing business at the national and sub-national levels are among the key challenges for Malaysia in becoming a more competitive economy. Malaysia has 31 investment promotion agencies (IPAs), which has led to duplicating roles and lengthy bureaucratic processes.

EMERGING MEGA TRENDS

Simply observing the current state of Malaysia's manufacturing industry is not enough to future-proof Malaysia. Instead, it is essential to prepare for the desired future economy. This requires a keen awareness of significant global trends that will influence Malaysia's development in the coming decade. Three mega trends will affect the future of trade and investment globally, including Malaysia.

Geopolitical shifts – focus on economic security

The world of today is marked by 'polycrisis'. Industrial development faces multiple threats across various dimensions. These range from the uneven recovery following the COVID-19 pandemic to climate change catastrophes, as well as rising geopolitical tensions between countries.

Building resilience has become an important policy and strategic tool for managing this increasingly complex web of global risks. In the face of growing supply chain disruptions, countries have had to shift their focus from economic efficiency to economic security.

Industry players these days prefer a shorter and more secure supply chain to provide goods and services more seamlessly. In this regard, there are several key trends in supply chain management and geopolitics that countries need to incorporate in their industrial policy planning. These include nearshoring (preferring to invest closer to the investors' country or origin) and friendshoring (preferring to set up manufacturing facilities in countries that are geopolitical allies).

Malaysia stands to gain from these developments. This recent trend is illustrated by the move of notable global players to turn to Southeast Asia as the "Plus One" to ensure economic security and supply chain resilience. Apart from that, ASEAN is becoming the alternative choice due to its strategic location, track record on industrial development and investment management as well as its relative macroeconomic and political stability.

Malaysia and the ASEAN economies are intertwined in trade and investment with both warring economies. This unlocks opportunities to integrate in the GVC as there is considerable

appetite for nearshoring and friendshoring in the region among global investors, especially to export to the US and European Union (EU). The ASEAN economies stand to benefit from these developments. Moving forward, Malaysia and its ASEAN neighbours should push for greater vertical integration across value chains, particularly in semiconductors, clean energy, critical minerals and other sectors of strategic importance. This implies a focus on working together to build regional strength and complement one another rather than being a zero-sum game.

The Government understands the importance of advancing in tandem with the ASEAN economies. By integrating with the ASEAN economies, Malaysia stands to be an indispensable part of the GVC. The way forward should involve further push for an international, rules-based order, while maintaining ASEAN centrality²⁹.

Digitalisation

As the world and Malaysia move towards embracing a digital economy, the internet has become an indispensable utility for accelerating digitalisation. The pandemic has added fuel to the surge in digitalisation as companies were forced to adapt to working from home and opting for online operations during the lockdown periods.

Embracing digitalisation bolsters companies' resilience to shocks by safeguarding labour productivity and employment during challenging times. This can contribute towards longer term labour productivity, based on historical evidence from the US and more advanced European economies³⁰.

Apart from raising productivity, digital transformation can help companies create value and spur innovation. Specifically, digital transformation enables manufacturing companies to improve their operations and inventory management, as well as employee and customer management. Smart technology can ensure a safe working environment, improve productivity rate and product quality.

Malaysia's digital economy grew faster, at 8 per cent per annum than the GDP growth at 5 per cent per annum, between 2015 and 2018³¹.

Malaysia's internet economy was worth USD11.4 billion in 2020 and has the potential to create an annual economic value of RM257.2 billion (USD61.3 billion) by 2030. For this to happen, Malaysia has to facilitate digitalisation in the public and private sectors, foster digital talent and promote digital trade opportunities.

Climate Change and Environmental, Social and Governance (ESG) Requirements

Climate change has increased two types of risks for companies globally and they are:

- Physical risk associated with the physical impact of climate change. By 2050, over 90 per cent of the world's largest companies will have at least one of their assets highly exposed to the physical impact of climate change³², such as rising sea levels affecting port operations and increased droughts harming hydroelectric power generation.
- Transition risk as countries shift toward a low-carbon economy and are exposed to regulatory changes and new economic requirements. For instance, the use of less carbon-intensive fuels, which may drive up the costs of production in the short-term.

Physical risks from climate change can be disruptive to businesses, from physical asset damages due to flood and supply-side shocks which would result in higher commodity prices and migration of people³³. Transition risks can result in stranded assets, requiring reinvestment and replacement. These risks raise the management costs for companies.

Apart from that, an earlier report indicated that labour productivity in Malaysia could fall by 25 per cent by 2045. This is due to the negative impact of increased global warming on the number of unsafe 'heat stress' days per year and its impact on vulnerable workers³⁴.

ESG compliance has become increasingly important in the face of increasing climate risks as it deals with a company's impact on the environment and society. Investors are progressively taking ESG considerations into account in their selection of locations to invest, apart from other traditional variables such as market size, infrastructure, macro-economic condition and political stability. Thus, proactive measures to meet ESG compliance should be used to drive future investments.

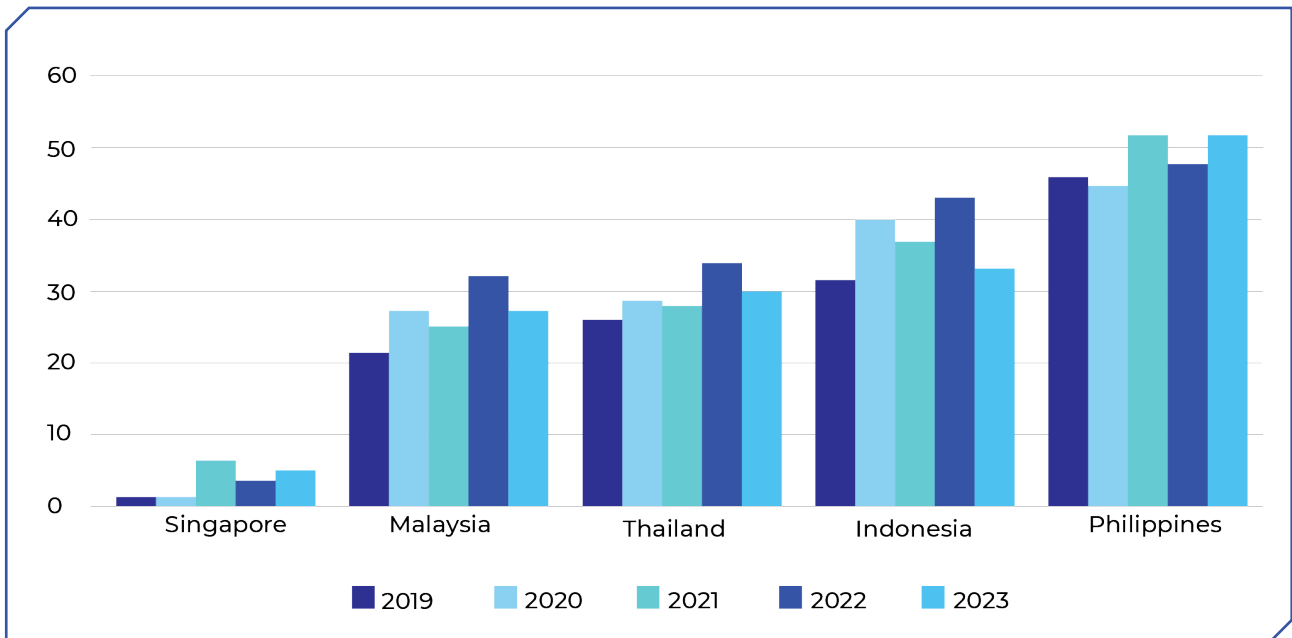
OPPORTUNITIES FOR MALAYSIA

All three mega trends imply the reconfiguration of GVCs for risk diversification, leading to a shift in strategy from economic efficiency ('just-in-time' model) to economic security ('just-in-case' model).

In the new model where proximity is valued, there will be an increasing regional focus, where manufacturing will be less fragmented and more concentrated in terms of value-added. It will be platform-driven, more asset-light, with a growing share of services³⁵.

Malaysia is well positioned amidst these changes to become a key destination for investors looking to diversify out of China and the US as part of the evolving GVC transformation based on Malaysia's competitiveness ranking (Figure 2.12). Throughout this period, Malaysia is ranked second among the selected ASEAN member countries, but Malaysia has to act fast to improve its ranking aggressively to be among the top 20 nations.

Figure 2.12: World Competitiveness Ranking, 2019-2023

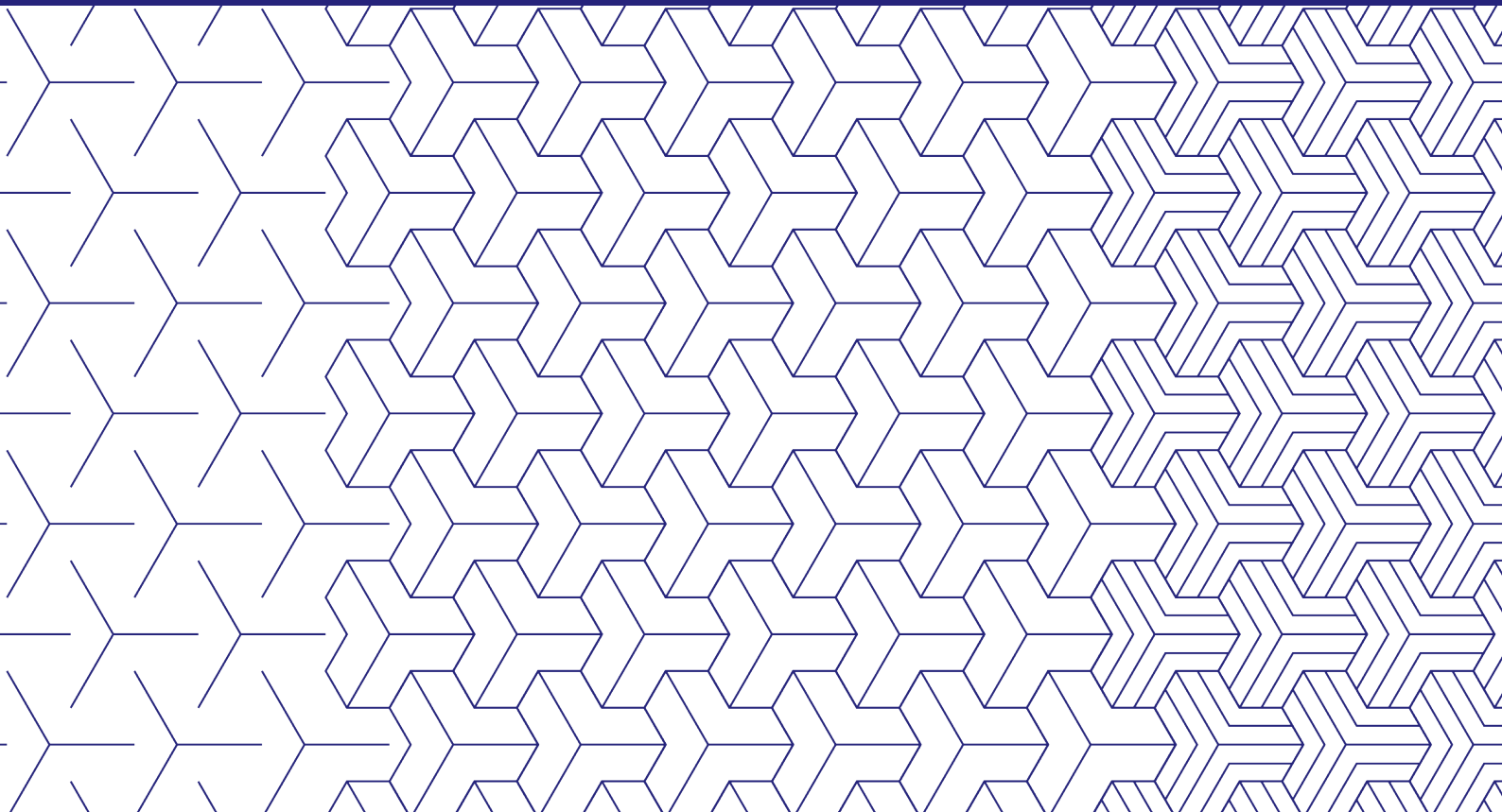


Source: IMD



3

VISION, GOALS AND MISSIONS



With Malaysia's strategic position to capitalise on the opportunities, it is pivotal for the nation to set forth an ambitious and holistic vision to propel Malaysia's industrialisation for the next breakthrough. The vision provides a compelling purpose to galvanise the entire nation – both the Government and the industries.

VISION

Aligned with the NIA Goals, the NIMP 2030 Vision is for Malaysia to have:

Competitive industry with high economic complexity

– foster industries that embrace innovation, produce sophisticated products and cutting-edge technologies to compete with global frontier technologies in a vibrant ecosystem

Well-developed new and existing industry clusters

– strengthen the existing industrial clusters by upgrading capabilities, whilst supporting the emergence of new high-growth industries from trends such as green economy and digitalisation

High income and skilled workforce

– create innovation-driven, knowledge-based job opportunities and help businesses create high and better paying jobs that raise the standard of living and expand the middle-class society

Balanced and inclusive participation

– foster balanced growth across all States in Malaysia and across different profiles by developing manufacturing opportunities

Strong domestic linkages

– enhance participation of the local players, including SMEs to strengthen domestic supply chains and become more connected within the global value chain

Sustainable development

– embrace a balanced industrial growth model that includes social, economic and sustainability practices by embracing ESG practices

To achieve this, Malaysia must ensure that every part of the nation achieves its full potential. The NIMP 2030 is focused on strengthening public and private investment partnerships in high growth opportunities, nurturing an innovative and entrepreneurial culture, driving R&D priorities for industries, improving connections across regional industrial clusters and catalysing transformation in investment and labour productivity across the economy.

GOALS AND TARGETS

The NIMP 2030 is expected to achieve high-impact growth for Malaysia. It is driven with the aim to contribute to the national manufacturing top-line targets (Figure 3.1).

Value-added (GDP)

Manufacturing's value-added (GDP) is expected to grow by 6.5 per cent from 2022, reaching RM587.5 billion by 2030. This indicates an increase of 61 per cent from today's GDP, derived by NIMP 2030 interventions for high-impact and emerging growth sectors including chemical, E&E, electric vehicle (EV), aerospace, pharmaceutical and advanced materials.

Employment

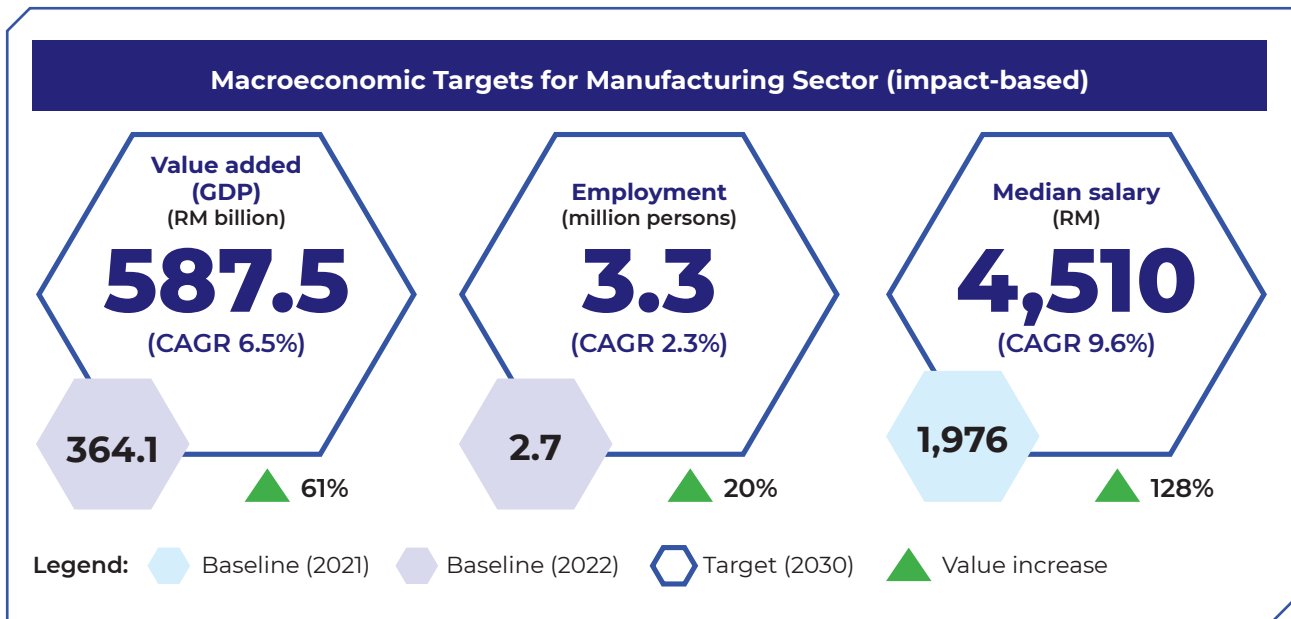
Employment is expected to grow at 2.3 per cent from 2022, consistent with historical growth rate, providing livelihood for 3.3 million *Rakyat* by 2030. The industry's growing employment trajectory is due to the creation of high-skilled jobs as the country advances towards higher value-added activities coupled with greater use of labour-enhancing automation and technological advancements.

Median salary

Through the NIMP 2030's interventions, median salary for manufacturing sector is expected to grow by 9.6 per cent, using median average pre-pandemic level, to reach RM4,510. This is an increase of approximately 128 percent from 2021, driven by the shift of the industry towards higher value-added activities and high-skilled jobs opportunities created.

The national manufacturing top-line targets of NIMP 2030 are as illustrated below:

Figure 3.1: NIMP 2030 Value-added, Employment and Median Salary Targets



Achieving the manufacturing top-line targets will drive more sophisticated production, technologies and expertise, leading to the creation of high-skilled jobs. This will contribute to improving the overall manufacturing industry productivity level.

These manufacturing top-line targets will require the NIMP 2030 to deliver a set of goals aligned to the Vision. The NIMP 2030 identified six key Goals, guided by the NIA's 5 key pillars and ESG as an overarching theme, which are as follows:

Increase economic complexity

Malaysia's journey towards accelerating economic development towards a high-income nation hinges upon the acquisition and utilisation of productive knowledge, particularly in increasingly sophisticated industries and products. Malaysia's economy must effectively diversify into products that require rich and deep know-how which only a few other countries master, from innovation-intensive sectors such as E&E, aerospace, ICT, pharmaceutical, medical devices to the diverse high-tech engineering products. By increasing complexity, Malaysia aims to enhance the strategic competitive positioning in industries in a wider range of products and services.

This goal can be achieved by strategies such as building industrial capabilities to move up the value chain and fostering research, development, commercialisation and innovation (RDCI) ecosystem. Through a robust and dynamic ecosystem, businesses, academia and civil societies can work together to innovate and develop new technologies for industries in the areas of strategic importance, integrate value chains across sectors and support the internationalisation of Malaysian companies through access to more in-market opportunities, robust trade facilitation for intellectual properties (IPs) and strategic collaboration with international partners under existing FTAs.

Create high-value job opportunities

The creation of high-value job opportunities is crucial to uplift the society. To remain resilient, it is imperative for Malaysia to shift away from creating low-skilled, traditionally labour-intensive occupations towards knowledge-intensive jobs. Global mega trends such as the rising role of Industry 4.0 technologies, climate change and environmental sustainability, demographic shifts and globalisation of value chains are changing the nature of jobs. Skills transformation to develop future competencies remains at the forefront of the industrial strategy. It is imperative to support upward

mobility of the bottom 20 to 30 per cent of the workforce, which could see jobs displaced and threatened by automation.

The NIMP 2030 aims to create high-paying jobs and improve living standards for Malaysians to build a sustainable middle-class society with high purchasing power. This is important to address present challenges such as skill-related underemployment affecting over 894,000 individuals in 2022 and issues of limited increase in average real income for the bottom 50 per cent of the workforce.

Among the strategies set include attracting high-quality investments from emerging industries, building a good education base to enhance future workforce readiness, upskilling and reskilling the workforce through market-responsive STEM and Technical and Vocational Education and Training (TVET) education streams, implementing progressive wage and inclusive workforce policies, as well as strengthening entrepreneurship opportunities.

Extend domestic linkages

Developing strong domestic linkages is essential for sustainable industrial development. This goal emphasises the importance of developing the breadth and depth of Malaysia's value chains for domestic industries, suppliers and service providers to foster collaboration, knowledge-sharing and innovation.

By strengthening local value chains, Malaysia can enhance competitiveness in providing holistic solutions and stimulate investments in industries with the greatest backward or forward linkages. This also supports domestic industries to achieve greater integration with global value chain and deepen local entrepreneurship. Extending domestic linkages can lead to technology transfer, skill development and the development of a robust support ecosystem for businesses.

Develop new and existing cluster

Malaysia aims to develop new clusters in emerging sectors and strengthen existing clusters to enhance specialisation and competitiveness. By fostering collaboration, knowledge exchange and infrastructure

development within clusters, Malaysia can stimulate innovation, attract investments and promote the growth of high-potential industries.

Apart from that, clusters facilitate the sharing of resources, access to specialised services and the creation of economies of scale.

Improve inclusivity

Malaysia recognises the importance of ensuring that the benefits of economic growth are shared equitably among all segments of society. Improving inclusivity contributes to social cohesion, stability and long-term sustainable development.

By promoting policies and programmes that address social and economic disparities, Malaysia aims to provide equal opportunities for participation and advancement. This includes initiatives such as promoting gender equality, supporting marginalised communities and empowering *Bumiputera* participation.

Enhance ESG practices

ESG practices have gained significant importance in today's world. This involves adopting environmentally friendly production processes, ensuring responsible resource management, promoting fair labour practices and strengthening corporate governance.

Malaysia aims to enhance ESG practices within its industries to promote sustainable development. By embedding sustainability principles in industrial operations, Malaysia can mitigate environmental impacts, promote social well-being and enhance the long-term resilience and reputation of its industries.

With the above Goals, the NIMP 2030 has formulated the following targets:

Table 3.1: NIMP 2030 Targets

The NIMP 2030 Goals	Outcomes	Measures	Baseline (2021)	Targets (2030)
Increase economic complexity	Sophistication in economic value-added <ul style="list-style-type: none"> Intensifying efforts in higher value-added activities 	High-tech manufacturing and services value-added share of GDP	8.1% of GDP	15% of GDP <i>Consistent with the achievement of countries like Korea (15.6% of GDP)</i>
	Malaysia as a regional innovation hub <ul style="list-style-type: none"> Driving R&D-intensive companies and academia to accelerate breakthrough technologies and transform industries, develop new products and core technologies 	GERD to GDP	1.0%	3.5% <i>In line with top 10 OECD economies (between 2.8-5.6% of GDP as at 2021)</i>
Create high-value job opportunities	High-skilled jobs in the manufacturing sector <ul style="list-style-type: none"> Generating high-income job opportunities in manufacturing and related services which would support a sustainable base of middle-income earners 	Number of jobs created	N/A	700,000 total in 7 years
	Fair income in the manufacturing sector <ul style="list-style-type: none"> Raising income levels and providing fair employment opportunities 	Median salary	RM1,976	RM4,510 <i>From the previous increase of RM64 per annum, between 2011 to 2021 to RM 282 per annum between 2021 to 2030.</i>
Extend domestic linkages	Internationally competitive SMEs <ul style="list-style-type: none"> Integrating domestic SMEs into the Global Value Chain 	Share of export-oriented SMEs	11.7%	25% <i>Doubling share of SMEs involved in vendor development.</i>
	Deepened local supply chain integration <ul style="list-style-type: none"> Fostering more interconnected and robust domestic economy, greater contribution from local companies to production of domestic output and supporting cross-linkages across sectors 	Domestic value-added in manufacturing	49% (2018)	65%
Develop new and existing clusters	Accelerated growth in existing core clusters by diversifying into new products <ul style="list-style-type: none"> Deepening existing core clusters for greater economic contribution 	Global market share in high-tech manufacturing exports	3.0%	6.0%
	Accelerated growth in emerging markets such as 4IR and digital <ul style="list-style-type: none"> Expanding to new higher-value clusters 	Global market share in green and digital exports	2.0%	4.0%

The NIMP 2030 Goals	Outcomes	Measures	Baseline (2021)	Targets (2030)
Improve Inclusivity	Catalysed sectoral and regional development through investments <ul style="list-style-type: none"> Encouraging distribution of investments for more equitable regional development across the States 	Realised FDI and DDI share of contribution to State GDP	Average 13% <i>Based on investment approvals figures provided by MIDA</i>	25%
	High manufacturing value-added participation by less developed States <ul style="list-style-type: none"> Encouraging value-added and higher income generating activities for balanced growth distribution across the States Support greater regional industrial linkages across activities between the States 	Manufacturing value-added in less developed States	22% of State GDP	30% - 35% of State GDP <i>In line with advanced States' GDP (between 35% to 37%)</i>
Enhance ESG practices	Derisked economy against ESG factors <ul style="list-style-type: none"> Increasing Malaysia's attractiveness as an investment destination by meeting global ESG standards and investors' needs 	Sustainalytics ESG Index	56.5 (Grade C)	75-100 (Grade A)
	Drive towards Net Zero aspirations <ul style="list-style-type: none"> Achieving commitments in reducing GHG emissions intensity under NDC by 2030 	Reduction in carbon emission intensity based on NDC goals	33% <i>Based on percentage changes in GHG levels between 2005 and 2019</i>	45%

MISSION-BASED APPROACH

The NIMP 2030 takes on a Mission-based approach in industrial policy development. This rallies the nation to work together collectively towards achieving the NIMP 2030 Vision and shared set of Goals. This approach will also serve as a lever to enhance capabilities in line with the strategic investment and industrial goals under the NIA.

To effectively drive Malaysian industrial development requires “moon-shot thinking” – setting ambitious goals and pursuing them with bold solutions to achieve transformative outcomes. This approach unites the nation, fostering collaboration to transform industries collectively. It galvanises the whole-of-government and the whole-of-nation, with the participation of both public and private sectors to realise the Missions.

It is a shift from the sectoral-based approach of previous IMPs, which primarily focuses on the vertical action plans of individual sectors. The Mission-based approach unlocks the cross-cutting nature of the sectors with horizontal strategies. It outlines targeted and focused action plans in ensuring successful implementation to transform Malaysia’s industry.

The NIMP 2030 recognises the importance of focusing on across-the-board shared challenges and common Missions that can generate broad-based effects and impacts.

MISSIONS

To meet the Goals and targets, four Missions were formulated (Figure 3.2):

MISSION 1 - Advance economic complexity:

This is to encourage high-growth industries to innovate and produce more sophisticated products. This will enhance the competitiveness of Malaysia in the global market

MISSION 2 - Tech up for a digitally vibrant nation:

By embracing a whole-of-nation digital transformation, Malaysia can drive digital adoption, spur innovation, enhance labour productivity, and unlock opportunities in digital frontier technologies

MISSION 3 - Push for Net Zero:

This emphasises Malaysia's commitment to addressing climate change by striving for a Net Zero future. Through sustainable practices and green initiatives, Malaysia aims to reduce carbon emissions and build a resilient and environmentally friendly economy

MISSION 4 - Safeguard economic security and inclusivity:

Malaysia aims to build resilience and enhance trade security against global shocks and geopolitical tension. Apart from that, Malaysia is creating an enabling environment that fosters entrepreneurship, supporting SMEs, and promoting equitable participation in economic activities to narrow all forms of disparities between the States

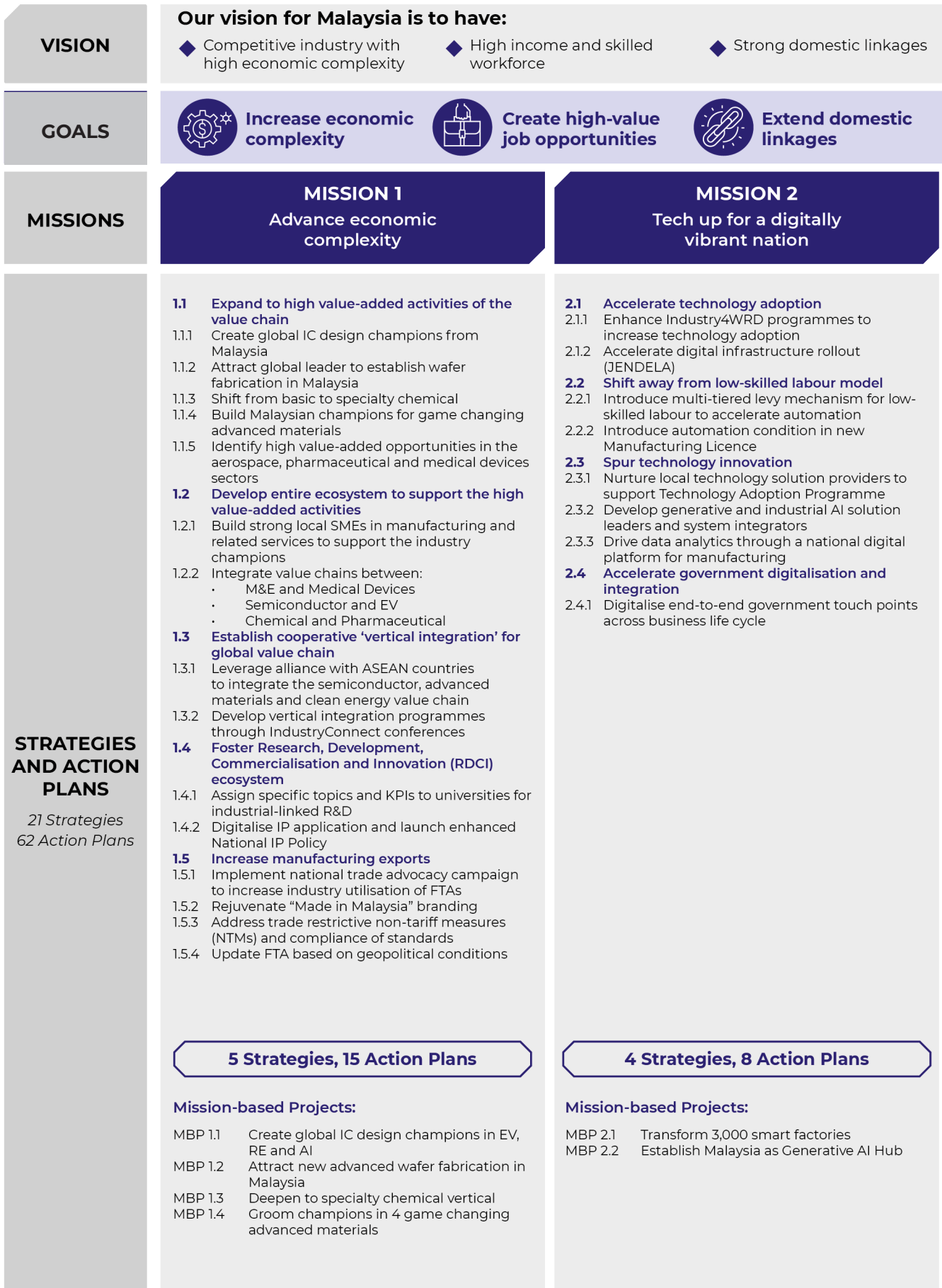
The Missions are interlinked and requires all to be advanced simultaneously towards achieving the Goals and targets. However, there are multiple systemic and institutional issues that the Malaysian industries are facing – which will be addressed through four Enablers:



The Missions and Enablers identified will be executed through 21 Strategies and 62 Actions Plans to unlock the needed enabling ecosystems. Several catalytic Mission-based Projects (MBPs) have been identified to catapult the mission-based implementation. There will be continuous engagements across industries and stakeholders through 'industry deals'. These deals provide an avenue for industry players to foster collaborative partnerships and submit strategic proposals for MBPs that can be executed in delivering the Missions. Those will drive tangible actions towards achieving the Missions' intended outcomes.

The overall NIMP 2030 framework is illustrated below:

Figure 3.2: Overall NIMP 2030 Framework



◆ New and existing industry clusters

◆ Balanced and inclusive participation

◆ Sustainable development



Develop new & existing clusters



Improve inclusivity



Enhance ESG practices

MISSION 3
Push for Net Zero

MISSION 4
Safeguard economic security and inclusivity

ENABLERS

- 3.1 Accelerate transition towards sustainable practices**
 - 3.1.1 Develop sectoral decarbonisation pathways to guide transition
 - 3.1.2 Decarbonise "hard-to-abate" sectors
 - 3.1.3 Introduce carbon policy, accounting and tax
 - 3.1.4 Launch iESG framework and transition programmes
- 3.2 Transition to renewable and clean energy**
 - 3.2.1 Enhance adoption scheme for energy efficiency or renewable energy
 - 3.2.2 Accelerate availability and accessibility of renewable energy source for the industry
- 3.3 Catalyse new green growth areas**
 - 3.3.1 Catalyse EV as a key growth driver
 - 3.3.2 Grow carbon capture, utilisation and storage (CCUS) as a new sector
 - 3.3.3 Develop circular economy framework for the industry
- 3.4 Shift towards green infrastructure**
 - 3.4.1 Accelerate transformation of industrial estates into eco-industrial parks

- 4.1 Develop resilient supply chain**
 - 4.1.1 Identify specific supply chain resilience strategies for critical sectors
 - 4.1.2 Establish supply chain cooperation and collaboration through G2G and G2B programme
 - 4.1.3 Introduce National Mineral Policy for downstream processing of critical minerals
- 4.2 Foster climate resilient development**
 - 4.2.1 Develop sectoral adaptation pathways
 - 4.2.2 Foster an adaptation industry to provide adaptation products and services (including exports)
 - 4.2.3 Instil climate resilience measures for critical economic infrastructure
- 4.3 Strengthen industrial clusters for regional development**
 - 4.3.1 Expand clusters for spillover regional impact
 - 4.3.2 Align industrial development plan between Federal and States
- 4.4 Empower Bumiputera participation and create inclusive workforce**
 - 4.4.1 Uplift capabilities of Bumiputera companies in manufacturing via *Tindakan Pembangunan Bumiputera 2030*
 - 4.4.2 Develop programme to increase women participation in high-skilled manufacturing employment

- E.1 Mobilise financing ecosystem**
 - E.1.1 Introduce NIMP Industrial Development Fund and NIMP Strategic Co-Investment Fund
 - E.1.2 Boost financing for digitalisation and decarbonisation transition
 - E.1.3 Establish green *sukuk* to facilitate transition
 - E.1.4 Establish supply chain financing for SMEs
 - E.1.5 Increase utilisation of the capital market
 - E.1.6 Expand the imSME platform to show all available funding options including government funding and capital market
 - E.1.7 Review government funding for consolidation
- E.2 Foster talent development and attraction**
 - E.2.1 Leverage mynext and MYFutureJobs for strategic workforce planning to address long-term demand-supply requirement
 - E.2.2 Introduce progressive wage system policy
 - E.2.3 Improve policy to enable fast and hassle-free access to high-skilled foreign talents
 - E.2.4 Expand TVET programmes for high-skilled jobs in critical sectors
 - E.2.5 Raise profile of high-tech manufacturing career to attract interest in STEM subjects
- E.3 Establish best-in-class investor journey for ease of doing business**
 - E.3.1 Establish a unified investment strategy and align investment evaluation to new parameters under NIA
 - E.3.2 Harmonise and streamline functions and KPIs across IPA landscape
 - E.3.3 Review and design competitive, agile and relevant incentives
 - E.3.4 Improve One-Stop Portal for seamless investor experience
- E.4 Introduce whole-of-nation governance framework**
 - E.4.1 Establish public-private collaborative councils
 - E.4.2 Set up NIMP 2030 Delivery Management Unit
 - E.4.3 Develop NIMP 2030 dashboard system

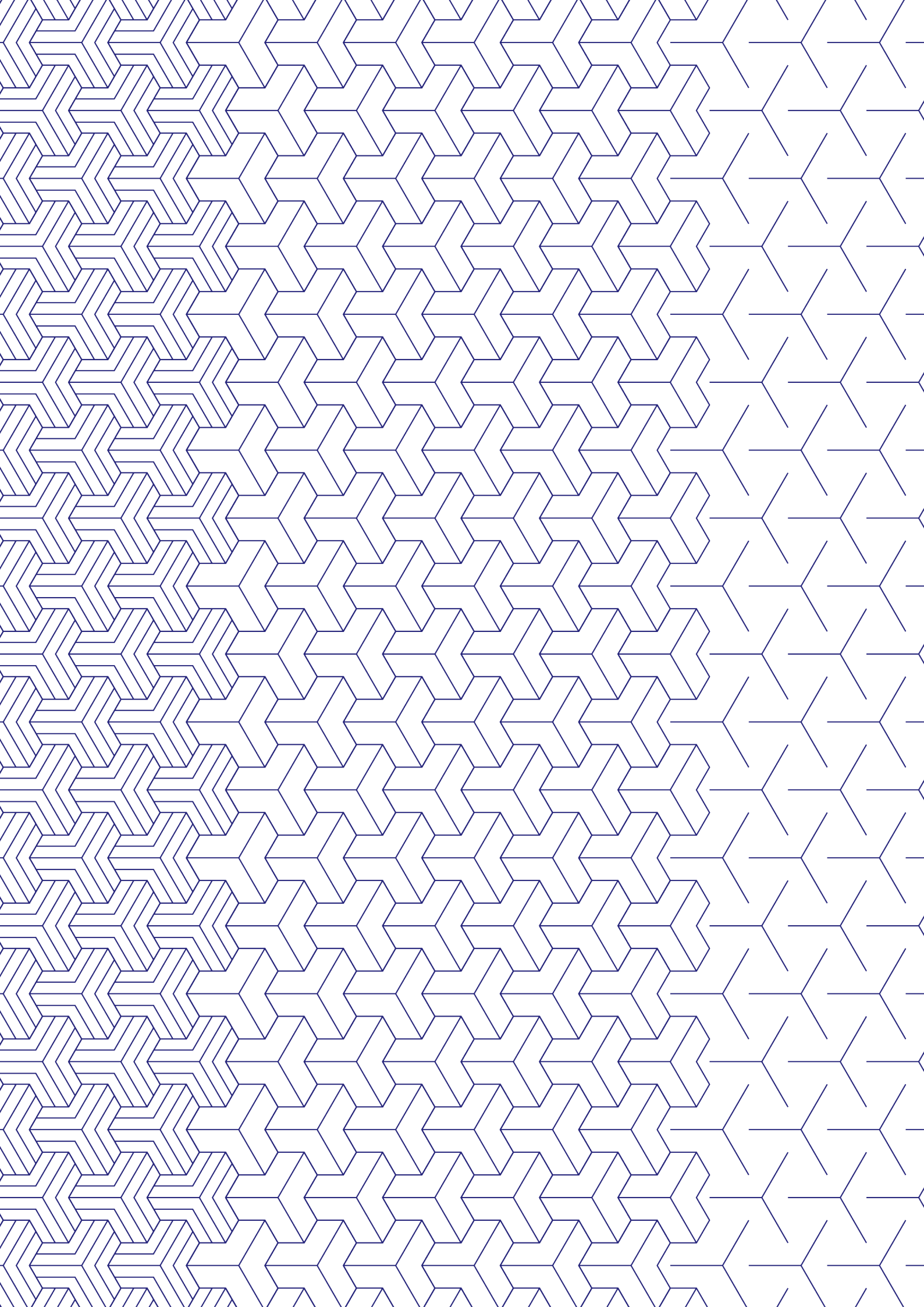
4 Strategies, 10 Action Plans

4 Strategies, 10 Action Plans

4 Strategies, 19 Action Plans

Mission-based Projects:

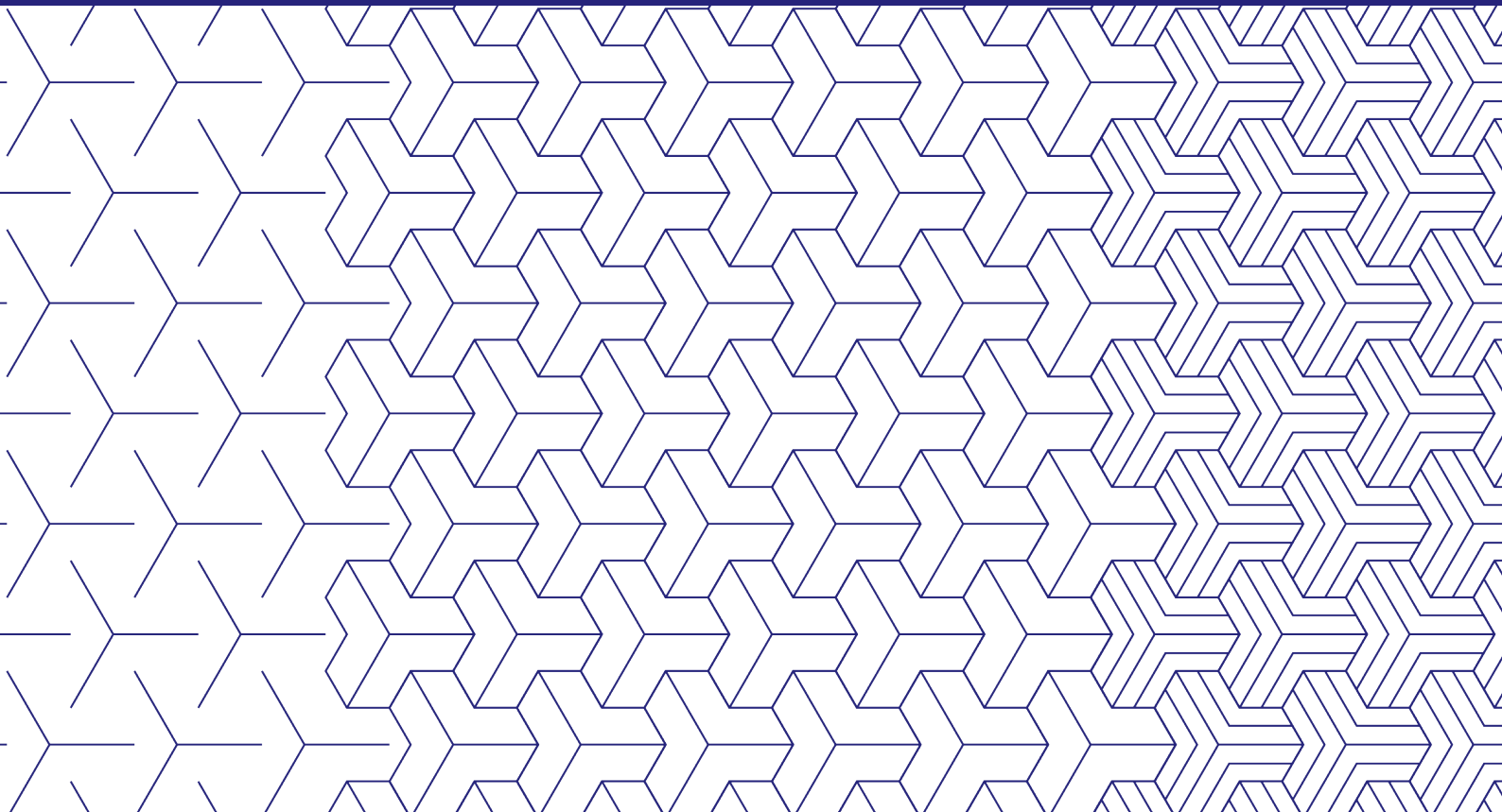
- MBP 3.1 Create decarbonisation pathway role models
- MBP 3.2 Launch locally-manufactured EV
- MBP 3.3 Deploy large-scale CCUS solutions





4

**MISSION 1 :
ADVANCE ECONOMIC COMPLEXITY**





Malaysia is currently positioned 24th in the Economic Complexity Index ranking. While neighbouring countries have been catching up and moving up the rank e.g. Thailand (37th to 29th) and the Philippines (45th to 37th), Malaysia's position has remained stagnant in the last 10 years. Malaysia aspires to emulate the economic complexity of Japan, South Korea and Singapore.

Malaysia's established manufacturing ecosystem has given the country the opportunity to expand into more advanced and high value-added manufacturing activities. For the most part, Malaysia has been involved in medium to low value-added segments of the manufacturing value chain. This calls for the industries to innovate, produce and export more sophisticated products and diversify production capabilities.

In pursuit of this Mission, Malaysia aims to facilitate industries to move up the value chain, develop a comprehensive ecosystem, reduce dependency on external supply chains and perform targeted R&D focusing on key sectors.

The successful implementation of Strategies and Action Plans under Mission 1 will result in impactful outcomes as follows:

- **Diversification of the economy:**

While Malaysia has a relatively diversified export basket mix, the country ranks 51st out of 133 countries in terms of export diversity. The Mission is envisioned to improve this performance by expanding our know-how to tap adjacent products with higher value-added activities, integrate into new high-growth opportunities, unlock new invention and reduce dependency on importation of critical products;

- **Improved global competitiveness through complex product exports:**

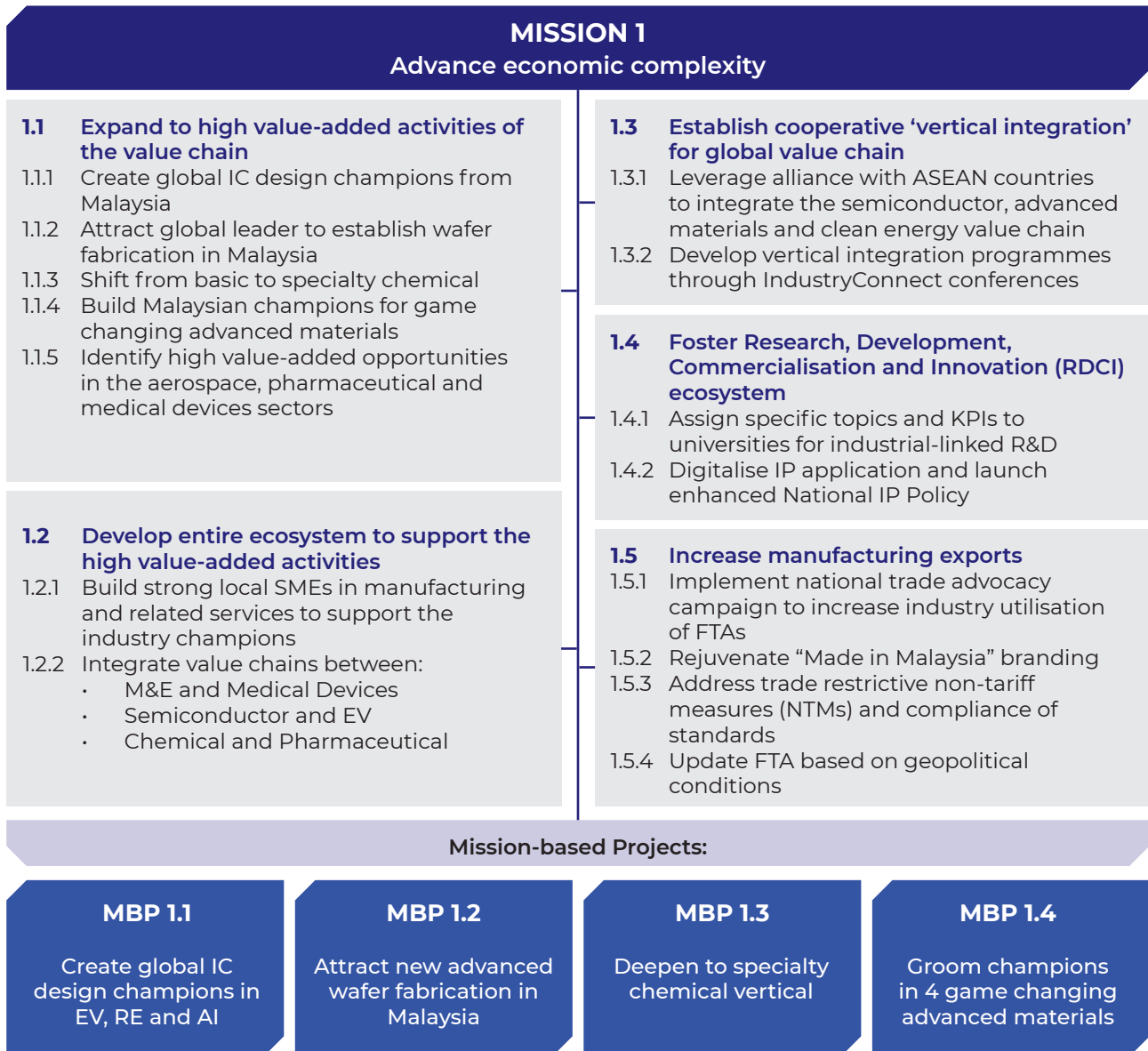
Malaysia will be able to produce a wider range of sophisticated and value-added products and services across the various sectors. This will enhance Malaysia's participation in the global value chain; and

- **Higher income and wages:**

Malaysia will be able to create more high-skilled STEM jobs, as well as attract and retain a world-class talent ecosystem that drives innovation.

There are five Strategies, 15 Action Plans and four Mission-based Projects to be carried out to achieve Mission 1, as illustrated below:

Figure 4.1: Mission 1 – Advance Economic Complexity



STRATEGY 1.1**Expand to high value-added activities of the value chain**

Malaysia is well-positioned to transform its economy through high value-added activities along the manufacturing value chain, given the current accumulated production experience. Of significance, the industrial upgrading of capabilities especially through horizontal and vertical integration are becoming important features within a modern and competitive production structure, especially with more flexible processes driven by automation and digitalisation.

All manufacturing and MRS sectors have the opportunities to expand to high value-added activities, for instance:

- **E&E** – Adopt higher level of technology in advanced packaging, such as Fan-Out Wafer-Level Packaging and Chiplet die-to-die packaging;
- **M&E** – Expand into refurbishing services (e.g. industrial turbines and generators) and energy efficient solutions (e.g. water and wind turbines, and photovoltaic power generating systems);
- **Metal** – Develop flat products, such as hot-rolled sheets and strips, plates, galvanised sheets and other metallic coated sheets;
- **Food processing** – Expand into ready-to-eat meals and alternative proteins; and
- **Textile** – Leverage smart and advanced textiles for defence, automotive interior furnishings, medical, geo-textile and sportswear.

In this strategy, Malaysia emphasises on expansion to higher value-added activities from design and development, product development, supply chain management to integrated services solution delivery. Among the high-tech manufacturing industries identified for this strategy include E&E, chemical, advanced materials, aerospace, pharmaceutical and medical devices, which can generate high economic and innovation knowledge spillovers. Going forward, Malaysia strives to shift away from traditional manufacturing models (e.g. contract manufacturing) and methods towards becoming an innovation-led manufacturing hub.

To achieve this, five Action Plans have been formulated:

**ACTION PLAN
1.1.1****Create global IC design champions from Malaysia**

The E&E sector forms about 40 per cent of Malaysia's manufacturing exports (twelfth largest exporter of E&E products and sixth largest exporter of semiconductor in the world³⁶). With semiconductors making about 60 per cent of the total E&E exports, Malaysia is currently among the leading hub for assembly, including outsourced, testing and packaging activities. Building on these capabilities and trends such as the digital revolution which require more advanced chips with greater computational power and memory capacity, Malaysia aims to develop a more integrated involvement across the front-end and back-end semiconductor ecosystem. This will be crucial even as the future semiconductor manufacturing moves towards advanced packaging models, where multiple chip dies are integrated within a single package to minimise fabrication cost and yield higher performance.

On the front-end of activities, Malaysia aims to deepen involvement in the Integrated Circuit (IC) design which confers higher profit margins and greater specialisation within the global semiconductor value chain. IC design - which includes design of both physical integrated circuits and associated software - accounts for roughly half of global semiconductor industry R&D investment and value-added. Furthermore, the design of ICs has a sustainable and competitive advantage if close collaboration can be promoted with OEMs in high-technology industries such as mobile communication, defence, medical devices and automotive that requires ICs embedded within their systems.

The involvement in leading-edge chip design and manufacturing will require nurturing strong capabilities in research, supply chain management, talent, and intellectual property (IP) protection, as well as navigating through government policies.

The NIMP 2030 plans to support the development of IC design capabilities to capitalise on fast-growing end-market applications such as:

Electric Vehicle

Proliferation of EV and green mobility presents opportunities for local E&E players to the tune of RM961 billion in electronics and sensors for the global market as well as RM141.2 million in terms of potential annual consumption. Electric drives and energy control system will utilise power inverters, while autonomous driving systems and other on-board control will require purpose-built AI-chips and a wide range of sensors across radar, Light Detection and Ranging (LiDAR) and vision. Custom-designed chips also play an integral role in critical safety features such as redundant power systems to ensure that chips operate safely and reliably in the most challenging environments.

Renewable Energy

Renewable energy (solar power generation) and energy storage will require greater power management. In this regard, new materials such as Gallium Nitride (GaN) and Silicon Carbide (SiC) are paving the way for higher efficiency and longer lifetime power conversion devices. The use of GaN and SiC transistors in solar inverters can boost system efficiency. At present, more than 90 per cent of the balance of system electronics are imported. Going forward, domestic development of power electronic modules can be synergised to support present value chains for solar in Malaysia, especially in Electronic Manufacturing Service and Advanced Test Packaging, as well as downstream deployment of solar projects domestically through Large Scale Solar (LSS capacity) and globally.

Artificial intelligence (AI)

AI applications require parallel computation, higher CPU-memory throughput, and an increase in need for edge-based computation for use cases. AI-based chips (e.g. Application Specific Integrated Circuits (ASIC) and Field-Programmable Gate Array (FPGA)) for low-to-medium-based complexity is up to 1,000 times more efficient as a general-purpose CPU for AI tasks. This opens the opportunity to utilise higher node sizes of up to 28nm - 40nm and tune the AI chip to AI application's complexity rather than using the brute force of smaller node size for general CPUs. Beyond popular consumer applications such as smart phones and PCs, these AI chips are also applied for drones, autonomous robots and manufacturing control and quality monitoring. As these latter applications are still emerging, Malaysia has an opportunity to build indigenous technology supply for industries by way of AI chips, control modules and sensors for local and regional industries to build inertial momentum.

MITI will lead the action plan, with support from Malaysian Investment Development Authority (MIDA), Malaysia Productivity Corporation (MPC), Standard and Industrial Research Institute of Malaysia (SIRIM), Collaborative Research in Engineering, Science and Technology (CREST), MIMOS, Malaysia Semiconductor Industry Association (MSIA) and key industry players. The following are key steps to be undertaken:

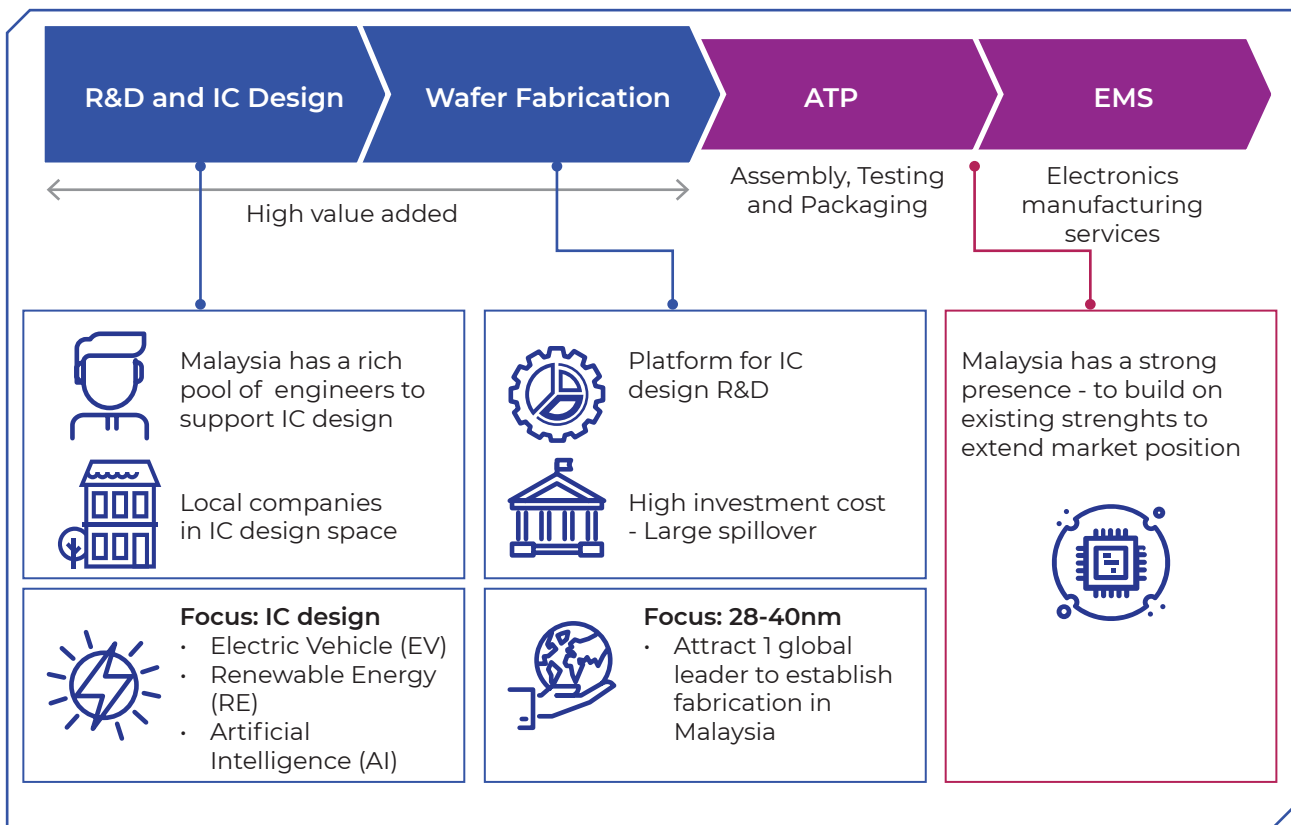
- Create a supportive ecosystem to accelerate the growth of local IC design champions;
- Facilitate the collaboration of industry, academia and the Government to create a robust ecosystem to address business demands; and
- Provide support to the IC design champions i.e. talent development, funding and incentives.

**ACTION PLAN
1.1.2****Attract global leader to establish wafer fabrication
in Malaysia**

Wafer fabrication is a manufacturing process of creating semiconductor wafers that are used to produce ICs. Design and wafer fabrication are closely interlinked. Fabrication provides vital input on the design's manufacturability by providing the test silicon to validate the electronic model. Such close collaboration is especially critical to support scaling new processes which are faced with inherent uncertainties in modelling and achieving a target manufacturing yield.

Thus, the need to establish a wafer fabrication outfit grows greater even as Malaysia moves up the semiconductor value chain. Malaysia's focus will be primarily in the mid-range wafer fabrication as this configuration typically provides the best cost-to-performance balance. Apart from that, the establishment of a wafer fabrication facility will also provide a diversification strategy even within East Asia which has the highest concentration for wafer fabrication.

Figure 4.2: Semiconductor Value Chain



This action plan will be led by MITI and supported by MIDA, MSIA, SIRIM, CREST, MIMOS and several key industry players. Key activities will be to:

- Create a supportive ecosystem to attract global wafer fabrication leaders and integrate opportunities with end applications;
- Facilitate the collaboration between industry, academia and the Government to create a robust ecosystem to address business demands; and
- Provide support to the wafer fabrication companies i.e. talent development, funding and incentives.

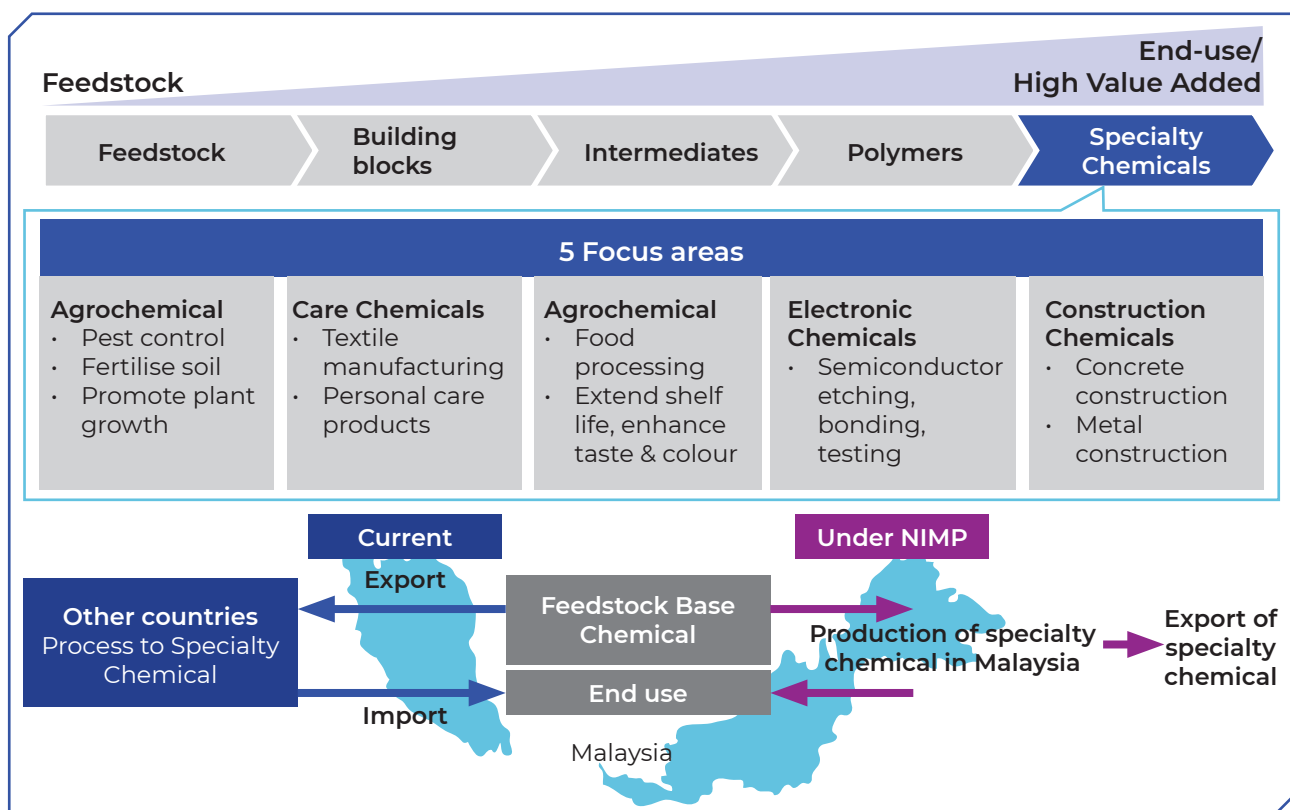
ACTION PLAN
1.1.3**Shift from basic to specialty chemicals**

The specialty chemical industry plays a pivotal role in driving innovation and the production of high-value specialty chemical products. Known for their complexity, specialty chemicals hold substantial potential for exports, thus contributing to the economic complexity of the country.

The specialty chemical market has a huge potential because of its diverse usage:

- Electronic chemicals (semiconductor use for etching, bonding, testing);
- Construction chemicals (concrete construction, metal construction);
- Nutrition chemicals (flavouring, extend shelf life);
- Care chemicals (textile manufacturing, personal care products); and
- Agro-chemicals (pest control, fertilise soil, promote plant growth).

Figure 4.3: Chemical Sector Value Chain



Malaysia currently produces and exports feedstock and intermediate products and imports the value-added intermediates in the form of specialty chemicals. To remain competitive and enhance domestic linkages, Malaysia has to advance into producing higher value-added intermediates and specialty chemicals.

Specialty chemicals produced locally will:

- Strengthen the domestic value chain, thus reducing the need to import;
- Boost the local development of niche expertise in specialty chemical technologies; and

- Complement the development and growth of other key prioritised sectors and create opportunities for export (e.g. pharmaceutical, E&E, etc.).

MITI will lead this action plan, supported by MIDA and key industrial players. Key activities will include:

- Understanding and providing the necessary support required by other local players (funding, attracting investment);
- Strategising the upskilling of local capabilities; and
- Facilitating the ecosystem to support the specialty chemical industry.

Box Article 4.1: Specialty Chemicals and Their Uses

What are specialty chemicals?

Commodity chemicals



- Produced in large quantities
- Primarily used as raw materials for products

Lower value add

Higher value add

Specialty chemicals



- Typically manufactured in smaller batches
- Offers unique characteristics and performance properties

Quick Facts

- In 2019, Specialty Chemicals accounted for **11.7% of investments in Malaysia's manufacturing sector (RM 4.8 billion)**
- From 2019 to 2026, the global market for Specialty chemicals is expected to **grow at a compounded annual growth rate of 5.2%**



Agrochemical

Used to enhance crop yield - typically through protection of plants from pests and diseases e.g. pesticides, herbicides



Construction chemicals

Used to enable/ease manufacturing or improve performance of construction materials e.g., concrete admixtures, protective coatings



Care chemicals

Used in formulation of personal care products such as cosmetics or toiletries e.g.; emollients, surfactants

NIMP Specialty Chemicals Focus Area



Electronics chemicals

Used in production of electronic components such as semiconductors and PCBs e.g., silicon



Nutrition chemicals

Used on food products to enhance qualities such as taste, texture, appearance or preservation e.g. flavour enhancers

Source: S&P Global, MIDA

ACTION PLAN
1.1.4**Build Malaysian champions for game changing advanced materials**

Malaysia possesses abundant natural resources that are instrumental in the production of advanced materials. These materials hold great significance in global manufacturing industries and are highly sought after by multinational corporations (MNCs) worldwide. Apart from that, advanced materials play a crucial role in key industries within Malaysia such as EV, healthcare and aerospace. Leveraging its resource advantage, Malaysia is well-positioned to contribute significantly to the production and utilisation of advanced materials.

The National Advanced Materials Technology Roadmap 2021-2030 identified four game changing advanced materials that have the potential to revolutionise the manufacturing industry:

Table 4.1: Game Changing Advanced Materials

Advanced Materials	Characteristics	Application (Potential usage)
Graphene	Thinnest, strongest and most conductive material	Electronics, medical devices, batteries
Nitinol	Shape memory effect (returns to its original shape when heated up), super elastic, pseudo-elastic	Medical devices, aerospace
Rare Earth	Strong, lightweight, high magnetic properties	Ideal for battery production, EV batteries
Microcrystalline Cellulose (MCC) Polymer	Environmentally friendly and sustainable polymer	Ingredient for food, cosmetics, pharmaceutical, structural composites

To produce local champions and spearhead the growth and usage of advanced materials, it is imperative that the Government facilitates the following:

- Promote and proliferate downstream application of advanced materials (awareness of benefits to industry players across sectors) and strengthen partnerships to obtain greater market access;
- Provide better access to funding, talent and infrastructure for R&D, and provide support to commercialise R&D; and
- Protect IP rights and provide incentives (e.g. for R&D activities).

This action plan will be led by MITI and supported by Ministry of Science, Technology and Innovation (MOSTI), Ministry of Natural Resources, Environment and Climate Change (NRECC), MIDA, Malaysian Industry-Government Group for High Technology (MIGHT), SIRIM and key industry players.

Box Article 4.2: Applications of Advanced Materials

What is advanced materials?

“ Novel or improved materials engineered for targeted and improved properties, that provide a distinct advantage in (physical or functional) performance and application when compared to conventional materials, which enable and provide innovative technological solutions and sustainability to the economy, environment and society ”

MALAYSIAN DEFINITION FOR ADVANCED MATERIALS

New or better materials

Designed to have clear advantages to common materials

To provide solutions that benefit the economy, environment and society



Surfaces

- Coatings and emerging adhesives/ sealants
- Improve the properties of materials
- E.g. protective coatings can increase the lifetime of a product while also reducing maintenance costs by slowing down degradation



Structures

- Metals, composites, polymers, high performance structural ceramics, process technologies and geopolymer
- Improve on the limits of typical engineering materials
- E.g. metals can be developed for extreme features, such as high thermal resistance or electrical conductivity



Future Material Platforms

- Nanomaterials, reticular materials, smart coatings, shape memory and metamaterials
- Tackles problems in the status-quo: sustainability and materials security, materials for energy and high value markets
- E.g. metamaterials developed to achieve electromagnetic properties have applications in many industries such as cloaking devices in defense, energy harvesting and solar cells and acoustic and vibration control

Importance

Essential for **innovation** and growth in various industries worldwide, including Malaysia

Offer functional solutions and drive **market development** in sectors like healthcare, aerospace and automotive

Fuel **economic growth**, value creation and competitiveness in the manufacturing sector

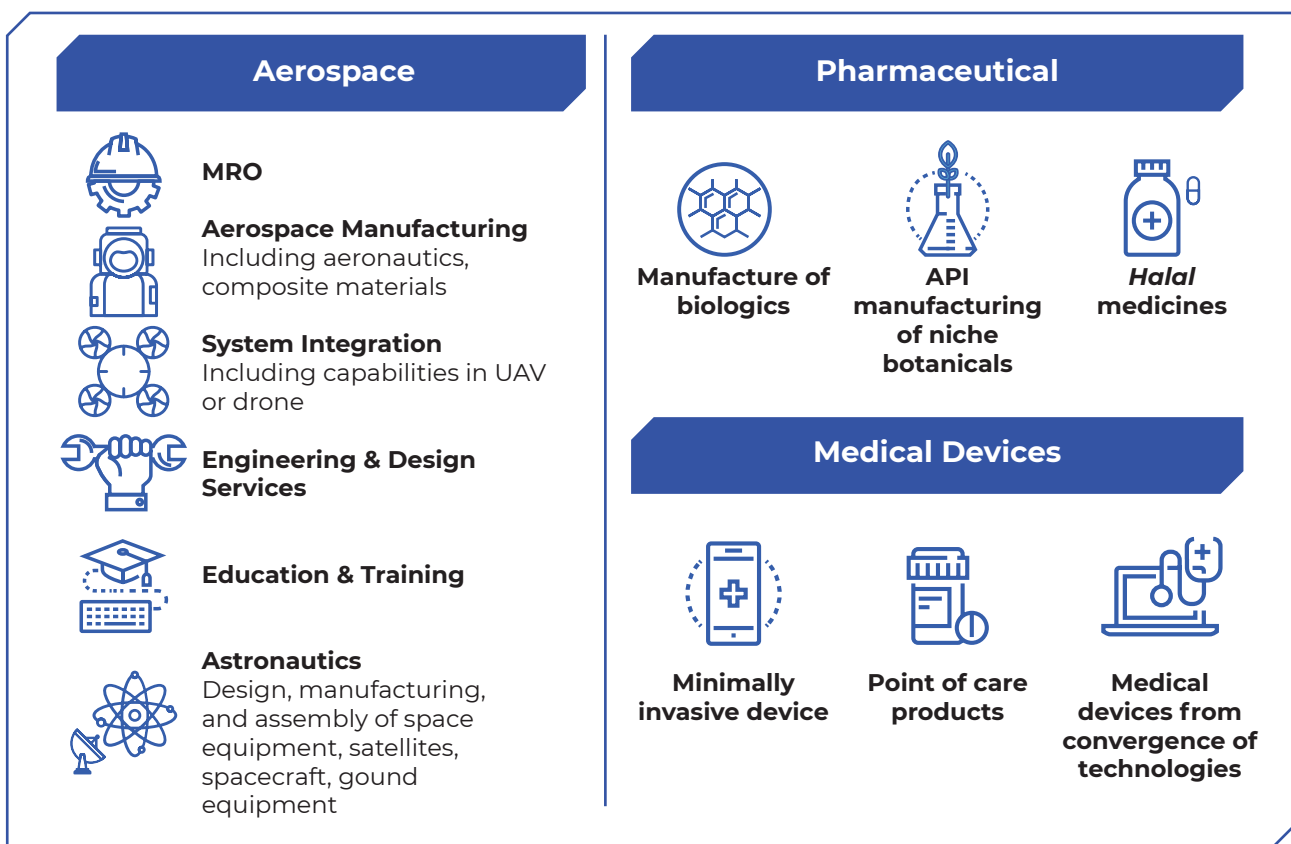
Source: National Advanced Materials Technology Roadmap 2021-2030

ACTION PLAN
1.1.5**Identify high value-added opportunities in the aerospace, pharmaceutical and medical devices sectors**

The aerospace, pharmaceutical and medical devices are important industries in Malaysia.

The aerospace sector in Malaysia is home to several major international companies. These companies manufacture a wide range of aircraft components and systems in Malaysia, including parts of the wing, engine components, avionics and drones. Apart from that, there are opportunities present in astronautics upstream segment, in particular space-related manufacturing of satellites and other spacecraft parts and components. On healthcare manufacturing, Malaysia has a strong pharmaceutical and medical devices base which can be enhanced for future growth in a higher range of product segments.

Figure 4.4: Key Growth Segments of Aerospace, Pharmaceutical and Medical Devices Sectors



The Government recognises huge potentials in these sectors where the aerospace sector revenue in Malaysia is estimated to skyrocket to RM55 billion by 2030³⁷ while the pharmaceutical sector's GDP value is estimated to reach RM2.5 billion by 2030. It is important that MITI and the Ministry of Health (MOH) along with MIDA, National Aerospace Industry Corporation (NAICO) and Medical Device Authority (MDA) work together to:

- Create a supportive ecosystem to cater to the industry's needs (including collaboration and partnerships between businesses, universities and Government Agencies);
- Foster collaboration and knowledge sharing among industry players to adopt the industry's best practices; and
- Facilitate the industry's product development including R&D, testing and standards compliance.

STRATEGY 1.2**Develop entire ecosystem to support the high value-added activities**

Developing an ecosystem to support high value-added activities in Malaysia involves creating a conducive environment that stimulates and sustains the growth of industries engaged in activities of high economic value. This ecosystem focuses on providing the necessary infrastructure, resources, policies and support systems to enable manufacturing industries to thrive in activities that add significant value to products and services. Such an ecosystem encompasses various elements, including R&D capabilities, access to funding and grants, availability of skilled talents, robust IP protection, strong industry-academia collaborations, supportive government policies and incentives and a well-developed supply chain through the participation of SMEs.

This approach helps create a favourable environment for innovation and the development of high value-added sectors, positioning Malaysia as a dynamic and attractive destination for high-value economic activities which can result in:

- Job creation – generating medium and high-skilled workforce demand; and
- Enhance the country's competitiveness for innovation.

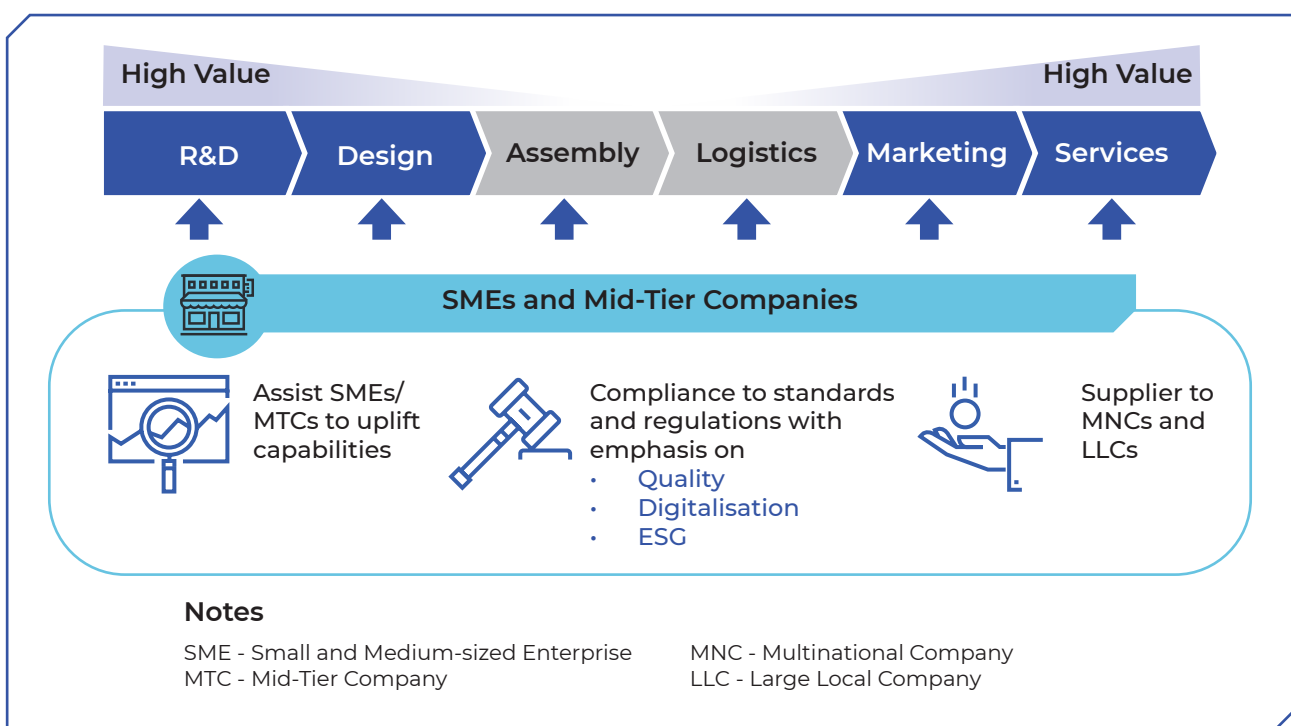
To achieve this, two Action Plans have been formulated:

**ACTION PLAN
1.2.1****Build strong local SMEs in manufacturing and related services to support the industry champions**

To meet the demand along the value chain, it is crucial to enhance the capabilities of small and medium enterprises (SMEs) and involve them in higher value-added activities. The ambition is to increase the contribution of SMEs to the country's GDP currently at 38 per cent³⁸, to reach the levels seen in developed countries, ranging from 50 to 60 per cent.

Manufacturing sector SMEs play a pivotal role to support large local companies (LLCs) and MNCs as local suppliers with the required skillsets. This reduces the overall cost for these LLCs and MNCs to operate in Malaysia and helps create a more sustainable and robust supply chain.

Figure 4.5: Industry Champion Value Chain



One approach to help SMEs scale up towards becoming mid-tier companies is by leveraging key SME programmes like PRESTIGE by SME Corp. These programmes provide support and resources to assist SMEs in expanding their operations and reaching higher levels of labour productivity.

The SME Roadmap is currently under development by the Ministry of Entrepreneur and Cooperatives Development (KUSKOP). This roadmap will outline the strategic direction and initiatives to further support and empower SMEs in their growth and participation in higher value-added activities.

The execution of this action plan will be led by KUSKOP and SME Corp in consultation with MITI, MIDA, MPC, industry players in the prioritised sectors and industry experts. Key actions to be taken include:

- Engage industry players in the prioritised sectors to identify strong manufacturing sector SMEs in Malaysia;
- Identify gaps in the value chain of LLCs and MNCs with no or few local SMEs participation;
- Identify and engage potential SMEs that have the potential to be groomed to meet the standards required by LLCs and MNCs; and
- Provide support required to scale up interested SMEs.

ACTION PLAN **1.2.2**

Integrate value chains between: M&E and Medical Device, Semiconductor and EV, and Chemical and Pharmaceutical

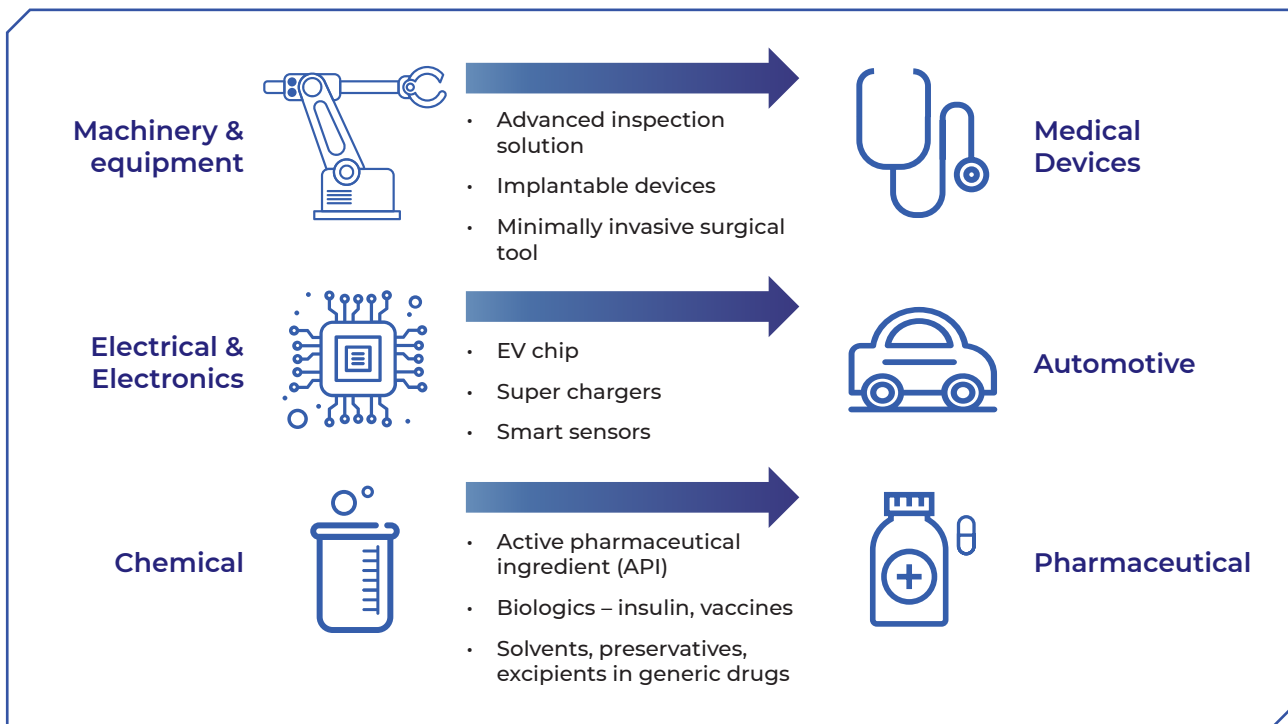
Integrating value chains between sectors, involves linking the various stages and processes involved in the manufacturing of products in both the sectors. By integrating the value chains between these sectors, Malaysia will have a better-connected economic ecosystem. This integration leads to increased efficiency in resource utilisation, reduced costs, improved innovation and enhanced product complexity.

To achieve this, it is essential to nurture local companies and further develop core competencies that are applicable across different sectors. This approach recognises that certain sectors may have specific capabilities, knowledge or resources that can be leveraged to stimulate cross sectoral innovation and unlock new opportunities.

These are some examples of how different sectors complement each other to produce more complex products:

- M&E (e.g. electronic manufacturing services (EMS) and engineering supporting services (ESS)) and medical devices sectors: Advanced inspection solution in manufacturing adopted in medical devices (imaging, endoscopy);
- E&E and automotive sectors – EV components; and
- Chemical and pharmaceutical sectors – improved active pharmaceutical ingredient (API) for better quality generic drugs.

Figure 4.6: Integration between Value Chains



This action plan will be led by MITI in collaboration with MIDA, MPC and industry players in the prioritised sectors. Key actions to be taken include:

- Identify core competencies that have potential for high value-added activities;
- Identify synergies between sectors across the value chain based on complementary strengths;
- Prioritise opportunities for collaborations across sectors and discuss potential business case; and
- Connect with foreign investors or MNCs, if needed, for greater investment and market access.

STRATEGY 1.3

Establish cooperative 'vertical integration' for global value chain

ASEAN countries, including Malaysia, can bolster their participation in the global value chain by prioritising collaboration as a cohesive trading bloc. A key aspect of this strategy is pursuing vertical integration, where different stages of the value chain for selected industries are integrated across ASEAN countries. This approach enables efficient resource utilisation, promotes specialisation and enhances the region's overall competitiveness. By working together, Malaysia and its neighbouring nations have the opportunity to achieve collective success through mutual trade cooperation.

By leveraging each other's strengths and collaborating on value chain integration, ASEAN countries can create a win-win situation, fostering economic growth and strengthening their collective position in the global marketplace.

To achieve this, two Action Plans have been formulated:

ACTION PLAN
1.3.1**Leverage alliance with ASEAN countries to integrate the semiconductor, advanced materials and clean energy value chain**

Malaysia aims to take proactive steps to establish an alliance with ASEAN countries to increase its participation in higher value-added activities within the GVC. By collaborating closely with ASEAN partners, Malaysia seeks to leverage the collective strengths and resources of the region to complement each other's strengths and promote regional cooperation that will collectively capture more value in the GVC.

Figure 4.7: Malaysia as Gateway to ASEAN

Malaysia needs to first upgrade its capabilities and strengths to participate in segments within the GVC of the prioritised sectors. For example:

- Semiconductor: IC design and wafer fabrication;
- Advanced material: production of advanced materials e.g. graphene, rare earth; and
- Clean energy: production of EV batteries and renewable energy.

MITI will lead this action plan, supported by MIDA, MATRADE and key industry players. Some of the actions to be taken are:

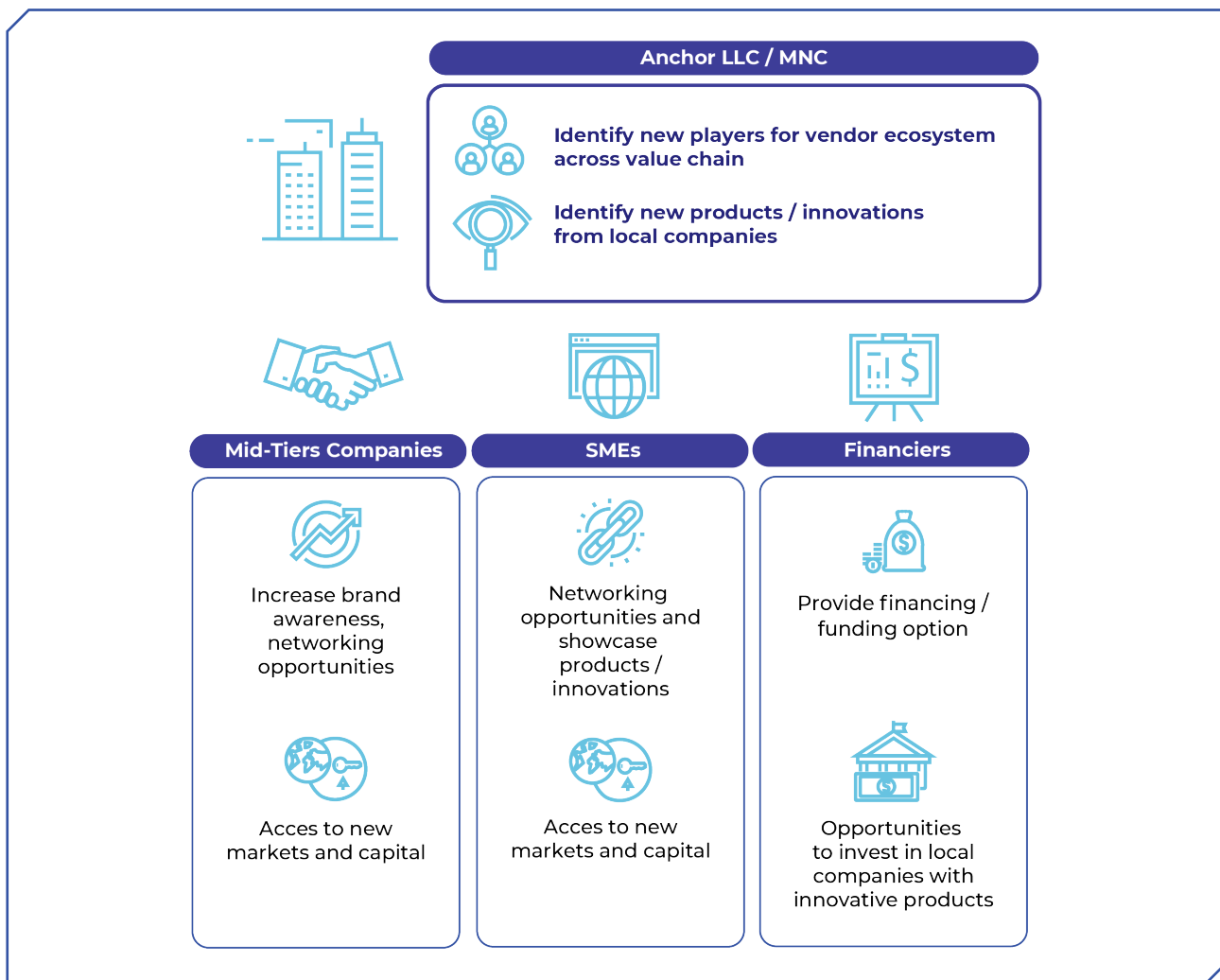
- Identify areas where Malaysia is strong in and have potential global demand;
- Engage large global players in prioritised sectors to understand opportunities within the GVC and interest to invest;
- Identify and upscale Malaysian local companies with the required capabilities and capacity to participate in GVC; and
- Strengthen economic cooperation with countries regionally and globally for opportunities in GVC.

**ACTION PLAN
1.3.2****Develop vertical integration programmes through
IndustryConnect conferences**

Malaysia will create greater integration with the GVC, supporting SMEs to connect with the supply chains of MNCs and LLCs. Malaysia will facilitate IndustryConnect conferences which provide opportunities for industry players, investors and financiers to interact, share experiences and explore potential partnerships. This conference will involve key industry players from MNCs, LLCs, Mid-tier companies (MTCs), SMEs and other companies within the vendor ecosystem along with financial institutions. This opportunity will provide an avenue where investment deals could be initiated and pursued whereby:

- Industry players can support potential suppliers to meet requirement, such as standards, digitalisation and ESG;
- SMEs can showcase their innovation, products or capabilities to support in the MNC or LLC value chain; and
- Investors and financiers can identify promising funding or investment opportunities.

Figure 4.8: IndustryConnect Conference



This action plan will be led by MITI and supported by MIDA, Federation of Malaysian Manufacturers (FMM), SME Corp, BNM, SC and key industry players. Some of the actions to be taken are:

- Engage MNCs and LLCs to be anchor companies in IndustryConnect conferences; and
- Organise IndustryConnect conference, inviting anchor companies, potential vendor ecosystem and financiers.

STRATEGY 1.4**Foster Research, Development, Commercialisation and Innovation (RDCI) ecosystem**

RDCI plays a crucial role in increasing economic complexity and high-skilled talent development. This seamless connection between research, commercialisation and innovation processes promotes the introduction of new products and services that drive job creation and economic expansion.

However, Malaysia faces challenges in achieving high value-added manufacturing due to its relatively low innovation performance.

The RDCI ecosystem is a network of organisations and individuals that work together to promote research, development, commercialisation and innovation. The ecosystem includes universities, research institutes, businesses, Government Agencies and financial institutions.

To achieve this, two Action Plans have been formulated:

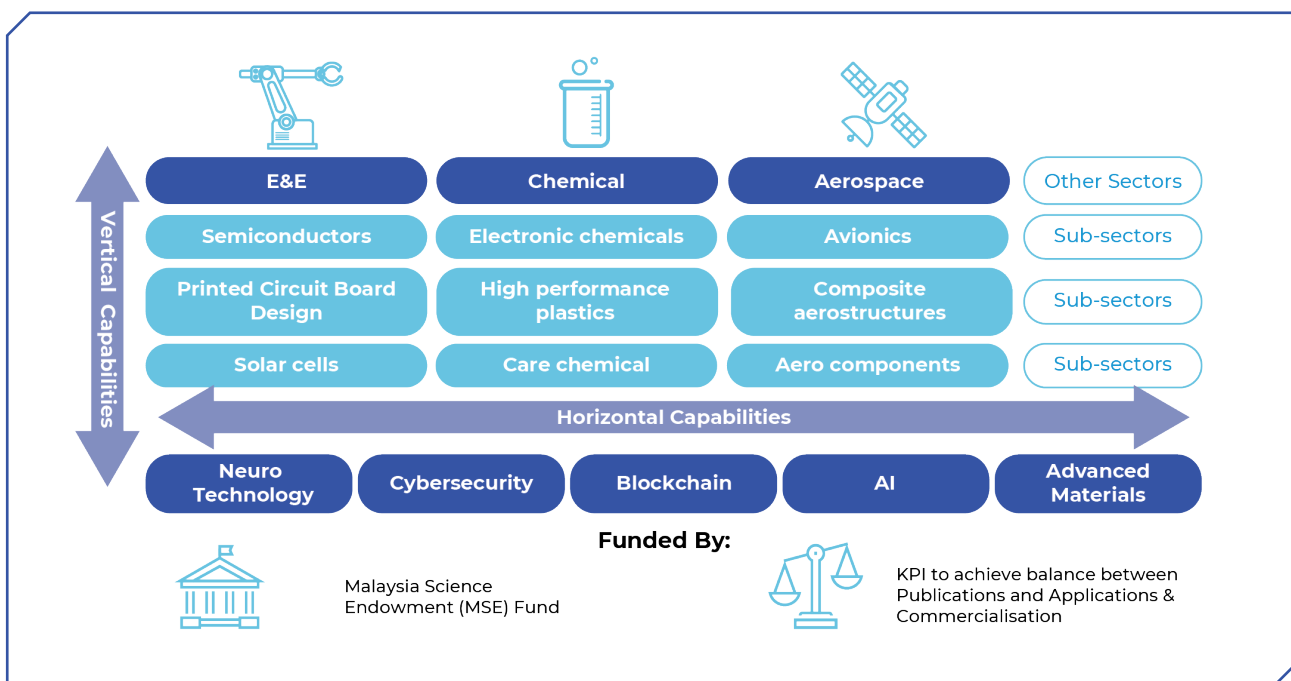
**ACTION PLAN
1.4.1****Assign specific topics and Key Performance Indicators (KPIs) to universities for industrial-linked R&D**

Malaysia will gradually shift towards a topic-centric R&D model where efforts are organised and prioritised based on specific topics or areas of focus. Specific topics are identified based on alignment to the NIMP 2030 Goals, strategic importance and industry-specific needs for Malaysia's advancement.

The R&D topics will focus on both horizontal and vertical capabilities within specific areas. They encompass various fields, such as emerging technologies. Some examples include:

- **Horizontal capabilities** – critical in driving innovation across multiple sectors e.g. AI, Blockchain and Cybersecurity; and
- **Vertical capabilities** – targeted focus area in specific sectors e.g. E&E (IC design), aerospace (drone technology, avionics system), and specialty chemicals (electronic chemicals, eco-friendly fertiliser).

Figure 4.9: Top-centric R&D for Industrial Application



To achieve this, Malaysia aims to enhance topic-specific R&D ecosystems by facilitating collaboration among research institutions, industry players and funding bodies (e.g. Malaysia Science Endowment) to achieve greater efficiency and impactful R&D. There needs to be a balance between publication, application and commercialisation of R&Ds. These efforts will be aligned to the direction and guidance of the Research, Development, Innovation, Commercialisation and Economy (RDICE) roadmap by MOSTI.

Malaysia aims to strengthen existing centres of excellence (CoE) in targeted sectors to develop expertise in high value-added areas. These CoEs will serve as shared facilities to cultivate complex innovation, foster collaboration and accelerate knowledge dissemination.

This action plan will be led by Ministry of Higher Education (MOHE) and MOSTI, supported by the National Science Council, Research Management Unit under the Ministry of Economy (KE), Malaysian Research Accelerator for Technology and Innovation (MRANTI), MIMOS, CREST, MITI, SIRIM and other national research institutions (NRI). The key steps to be taken include:

- Identify relevant topics for R&D through organising sessions and forums;
- Identify potential industry players to collaborate based on R&D topics (e.g. launch academia-industry partnership programmes);
- Identify existing CoEs to be scaled up in high value-added areas of prioritised sectors;
- Scale up support to topic-specific ecosystem through NRI collaboration; and
- Introduce targeted and time-bound incentives on R&D investments.

ACTION PLAN 1.4.2

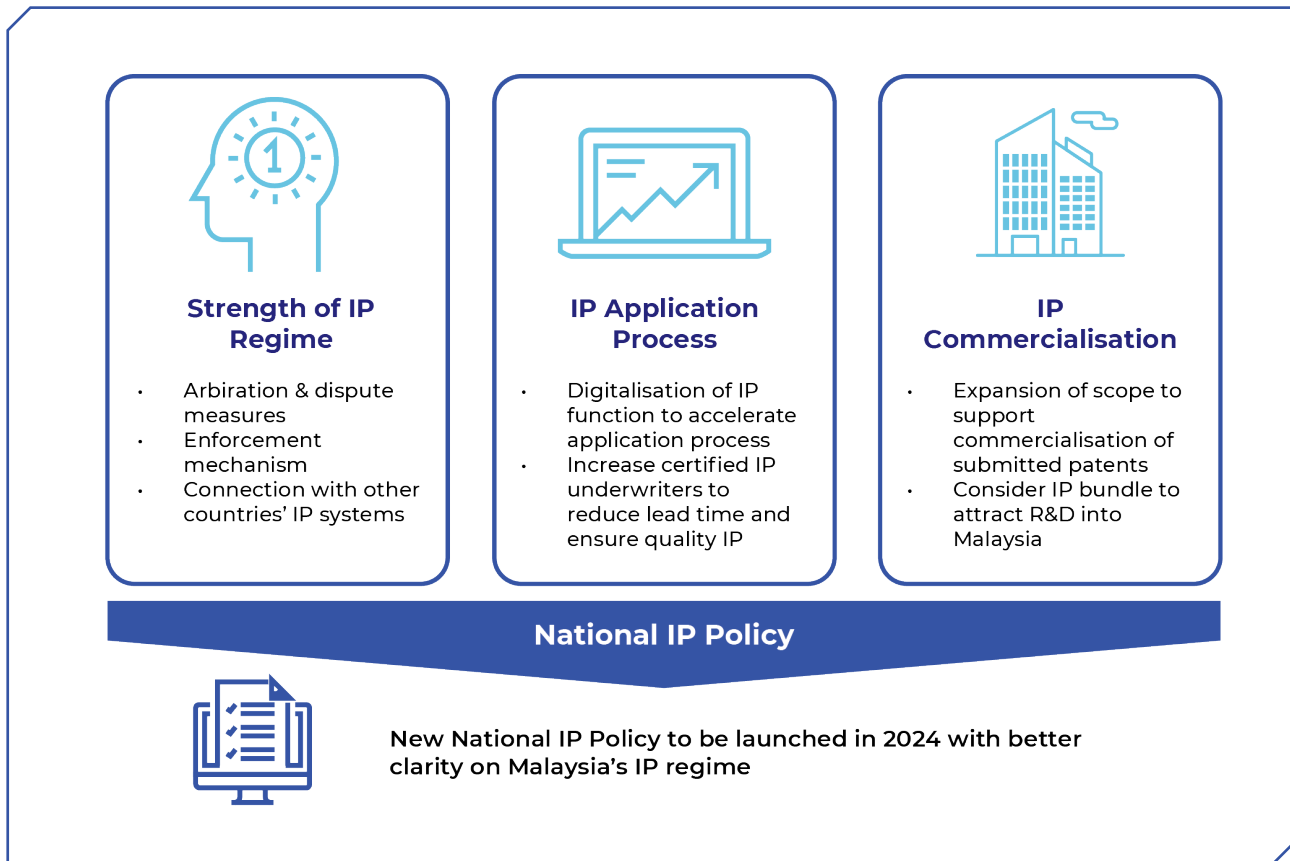
Digitalise IP application and launch enhanced National IP Policy

Intellectual property (IP) rights are essential for manufacturing industries in Malaysia as it can help to protect their inventions and designs from unauthorised use. A new national IP policy to enhance the principles and guidelines that govern how IP is created, used and protected is being developed by the Ministry of Domestic Trade and Costs of Living (KPDN) and the Intellectual Property Corporation of Malaysia (MyIPO). Currently, the IP application process, particularly for patents, is time-consuming. To address this, Malaysia aims to digitalise the IP application process, making it more efficient, accessible and user-friendly.

Malaysia is focused on enhancing IP protection by ensuring fair assessments of patents and providing comprehensive coverage for patent owners during disputes. To strengthen the overall IP regime, Malaysia has identified three key areas for improvement:

- **Strengthen IP Regime** – strengthened Malaysia's IP protection to ensure fair examination of patent applications;
- **IP Application process** – improved patent assessment capability through partnerships with industry and academia; and
- **IP Commercialisation support** – improved IP application process (application, arbitration and dispute centre) and commercialisation support for R&D outcomes to attract investors.

Figure 4.10: Areas to Strengthen in IP Regime



This action plan will be led by KPDN and MyIPO supported by MITI, SIRIM and Standards Malaysia. The key related activities are to:

- Identify levers to improve current IP protection regime:
 - Arbitration and dispute measures;
 - Enforcement mechanism;
 - Leveraging other countries' IP systems and IP application process; and
 - Review relevant agencies current capabilities for better IP support.
- Implement key measures to accelerate IP application process:
 - Digitalise key patent application functions to accelerate application process; and
 - Increase number of certified IP underwriters to draft patents to reduce lead time and ensure quality IP.
- Consider provision of IP bundle to make it attractive for R&D in Malaysia; and
- Launch enhanced National IP Policy.

STRATEGY 1.5**Increase manufacturing exports**

Increasing manufacturing exports is one of the most critical objectives for Malaysia seeking to boost its economic growth and international competitiveness. By expanding manufacturing exports, Malaysia can capitalise on its industrial capabilities and leverage global market opportunities. There are several steps that Malaysia can do to increase their manufacturing exports. These ranges from improving the quality of products produced to expanding into new markets or improving the overall trade ecosystem.

To achieve this, four Action Plans have been formulated:

**ACTION PLAN
1.5.1****Implement national trade advocacy campaign to increase industry utilisation of FTAs**

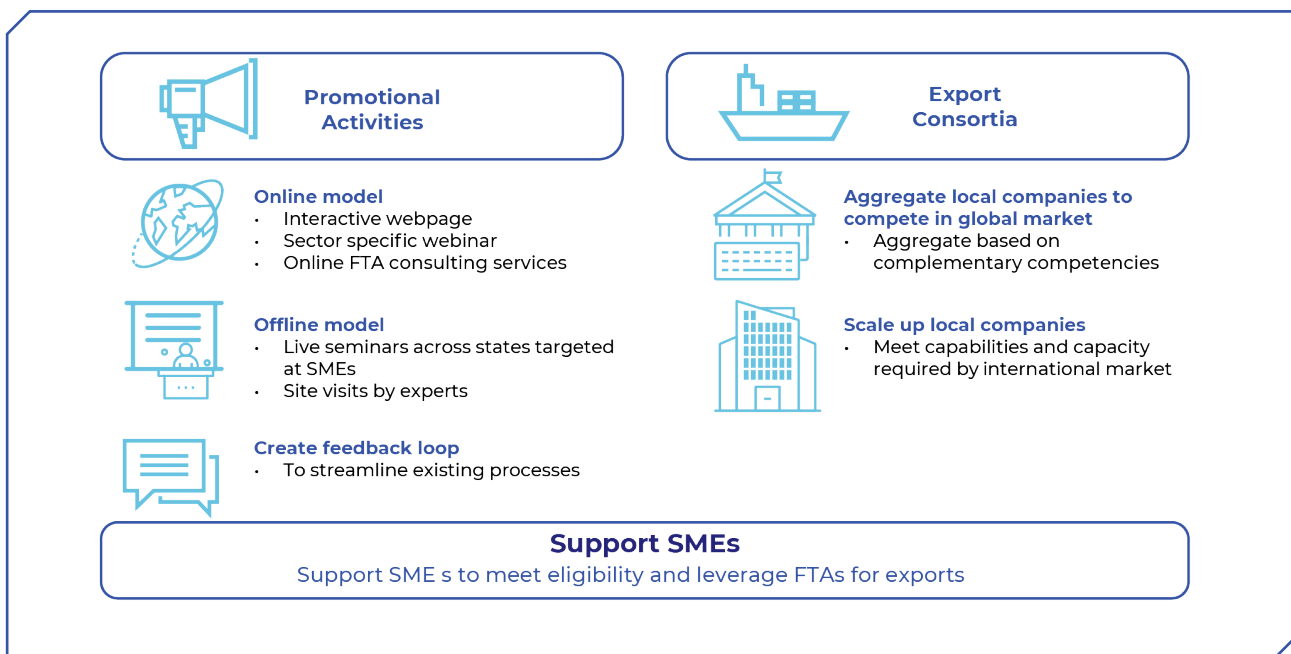
The utilisation of FTAs in Malaysia is of significant importance as it enables wide market access to participating countries and supports diversification of exports by fully leveraging on the preferential tariffs offered. However, the utilisation of the FTAs especially amongst SMEs is low, and this is largely due to the limited awareness and knowledge to navigate through the complex processes. A national trade advocacy campaign needs to be enhanced to deepen understanding of FTA benefits. It will act as a guide for companies to fulfil requirements of the FTAs among others:

- Rules of Origin (ROO);
- Certificate of Origin (COO); and
- Technical barrier to trade.

Malaysia will support in aggregating the competencies of local companies, bringing them together via export consortia to increase their bidding competitiveness for international contracts. The local companies will need to upgrade their capabilities to meet the standards and requirements by the international market.

The trade advocacy campaign aims to support SMEs and *Bumiputera* companies to meet the FTA eligibility criteria and therefore increase exports.

Figure 4.11: National Trade Advocacy Campaign



This action plan will be led by MITI and supported by MATRADE, Malaysia Design Council (MRM), TERAJU, SMECorp and industry players. Key actions are to:

- Conduct promotional activities through online and offline model:
 - Online: interactive webpage, sector specific webinar, online FTA consulting services; and
 - Offline: live seminars targeted at SMEs, site visits by experts to assist with ROO determination and documentation.
- Address issues based on feedback from companies regarding FTA requirements; and
- Provide access to experts to address ROO, FTA eligibility and other related issues.

ACTION PLAN 1.5.2

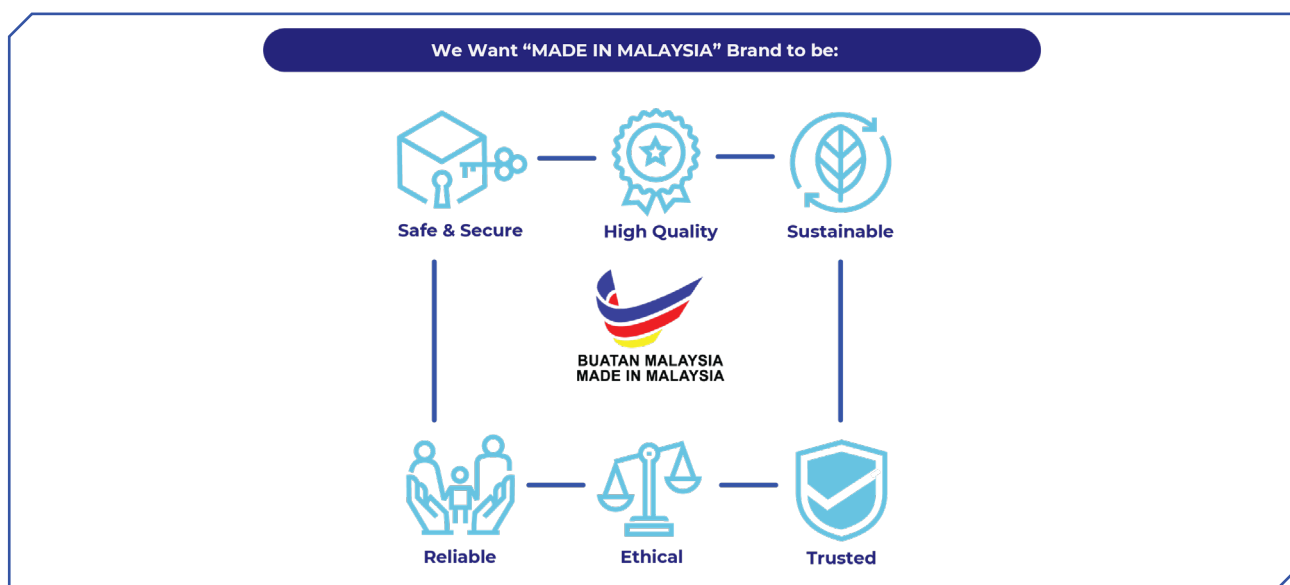
Rejuvenate “Made in Malaysia” branding

The Made in Malaysia tagline can be a powerful marketing tool to portray Malaysian-made products. A good branding image to Malaysia can result in:

- **Built brand trust** – a tagline that highlights quality and innovation from Malaysia-made products can help build brand trust and loyalty;
- **Differentiating factor** – sets the standard to differentiate Malaysian-made products from those made in other countries; and
- **Raised awareness** – good publicity to attract new national and international partners towards Malaysian-made products.

To further enhance Malaysia's international presence and marketability, it is imperative to develop a national branding theme that fosters a more consistent approach in promoting Malaysian-made products globally. It is essential to tailor a unique value proposition for each export sector, emphasising the distinct strengths and advantages of Malaysian products within their respective industries.

Figure 4.12: “Made in Malaysia” Brand



This action plan will be led by MATRADE and supported by MITI, MRM and selected industry champions. Key activities are to:

- Provide national branding guidelines for public and private sectors, including SMEs;
- Work with strategic partners and key influencers in target markets to promote Malaysian brands; and
- Facilitate access to funding to cover support for international branding efforts, digital marketing and certification.

**ACTION PLAN
1.5.3****Address trade restrictive non-tariff measures (NTMs) and compliance of standards**

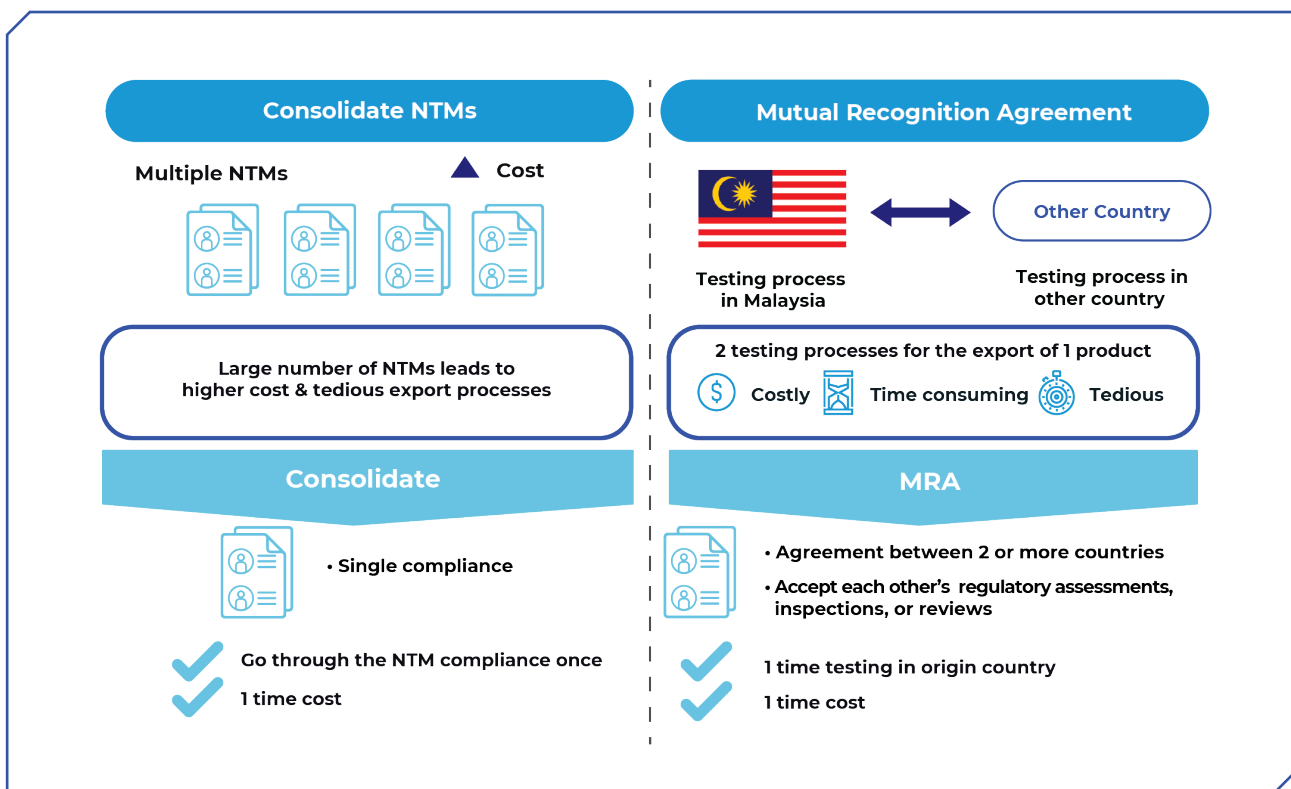
The imposition of many Non-tariff Measures (NTMs) by multiple Ministries in Malaysia has resulted in increased costs and complex procedures for local companies seeking to export their products.

A number of these NTMs could have overlapping requirements and companies need to spend time and effort to comply with each individual NTMs that are relevant to them. Some of the key requirements to export include:

- “Technical barriers to trade” (TBT) and “Sanitary and phytosanitary” (SPS) measures (convention or standards);
- Complying with technical specifications and quality requirement, related processes and production methods; and
- Labelling and packaging for environmental protection, consumer safety and national security.

To address this issue, it is crucial to have a consolidated review on legislation and standard requirements associated with NTMs, and streamline the process to make it more efficient and business-friendly. Consolidating NTMs based on their similarities will simplify procedures and help local companies avoid unnecessary efforts and costs. Apart from that, expanding the product coverage of Mutual Recognition Agreements (MRA) with trading countries would effectively reduce duplicated compliance processes for both importing and exporting countries.

Figure 4.13: Pathway to Ease NTMs Process



This action plan will be led by MPC and supported by MITI, SIRIM, MATRADE and relevant Ministries with NTMs. Key actions to be taken:

- Categorise NTMs based on TBT or SPS classifications;
- Engage relevant Ministries to discuss consolidation of NTMs issued;
- Engage industry players to understand challenges faced to comply with NTMs; and
- Provide guidance and support to local companies through future-developed consolidation platforms to stay updated with the latest requirements.

**ACTION PLAN
1.5.4****Update FTA based on geopolitical conditions**

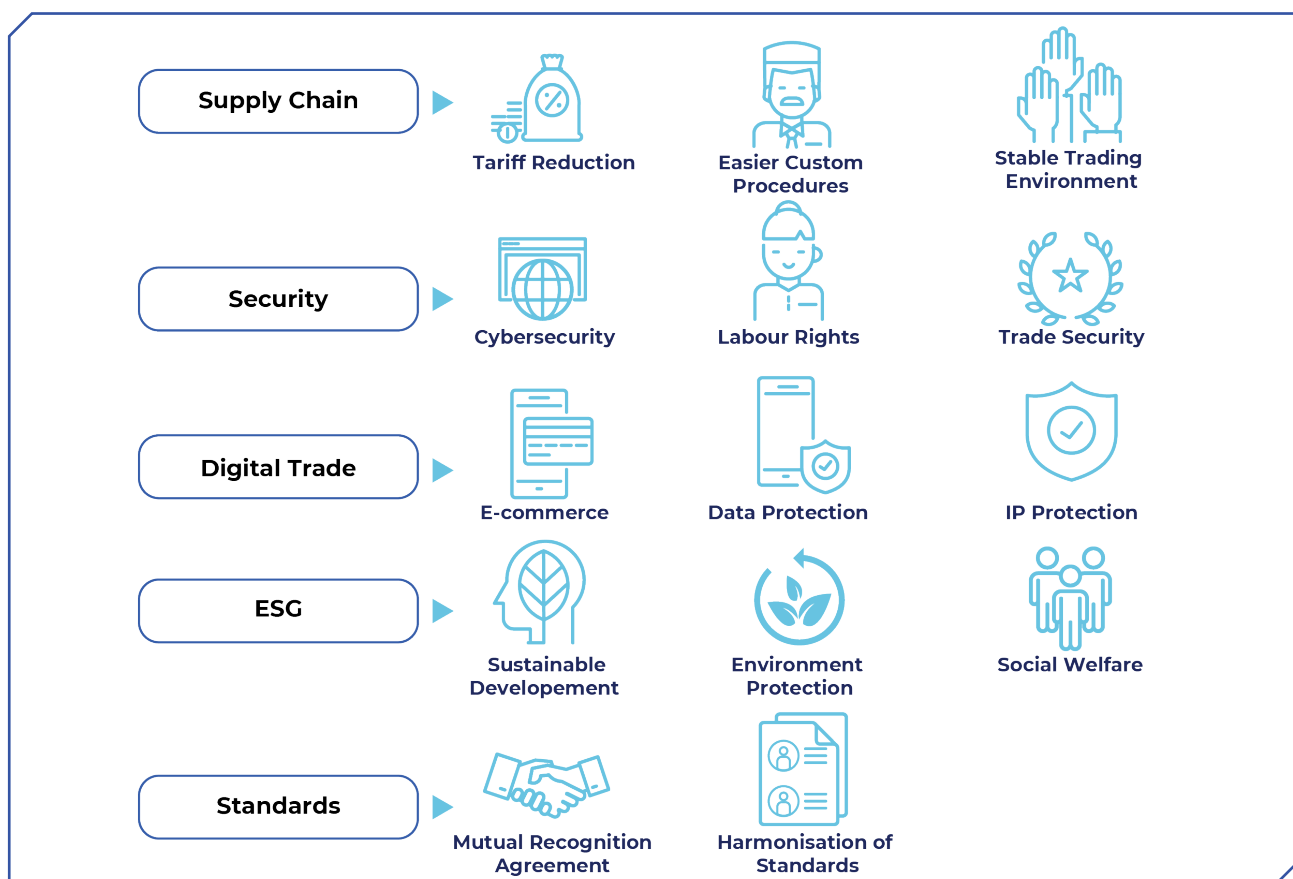
Free Trade Agreements (FTAs) hold significant importance in Malaysia's trade and economic strategies. These agreements aim to reduce tariffs and non-tariff barriers, between Malaysia and its trading partners to facilitate the flow of goods, services and investments.

However, new modern FTAs have now gone beyond the traditional parameters, evolving to encompass major trends such as ESG considerations, reflecting a broader focus on sustainable and responsible trade practices.

Malaysia recognises that the current FTAs approach has not been able to adequately address the evolving geopolitical dynamics and key developments in the global trade landscape. To adapt to these shifts, Malaysia aims to reassess its trade position and capitalise on key areas that should be included in modern FTAs. The five key focus areas encompass supply chain, security, digital trade, ESG considerations, as well as standards.

To navigate new trade deals effectively, Malaysia aims to engage in discussions with its FTA partners to refresh and update the agreements accordingly. This approach allows Malaysia to adapt to evolving trade dynamics and ensure that its trade agreements remain relevant and mutually beneficial for all parties involved.

Figure 4.14: Key Focus of Modern FTAs



This action plan will be led by MITI and supported by MIDA and MATRADE. Key activities include:

- Engage key industry champions to understand potential challenges faced to better define FTAs;
- Strengthen investment, trade and industrial position for the FTAs; and
- Identify the potential FTAs that would require an update on the strategic position.

Mission-based Project 1.1 and 1.2**IC design and wafer fabrication**

The Government aims to further strengthen Malaysia as a leading E&E hub, focusing on developing a robust ecosystem that nurtures and supports local IC design and wafer fabrication companies, strengthen embedded systems and build capabilities in advanced packaging. This will enable them to compete globally and contribute significantly to Malaysia's economic growth.

Rationale

The rationale behind these MBPs arise from several factors:

- The E&E sector plays a vital role in Malaysia's economy, with over RM595 billion in exports – contributing approximately 40 per cent to the nation's overall exports and 45 per cent to Malaysia manufacturing sector's exports;
- The semiconductor industry is referred as the "new oil of the future" by many, with an AT Kearney study projecting the industry to reach USD1.2 trillion by 2030. The study predicts that the Asia Pacific region will account for the largest share of the market in 2030 at 52 per cent;
- Introduction of the Creating Helpful Incentives to Produce Semiconductors Act in America (CHIPS Act), provides Malaysia with an opportunity to become a neutral country of choice to expand on semiconductor manufacturing activities, capitalising on the US+1, China+1 and Taiwan+1 trends; and
- IC design and wafer fabrication represents the high value-added activities in the semiconductor value chain.

Specifically, the following MBPs are focused to:

- 1.1. Create global IC design champions in EV, RE and AI; and
- 1.2. Attract new advanced wafer fabrication in Malaysia.

Mission-based Project 1.1**Create global IC design champions in EV, RE and AI**

This MBP aims to establish Malaysia as a hub for advanced IC design technologies and solutions by developing five globally competitive local IC design companies. This MBP will focus on IC design for EV, RE and AI segments, leveraging the strong growth potential on these technologies and its dependencies on semiconductors.

Actions

First step towards this would be engaging IC Design companies with strong export potential to explore possible collaborations, partnerships, investments, or support required for them to scale up their operations. Incentives must be considered to encourage the scaling up of local IC design companies and enable them to compete on a global scale.

Enablers

The following are key Enablers to be implemented for this MBP:

- Collaboration with industry stakeholders, (e.g. automotive companies, RE firms and AI-driven technology developers) to understand their specific IC design requirements. Cross-industry collaborations can foster expertise and knowledge sharing from various sectors, enhancing IC design capabilities and product offerings;
- Deepen capabilities in research, technology and industry collaboration; and
- Talent development support such as training of IC design engineers and on-the-job training.

Funding

Funding for this MBP will be driven by private sector investments and Government funding through the NIMP 2030 Strategic Co-Investment Fund.

Mission-based Project 1.2

Attract new advanced wafer fabrication in Malaysia

The wafer fabrication capability needs to be developed in parallel to complement the development of the IC Design ecosystem in Malaysia. As such, the Government is looking to set up local production of mid-tier (28-40nm) wafer fabrication by attracting globally competitive wafer fabrication companies and expand capabilities of local companies.

Actions

In this MBP, Malaysia aims to attract FDI from global wafer fabrication leaders. This requires developing a targeted offensive investment strategy that includes an attractive incentives package. For example, through the CHIPS Act, the US Government provides 25 per cent investment tax credit for capital expenses incurred by both domestic and foreign companies that invest in semiconductor manufacturing in the US.

To further support the realisation of this, the Government looks to assess and collaborate with existing local companies in Malaysia's semiconductor industry. By identifying companies with existing capabilities, the Government can work with them to expand their operations and establish mid-tier wafer fabrication facilities locally.

Companies in other parts of the value chain have the opportunity to explore and venture into wafer fabrication, thus advancing into higher value-added activities.

Enablers

The following are key Enablers to be implemented for this MBP:

- Strategic level engagement with global advanced wafer fabrication companies to promote Malaysia as preferred investment destination;
- Competitive incentives to attract investments from global wafer fabrication companies to Malaysia; and
- E&E ecosystem supported by local SMEs in the value chain for the global wafer fabrication companies.

Funding

Funding for this MBP will be driven by private sector investments and Government funding through the NIMP 2030 Strategic Co-Investment Fund.

Box Article 4.3:

Why are IC design and fabrication critical to Malaysia's economy?

What are IC Design and Fabrication?

Integrated circuit (IC) design and fabrication involve the creation of electronic circuits on a wafer made of pure semiconductor material

IC design is a process of creating a blueprint or layout for an integrated circuit. It involves designing the functionality and placement of various components on the semiconductor material

IC fabrication, or wafer fabrication, is the process of building the integrated circuit on a semiconductor wafer

Main uses...



PCs, laptops



Wearables, smartphones, tablets



Autonomous vehicles, drones



Medical devices



Robotics, industrial productions



Data centres, IoTs



Communication system



DID YOU KNOW?

IC design is a critical front-end manufacturing related services activity that needs to be groomed to link to the global semiconductor value chain

Within semiconductor value chain, IC design has the highest value-added component

Malaysia is a major global manufacturing hub for the E&E industry which produces semiconductors. This industry has been known as the largest contributor to export of Malaysia, 36.4 per cent (RM405.83 billion) of total export in 2021 (source MATRADE)

Hence, IC design and fabrication are critical to Malaysia's economy as this will pave the way for Malaysia to become a high value-added semiconductor producing country

Initiatives for Growth in IC Design and Fabrication...

National Policy on Science, Technology, and Innovation (NPSTI)

to promote research, development, and commercialisation of high-value technologies, including microelectronics and semiconductor industries

E&E Roadmap 2021-2030

outlines strategic direction and priorities for the semiconductor industry in Malaysia, including IC design and fabrication

Semiconductor Design Cluster

to attract semiconductor design companies to establish their presence in Malaysia

Source: MIDA, The Malaysian Reserve, Malay Mail, NAP 2020

Mission-based Project 1.3

Deepen to specialty chemicals vertical

The Government is committed to deepening the specialty chemicals vertically, with a vision to achieve multiple strategic objectives. These objectives include spearheading technology and innovation development and transitioning from being a specialty chemicals importer to becoming a net exporter.

Rationale

The rationale behind this MBP arises from several factors:

- Malaysia currently produces and exports feedstock and commodities but relies on imports for specialty chemicals. There is an opportunity for Malaysia to bridge the gap by producing specialty chemicals domestically, capturing both domestic market demand and export opportunities. The specialty chemicals market is substantial, with a market size exceeding USD40 billion;
- The specialty chemicals industry acts as a catalyst for innovation, driving the development of higher value-added specialty chemicals products which translates into the creation of more high-skilled job opportunities;
- It offers significant opportunities for R&D, leading to product innovation, competencies expansion and in turn drives economic complexity; and
- It drives the establishment of forward and backward linkages. Backward linkages involve developing industries that support specialty chemicals production, while forward linkages encompass industries that benefit from the innovation multiplier effect generated by the specialty chemicals sector.

Actions

A local chemical leader will lead the investments in key specialty chemicals areas, including agrochemicals, care chemicals, nutrition chemicals and construction chemicals. Efforts will be made to identify other local players in the specialty chemicals sector with growth potential.

To support the growth and expansion of the specialty chemical industry, the Government aims to provide bilateral support required by the local chemical leader. A comprehensive support will be extended to other local players to strengthen their capabilities and capacity, attract investments and cultivate talent within the sector.

Enablers

The following are key Enablers to be implemented for this MBP:

- Government-to-Government (G2G) support to facilitate requirements within the specialty chemicals industry;
- Attracting and developing talent, including building a talent pipeline for chemists and polymer scientists, supporting training programmes for chemical engineers and promoting industry-led research and development;
- Strengthening IP protection to safeguard innovations and encourage further R&D within the specialty chemicals sector;
- Special government incentives to incentivise investments and foster growth within the specialty chemicals industry. Specific details of these incentives to be determined;
- Cluster-based linkages within the existing chemical industry cluster will be strengthened, leveraging geographical proximity to raw materials and facilitating collaboration among stakeholders; and
- Capabilities and capacity of players along the value chain of the chemical industry, supporting the specialty chemicals sector, will be enhanced to ensure a robust and sustainable ecosystem.

Funding

This MBP will be private led, potentially financed from the financing ecosystem catalysed under the NIMP 2030.

Mission-based Project 1.4

Groom champions in 4 game changing advanced materials

Malaysia is poised to become a frontrunner in game changing advanced materials by catalysing downstream activities, strengthening industrial clusters and harnessing its rich natural resources. With a focus on four key materials – graphene, nitinol, rare earth and MCC polymers. Malaysia aims to meet global demand and drive exports to manufacturers worldwide. This strategic endeavour aligns with the National Advanced Materials Technology Roadmap (2021-2030) and holds immense potential for key sectors such as electric vehicles and aerospace.

Rationale

The rationale behind this MBP arises from several factors:

- **Abundance of natural resources:** Malaysia's wealth of natural resources positions itself advantageously to produce advanced materials of high value, making it a potential key player in the global market.
- **Growing demand for advanced materials:** The increasing demand for advanced materials across various industries presents significant opportunities for Malaysia to meet market needs.
- **Critical importance to key sectors:** The identified game changing materials play a vital role in crucial sectors such as electric vehicles and aerospace. Developing expertise and capabilities in these materials will fuel advancements and strengthen Malaysia's position in these sectors.
- **National Advanced Materials Technology Roadmap:** This MBP aligns with the National Advanced Materials roadmap, which provides direction for the growth of Malaysia in the field of advanced materials.

Actions

To realise this MBP, the following key actions will be pursued:

- **Strengthen partnerships:** Collaboration among industry players, research institutions and Government Agencies will be fostered to promote knowledge sharing, technology transfer and innovation in advanced materials.

- **Enhance access to funding:** Measures will be implemented to facilitate improved access to funding for research, development and commercialisation of advanced materials projects. Public-private partnerships and investment attraction efforts will be encouraged.
- **Incentivise research and development:** Special incentives will be introduced to promote research and development activities in advanced materials. These incentives will promote increased industry participation and attract local and foreign researchers to contribute to the sector's growth.
- **Safeguard IP rights:** Robust measures will be put in place to strengthen the protection of IP rights, ensuring that innovators and companies in advanced materials are duly recognised and rewarded for their contributions.

Enablers

The following are key Enablers to be implemented for this MBP:

- **Talent development:** Efforts will be made to nurture and develop a skilled workforce in advanced materials. Specialised training programmes, scholarship opportunities and collaborations between academia and industry will be encouraged.
- **Strengthened IP protection:** Stringent measures will be implemented to enhance IP protection, safeguarding the innovations and creations in the field of advanced materials.
- **Special Government incentives:** Tailored Government incentives will be introduced to provide additional support for the development and commercialisation of advanced materials. These incentives will attract investments, stimulate growth and drive competitiveness in the sector.

Funding

This MBP will be private-led, potentially financed from the financing ecosystem catalysed under the NIMP 2030.



5

**MISSION 2 :
TECH UP FOR A DIGITALLY VIBRANT
NATION**





Increase
economic
complexity



Create high-
value job
opportunities



Extend domestic
linkages



Develop new &
existing clusters



Improve
inclusivity



Enhance ESG
practices

In the recent Technology and Innovation Report 2023, by UNCTAD³⁹, which assessed the global readiness for frontier technologies, Malaysia is ranked 32nd among 166 countries and fifth in Asia. This is contributed by the industry's adoption and adaptation of frontier technologies and access to finance the technologies.

The Industry4WRD policy was introduced in 2018 to accelerate Malaysia's manufacturing sector's digitalisation journey. The aim was to transform the manufacturing sector and MRS to adopt Industry 4.0 technologies in order to increase the level of labour productivity, elevate contribution of manufacturing to the economy, strengthen innovation capacity and capability and increase the number of high-skilled workers in the manufacturing sector.

Despite the efforts undertaken, the performance of the manufacturing sector has not shown significant improvement. The growth rate of Malaysia's labour productivity has slowed down in the last three decades and this decline was further exacerbated by the COVID-19 pandemic. This is attributed to prolonged use of low-skilled labours, relatively low innovation and low technology adoption in the manufacturing industry.

It is imperative for companies to adopt digitalisation and shift away from low-skilled labour. This is to increase labour productivity and create more high-skilled jobs for the industry. With the changing global landscape, it is no longer sufficient to merely go digital; the future growth of Malaysia hinges on the organisations' ability to embrace a digital mindset and fully embody digital capabilities across all aspects of the manufacturing processes.

Similarly, the Government will accelerate digitalisation and integration to support the industry. By streamlining and digitalising processes, it will improve the delivery of public services and ease the process of doing business in Malaysia.

Collectively, both the Government and industry will spur technology innovation and create more local technology solutions. By supporting homegrown talent and encouraging disruptive ideas, Malaysia can transition from being a technology provider to a technology creator.

The urgency of the digital transformation cannot be understated. It is essential to act swiftly and proactively seize the opportunities that digitalisation offers to remain competitive in the rapidly evolving global landscape.

The successful implementation of Strategies and Action Plans under Mission 2 will result in impactful outcomes as follow:

- **Enable economic complexity:**

The use of technology enhances labour productivity and efficiency, enabling businesses to allocate resources to more complex activities. Advanced technology enables R&D activities, which will drive innovation to develop high value-added products;

- **Emergence of high-skilled jobs:**

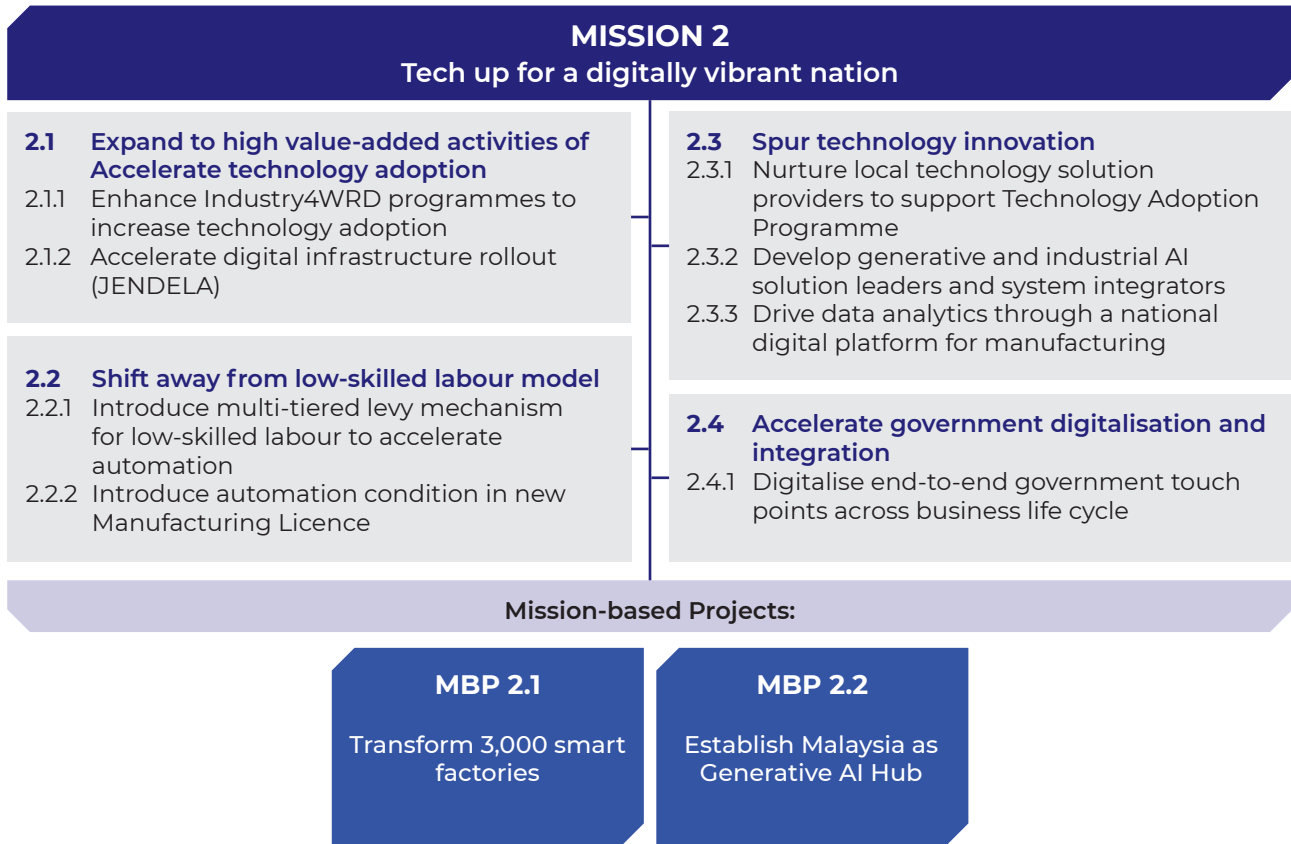
Technology and digital adoption creates the demand for more high-skilled jobs such as data scientists, data engineers, data analysts, artificial intelligence engineers and specialists, system integrators, cybersecurity engineers and other tech-related services professionals; and

- **Creation of new clusters:**

Technology acts as a catalyst for disruptive ideas, enables knowledge exchange and collaboration, and attracts talented individuals. This fosters innovation and spurs economic activity, contributing to the formation of new clusters. The development of these clusters can be supported through strengthening the ecosystem infrastructure and capitalising on emerging market opportunities.

There are four Strategies, eight Action Plans and two Mission-based Projects to be carried out to achieve Mission 2, as illustrated below:

Figure 5.1: Mission 2 – Tech Up for a Digitally Vibrant Nation



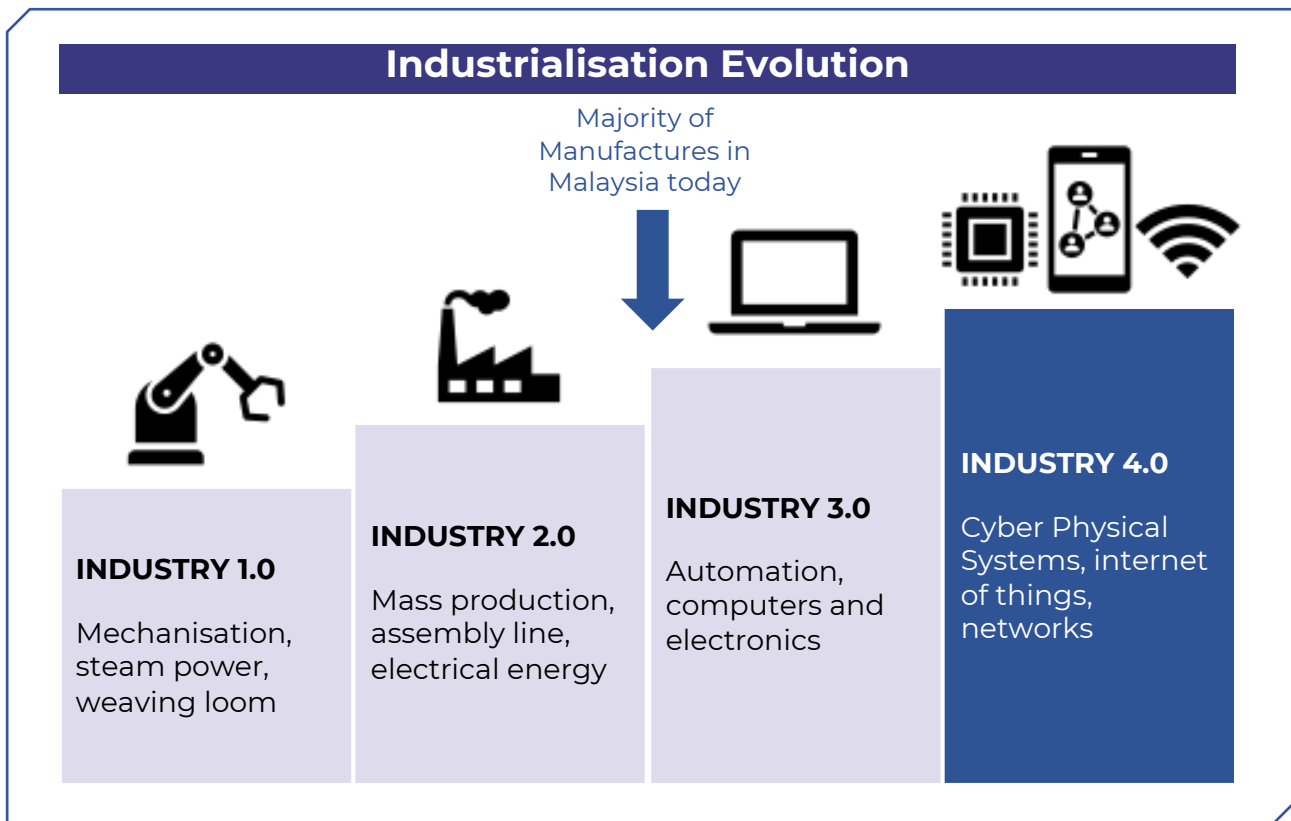
STRATEGY 2.1**Accelerate technology adoption**

This strategy aims to accelerate technology adoption by extending from front-end to back-end digitalisation. This will improve efficiency, data accuracy and decision-making by integrating various functions and providing real-time insights.

The NIMP 2030 will further enhance the Industry4WRD programmes to accelerate the technology shift towards Industry 4.0. By leveraging Industry 4.0 technologies, Malaysia will continue to maintain its competitiveness amidst the rapidly changing global landscape.

The Government is committed to ensuring the readiness of digital infrastructure to support industry development. In the face of rapidly advancing technology, Malaysia must act promptly to establish a robust and adaptable digital infrastructure.

Figure 5.2: Industrialisation Evolution



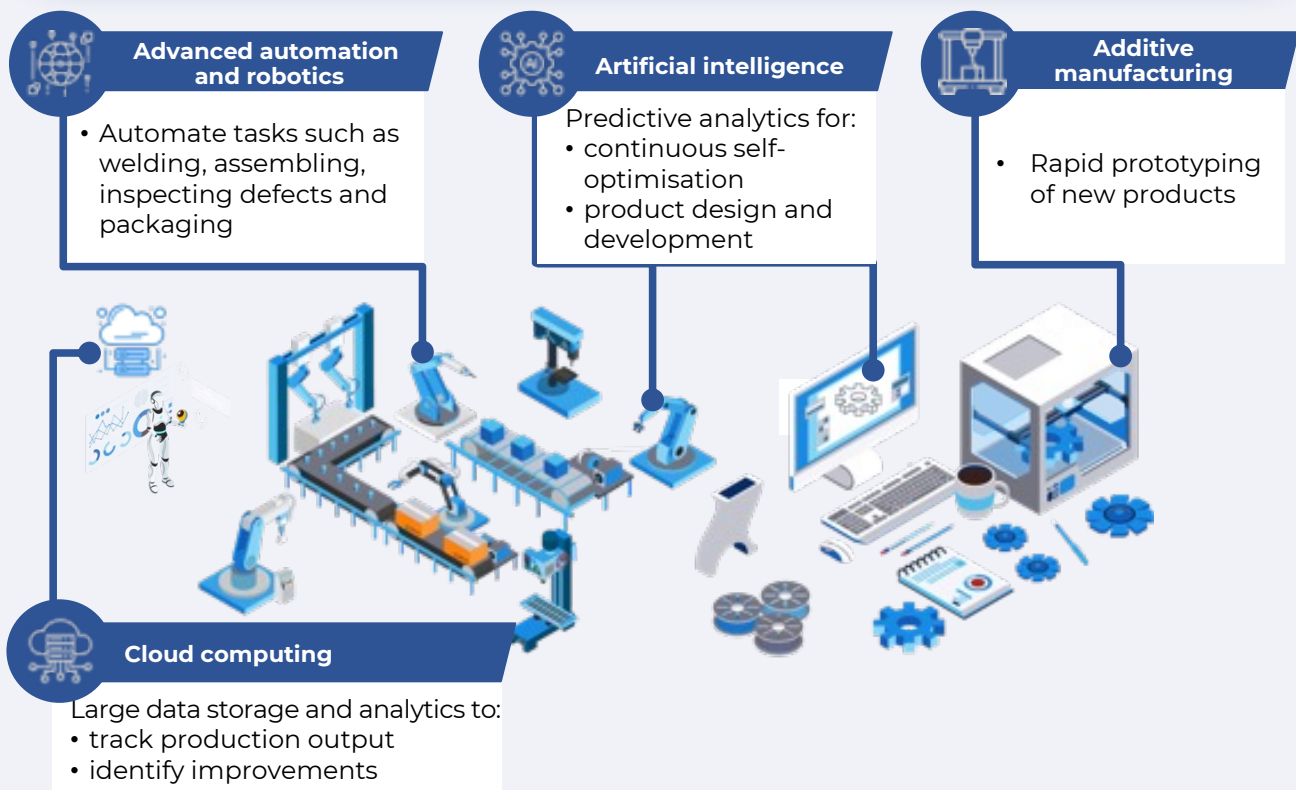
To achieve this, two Action Plans have been formulated:

Box Article 5.1: What is Smart Manufacturing?

Smart manufacturing⁴⁰ involves the seamless integration and connectivity of physical and digital processes across factories and the supply chain to optimise manufacturing operations and processes. By transforming and improving the ways in which people, processes and technologies operate, smart manufacturing facilitates the delivery of critical information for quality decision-making, enhanced efficiency, cost reduction and increased agility.

The element of smart manufacturing includes:

- Internet of Things (IoT) to connect devices, machines and sensors to collect and exchange data in real time. This creates a networked ecosystem, where machines and systems communicate seamlessly.
- Data analytics and big data tools to analyse vast amounts of data collected from various sources within the manufacturing process. This unlocks insights for decision-making, predictive maintenance and optimisation of production processes.
- Artificial intelligence and machine learning to automate tasks and continuously improve manufacturing processes. AI-driven systems are capable to identify patterns, adjust to dynamic conditions and optimise operations in real-time.
- Robotics and automation enable the efficient and precise execution of repetitive and labour-intensive tasks. These technologies encompass robotic arms, automated guided vehicles (AGVs) and autonomous systems, which streamline production processes and minimize the need for human intervention.
- Cloud computing to store, process and analyse manufacturing data. Cloud infrastructure provides scalable and cost-effective resources for data storage, computing power and collaborative applications.
- Cybersecurity to protect digital systems, networks and data from cyber threats. Secure networks and protocols are essential to safeguard sensitive information and maintain the integrity of manufacturing processes.



Source: *The Global Smart Industry Readiness Index Initiative: Manufacturing Transformation Insights Report 2022*, World Economic Forum

**ACTION PLAN
2.1.1****Enhance Industry4WRD programmes to increase technology adoption**

The Government has introduced programmes to encourage manufacturers to move towards Industry 4.0 technology adoption. In 2019, the Industry4WRD Readiness Assessment (RA) and Intervention Fund (IF) Programmes were launched as flagship initiatives under the Industry4WRD policy. The programmes were aimed to support the adoption of Industry 4.0 technologies by assessing the company's readiness, identifying priority areas to transform the company and providing funding support for the intervention.

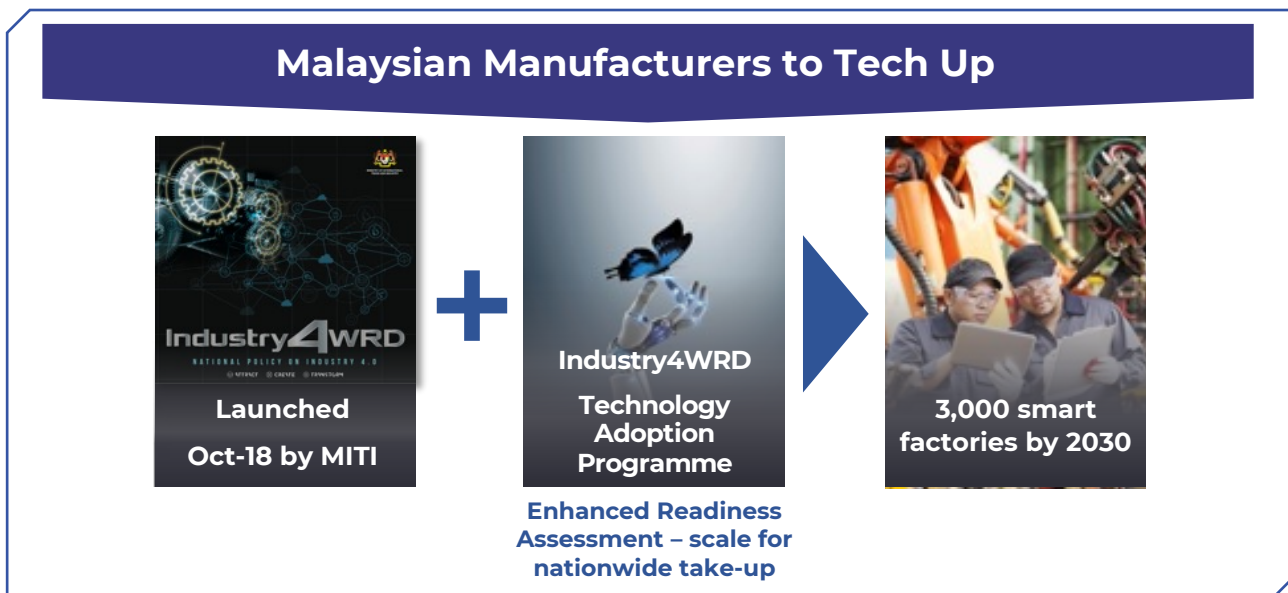
Despite having these technology adoption programmes, the industry has not shown significant transformation, especially among the SMEs. The take-up rate was dampened due to limited awareness to tech up and digitalise, high cost of investment and shortage of skilled talent for technology intervention projects.

The Government will enhance the Industry4WRD by:

- Equipping the industry with the fundamentals to embrace digitalisation and shift towards Industry 4.0;
- Enhancing the scope of the RA and IF programmes to include a follow-through in the technology implementation and post-implementation review. This will ensure the long-term sustainability of technology intervention; and
- Collaborating with capital market and financial institutions to fund the technology intervention projects.

The newly improved Industry4WRD programme is expected to create 3,000 smart factories by 2030.

Figure 5.3: Malaysian Manufacturers to Tech Up



To execute this action plan, MITI will lead with the support of MIDA, MPC, SIRIM, MOSTI, Ministry of Communications and Digital (KKD), Malaysia Digital Economy Malaysia (MDEC) and industry associations (e.g. FMM) to conduct the following activities:

- Review Industry4WRD programmes, specifically on the readiness assessment and intervention fund;
- Introduce the enhanced end-to-end programme to enable the creation of 3,000 smart factories; and
- Conduct proactive awareness including seminars, outreach programmes and portals to increase participation in the enhanced programme.

**ACTION PLAN
2.1.2****Accelerate digital infrastructure rollout (JENDELA)**

Digital infrastructure is critical in today's digital age as it enables smooth operation and connectivity of digital systems. Strong digital infrastructure further lowers the costs associated with innovation for enterprises of all sizes, with the most noteworthy benefits going to SMEs, thereby bolstering overall competitiveness.

Since the launch of JENDELA in August 2020, there has been significant improvement in Malaysia's national connectivity⁴¹:

- Nationwide access to an average mobile broadband speed of 116.03 mbps higher than the goal set by end of 2022, which is 35 mbps;
- Rise in 4G population coverage of 96.92% compared to 91.8% during the early commencement of JENDELA Phase 1;
- Access to fibre connectivity across a total of 7.74 million premises; and
- Roll out of 5G plans as the next wave.

In parallel to JENDELA for the national digital network development, the development of other digital infrastructure is equally important to cohesively support the industry in advanced technology adoption. Examples include cloud computing infrastructure, cybersecurity infrastructure and AI networks. These are critical as they enable the following:

- Rapid data transfer that enables businesses to quickly exchange data, access resources and make faster decisions based on real-time information;
- Access to cloud-based application, databases and shared resources with minimal latency;
- Seamless connectivity for industrial automation and Internet of Things (IoT); and
- Protect critical infrastructure from cyberattacks.

Continuous effort must be undertaken to ensure Malaysia's digital infrastructure is continuously upgraded to meet the industry's needs. KKD, MITI and industry players will work together to:

- Facilitate the industry's digital infrastructure needs;
- Foster collaboration and knowledge sharing among industry players to adopt the industry's best practices for digital infrastructure development; and
- Establish clear monitoring and evaluation mechanisms to track progress and ensure the timely completion of the upgrade activities.

STRATEGY 2.2**Shift away from low-skilled labour model**

This strategy aims to incentivise the industry to adopt automation and advanced technology. By embracing automation and technology, it will encourage the industry to shift away from low-skilled labour, thus creating the demand for high-skilled workers. This will increase labour productivity to contribute to economic growth.

To achieve this, two Action Plans have been formulated:

**ACTION PLAN
2.2.1****Introduce multi-tiered levy mechanism for low-skilled labour to accelerate automation**

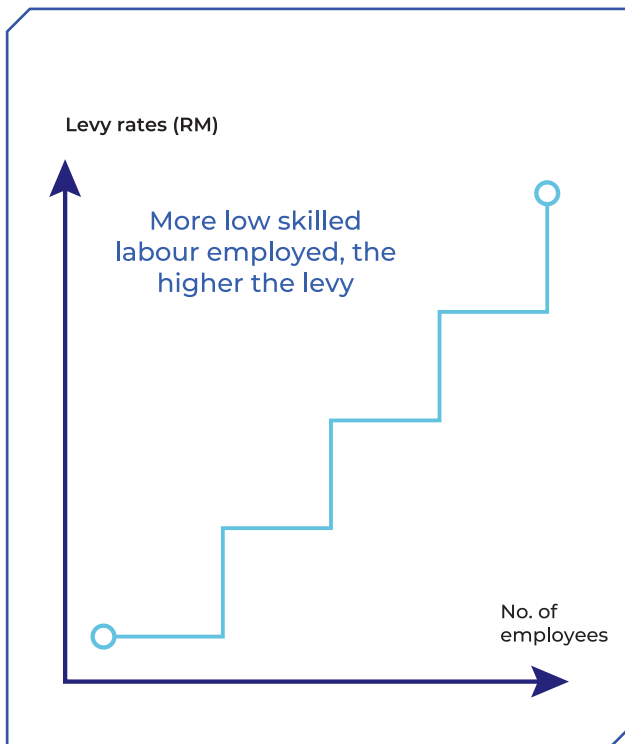
In an effort to create job opportunities for local employees in the workforce, the 80:20 workforce policy was introduced in 2016. However, businesses are facing difficulties to meet the ratio, which resulted in the extension of the policy up to 31 December 2024.

Moving forward, the Government will consider a multi-tiered levy mechanism to gradually phase out the reliance on foreign low-skilled workforce and accelerate the adoption of automation.

The multi-tiered levy mechanism will include the following features:

- **Higher levy charges** will be imposed on companies that employ more foreign low-skilled labour;
- **Tailored levy rates based on sector.** Sectors with high foreign low-skilled labours will be imposed with higher levy; and
- **Gradual implementation** to allow industry players to adjust and adapt to the new policy.

Figure 5.4: Multi-tiered Levy Mechanism



The execution of this action plan will be led by MOHR, supported by MITI, MIDA, Ministry of Finance (MOF) and key industry players. The following activities will be conducted:

- Define baseline to determine the levy rates and structure, with considerations of sectors that are heavily reliant on foreign workers and face labour shortages, skill requirements, wage levels, unemployment rates and future job demand projections to ensure the industry can adapt to the multi-tiered levy mechanism;
- Develop the transition plan with a gradual timeline for the industry to adopt the multi-tiered levy. This is to allow adjustments to the new policy while minimising disruptions; and
- Establish a monitoring mechanism to track the effectiveness and impact of the levy mechanism. This is to ensure the levy mechanism is continuously reviewed and refined based on market conditions.

**ACTION PLAN
2.2.2****Introduce automation condition in new Manufacturing Licence**

In effort to accelerate industry automation, the Government will explore a more impactful approach by introducing automation condition in the issuance of new Manufacturing Licence (ML).

However, the journey to automation involves major transformation for many companies. Therefore, a phased approach will be in place to allow companies to transition, based on their maturity and capabilities:

- **SME companies** – a phased approach with a grace period to allow SMEs to adopt relevant automation and technology solutions. This is to ensure foundational automation, technology and capabilities are in place before gradually upgrading into more advanced technologies.
- **MNCs and LLCs** – immediate effect for the MNCs and LLCs as they are equipped with the resources and capabilities to adopt digitalisation. This is to push established companies to adopt Industry 4.0 technologies and beyond.

This action plan will be led by MITI and supported by MIDA. The following activities will be conducted:

- Identify suitable phased approaches to implement automation condition in ML;
- Update policy for inclusion of automation condition in ML and create awareness to industry players of the requirements; and
- Develop mechanisms to monitor compliance with automation condition. Governance will be in place to ensure companies regularly perform audit checks and report automation progress, technology adoption achievements and investments in technology.

STRATEGY 2.3**Spur technology innovation**

The strategy aims to foster technology innovation and develop indigenous solutions in Malaysia. This includes stimulating the market for local technology solutions by creating the demand for local providers and encouraging industry-wide adoption. By supporting local talent and innovation, Malaysia aims to shift from being a technology provider to becoming a technology creator.

Additionally, this strategy aims to unlock further opportunities for Malaysia through data analytics and artificial intelligence (AI). By harnessing the power of data and AI technologies, businesses can gain valuable insights, make informed decisions and expand into new markets. This enables the industry to venture into untapped potential and explore growth possibilities both domestically and internationally.

To achieve this, three Action Plans have been formulated:

**ACTION PLAN
2.3.1****Nurture local technology solution providers to support
Technology Adoption Programme**

At present, the digital and technology solution is largely provided by foreign technology companies, which is a challenge for SMEs to adopt due to high costs and proprietary limitation. As SMEs make up for the majority of Malaysia's business landscape, their participation in adopting digitalisation is vital in driving economic growth and competitiveness.

To cater to the needs of businesses in Malaysia, it is essential to foster and promote local indigenous digital solutions to achieve the following:

- Provide affordable and tailored solutions to the local needs
- Provide inclusive technology and digital solutions
- Foster a vibrant and dynamic technology industry
- Enhance competitiveness of local technology users and technology creators
- Cultivate innovation culture in Malaysia

To realise this, the industry needs to transition from being technology providers to technology creators. This will be accomplished through the promotion of technology solution providers on the enhanced Industry4WRD:

- Support local technology start-ups to supply large scale technologies and innovations for the industry;
- Connect SMEs, MNCs and LLCs with local solution providers to address their technology and innovation needs; and
- Strategic partnership with higher learning institutions to support local solution providers in R&D.

Figure 5.5: Technology Adoption Programme



MDEC will be the main driver, supported by KKD, MITI, MIDA, MOSTI, SIRIM, MRANTI, Malaysian Technology Development Corporation (MTDC) and solution providers. The following activities will be conducted:

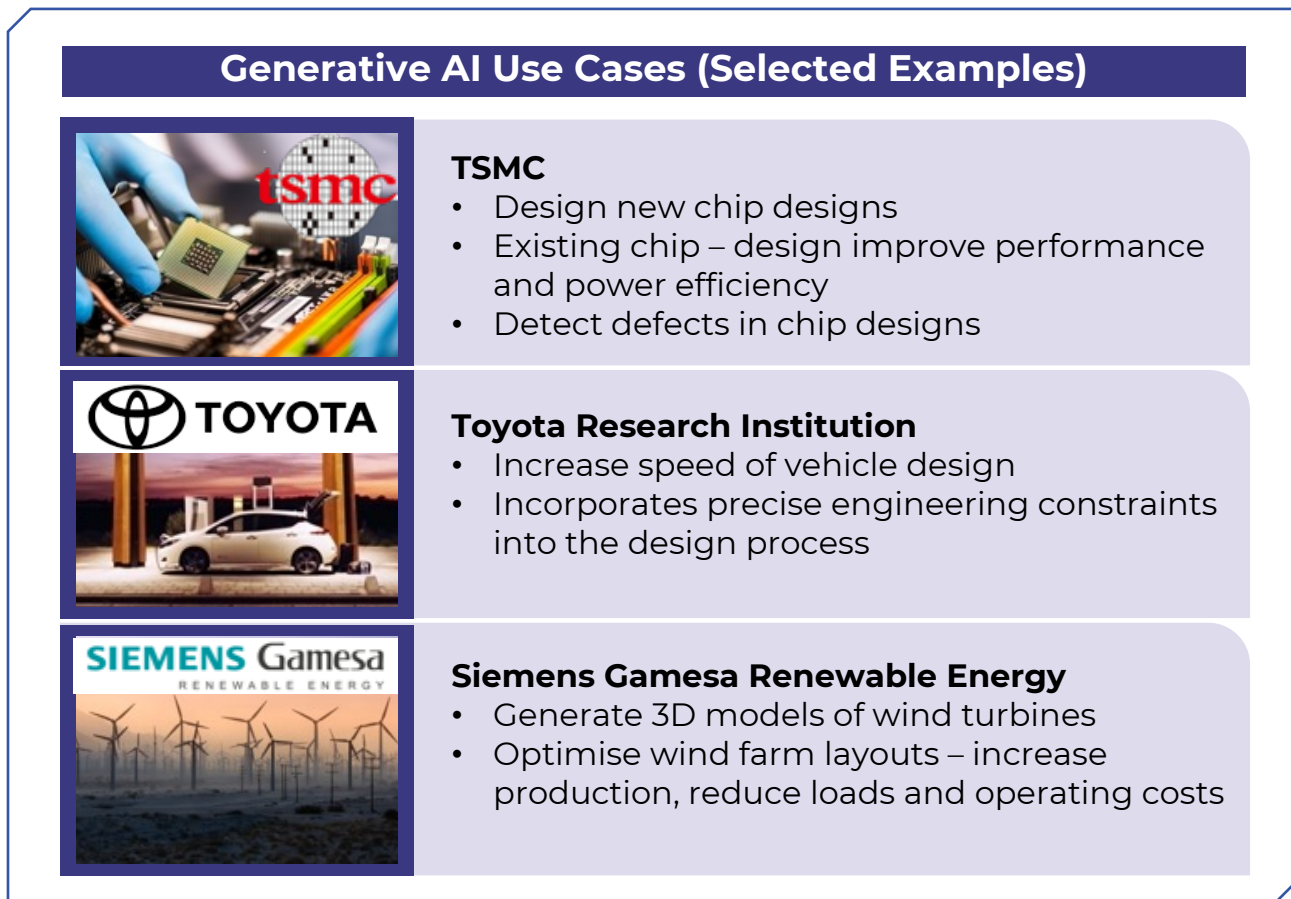
- Identify and qualify local technology solution companies (e.g. industry start-ups and SMEs) and onboard them as part of the technology solution developer programme;
- Develop new and enhanced programmes together with technology centres (e.g. SIRIM and MTDC), academia (e.g. MOHE) and private companies (e.g. MNCs) to support local technology companies in developing innovative solutions and accelerate technology adoption;
- Facilitate in providing financial assistance to support the solution providers in scaling up their products and services; and
- Package local solution providers with the enhanced Industry4WRD programme to encourage the usage of local technology solutions.

ACTION PLAN 2.3.2

Develop generative and industrial AI solution leaders and system integrators

The emergence of generative AI revolutionises the manufacturing industry by enabling new levels of automation, customisation and optimisation. Although generative AI is still a nascent industry, it is rapidly evolving and has shown promising results.

Figure 5.6: Generative AI Use Cases



The use of AI can unlock vast opportunities for the industry. Malaysia has the potential to adopt AI and be an AI solution leader. Based on the Oxford Insights Government AI Readiness Index 2022⁴², Malaysia is ranked 29th out of 181 countries. Amongst the ASEAN countries, Malaysia ranked the second highest, while amongst the APAC countries, Malaysia is ranked the sixth highest.

Table 5.1: Ten Highest Ranking Countries in APAC Region

No.	Rank	Country	Score
1	2	Singapore	84.12
2	6	Republic of Korea	76.76
3	8	Australia	75.29
4	9	Japan	75.25
5	17	China	70.84
6	29	Malaysia	67.37
7	31	Thailand	64.63
8	32	India	63.67
9	43	Indonesia	60.89
10	54	Philippines	55.42

Table 5.2: Government AI Readiness Index, Ranking by ASEAN Region

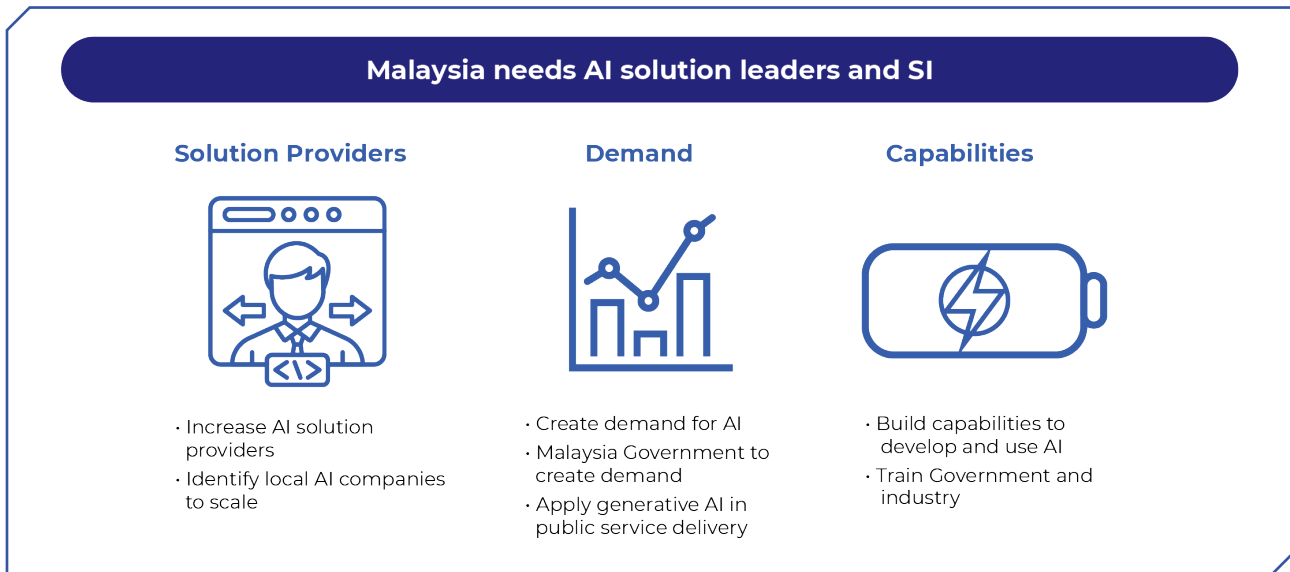
No.	Rank	Country	Score
1	2	Singapore	84.12
2	29	Malaysia	67.37
3	31	Thailand	64.63
4	43	Indonesia	60.89
5	54	Philippines	55.42
6	55	Viet Nam	53.96
7	67	Brunei Darussalam	48.06
8	126	Myanmar	32.45
9	132	Cambodia	31.17

Source: Oxford Insights Government AI Readiness Index 2022

According to the assessment, Malaysia's ranking is attributed to strong foundation in digital capacity and infrastructure to support AI. While this is the case, the Government must provide support in growing the AI market in Malaysia by ensuring the following are in place:

- **Sufficient quality AI solution providers** – spur the growth of AI solution providers, especially local providers to scale and grow the AI market in Malaysia;
- **Strong demand for AI adoption** – create the demand for AI to attract solution providers. The Government to create the demand by applying generative AI in public service delivery; and
- **Availability of quality talent to develop and use AI** – build capabilities of the public and private sectors to develop and adopt AI.

Figure 5.7: Needs of AI Solution Leaders and SI



To implement this, MDEC will lead with the support of KKD, MOSTI, MITI, MIDA, Ministry of Human Resources (MOHR), MOHE and industry players. Together, the following activities will be conducted:

- Engage MOHR, MOHE, MOSTI and universities to develop expertise in generative AI by building a strong foundation in AI concepts, algorithms, programmes and system integration;
- Attract foreign investments with AI capabilities to build the generative AI market in Malaysia by developing generative AI R&D centres; and
- Develop programmes to facilitate and foster partnerships with industry players and generative AI leaders to grow the national AI ecosystem. This is to encourage participation in joint initiatives and knowledge sharing.

Box Article 5.2: What is Generative AI?

What is Generative AI?

Generative AI is a type of artificial intelligence that can create new content, such as text, images, audio and video. It does this by learning from a large dataset of existing content, and then using that knowledge to generate new content that is similar to the data it was trained on.

What can it be used for?

Generative AI is still a relatively new field, but it has the potential to revolutionise the way content is created.

It can be used to create new forms of art, to generate new product designs, or even to create synthetic data that can be used to train other AI models.

EXAMPLES OF GENERATIVE AI



ChatGPT

Generates text, translate languages, write different kinds of creative content and answer your questions in an informative way



Bard



DALL-E2

Generates images based on text prompts

SPECIAL CASE

Using Generative AI to automate repetitive tasks

One example of Generative AI application is to automate repetitive tasks. This can be done by asking the AI to code certain programmes, using prompts designed to elicit the desired code, such as “help me write a programme to automatically format tables”.

With AI-generated code, anyone can automate repetitive processes without prior coding experience. This has the potential to increase workplace productivity, by making it accessible to a wider range of individuals by eliminating certain knowledge barriers.

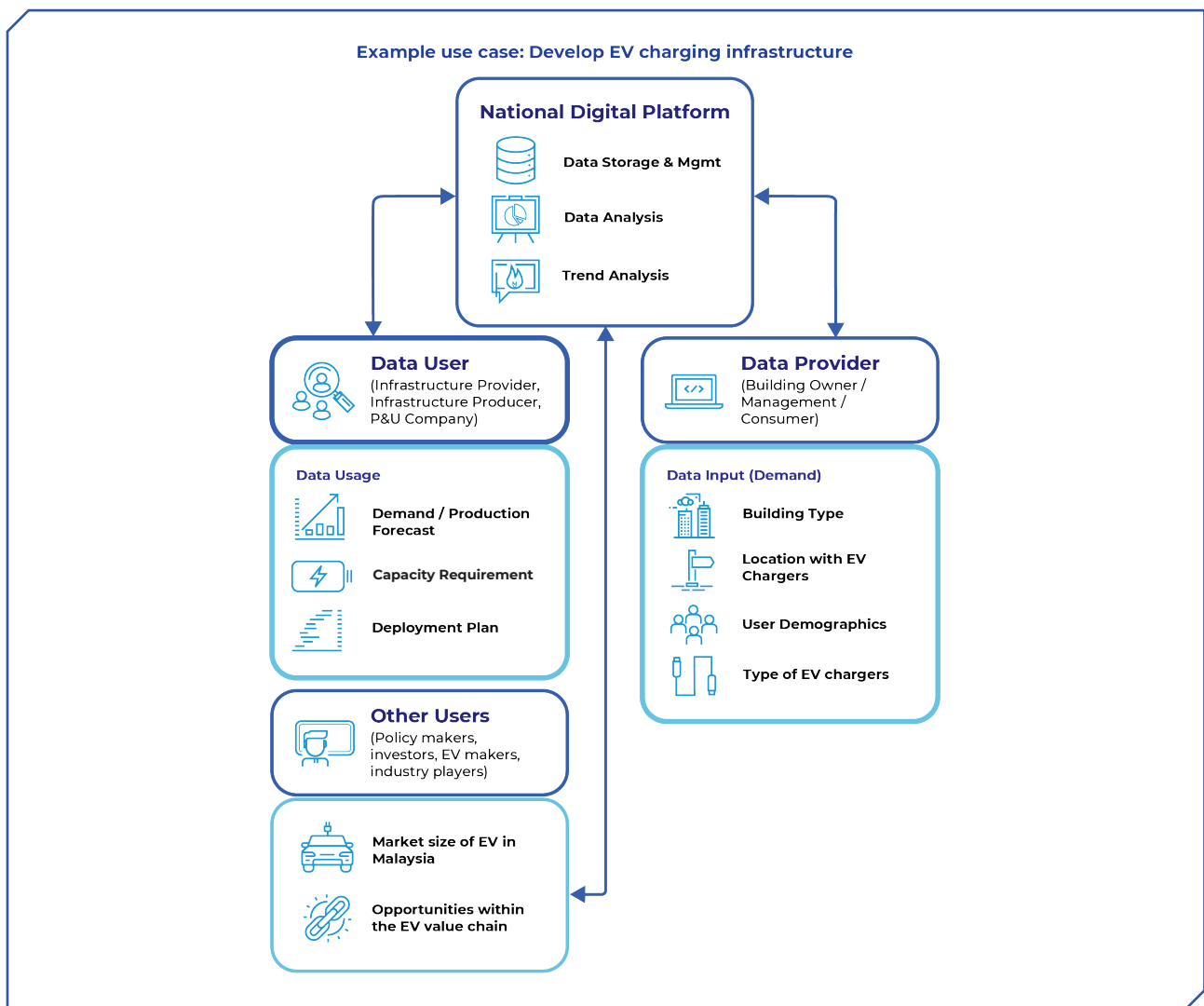
Source: OpenAI

ACTION PLAN
2.3.3**Drive data analytics through a national digital platform for manufacturing**

With advanced technology and growing data availability, data has become a valuable asset that can unlock opportunities. Businesses and individuals can leverage data to gain insights, make informed decisions and drive innovation. With a national digital platform, it will aggregate manufacturing industry data, which will encourage data analytics.

A national digital platform for manufacturing can contribute to better national level planning for supply chain security. The digital platform will be based on an open-source data concept, allowing businesses to access and contribute data, which will enrich the data bank.

Figure 5.8: National Digital Platform for Analytics



MITI will lead the action plan, with support from KKD, MAMPU, MOSTI, MIDA, technology vendors and industry players. The following activities will be conducted:

- Develop the architecture for the manufacturing digital platform. Assess leading countries with national digital platform using open-source data to develop use cases;
- Engage the manufacturing industry players to understand expectations and obtain buy-ins on data usage and data sharing requirements; and
- Launch the national digital platform and promote its use among the industry players.

STRATEGY 2.4**Accelerate government digitalisation and integration**

This strategy aims to accelerate government digitalisation to ensure processes are integrated, providing a seamless experience for businesses in Malaysia. By embracing digital transformation, the Government can modernise its operations, enhance efficiency and improve its public service delivery. The Government will be able to harness data-driven insights, enhance decision-making and deliver more personalised services to businesses.

To achieve this, the following Action Plan has been formulated:

**ACTION PLAN
2.4.1****Digitalise end-to-end government touch points across
business life cycle**

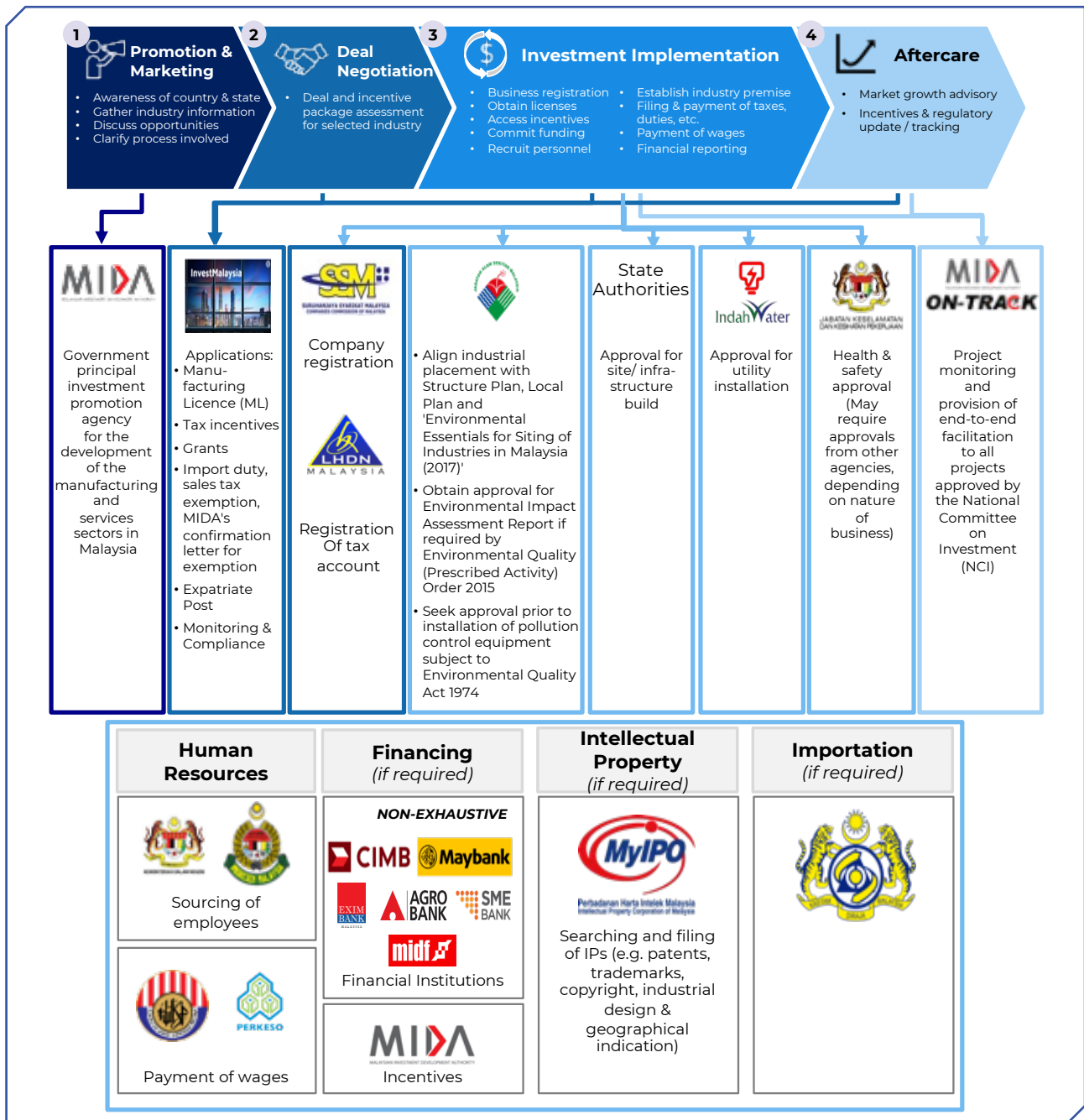
The Government aims to develop a single digital channel for a seamless experience across the end-to-end business lifecycle. The single digital platform aims to provide the following:

- Ease access to relevant information, guidelines and resources to guide through the business registration process;
- Offer integrated services such as online application capabilities with real-time status updates on application progress; and
- Speed up the application and approval processes to support businesses in Malaysia.

In order to do this, the Government will include the following:

- Streamline and remove redundant processes within and between the Ministries and Agencies;
- Digitalise the front-end and back-end processes for straight-through processing;
- Integrate all systems into a single interface for ease of access based on end-to-end business lifecycle;
- Customise the business lifecycle based on the nature and priority of FDIs, LLCs and SMEs; and
- Institutionalise the single company ID system for better visibility of each company's lifecycle.

Figure 5.9: Government Touchpoints Across the Business Lifecycle



The execution of this action requires a whole-of-government approach. The action plan will be led by MITI, KKD, MAMPU and MIDA, and supported by MATRADE, MPC, MOF, KPKT, Companies Commission of Malaysia (SSM), Employees Provident Fund (EPF), Social Security Organisation (SOCSSO), Customs, Inland Revenue Board of Malaysia (LHDN), MyIPO, InvestMalaysia, Malaysian Industrial Development Finance (MIDF), Banks, and State Authorities and other relevant agencies across the business lifecycle.

The following activities will be conducted:

- Identify and map all relevant processes from the Ministries and Agencies across the business lifecycle;
- Improve internal processes within the Ministries and Agencies by removing duplication and redundancy to make processes more efficient; and
- Digitalise processes for straight-through processing and integrate systems with single sign-on capabilities.

Mission-based Project 2.1

Transform 3,000 smart factories

This project aims to drive the adoption of Industry 4.0 technologies by transforming 3,000 smart factories in Malaysia by 2030. A smart factory is a type of manufacturing facility that enhances its performance by incorporating intelligent and integrated processes and resources across cyber, physical and human domains. It leverages on technology and automation to create and deliver products and services more efficiently. Apart from that, a smart factory collaborates with other areas within a company's value chains to optimise operations and enhance overall labour productivity.

Rationale

The rationale for this MBP is based on the following factors:

- Transforming into smart factories will lead to an increase in labour productivity;
- It will shift the manufacturing industry from low-skilled labour to high-skilled workers. This will increase wages and improve the livelihood of the nation, thus expanding the middle-class society;
- It can build supply chain resilience as the use of automated machineries can reduce production downtime. Apart from that, the use of predictive analytics is able to identify and mitigate supply chain shortages; and
- It can catalyse other industries in Malaysia to support the transformation of smart factories. For instance:
 - Machineries and equipment sector to produce system integration, robotics, 3D printing and imaging technology and other Industry 4.0 technologies;
 - E&E sector to produce advanced chips and IoT sensors for fully automated machinery; and
 - ICT sector to supply software development, AI, 5G, cloud computing and cybersecurity that enables automation with less human interaction.

The shift towards smart factories is crucial for Malaysia to remain at the forefront of global manufacturing trends. In the past, Malaysia had a competitive advantage due to relatively low labour cost. Now, as other countries

recognised the benefits of technology and automation, Malaysia is faced with high competition. Together with FMM, MDEC and SIRIM, concerted efforts with other Ministries, Agencies and industry players are required to support this transformation.

Actions

The following activities will be conducted for this MBP:

- Leverage the enhanced Industry4WRD RA and IF to prepare the industry to transform into smart factories. The Ministries, Agencies, associations and industry players must work together to increase the readiness assessment participation and encourage national level adoption;
- MNC and LLC champions will be identified to guide the industry towards Malaysia's national direction:
 - The large companies will provide mentorship, guidance and knowledge to help other industry players grow, adopt advanced technologies and transform into smart factories; and
 - The MNC and LLC will integrate the SMEs and mid-tier companies (MTC) as part of their value chain. This will encourage SMEs and MTCs to tech up and meet the digital requirements of larger companies.
- Another critical aspect is to ensure Malaysia has sufficient and qualified solution providers to support the industry through Government assistance.

Enablers

The following are key Enablers for this MBP:

- Capacity and competency building in higher learning institutions and research institutions to develop technology creators' capabilities;
- Incentives to support industry players in the readiness assessment and local solution providers to scale their products and services;
- Training development to ensure the industry players are skilled and knowledgeable for sustainable adoption of Industry 4.0

- technologies and smart factories; and
- Digital infrastructure to support Industry 4.0 technologies, such as connectivity and data centres readily available to support cloud computing, AI, etc.

With this MBP, Malaysia aims to embrace a digital mindset and fully embody digital capabilities across all the manufacturing industry supply chains. It is essential to act swiftly and proactively to seize the opportunities that digitalisation offers to remain competitive in the rapidly evolving global landscape.

Funding

Funding for this MBP will be driven by private sector investments and Government funding through the NIMP 2030 Industrial Development Fund.

Mission-based Project 2.2

Establish Malaysia as Generative AI Hub

Malaysia aims to position itself as the market leader in generative AI and strengthen presence in the regional and global marketplace by developing local AI companies with system integrator capabilities.

Rationale

The rationale behind this MBP arises from multiple factors:

- Firstly, the global AI market is expected to grow at a compound annual growth rate (CAGR) of 37 per cent with an estimated value of USD1.3 trillion by 2030, from USD150.2 billion in 2023. The study forecasts that the Asia Pacific region will account for the second largest share of the market in 2030;
- Secondly, Malaysia has embraced the trend and established ambitions through the National Fourth Industrial Revolution (4IR) Policy and the Malaysia National AI Roadmap (AI-RMAP). MOSTI forecasts that AI will boost labour productivity in Malaysia by 30 per cent across all sectors by 2030 and generative AI has been identified as a key enabler;
- Thirdly, Malaysia has strong foundations in digital capabilities and infrastructure. According to the Oxford Insights AI Readiness Index 2022, Malaysia is ranked 29th globally (out of 181 countries) for the readiness to implement AI in the delivery of public services; and
- Generative AI is rapidly evolving, creating new ways of working. Companies in the manufacturing industry have been

leveraging on generative AI to design new products, detect defects, etc. This unlocks opportunities to create new industries and high-skilled jobs that are AI-powered.

Generative AI has the potential to increase efficiency, labour productivity and economic growth. Under the World Bank's GovTech Programme that aims to promote a whole-of-government approach to modernise the public sector, Malaysia has outlined clear goals to achieve 80 per cent of end-to-end online government services. With this goal in mind, there is an opportunity to leverage generative AI in the public service delivery as it not only improves the government's efficiency, but also creates the demand required for local AI companies to expand their offerings to the government.

Actions

The following activities will be conducted for this MBP:

- Identify local AI companies that offer generative AI solutions and system integration to explore potential collaborations, partnerships or support required to scale operations and offerings at a large scale;
- Through the GovTech initiatives, the Government will create the demand for the application of AI by identifying opportunities for generative AI application in the public service delivery. This is to encourage the scaling up of local AI solutions and system integration providers;

- MOHR and MOHE with the collaboration of key industry players will provide the necessary education and training programmes for both public and private sectors. The training programmes will cover three stages for AI adoption; basic knowledge, application and development; and
- There will be incentives to encourage generative AI adoption and generative AI solution providers, which will drive the AI market.

Enablers

The following Enablers are key to executing the MBP:

- Training development for public and private sector to adopt AI;
- Incentives to accelerate AI adoption in the manufacturing sector. This will create demand for local AI companies to grow;
- R&D activities to develop use cases for the manufacturing sector to adopt AI at a national level;
- Infrastructure readiness to support the growth of data;
- Availability of sufficient and quality data to create a reliable knowledge base; and
- Legal and regulatory framework to ensure ethical use of Generative AI and considerations on the limitations of Personal Data Protection Act (PDPA).

Funding

Funding for this MBP will be driven by private sector investments and Government funding through the NIMP 2030 Industrial Development Fund.



6

**MISSION 3 :
PUSH FOR NET ZERO**



The manufacturing industry plays a pivotal role in the global economy, but its extensive reliance on fossil fuels and energy-intensive processes have led to significant greenhouse gas (GHG) emissions, contributing to the acceleration of environmental deterioration. Malaysia is committed to the global effort to tackle climate change and has pledged to reduce GHG emissions intensity to achieve Net Zero emissions as early as 2050. To ensure this target can be met, it is pertinent that Malaysia actively pursues the transition to a greener manufacturing industry.

The Industrial Processes and Product Use (IPPU) sector is the second largest emitting sector in 2019, contributing approximately 10 per cent of Malaysia's total emissions. Industrial energy use contributes a further 10 per cent of total emissions⁴³.

The Push for Net Zero mission aims to decarbonise Malaysia's industries to achieve its Net Zero emission goal through implementation of energy efficiency and waste management measures, rapid RE and technology adoption and robust regulatory frameworks. The decarbonisation push will further present new economic opportunities for Malaysia to capitalise, particularly in positioning itself as a leader in new green growth areas.

The successful implementation of Strategies and Action Plans under Mission 3 will result in impactful outcomes as follows:

- **Enhanced industry readiness towards ESG compliance:**

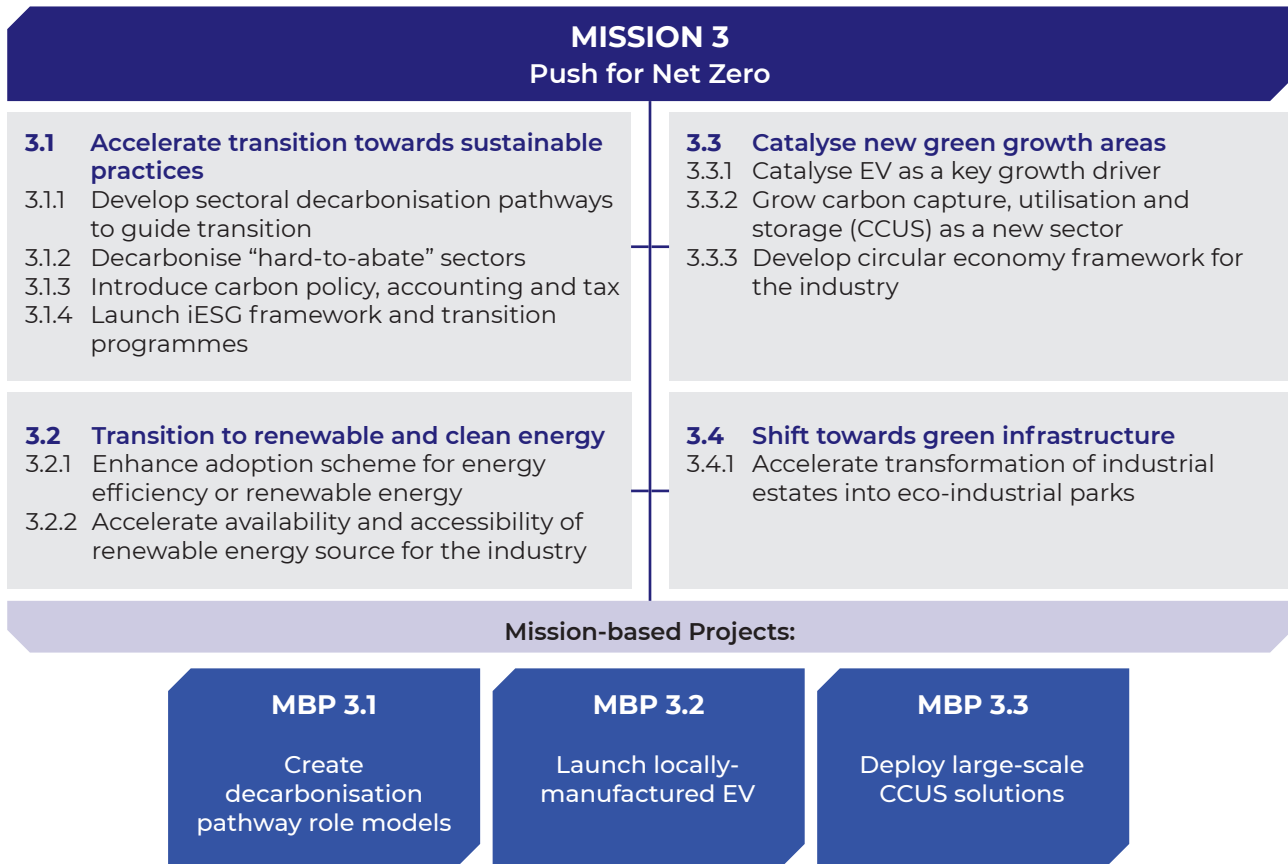
Climate change causes disruptions to weather patterns and physical risk to infrastructure and ecosystems. In view of this, Governments, investors, businesses and consumers worldwide increasingly prioritise sustainable practices and low-carbon operations to reduce the contribution to climate change. By actively working towards Net Zero emissions, Malaysia will enhance its industry's ESG compliance and align itself to the global sustainability agenda; and

- **Development of new growth sectors:**

The transition to Net Zero emissions presents significant opportunities for the development of new growth sectors that will position Malaysia as a leader in green solutions in the region.

Four Strategies, 10 Action Plans and three Mission-based Projects have been developed to achieve Mission 3, as illustrated below:

Figure 6.1: Mission 3 – Push for Net Zero



STRATEGY 3.1**Accelerate transition towards sustainable practices**

Sustainable practices in the context of industrial practices refer to processes that minimise environmental impact via reduced waste generation, emissions and pollutants. Examples of sustainable practices include improving energy and resource efficiency in industrial processes, using RE sources for energy production and implementing waste recycling and management systems.

The road to decarbonise Malaysia's manufacturing industry is dependent upon the adoption of sustainable practices and technologies, particularly for hard-to-abate sectors. This adoption must be accelerated to support Malaysia's vision to achieve Net Zero emissions as early as 2050.

To achieve this, three Action Plans have been formulated:

**ACTION PLAN
3.1.1****Develop sectoral decarbonisation pathways to guide transition**

Different sectors have varying emission levels and industry readiness to adopt decarbonisation practices. As such, businesses need to adopt the appropriate decarbonisation pathways that best suit the nature of their sectors without negatively impacting their overall operations.

The Government will co-develop decarbonisation pathways with the industry to guide the transition towards low-carbon operations. Among the actions that can be adopted in these pathways include the adoption of energy-efficient equipment and machinery, transition to RE and electrification of industrial processes.

MITI will work with NRECC with the support of selected industry associations and industry players to execute this plan and conduct the following activities:

- Identify anchor companies and co-develop sector-specific decarbonisation pathways;
- Socialise the pathway recommendations to industry players and provide incentives to encourage adoption of decarbonisation initiatives; and
- Introduce policy measures to accelerate implementation of decarbonisation plans.

**ACTION PLAN
3.1.2****Decarbonise "hard-to-abate" sectors**

Hard-to-abate sectors are typically capital-intensive and involved in upstream activities such as metal, cement, chemical and petroleum. These sectors have inherent difficulty in lowering emissions due to their reliance on fossil fuels for energy and as feedstock, energy-intensive processes and expensive decarbonisation technologies.

The need to decarbonise hard-to-abate sectors has become more critical and urgent to protect the environment and Malaysia's export market. As an example, decarbonising hard-to-abate sectors will address the EU's Carbon Border Adjustment Mechanism (CBAM)⁴⁴ tariffs, which will affect Malaysia's key export sectors as well as other ESG-sensitive markets.

Among the actions that can be executed include the adoption of low-carbon technologies in processes and production activities, deploying carbon capture and storage mechanism, recycling and reusing wastes as secondary sources of feedstock.

MITI will work with NRECC, Department of Environment (DOE), MIDA, Malaysian Green Technology and Climate Change Corporation (MGTC) and MTDC to execute this plan and conduct the following activities:

- Prioritise the development of decarbonisation pathways for hard-to-abate sectors;
- Explore the introduction of sectoral emissions levy, specific for companies in hard-to-abate sectors that produce emissions above a pre-set baseline;
- Develop programmes to ease access to financing for companies from hard-to-abate sectors to acquire relevant technologies and implement transition programmes; and
- Facilitate industry conference programmes to allow decarbonisation technology providers to showcase products to industry players from hard-to-abate sectors.

ACTION PLAN 3.1.3

Introduce carbon policy, accounting and tax

Carbon policy will set mandates and guidelines for a carbon accounting model to guide industry players to measure and report Scope 1, 2 and 3 carbon emissions and for the implementation of a carbon pricing mechanism e.g. carbon tax. A robust carbon tax system introduces a cost component that is proportional to emissions produced. This will encourage industry players to adopt sustainable practices to reduce carbon emissions.

This action plan is aligned to RMKe-12, which emphasises the need for a carbon pricing mechanism such as a carbon tax system and a GHG emission accounting model to improve monitoring emission levels.

MOF, with the support of NRECC and MITI will execute this action plan and conduct the following activities:

- Develop a carbon accounting model that provides guidelines to identify emission sources and measure, verify and report carbon emissions;
- Study the impact of carbon tax on Malaysia's emissions in the long term; and
- Develop a carbon tax system with an appropriate initial tax rate and a pathway for a gradual increase in tax rate over a set number of years.

ACTION PLAN 3.1.4

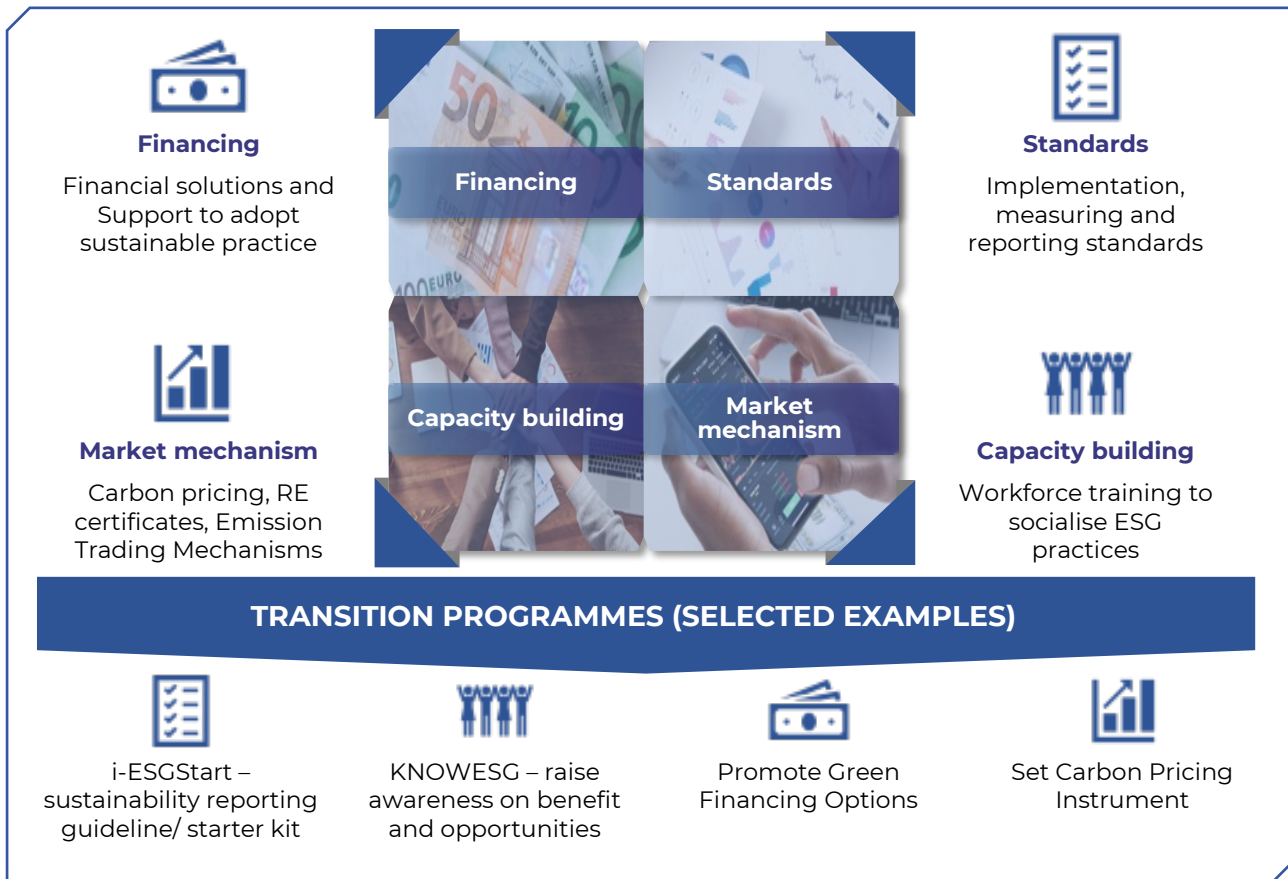
Launch iESG framework and transition programmes

Compliance with ESG is now a critical requirement for the global market, particularly in ESG-sensitive markets. The iESG framework will serve as a comprehensive guideline for the manufacturing sector to adopt ESG practices. The framework has three objectives:

- Support manufacturing firms to learn, be agile and adopt ESG practices;
- Transform challenges into opportunities; and
- Foster symbiotic public-private partnership for value creation.

The iESG framework will focus on four central components: Standards, capacity building, financing and market mechanism, each with its own transition programmes.

Figure 6.2: ESG Framework for the Manufacturing Sector



The iESG framework must be aligned with ongoing global reporting standards such as those issued by the International Sustainability Standards Board (ISSB) as well as national frameworks on sustainability.

It will be aided by upcoming domestic guides and tools such as the Simplified ESG Disclosure Guide (SEDG) for SMEs by the Securities Commission Malaysia (SC) and Capital Markets Malaysia (CMM). The Guide, which will be released in 2023, offers practical, structured guidance on disclosures expected of SMEs in relation to ESG matters. It will provide SMEs with a simplified and standardised set of ESG disclosures that will enable them to adopt sustainability to remain competitive and relevant and to respond to disclosure requests from stakeholders, including customers, investors, banks and regulators.

The SEDG is aligned with the main global frameworks and reporting standards including the ISSB standards and the Global Reporting Initiative (GRI). It will reference local reporting requirements including those under the Bursa Malaysia (Bursa) Listing Requirements, Bursa's Sustainability Reporting Guide as well as the Malaysian Code on Corporate Governance (MCCG).

MITI will execute this action plan and conduct the following activities:

- Align the iESG framework with the Simplified ESG Disclosure Guide (SEDG) for SMEs by the Securities Commission Malaysia (SC) and Capital Markets Malaysia (CMM);
- Launch iESG framework and socialise recommendations to industry players;
- Roll out programmes in each of the four central components of the framework; and
- Set up monitoring mechanisms to track take-up of programmes.

STRATEGY 3.2**Transition to renewable and clean energy**

The manufacturing industry is largely dependent on the combustion of fossil fuel for power generation, producing harmful GHG emissions. A Net Zero manufacturing industry requires transition to renewable and clean energy as its main energy sources.

This strategy is aligned to the Malaysia Renewable Energy Roadmap (MyRER), which provides the policy framework for RE development in Malaysia. MyRER specifies a target of 35 per cent by 2025 and 40 per cent by 2035⁴⁵. The National Energy Transition Roadmap (NETR) further pushes this target to 70 per cent by 2050⁴⁶.

To achieve this, two Action Plans have been formulated:

**ACTION PLAN
3.2.1****Enhance adoption scheme for energy efficiency or renewable energy**

Implementing energy efficiency measures and adopting RE will reduce carbon emissions and provide long-term cost savings. Examples of energy efficiency measures include decommissioning old equipment in favour of new, less power-intensive equipment and implementing energy management systems. RE includes solar photovoltaic cells, hydropower and bioenergy sources such as agriculture waste and biofuel derived from palm oil.

A significant barrier for industry players to make this transition is the associated high implementation cost and limited knowledge on RE transition. The Government will address these challenges by developing financial and advisory schemes, to facilitate the adoption of energy efficient measures and RE.

MITI, with the support of MIDA, NRECC and Sustainable Energy Development Authority Malaysia (SEDA) will execute this action plan and conduct the following activities:

- Engage industry players to understand challenges in adopting energy efficiency measures and RE;
- Review and strengthen incentive schemes to ease industry in adopting energy efficiency measures and RE; and
- Introduce governance mechanisms to monitor take-up rate of schemes.

**ACTION PLAN
3.2.2****Accelerate availability and accessibility of renewable energy source for the industry**

RE is a key component in the decarbonisation of industries. Due to its geographical location, climate and rich agricultural activity, Malaysia has high potential for RE generation such as solar, hydro, bioenergy, geothermal and hydrogen fuel cell. However, the availability and accessibility of RE is a key challenge to facilitate the transition to RE.

The types of RE and their potential can be summarised as below:

Table 6.1: Summary of Renewable Energy Resources Potential

No.	Type of RE	Viability	Potential (GW)
1	Solar Photovoltaic Cells	All year-round solar irradiation	269.0
2	Hydropower	Presence of numerous river basins: <ul style="list-style-type: none"> • Large hydro • Small hydro 	13.6 2.5
3	Bioenergy	Availability of large quantities of agriculture, domestic and industrial waste	3.6
4	Geothermal	Presence of geothermal fields with high activity	0.6
5	Hydrogen	Growing focus on hydrogen as a source of energy	New potential

Source: Malaysia Renewable Energy Roadmap

However, the supply of RE is currently limited due to various challenges, unique to each type of RE source. The Government will address these challenges to accelerate the availability and accessibility of RE for the industry via the Strategies and Action Plans identified under the MyRER. This includes strategic focus on accelerating large scale solar deployment, new business models to explore bioenergy resources, hydro potential and new energy technology exploration e.g. hydrogen fuel cell⁴⁷.

NRECC and SEDA, with the support of MITI, MGTC, MIDA, SIRIM, the Energy Commission and power utility providers such as Tenaga Nasional Berhad (TNB), Sabah Electricity Sdn. Bhd. (SESB) and Sarawak Energy Berhad (SEB) will execute this action plan through the governance of MyRER.

Box Article 6.1:

The Hydrogen Economy – Hydrogen as a renewable source

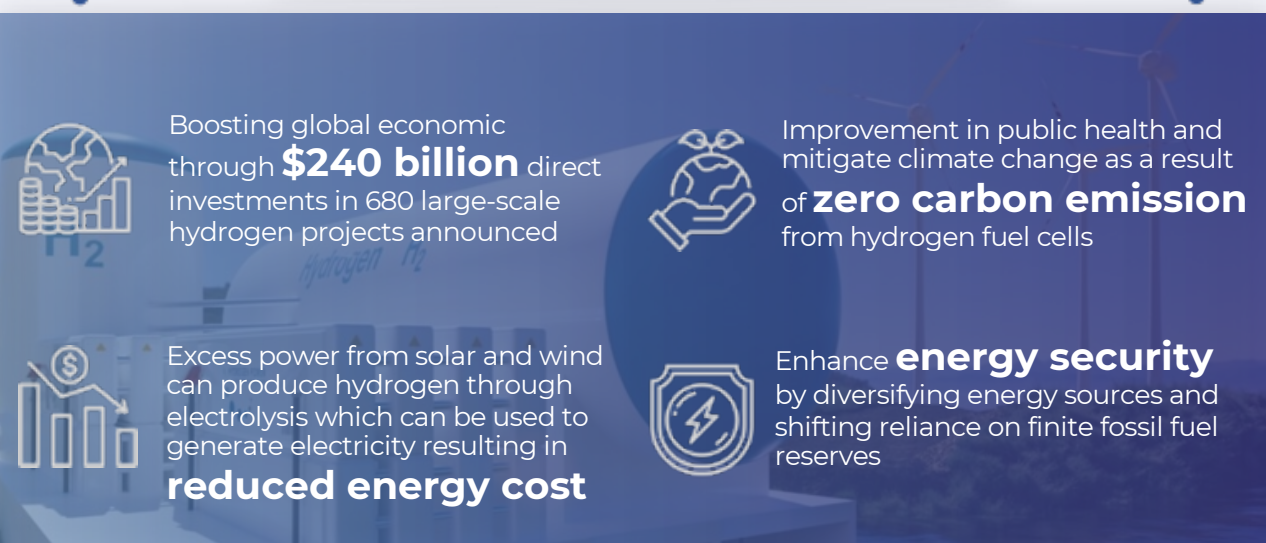
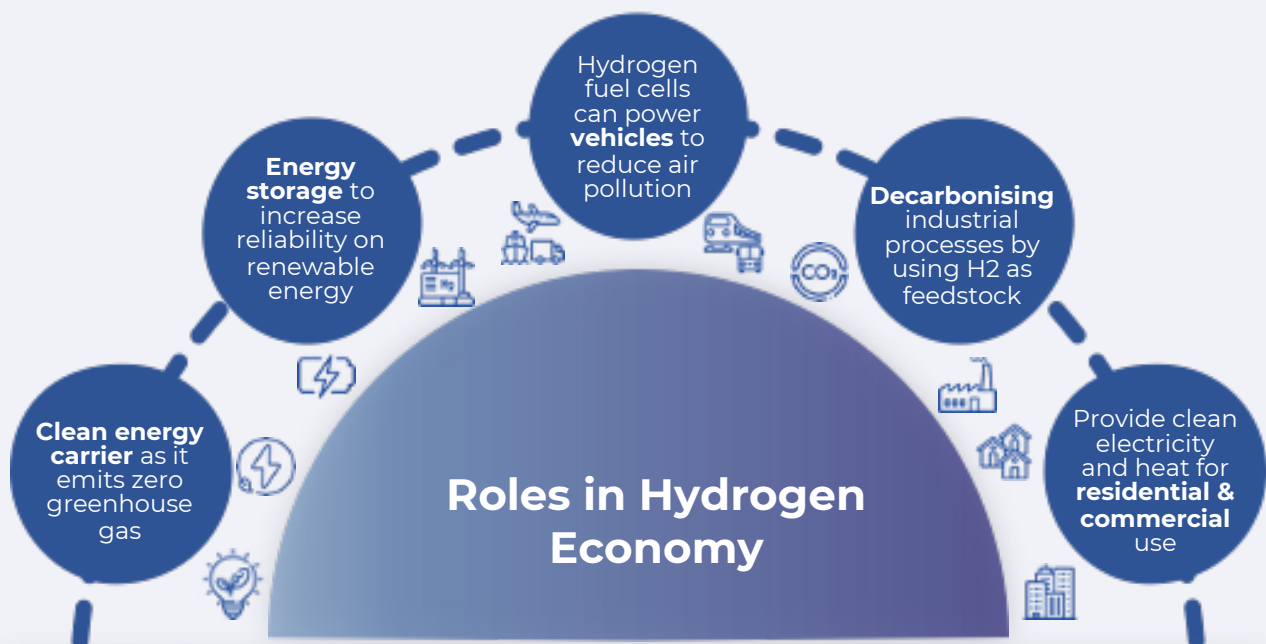
What is Hydrogen Economy?

Energy system where hydrogen is used as a clean and sustainable energy carrier to replace traditional fossil fuels in achieving low-carbon future

The use of hydrogen aims to reduce the impact on climate change which predominantly caused by the usage of carbon-intensive energy sources such as coal, oil and natural gas

A conceptual framework has been established to accomplish Hydrogen Economy in Malaysia...

- 1 Feedstock for chemical industries
- 2 Internal combustion engines fuel
- 3 Automobiles fuel and energy storage



Source: MIDA

STRATEGY 3.3**Catalyse new green growth areas**

The global demand for green technologies and processes is increasing at a rapid pace as Net Zero targets become a central feature in the climate policy of many countries around the world and industries race to decarbonise their production. This presents new economic opportunities for Malaysia to capitalise, to position itself as a leader in new green growth areas.

To achieve this, three Action Plans have been formulated:

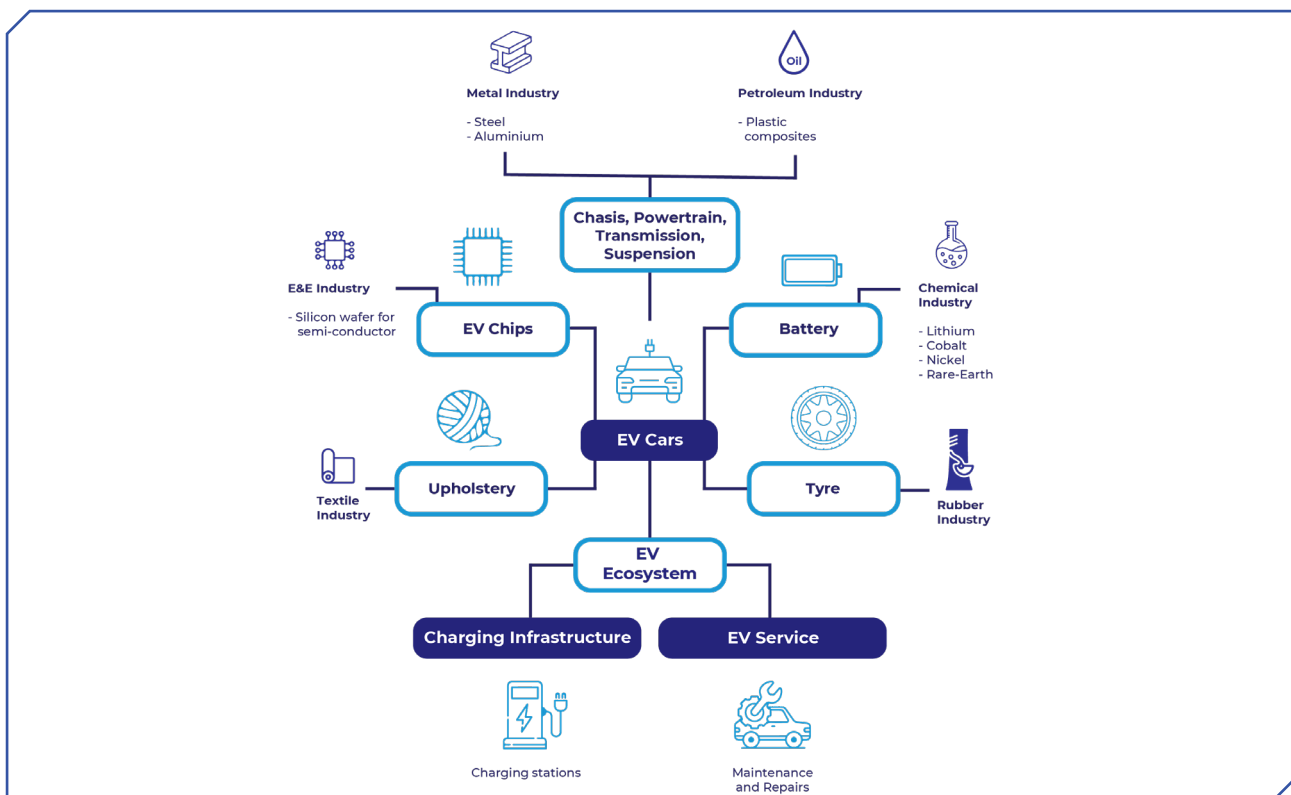
**ACTION PLAN
3.3.1****Catalyse EV as a key growth driver**

The transport sector is consistently the second largest emission contributor in the energy segment in Malaysia. The emissions are largely attributed to fossil-fuel powered road transportation. Catalysing the growth and adoption of EV will accelerate the decarbonisation of Malaysia's transport sector.

The catalytic effect of EV will further boost growth of related sectors in equipment supply, charging infrastructure and software development for an EV ecosystem. These would harness cross-sectoral collaboration across industries including metal, E&E, digital and ICT and chemical. An EV ecosystem comprises the following key components:

- Raw material: Steel, aluminium, plastic composites, etc.
- EV components: EV battery, chassis, motors, power electronics and embedded system platform, etc.
- Charging Infrastructure: Charging stations
- EV services: Maintenance and repairs, EV conversion services, battery testing and safety, battery recycling

Figure 6.3: The EV Ecosystem



The National Automotive Policy 2020 and the Low Carbon Mobility Blueprint 2021-2030 detail aspirations for Malaysia to develop an electric mobility ecosystem. Malaysia has set a target of 15 per cent xEV⁴⁸ share of the Total Industry Volume (TIV) by 2030.

The Low Carbon Nation Aspiration 2040 pushes this target further to 38 per cent xEV share by 2040⁴⁹. To achieve these targets, a National Level Inter-Ministry EV Taskforce was set up. This task force oversees the growth of EV in Malaysia.

The National Level Inter-Ministry EV Taskforce under MITI, with the support of Ministry of Transport (MOT), NRECC, MOSTI, MGTC, SIRIM, Malaysia Automotive Robotics and IoT Institute (MARii) and MIDA will execute this action plan and conduct the following activities:

- Formulate a comprehensive policy to attract global EV manufacturers into Malaysia, increase SME participation in the local EV value chain and facilitate the set-up of more charging infrastructure;
- Facilitate collaboration of industry players with global players for knowledge and technology transfer;
- Collaborate with selected industry players to deploy charging infrastructure; and
- Improve demand for EV by lowering cost of EV.

Box Article 6.2: The Electric Vehicle (EV) Value Chain

1 Research & Development

Collaborations between Government Agencies, academic institutions, and industry players to develop advanced technologies, improve battery efficiency and enhance the overall performance of electric vehicles

2 Battery Production

The production of lithium-ion batteries is a core components of electric vehicles. Battery manufacturers focus on improving energy density, durability and charging capabilities while reducing costs

3 Manufacturing

EV manufacturers assemble various components, including the battery pack, electric motor, power electronics and other subsystems, to create the final EV. It involves the integration of software and hardware systems, as well as compliance with safety and regulatory standards

4 Charging Infrastructure

The deployment of a robust charging infrastructure is essential for the widespread adoption of EV. This stage involves the installation of public charging stations, home charging units and fast-charging networks to support convenient and efficient charging of EV

5 Technology Solution

Digitalisation allows for over-the-air updates on EV software and battery management system. This would support the anti-theft protections, vehicle support and built in navigation enhance customers experience and provide solutions

6 End of Life

Managing end-of-life phase of EVs considers battery recycling and second life applications. Secondary application could be viable for non-transportation related. Recycling can help attach a residual value to the battery at its end of life

Source: MIDA

ACTION PLAN
3.3.2**Grow carbon capture, utilisation and storage (CCUS) as a new sector**

Carbon capture, utilisation and storage (CCUS) is a new potential solution for carbon management, particularly for hard-to-abate sectors. CCUS comprises two possible pathways; Carbon capture and storage (CCS), where emissions are captured and stored in depleted oil fields or other geological formations and Carbon capture and utilisation (CCU), where emissions are captured and utilised to manufacture products.

Malaysia is primed to capitalise on opportunities in CCUS as it has a sizeable number of depleted oil fields that are geologically stable, which is suitable for carbon storage. Products manufactured from captured carbon, such as carbon composites and chemical feedstock align to waste-to-wealth principles and help contribute to the growth of priority sectors such as aerospace and chemical.

The CCUS sector comprises businesses that offer Carbon Capture-as-a-Service (CCaaS), logistic companies that transport captured carbon to storage sites, technology solution providers that deploy carbon capture infrastructure in industrial plants and technology companies that convert captured carbon into useable feedstock.

KE, with the support of NRECC, MITI, MOT, Ministry of Foreign Affairs (MoFA) and MOF will execute this action plan and conduct the following activities:

- Develop a CCUS framework and the governance mechanisms for industry development, through Cluster-based approach;
- Roll out first CCUS cluster in East Coast Malaysia, targeting hard-to-abate sectors;
- Strengthen current carbon management regulation and introduce a carbon tax, to encourage the use of CCUS; and
- Explore Government-to-Government (G2G) bilateral agreements to facilitate collaboration between countries.

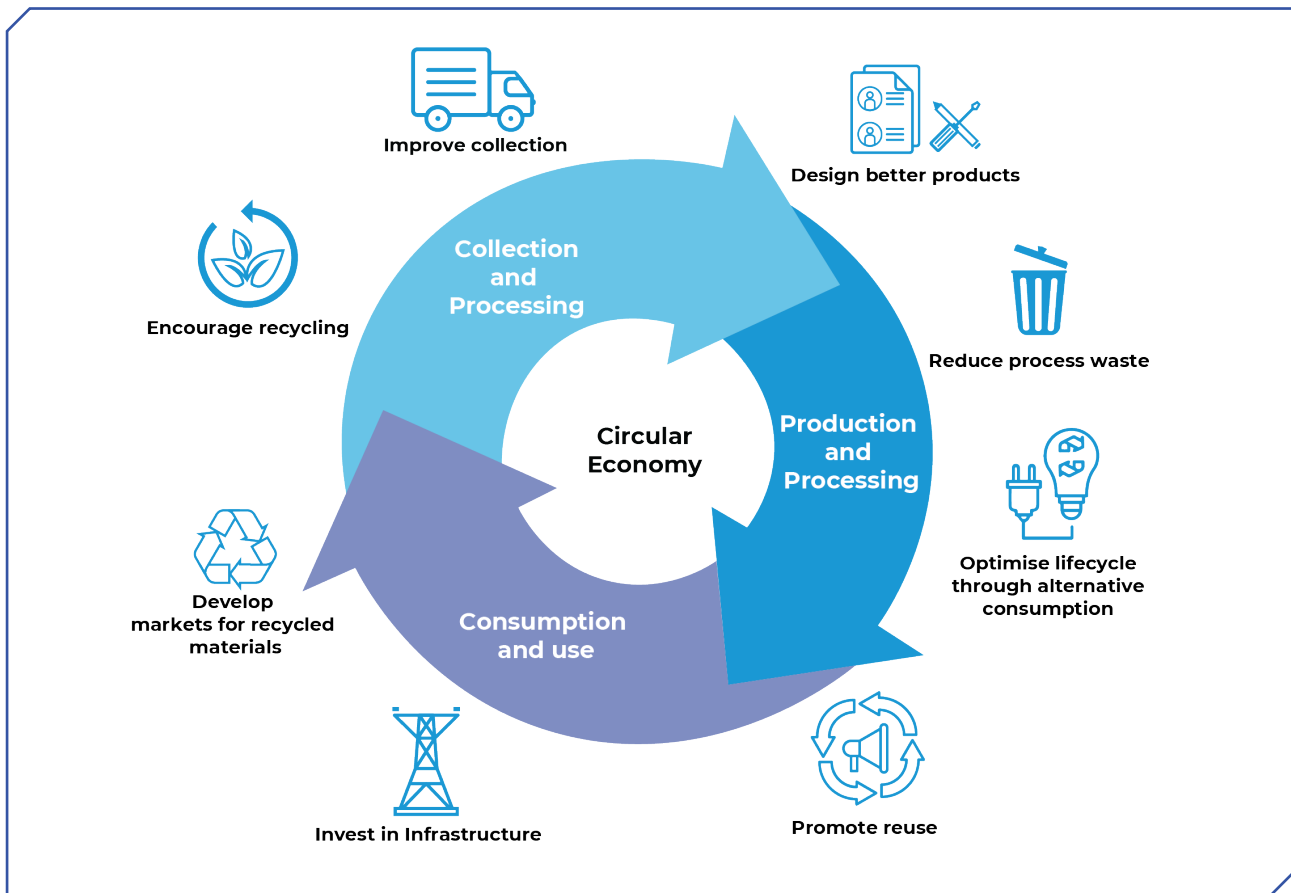
ACTION PLAN
3.3.3**Develop circular economy framework for the industry**

The traditional linear economy model follows a 'take-make-dispose' scheme and exhausts raw materials and energy. This results in overuse of resources and production of large quantities of wastes, pollutants and carbon emissions.

A circular economy model promotes an industrial economy that is restorative or regenerative by design, using a closed loop material flow in the economic system. Examples of this include designing products that require less raw materials and can be recycled and reusing wastes as secondary sources of feedstock.

A circular economy framework will provide guidelines for industry players to transition to a circular economy model, set targets and ensure the development of enablers such as R&D capability and infrastructure.

Figure 6.4: Circular Economy Principles



This action plan complements Malaysia's Roadmap Towards Zero Single-Use Plastics 2018-2030 and the National Solid Waste Management Policy.

MITI with the support of NRECC, KPKT, MIDA, MRM, SIRIM and selected industry players will execute this action plan and conduct the following activities:

- Assess the challenges and economic opportunities in transitioning to a circular economy;
- Develop guidelines for industry players and targets for Malaysia to achieve;
- Develop programmes to support the transition of industry players to adopt a circular economy model; and
- Develop training programmes to facilitate capacity building.

STRATEGY 3.4

Shift towards green infrastructure

Green infrastructure is a network of natural systems and man-made infrastructure that provide economic value while preserving environmental quality. Green infrastructure in industrial complexes is typically powered by RE and operated sustainably via waste-to-wealth activities that are aligned to circular economy principles and the utilisation of energy efficient equipment.

Shifting towards green infrastructure is key to achieve Malaysia's Net Zero target.

To achieve this, one Action Plan has been formulated:

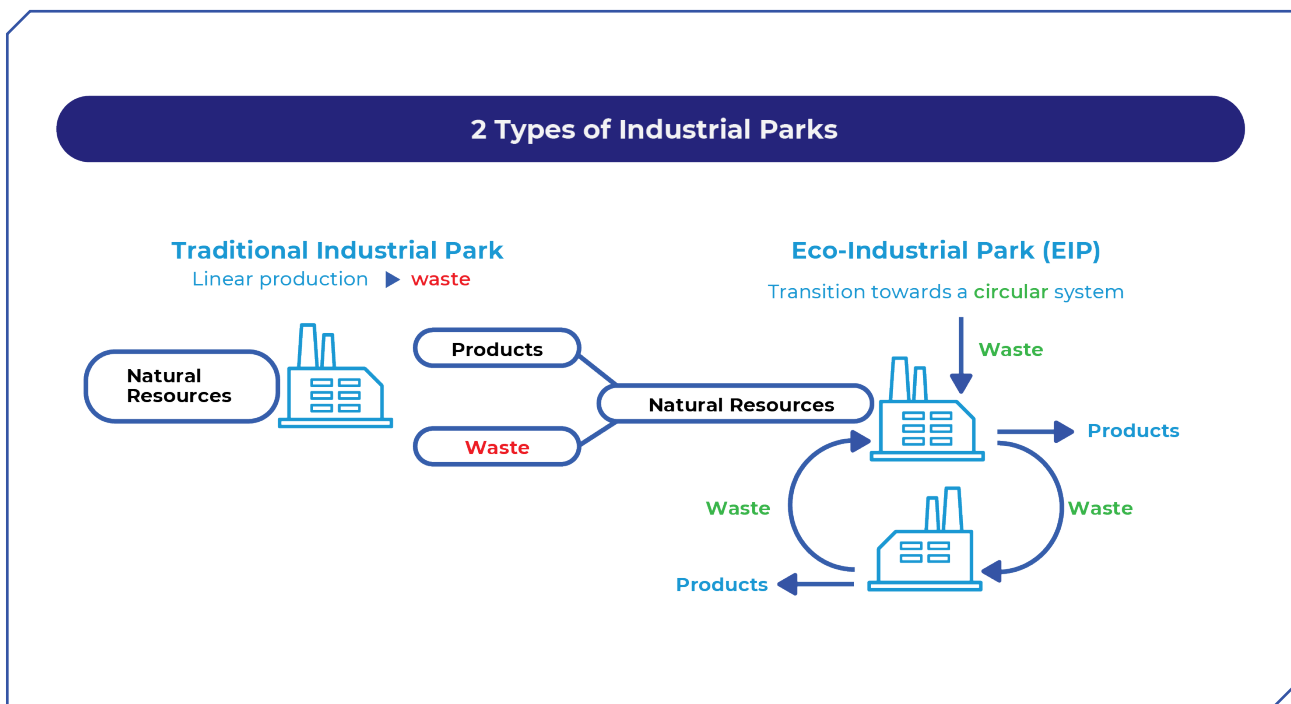
ACTION PLAN
3.4.1**Accelerate transformation of industrial estates into eco-industrial parks**

Industrial estates typically have a high concentration of companies, which make them GHG emission hotspots. Transforming brownfield industrial estates into eco-industrial parks that have green and resilient infrastructure and sustainable processes reduces greenhouse gas emissions, the amount of wastes produced and natural resources used. The principles of circular economy are a central component of eco-industrial parks.

Key components of eco-industrial parks include collective park management activities for resource-efficiency, resilient infrastructure, circularity of waste, advanced wastewater treatment and RE solutions⁵⁰.

Eco-industrial parks have reduced operation costs in the long term and will attract high quality green FDI.

Figure 6.5: Types of Industrial Parks



MITI with the support of NRECC, DOE, SIRIM and MIDA will execute this action plan and conduct the following activities:

- Obtain buy-in of relevant stakeholders to transform industrial estates to eco-industrial parks;
- Enhance industrial estates' development and management; and
- Implement green practices in industrial estates.

Box Article 6.3 :

What is an Eco-Industrial Park

What is an Eco-Industrial Park?

An eco-industrial park, also known as an eco-park, aims to integrate industrial activities with sustainable and environmentally friendly practices. It is designed to minimise the environmental impact of industries and promote resource efficiency, waste reduction and the use of renewable energy sources.

EcoWorld Case Study

EcoWorld has four strategically-located business parks – Eco Business Parks I, II, III, and V:

- Eco Business Park I: 612-acres, in Iskandar Malaysia, Johor, with 500+ SMEs from various industries.
- Eco Business Park II: 383-acres, in fast-growing Flagship E of Iskandar Malaysia, close to Johor Bahru and Singapore.
- Eco Business Park III: 248-acres, in Pasir Gudang, a growing business hub in Iskandar Malaysia.
- Eco Business Park V: 117-acres, in Klang Valley, connected to major expressways, seaports, and airports.

Benefits to businesses:

- **Convenient logistics:** Strategically located near major land and sea routes, ideal for a range of industries.
- **Sustainable features:** Green initiatives like rainwater harvesting, LED lighting and ample green spaces to reduce carbon footprint and keep energy usage low.

Source: EcoWorld

Mission-based Project 3.1

Create decarbonisation pathway role models

To reduce carbon emissions from industrial activities, it is critical to adopt decarbonisation initiatives. However, without pathways to emulate, it may be difficult for industry players to identify effective initiatives.

This project aims to create decarbonisation pathway role models, to guide other companies in the same sector to decarbonise.

For this MBP, a champion has been identified to provide a showcase decarbonisation pathway for the petrochemical sector. The decarbonisation pathway developed will guide other petrochemical companies to decarbonise. Following this, other companies in hard-to-abate sectors such as Metal, Cement and Chemical will be able to develop their own decarbonisation pathways.

Rationale

The rationale for this MBP is based on the following factor:

- Hard-to-abate sectors have inherent difficulty in lowering emissions and require showcase references to adopt successful initiatives that utilise effective decarbonisation technologies and methodologies, such as:
 - Implementation of energy efficiency measures;
 - Electrification of machinery;
 - Transition to RE;
 - CCUS;
 - Sustainable sourcing of raw material and feedstock;
 - Adoption of Circular Economy principles: sustainable consumption and management of resources and waste reduction, reuse and management; and
 - Transition to green infrastructure.

Actions

The following activities will be conducted for this MBP:

- Select decarbonisation pathway role models for each hard-to-abate sector, beginning with petrochemical;
- Record the MBP champion's decarbonisation pathways, for other companies to emulate;
- Socialise the decarbonisation pathways to other potential companies; and
- Strengthen carbon management regulations e.g. sectoral emission levy and carbon tax system, to encourage adoption of decarbonisation pathway.

Enablers

The following are key Enablers for this MBP:

- Establishing collaboration in technical assistance to support firms in undertaking their sectoral decarbonisation;
- Mobilising financing to support the greening of value chains and undertake demonstration projects;
- Incentives to support industry players to adopt low-carbon technologies; and
- Talent development to ensure there is sufficient talent in high value R&D jobs to development new low-carbon technologies.

Funding

This MBP will be private led, potentially financed from the financing ecosystem catalysed under the NIMP 2030.

Mission-based Project 3.2

Launch locally-manufactured EV

This MBP is focused on launching a locally-manufactured EV. The aim is to facilitate industry players in the EV ecosystem to develop end-to-end capabilities in EV manufacturing by attracting and developing the relevant value chains in Malaysia. Private sector companies, including SMEs, will be upscaled to participate in the EV value chain, as component manufacturers, charging infrastructure manufacturers and providers and EV service providers.

Charging infrastructure is a key component in the EV ecosystem. The unavailability of a network of charging infrastructure induces 'range anxiety' amongst EV owners and causes low EV demand and adoption. In tandem with the launching of a locally manufactured EV, it is key to deploy a network of charging stations in strategic locations. Common standards should be established to ensure compatibility of connectors.

Rationale

The rationale behind this Mission-based Project arises from multiple factors:

- Firstly, this MBP is aligned to a national agenda to develop an electric mobility ecosystem in Malaysia. This is evident through the aspirations detailed in the National Automotive Policy 2020 and the Low Carbon Mobility Blueprint 2021-2030, and the set-up of a National EV Steering Committee under the National Level Inter-Ministry EV Task Force to oversee the growth of EV in Malaysia; and
- Secondly, this MBP will catalyse the growth of sectors such as R&D, M&E, E&E, Materials, Minerals, Digital and ICT and Energy to supply equipment, parts, infrastructure and capability to enable a local EV ecosystem, that comprises:
 - Raw materials: Steel, aluminium, plastic composites, etc.;
 - EV components: EV battery, chassis, motors, power electronics, etc.;
 - Charging Infrastructure: Charging stations; and
 - EV services: Maintenance and repairs, EV conversion services, battery testing and safety, battery recycling.

Actions

The following activities will be conducted for this MBP:

- Government-private sector collaboration to set standards for charging infrastructure, ensure compatibility of connectors and establish robust charging infrastructure;
- Incentivise the participation of SMEs in the local value chain to support this MBP;
- Facilitate the development of a locally-manufactured EV; and
- Drive EV-adoption programmes to increase demand.

Enablers

The following Enablers are key to execute the MBP:

- Industry adoption of Industry 4.0 technologies; and
- Incentives to lower the cost of EV ownership, to drive demand.

Funding

This MBP will be private led, potentially financed from the financing ecosystem catalysed under the NIMP 2030.

Mission-based Project 3.3

Deploy large-scale CCUS solutions

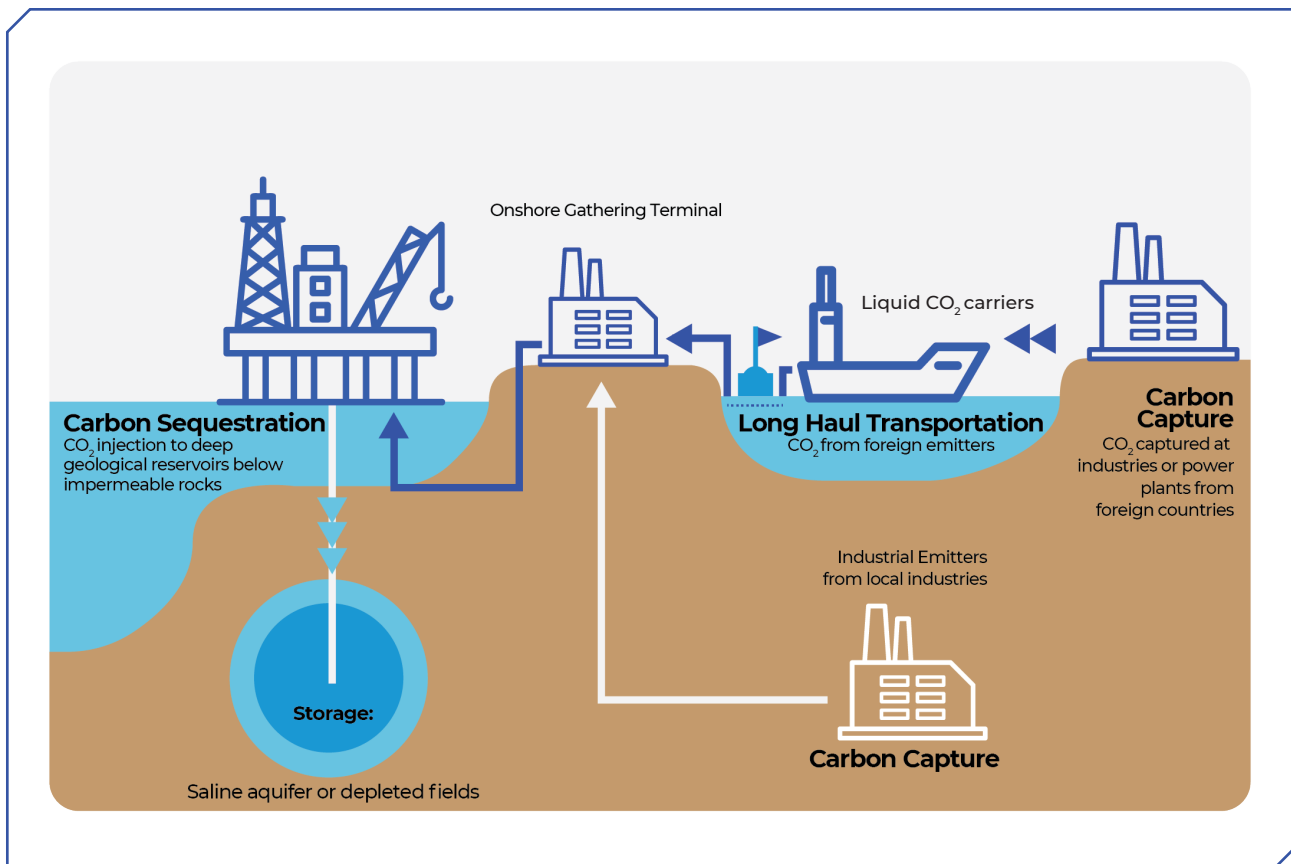
This MBP is focused on the deployment of CCUS infrastructure to decarbonise hard-to-abate sectors such as Metal, Cement, Chemical and Petroleum. Deploying CCUS comprises four key components:

- Carbon capture: Capture CO₂ from industrial processes;
- Transportation: By ship, pipeline and land transport;
- Carbon storage: CO₂ storage in depleted oil fields; and
- Carbon utilisation: Development of products from captured CO₂ and aligned to circular economy principles.

The champion for this MBP will invest in R&D to develop CCUS technologies, including for the utilisation of captured carbon and facilitate the transfer of CCUS technologies into Malaysia via partnerships with global companies. Initial focus will be on utilising CCUS to decarbonise selected oil and gas plants.

The storage capacity in the identified storage fields will be earmarked for both domestic use as well as for global players. The allowance for global players to store carbon emissions in Malaysian carbon storage fields is beneficial to facilitate technology transfer into the country to accelerate the growth of CCUS as a sector.

Figure 6.6: Processes in CCUS



Rationale

The rationale for this MBP is based on the following factors:

- CCUS is a nascent sector with no dominant player in the Asia Pacific. Malaysia can lead the growth of the sector in the region due to several advantages, particularly its vast carbon storage capacity across its depleted oil fields. Malaysia is geographically suitable as it does not have seismic activities and its potential carbon storage sites are 2,000 metres below sea level
- The growth of CCUS as a sector will facilitate technology transfer into the country, advance the local R&D ecosystem, create a new pool of skilled workers and a new export service segment e.g. Carbon Capture-as-a-Service (CCaaS).

The risks associated with leakages during transportation and at the storage sites will be mitigated through careful selection of storage sites and by reinforcing storage sites and deploying monitoring systems.

Actions

The following activities will be conducted for this MBP:

- Develop a CCUS framework and the governance mechanisms for industry development, through Cluster-based approach;
- Roll out first CCUS cluster in East Coast Malaysia, targeting hard-to-abate sectors; and
- Explore Government-to-government (G2G) bilateral agreements to facilitate collaboration between countries.

Enablers

The following Enablers are key to execute the MBP:

- Regulation for the growth of CCUS as a sector; and
- Carbon management regulations e.g. sectoral emission levy and carbon tax system to encourage the adoption of CCUS.

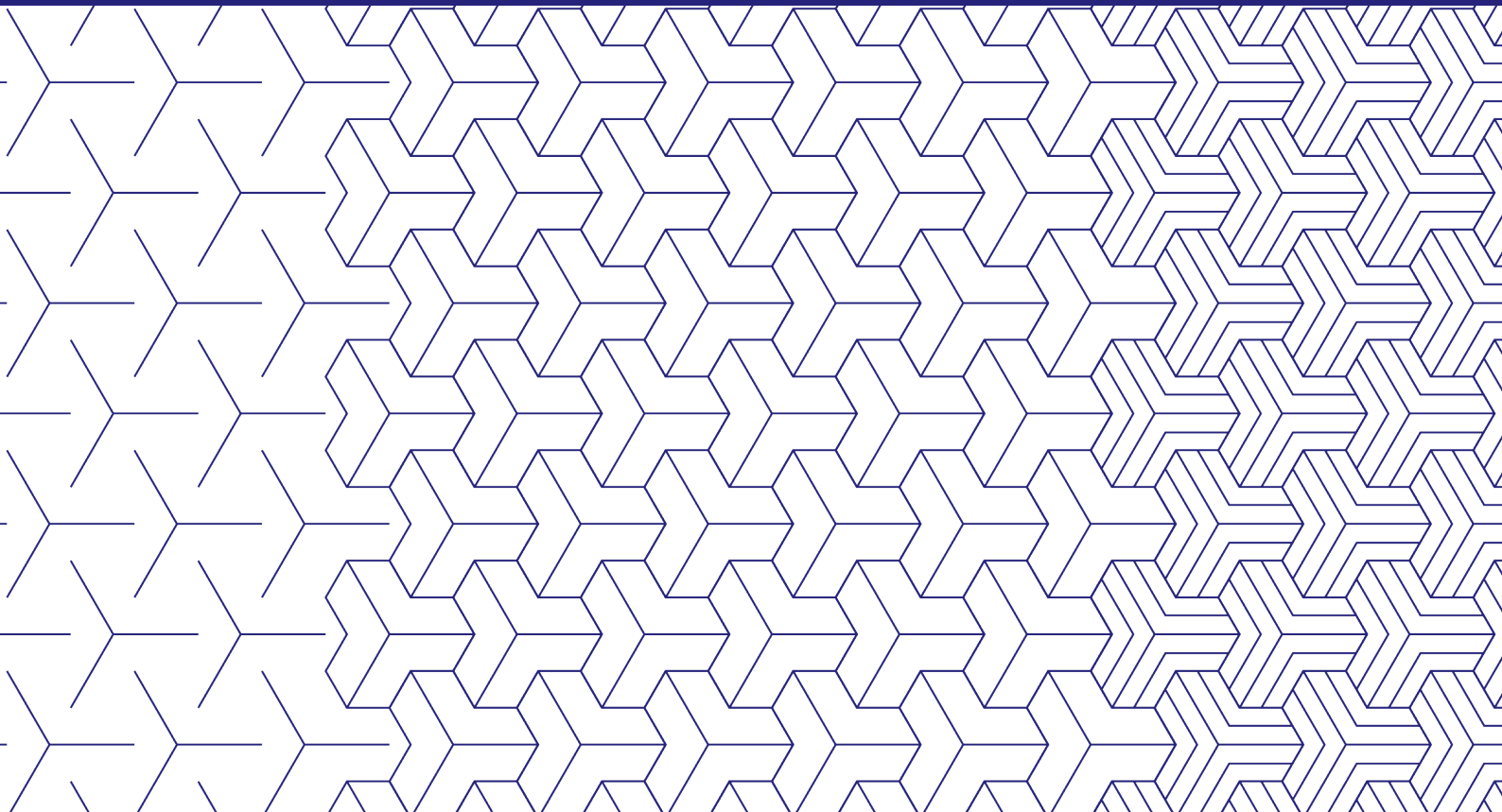
Funding

This MBP will be private led, potentially financed from the financing ecosystem catalysed under the NIMP 2030.



7

**MISSION 4 :
SAFEGUARD ECONOMIC SECURITY
AND INCLUSIVITY**





The world is undergoing a major geopolitical shift, as observed in the US-China trade tension and Russia-Ukraine conflict. In response, MNCs especially from the United States and Europe are actively seeking ways to de-risk their operations by adopting a “Plus One” strategy. Additional challenges posed by the COVID-19 pandemic have resulted in a notable shift in the global supply chain from economic efficiency to economic security. The Government via the NIMP 2030 will navigate the new paradigm, working towards building a resilient and robust economy.

There is a good opportunity for Malaysia to embark on a second take-off and expand the middle-class society. In pursuit of this Mission, Malaysia aims to develop a resilient supply chain, foster climate resilient development, strengthen industrial clusters and encourage a more balanced participation by States in socioeconomic activities.

The successful implementation of Strategies and Action Plans under Mission 4 will result in impactful outcomes as follows:

- **Ensure shorter and more secure supply chain:**

Malaysia is well-positioned as a strategic destination for nearshoring. This involves bolstering the capacity of domestic industries to be part of the global supply chain.

- **Enhance resilience of manufacturing base:**

The Government will work towards strengthening manufacturing sector’s ability to withstand and recover from potential disruptions and calamities.

- **Strengthen domestic and ASEAN vertical integration:**

The NIMP 2030 will drive collaborative efforts in industrial development among States. It will generate growth in manufacturing sector nationwide and create spill over to other sectors such as tourism, distributive trade and other services sectors. With the strong domestic linkages, Malaysia will be able to position itself strategically within ASEAN to build regional resilience and connectivity.

- **Promote inclusivity:**

Malaysia will harness the collective expertise and resources of the nation to drive the NIMP 2030 forward. By involving all stakeholders and fostering inclusivity, Malaysia aims to ensure that the benefits are shared by all members of society.

Four Strategies and 10 Action Plans will be carried out to achieve Mission 4, as illustrated below:

Figure 7.1: Mission 4 – Safeguard Economic Security and Inclusivity

**STRATEGY 4.1****Develop resilient supply chain**

According to the World Economic Forum, the collapse of a systemically important supply chain is rated as one of the highest risks to the global economy, as it may lead to an abrupt shock to the supply and demand of critical goods and services globally⁵¹. It is critical for Malaysia to ensure smooth trade, access to essential goods and business continuity by growing and innovating the local industries to become more self-sufficient.

Malaysia possesses significant reserves of critical minerals, which are valuable for high value-added manufacturing activities. Therefore, the Government and industries need to ensure sustainable development of critical minerals to meet current and future needs.

To achieve this, three Action Plans have been formulated:

ACTION PLAN
4.1.1**Identify specific supply chain resilience strategies for critical sectors**

National supply chain resilience is crucial for the industries to navigate disruptive forces and swiftly respond to volatile supply and demand. A significant example is the COVID-19 pandemic, which had caused disruptions in the global and local supply chains, as countries implemented lockdown measures, travel restrictions and trade disruptions. The adverse impact was particularly felt in the manufacturing sector.

In view of this, it is crucial for Malaysia to develop a robust model that can identify vulnerabilities and potential disruptions such as geopolitical shift, overreliance on single sourcing, natural disasters and public health challenges. This will help Malaysia to determine critical products and components that should be produced domestically and which can be outsourced from other countries. These critical products encompass essential goods, key raw

materials, critical components for industries and products vital for public health, defence and infrastructure. Given that, Malaysia needs to innovate and grow local industries and attract investments for domestic production.

The action plan will be led by MITI in collaboration with key stakeholders including relevant MITI agencies and industry associations. The following activities will be conducted:

- Develop supply chain resilience model to identify vulnerabilities, develop scenario planning and potential response and execute simulation of crisis scenarios;
- Develop business continuity plan in response to disruptions; and
- Conduct regular review to ensure relevance in addressing future disruptions.

ACTION PLAN
4.1.2**Establish supply chain cooperation and collaboration through G2G and G2B programme**

Moving beyond the national level, a broader perspective is global supply chain resilience. The pandemic has revealed the vulnerability of global supply chains. As a result, many countries have made structural changes to their supply chain framework by implementing dual or multiple sourcing strategies. This serves as a signal for Malaysia to re-evaluate and fortify its current supply chain, ensuring preparedness for any future disruptions.

A significant step towards achieving this resilience is through the adoption of the “Plus One” strategy, which has gained prominence in recent years due to escalating labour costs, geopolitical risks, supply chain disruptions and evolving trade dynamics.

Malaysia is well-positioned as a neutral country with existing strengths including in semiconductor, clean energy and critical minerals to support the supply chain resilience of the region and the world. Malaysia will form complementary cooperative relationship within the ASEAN framework to build a strong vertical supply chain integration.

Malaysia can take advantage of the trade agreements that have been signed with other countries to strengthen its supply chain. To date, Malaysia has implemented 16 FTAs, comprising seven bilateral and nine regional FTAs. G2G and government-to-business (G2B) cooperation is paramount to ensure that these trade agreements comprehensively secure the identified critical products and components.

The action plan will be led by MITI in collaboration with key stakeholders including MATRADE and MIDA to conduct the following activities below:

- Identify potential alternative trade partners or countries to support sourcing of critical products, components or resources;
- Review the current trade agreements to map with identified critical products; and
- Foster new trade agreements aligned with national interests, where necessary.

ACTION PLAN
4.1.3**Introduce National Mineral Policy for downstream processing of critical minerals**

Malaysia is set to become an important hub for the development of the mineral industry, leveraging on its abundant mineral resources. The responsible and sustainable use of these mineral resources are essential to ensure the country's economic security. The rapid development of clean energy technologies is set to supercharge demand for critical minerals.

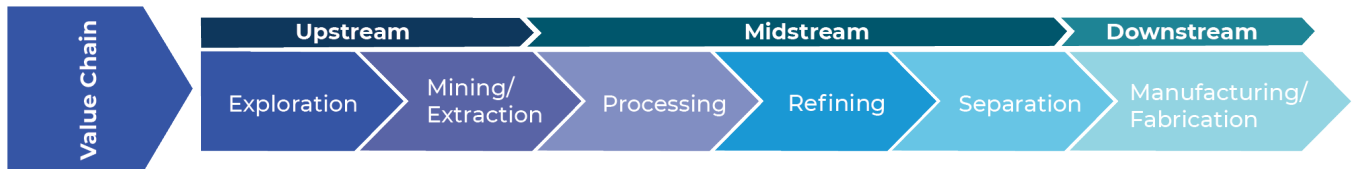
The global critical mineral supply chain is increasingly vulnerable as demand surges for the manufacturing of electric vehicle batteries, satellites and wind turbines. Malaysia should maximise its valuable critical mineral reserves by encouraging domestic downstream industries development.

In line with National Mineral Industry Transformation Plan 2020-2030 launched in 2021, NRECC has identified five critical minerals: NR-REE (non-radioactive rare earth elements), bauxite, tin ore, silica sand and kaolin. The estimated value is worth up to RM971.3 billion and Malaysia is well-positioned to capitalise on these economic opportunities. The strategic minerals are essential to produce high-tech products and act as a strong pillar to support other sectors' continuity and secure national security.

Figure 7.2: Strategic Minerals

A new National Mineral Policy will be rolled out to manage the extraction of minerals and ensure a balance between potential economic benefits and environmental sustainability. It will set a new SOP for all mining operations across the country, with the aim to strengthen enforcement against illegal mining while promoting environmentally friendly mining activities. Another focus is to propel downstreaming of the critical minerals. Malaysia shall take this opportunity to move up the value chain to further add value of the valuable minerals prior to exporting.

Figure 7.3: Minerals Value Chain



The policy will be led by NRECC in collaboration with key stakeholders such as MITI, MOSTI, State Governments, Local Governments and Jabatan Mineral dan Geosains (JMG). The following activities will be conducted:

- Determine and formulate the objective, scope and mechanism of the policy;
- Gather and incorporate feedback from States and Local Governments to drive synergy; and
- Enforcement of National Mineral Policy nationwide.

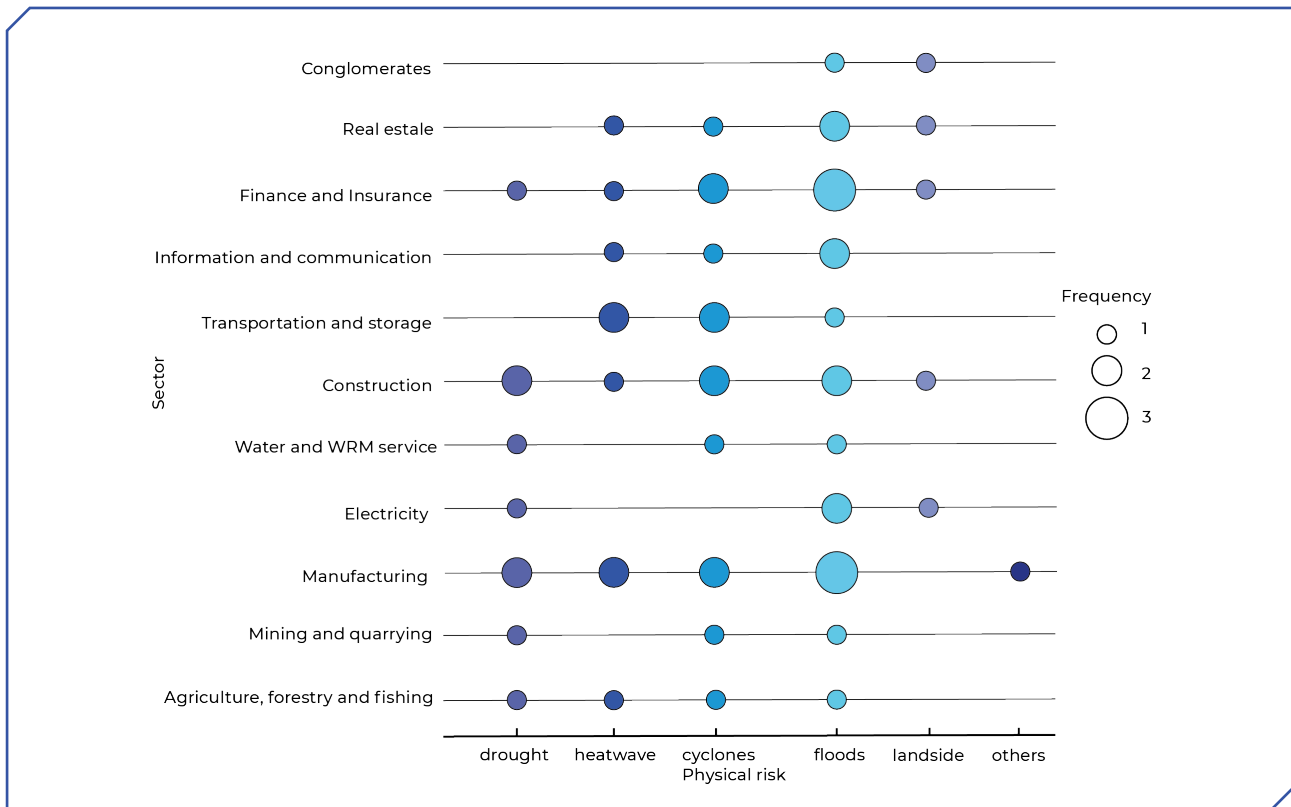
STRATEGY 4.2

Foster climate resilient development

Climate resilient development is a process of implementing both GHG mitigation and climate adaptation options to support Malaysia's pursuit of sustainable development. In this strategy, the focus will be on climate adaptation to build climate resilience of the manufacturing industry.

Based on a study by Khazanah Research Institution (KRI) in the Task Force on Climate Related Financial Disclosures (TCFD) framework, Malaysia's manufacturing industry is exposed to a range of physical risks associated with climate conditions. These risks can have significant implications for the operations of manufacturing companies and the overall economy.

Figure 7.4: Physical Risks Associated with Climate Conditions



Source: KRI's Compilation

Companies face not only short-run losses resulting from climate shocks but potential long-term challenges stemming from chronic climate risks. These chronic risks can have a lasting impact on a company's financial stability.

As a result, there is a need to support the industry in adaptation practices by fostering climate resilience development. By doing this, it reduces risks, adapts to changing conditions, promotes sustainable development, enhances economic stability and fulfils Malaysia's global responsibility in addressing climate change.

To achieve this, three Action Plans have been formulated:

ACTION PLAN 4.2.1

Develop sectoral adaptation pathways

As climate change worsens, the impact of it poses significant risks to Malaysia's industries:

- **Physical risks:**
Extreme weather events such as rising sea-level and changes in precipitation patterns can damage critical industrial infrastructure, especially in coastal areas;
- **Supply chain risks:**
Climate change can disrupt supply chains by affecting the availability, quality and reliability of key inputs, commodities and raw materials; and
- **Operational risks:**
Climate change can impact day-to-day operations by increasing operational costs, reducing labour productivity and disrupting business continuity.

With the view of the climate change risks, the Government will take a proactive approach to develop adaptation pathway to build resilience. Different sectors require different mechanisms to adapt to the climate change-induced risks. There are sector-specific challenges and vulnerabilities for which solutions must be catered to. The sectoral adaptation pathways will include measures to address:

- Changes to infrastructure to adapt to physical risks;
- Diversification of sources for critical resources such as energy and feedstock to minimise supply chain risk; and
- Adoption of technology.

MITI will collaborate with NRECC to execute this action plan and the following activities will be conducted:

- Develop sectoral adaptation pathway with the consideration of the current and future climate risks, potential vulnerabilities and climate change impact;
- Promote awareness of the pathways and provide incentive to encourage adaptation; and
- Introduce policy measure to accelerate the implementation.

ACTION PLAN 4.2.2

Foster an adaptation industry to provide adaptation products and services (including exports)

Malaysia's GDP loss by 2048 could be as high as 46 per cent due to physical climate impacts⁵². While this is alarming, the adaptation process can serve as an opportunity to grow local climate adaptation-related industries and service providers.

The existence of an adaptation industry can help the Government and other industries manage the impact of sea level rise, coastal erosion, floods, heat stress, agricultural adaptation and other forms of infrastructural effects. For example, according to a report by the National Hydraulic Research Institute of Malaysia (2018), Port Klang is expected to be submerged towards the end of the century with over 1m of sea level rise, based on sea level rise studies that it referred to. The Government shall collaborate with key stakeholders such as port operators, logistics providers, engineers and scientists to implement major infrastructural measures for climate risk mitigation.

To execute this action plan, MITI will collaborate with KKR, KE, NRECC and MOSTI. The following activities will be conducted:

- Identify risks of physical climate hazards that could cause disruption to industrial structures, supply chain continuity and daily operations.
- Determine product and service providers for the provision of climate adaptation advice and subsequent implementation of climate adaptation measures.
- Identify opportunities to grow climate adaptation product and service providers for the export market.

ACTION PLAN
4.2.3**Instil climate resilience measures for critical economic infrastructure**

Economic infrastructure is important to maintain national security, economic vitality, public health and safety to facilitate continuous economic growth. The economic infrastructure in the manufacturing industry must be able to withstand, respond to and recover rapidly from disruptions caused by climate conditions. These climate conditions include floods, rising sea-level, heatwaves, forest fire and haze. The Government will plan, design and build climate resilient infrastructure in anticipation of the changing climate conditions.

Based on Organisation for Economic Co-operation and Development (OECD) Environment Policy Paper on Climate-Resilient Infrastructure, the climate resilience measures can be grouped into two categories⁵³:

- **Structural adaptation measures**
 - Modify physical infrastructure to withstand climate conditions. For example, provide guideline in changing road surfaces to prevent deformation from high temperatures or building seawalls to manage excessive runoff during heavy rainfall.
 - Utilise natural infrastructure to design adaptation measures. For example, manufacturing facilities can incorporate green infrastructure elements such as rain gardens, bioswales and constructed wetlands to manage stormwater runoff.
- **Management (non-structural) adaptation measures**
 - Adjust timing of maintenance activities to align with shifting patterns of energy demand and supply. This can optimise operational efficiency and minimise disruptions.
 - Invest in early warning system and insurance to address financial consequences of climate conditions.
 - Enhance monitoring of existing assets to identify potential vulnerabilities and reduce the risk of failure as climate conditions change.
 - Incorporate adaptive management approaches to monitor and adjust to changing circumstances over the asset's lifetime.

To execute this action plan, MITI, KKR, KE and NRECC will lead with support from the industry players. The following activities will be conducted:

- Assess vulnerability of critical economic infrastructure in the manufacturing industry. Identify infrastructure such as buildings, transportation systems, power grids and water supply systems that are at risk from climate conditions;
- Evaluate the risk associated with climate change impacts on the critical infrastructure. Consider factors such as change in temperature, precipitation, storm and sea-level;
- Develop adaptation strategies to instil climate resilience for the critical infrastructure. This should include both structural and management adaptation measures; and
- Integrate climate considerations into policies and planning to ensure coordinated efforts. Raise awareness and capacity building to educate the industry. Conduct periodic review and update climate resilience measures to account for changing climate patterns and emerging technologies.

STRATEGY 4.3**Strengthen industrial clusters for regional development**

The NIMP 2030 will continue the effort to bridge the development gap among States to ensure balanced regional development. The overarching goal is to unlock the untapped potential of each State and Region, thereby stimulating and accelerating equitable economic growth on a nationwide scale. Priority will be given to industrialisation, leveraging the strengths of States to spur greater economic activities. The Government will strengthen existing industrial clusters and unlock potential new clusters.

To achieve this, two Action Plans have been formulated:

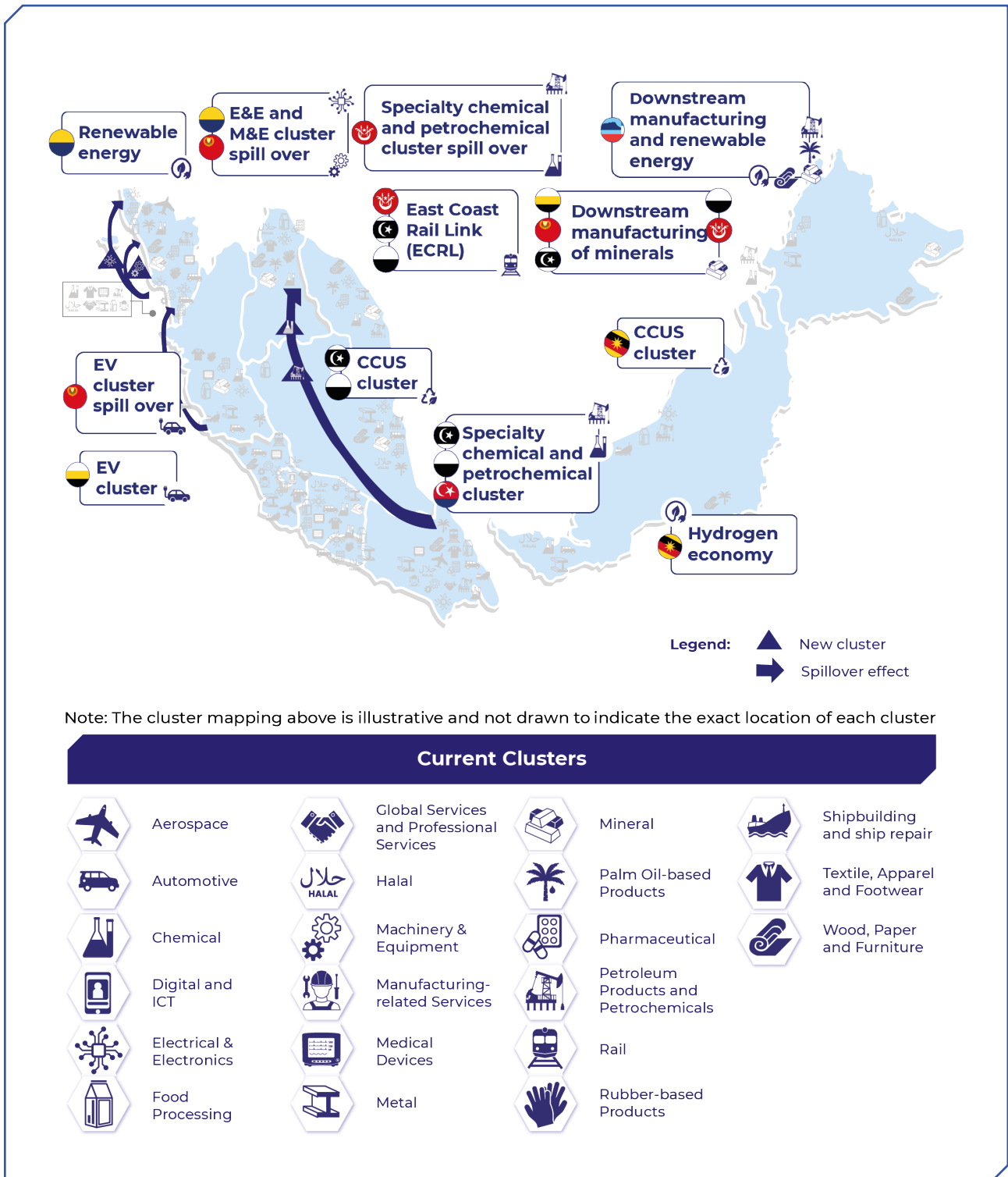
**ACTION PLAN
4.3.1****Expand clusters for spillover regional impact**

Malaysia has developed strong economic clusters in some States. In line with RMKe-12, the NIMP 2030 targets to address the disparity in industrial development between States. To achieve balanced regional development, the State Governments will work collaboratively based on respective complementary strengths. This allows the States in geographical proximity to gain spill over effects from existing clusters.

For example, the northern corridor of Kedah and Perak benefit from the rapidly expanding E&E cluster in Bayan Lepas and Batu Kawan in Penang. Integrated high-tech park in Kulim, Kedah which focuses on high technology manufacturing, advanced technologies and R&D activities can potentially support the E&E cluster. This expansion accelerates the growth of the economic clusters, drives local innovation and enables Malaysia to stay competitive in the global market by expanding the base. There are other examples of clusters that have the potential to create spill over impact, such as:

- M&E cluster: Batu Kawan, Penang
- Automotive cluster: Gurun, Kedah; Tanjong Malim, Perak
- Petrochemical cluster: Pengerang, Johor; Gebeng, Pahang; Kerteh, Terengganu

Figure 7.5: Economic Clusters in Malaysia



Another existing example is the East Coast Rail Link (ECRL), a strategic infrastructure project connecting the East and West Coasts of Peninsular Malaysia spanning across Kelantan, Terengganu and Pahang towards Port Klang. To unlock the transit-oriented development for ECRL, MIDA and China Communications Construction Company Ltd (CCCC) have signed an MOU for the development of the Economic Accelerator Projects (EAPs) along the ECRL alignment. To date, MIDA has identified three logistic hubs and 11 industrial parks, and is expecting more development to be established to grow regional economy. The details are as shown below:

Figure 7.6: Transit-oriented Development for ECRL

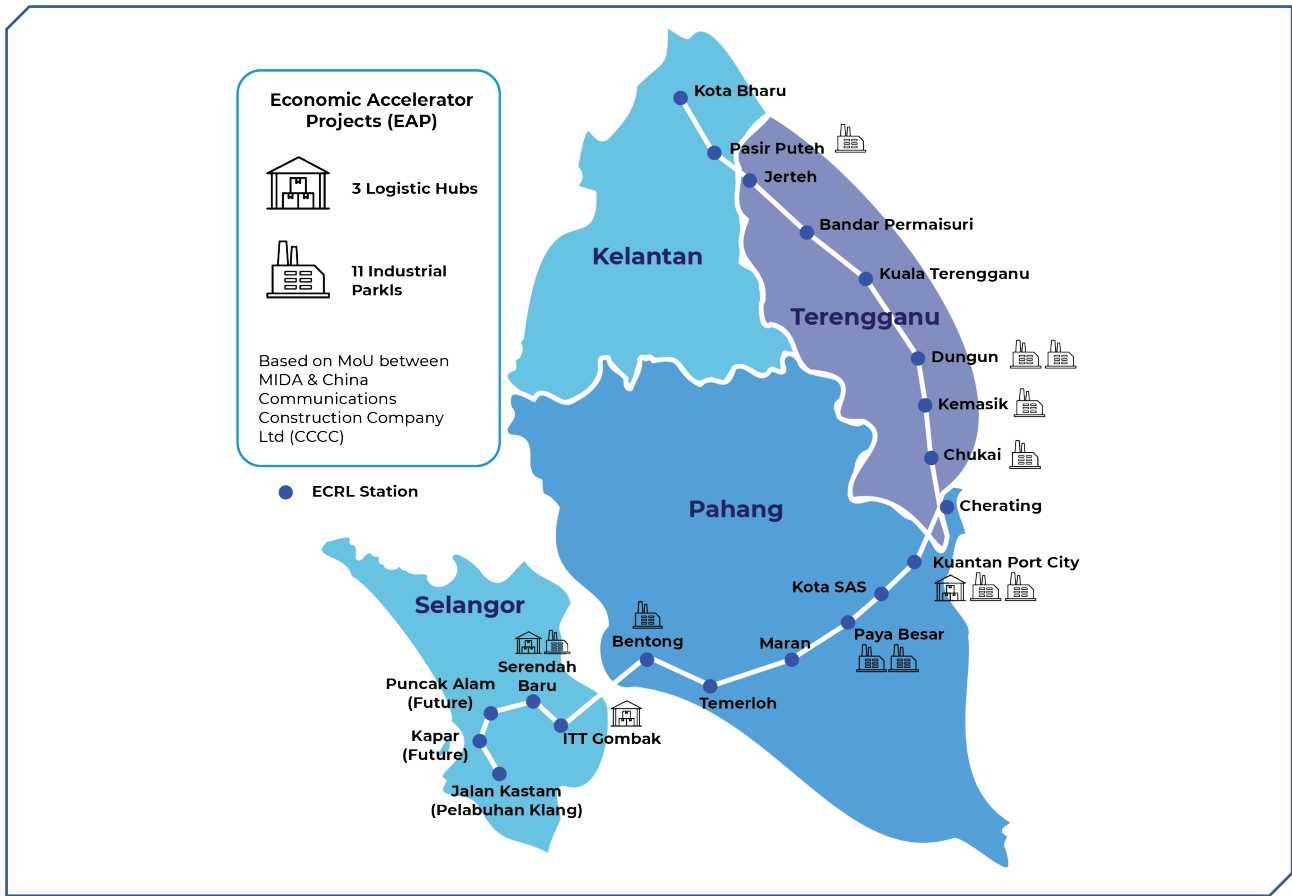


Table 7.1: Logistics Hubs in Malaysia

No.	Logistics Hubs	Location
1	Malaysia China Kuantan International Logistic Park (MCKILP)	Kuantan Port City Station, Pahang
2	ITT Gombak Transit Gateway	ITT Gombak Station, Selangor
3	Serendah Cargo Hub	Bandar Serendah Station, Selangor
4	*Potential Pasir Puteh Logistic Hub	Pasir Puteh Station, Kelantan
5	*Potential Dungun or Terengganu Silica Valley Logistic Hub	Dungun Station, Terengganu
6	*Potential Maran Logistic Hub	Maran Station, Pahang
7	*Potential Bentong Logistic Hub (Warehouse and storage, collection and aggregation center, distribution and packaging center)	Bentong Station, Pahang
8	*Potential Jalan Kastam Logistic Hub	Jalan Kastam Station, Selangor

Table 7.2: Industrial Parks in Malaysia

No.	Logistics Hubs	Location
1	Tok Bali Industrial Park (TBIP)	Pasir Puteh Station, Kelantan
2	Santong & Batu 7 Industrial Park	Dungun Station, Terengganu
3	Kertih Terengganu Industrial Park	
4	Kertih Biopolymer Park	Kemasik Station Spurline, Terengganu
5	Kemaman Heavy Industrial Park (KHIP)	Chukai Station, Terengganu
6	MCKIP3	Kuantan Port City Station, Pahang
7	Malaysia China Kuantan International Logistic Park (MCKILP)	
8	Pahang Technology Park (PTP)	Paya Besar Station, Pahang
9	Gambang Halal Park (GHP)	
10	Bentong Industrial Area	Bentong Station, Pahang
11	UMW High Value Industrial Park	Serendah Baru Station, Selangor
12	*Potential Puncak Alam Industrial Park	Puncak Alam Station, Selangor
13	*Potential Kapar Industrial Park	Jalan Kastam Station, Selangor
14	*Potential Klang Industrial Park	
15	*Potential Pulau Indah Industrial Park	

Source: MIDA

The action plan will be led by MITI in collaboration with key stakeholders such as KE, State Government, economic corridor, MIDA and sub-national IPAs. The following activities will be conducted:

- Develop recalibration plan of existing clusters to identify untapped opportunities

in States, to encourage vertical integration that complements each other;

- Engage State Governments to ensure synergy between State's growth plan with national plan; and
- Integrate potential investments to the existing clusters.

ACTION PLAN 4.3.2

Align industrial development plan between Federal and States

The Government underscores the importance to enhance industrialisation development in States and consistently engages with State Governments to ensure that the strategies are aligned. This action plan will leverage local strengths and capabilities to unlock potential economic growth. With that, the Government intends to improve the investment ecosystem and attract new investors directed at improving industrial distribution for balanced development.

The rich natural resources in Sabah including oil and gas, timber, minerals and palm oil provide opportunities to drive growth in downstream manufacturing. Opportunities lie in downstream activities of these valuable resources instead of exporting them in raw form. On top of that, Sabah's current energy

insufficiency can be addressed by exploring RE options.

Sarawak is aiming to become a leader in hydrogen economy in Malaysia, with plans to begin large-scale commercial production and export of hydrogen by 2027. The Government will work closely with Sarawak to upscale the production capacity to address domestic demands and improve access to the international market.

As outlined in the Perlis Strategic Development Plan 2012-2030, agriculture (food processing), biotechnology, RE and mining sectors are the key focus areas of Perlis' manufacturing industry. The Government will coordinate with the state to further develop these areas, especially for the RE sector, which have the

potential to benefit from the solar technology companies in neighbouring Kedah.

The action plan will be led by MITI in collaboration with key stakeholders such as MIDA, State Government, sub-national IPAs and developers. The following activities will be conducted:

- Identify potential growth areas in the States through regular engagement with the State Governments and sub-national IPAs; and
- Provide support to State Governments in the regional growth, among others, in the areas of infrastructure, investment opportunities and talent development.

STRATEGY 4.4

Empower Bumiputera participation and create inclusive workforce

Empowering Bumiputera participation and creating an inclusive workforce lie in the objective of reducing disparities, embracing diversity, overcoming systemic barriers and promoting equal opportunities. The NIMP 2030 requires collaborative efforts to create a supportive and empowering ecosystem for workforce participation.

To achieve this, two Action Plans have been formulated:

ACTION PLAN 4.4.1

Uplift capabilities of Bumiputera companies in manufacturing via *Tindakan Pembangunan Bumiputera 2030*

Bumiputera development agenda continues to be one of the national priorities with the NIMP 2030 encouraging balanced and inclusive participation, including *Bumiputera* companies. TERAJU has launched their *Tindakan Pembangunan Bumiputera (TPB) 2030* in 2021, which outlines key priority focus for *Bumiputera* manufacturers. The NIMP 2030 is aligned to the TPB 2030 and aims to empower *Bumiputera* companies in advancing economic complexity, increasing digitalisation, pushing for decarbonisation and ensuring economic security. There are 10 programmes outlined under TPB 2030 to support *Bumiputera* companies:

Figure 7.7: NIMP 2030 Incorporated *Bumiputera* Programme



Apart from that, the Government is committed to empower *Bumiputera* women in employment and leadership position. As of 2022, *Bumiputera* women workforce participation rate is recorded at 52.6 per cent⁵⁴. MITI will be working closely with TERAJU and *Bumiputera* communities to support women to return to workforce and uplift their well-being.

The following activities will be conducted:

- Identify *Bumiputera* programme that require intervention to enhance the growth of *Bumiputera* communities;
- Create linkage between *Bumiputera* communities, including women and youths, to existing programmes under the NIMP 2030, which are:
 - Talent development programme; and
 - Market access.
- Create linkage between *Bumiputera* communities to economic opportunities e.g. *halal* industry.

ACTION PLAN 4.4.2

Develop programme to increase women participation in high-skilled manufacturing employment

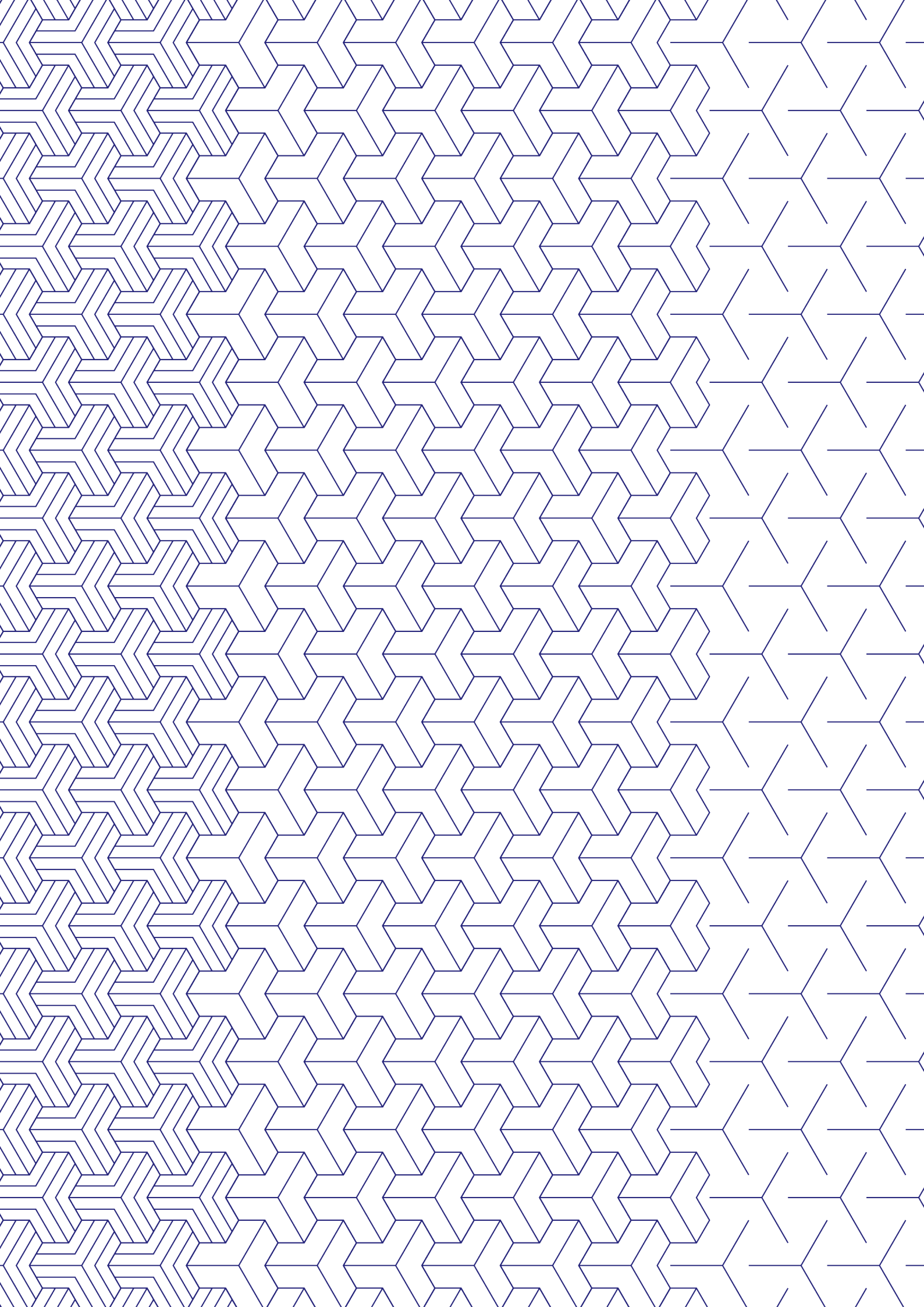
Malaysia is experiencing low female labour force participation despite the dominating education enrolment. This can be attributed to various factors including family responsibilities and workplace inequalities. Occupational concentration in certain sectors further misallocates human capital resources especially in the manufacturing industry.

To address the challenges, the Government will focus on these areas:

- **Strategic collaboration with the private sector** to empower women through nationwide programmes, providing resources, training and career advancement opportunities;
- **Implementing flexible working arrangements** to support women in balancing family and professional commitments, including flexible working hours and hybrid work models; and
- **Creating a conducive working environment** by incentivising childcare and elderly care support, ensuring safety protocols and providing resources for mental health support.

The action plan will be led by MOHR in collaboration with MITI, Ministry of Women, Family and Community Development (KPWKM) and TalentCorp. The following activities will be conducted:

- Strengthen existing policy to close the gender gap including protection and benefits for women in the workforce;
- Provide access to affordable and easily available childcare support and care centres; and
- Provide upskilling or reskilling programmes for women who have taken a break and returning to the workforce.





8

**ENABLERS:
ADDRESSING SYSTEMIC AND
INSTITUTIONAL CHALLENGES**

Malaysia has the strength and potential to capture the opportunities from emerging trends; geopolitical shifts towards economy security, digitalisation and compliance with ESG requirements. However, there are several challenges that remain inherent and have limited the potential of the manufacturing sector in the past, as highlighted in Section 2.

The Enablers aim to drive systemic and institutional reforms through:

- Mobilising a comprehensive financing ecosystem to support industry development;
- Fostering and attracting the right talent to support high value-added activities;
- Establishing best-in-class investor journey to provide seamless investor experience in Malaysia; and
- Introducing a whole-of-nation governance to rally the industry and implement the NIMP 2030.

By addressing the Enablers, the expected outcomes are:

- **Cohesive ecosystem**

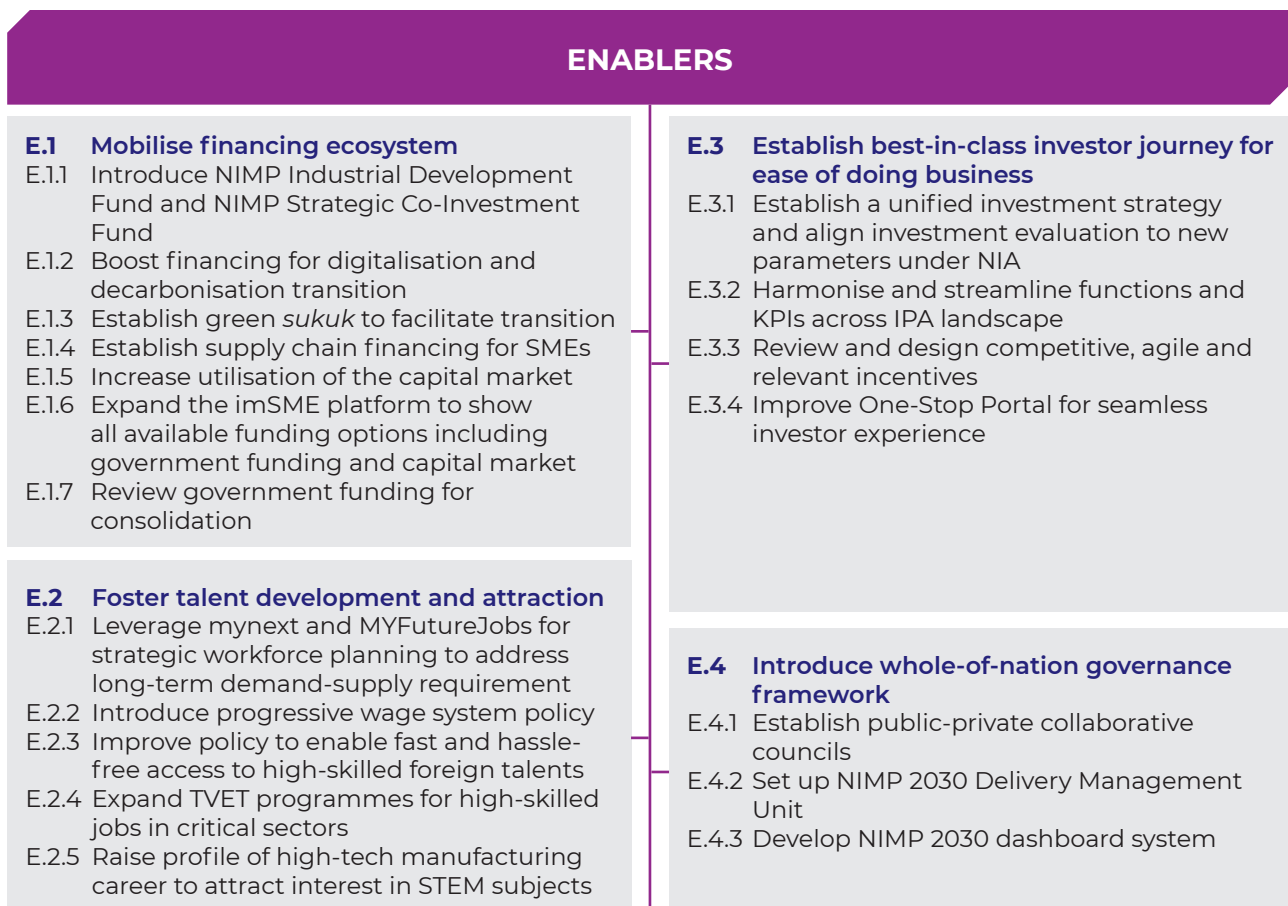
The Enablers will create a supportive, synergistic and collaborative environment, where the industry as a whole can collectively address challenges, seize opportunities and achieve the shared outcomes of the NIMP 2030; and

- **Resource optimisation**

By leveraging synergies, sharing resources and pooling efforts, it ensures efficient resource allocation and maximises the collective impact of the ecosystem.

There are four Strategies and 19 Action Plans to be carried out to achieve the Enablers, as depicted below.

Figure 8.1: Enablers



ENABLER 1**Mobilise financing ecosystem**

The Missions and Enablers require significant investments to support the industrial development through the following areas:

- Ensure coordination of large funding for the industry to expand into high value-added activities;
- Increase accessibility to funds for Malaysian companies, including SMEs (e.g. R&D, product and services development, training, technology and sustainability adoption); and
- Expand financing options to support national plans and initiatives.

The NIMP 2030 will mobilise various types of financing, from the financial institutions to the capital market, supported by government funding in strategic areas.

The funding will be required based on the following components:

Mission 1:

- Supporting the industrial upgrading to near-by adjacencies to increase economic complexity through IC design, wafer fabrication, E&E embedded system, specialty chemicals, advanced materials, aerospace, and pharmaceutical and medical devices manufacturing;
- SME development (including capacity or capability development and value chain integration);
- Supporting the financing of public-private partnership in undertaking research, development, commercialisation and innovation by identifying the right financial modalities and risk-reward sharing mechanisms; and
- Export programmes.

Mission 2:

- Digital adoption for 3,000 smart factories;
- Solution providers development;
- Training for digital adoption (including civil servants); and
- National digital platform for manufacturing sector.

Mission 3:

- Adoption of sustainable practices to achieve Malaysia's national commitment;
- iESG transition programme;
- New growth opportunities for sustainability, e.g.:
 - Locally-manufactured EV;
 - CCUS sites; and
 - Renewable Energy.
- Transformation towards eco-industrial parks.

Mission 4:

- Supply chain resilience, especially among SMEs and trade facilitation programmes;
- State industrial development programmes;
- Women workforce participation programmes; and
- *Bumiputera* development programmes (under TERAJU's funding).

Enablers:

- Talent development;
- Streamline of IPA landscape;
- Investor One-Stop Portal; and
- The NIMP 2030 dashboard.

To achieve this, seven Action Plans have been formulated:

ACTION PLAN
E.1.1

Introduce NIMP Industrial Development Fund and NIMP Strategic Co-Investment Fund

The NIMP 2030 will introduce two funds to support the Strategies, Action Plans and MBPs across the four Missions and Enablers:

The NIMP 2030 Industrial Development Fund (“NIDF”)

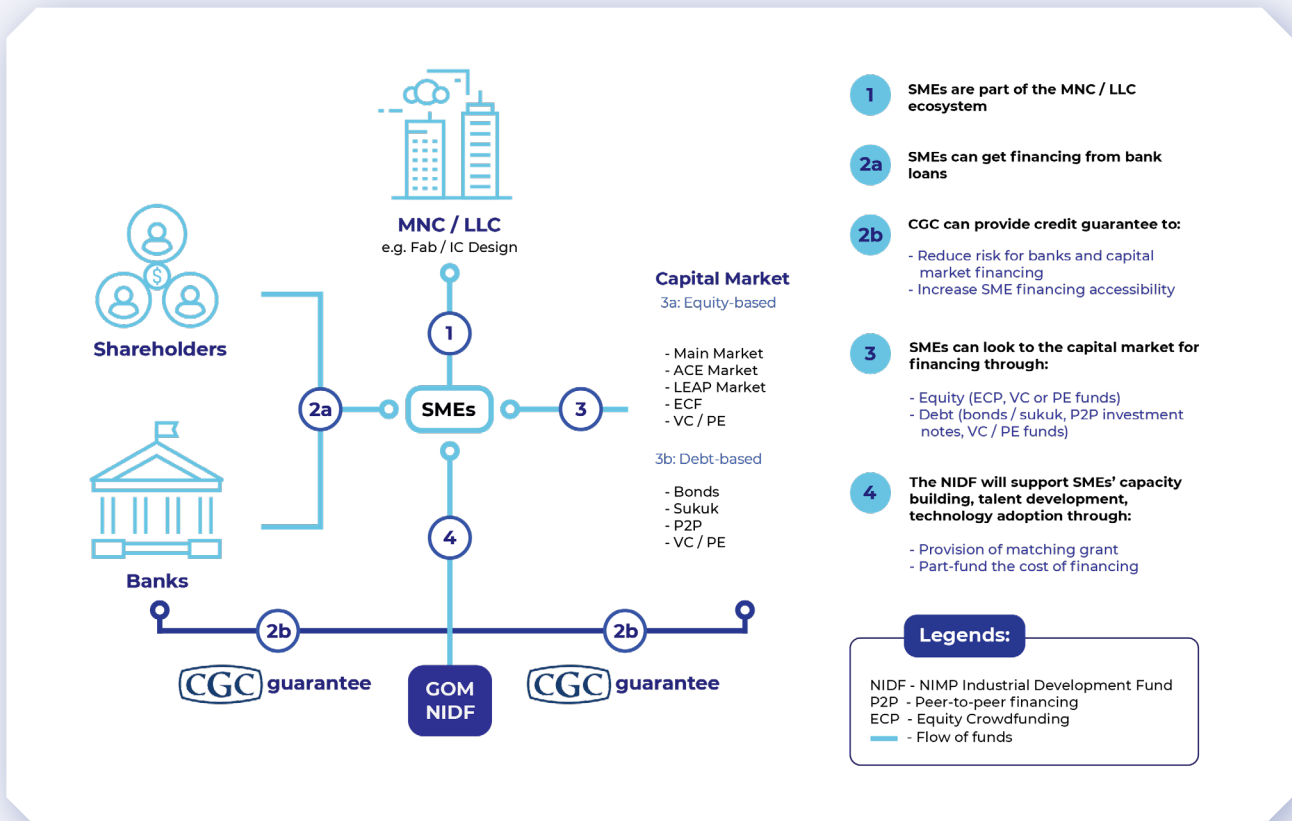
The NIDF will be funded by the Government to enhance the capability of Malaysian companies, including SMEs, and assist them to participate in the global value chain. This matching fund focuses on the overall industrial development for the manufacturing and related services, covering:

- Research, development, commercialisation and innovation;
- Technology adoption;
- Licensing or purchase of new or high technology;
- Talent development or capacity building;
- International standards or certification;
- Infrastructure development and upgrading – eco-industrial estates or parks; and
- Industrial cluster development for regional development.

The NIDF will be utilised for:

- Direct funding for the industrial development programmes;
- Provision of matching grants for Malaysian companies including SMEs; and
- Providing partial support to reduce the cost of financing.

Box Article 8.1: Funding for Malaysian companies including SMEs to Support MBPs and for Their Own Tech Up and Supply Chain Resilience



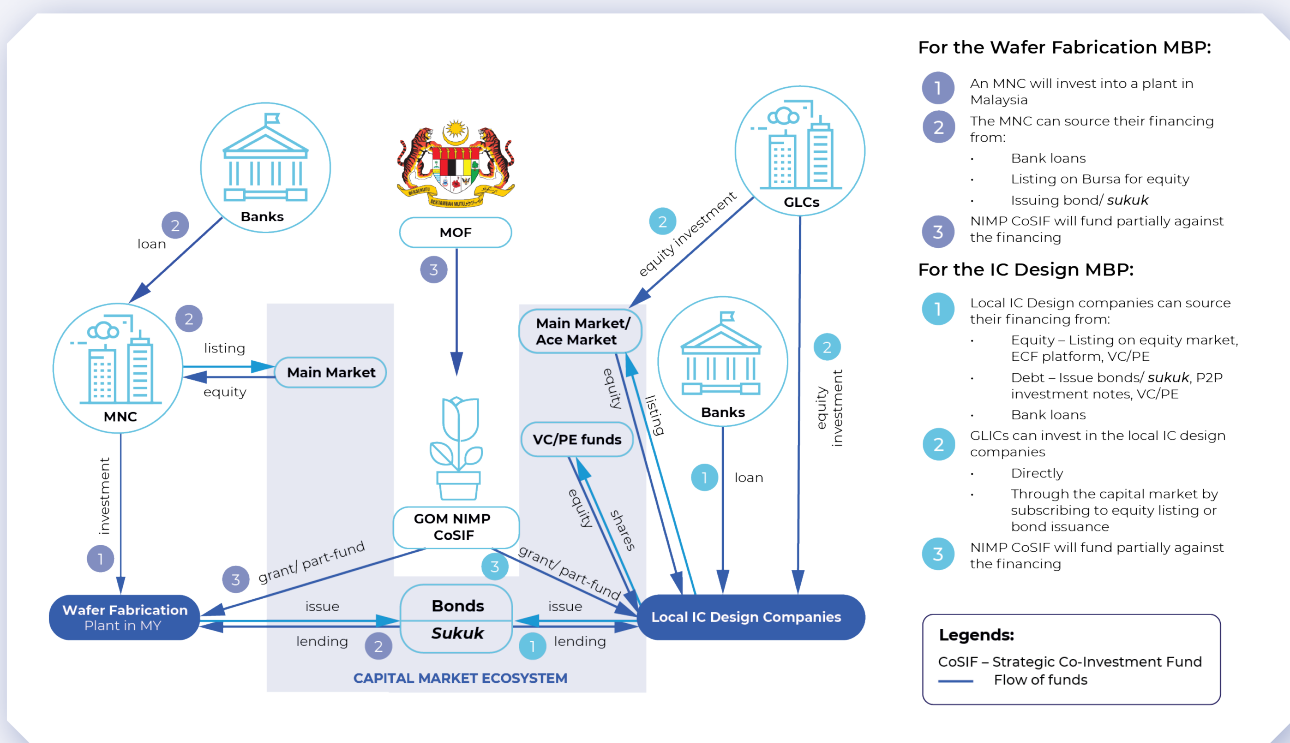
The NIMP 2030 Strategic Co-Investment Fund (“NIMP 2030 CoSIF”)

The NIMP 2030 CoSIF will be a co-investment fund, that supports strategic and high-impact MBPs to spur Malaysia’s economic growth, by crowding private sector financing. This public and private funding models will contribute to the following:

- Increase the pool of capital to support the MBPs; and
- Reduce the risk profile for investors and increase attractiveness of projects to raise capital in the equity and bond markets, as well as leverage alternative financing.

While nine MBPs have currently been identified under the NIMP 2030, other strategic projects which align to the Missions of the NIMP 2030 in achieving Malaysia’s industrial objectives may subsequently be identified as MBPs.

Box Article 8.2: Funding Options for MBPs Requiring Large Investments



This action plan will be led by MITI and supported by MOF and KE. The following activities will be conducted:

- The funds will be launched from 2024 onwards, with an overarching structured governance together with MOF and KE, on the fronts of:
 - Funding mechanism for the co-investment funds, including considering the structure of co-investment funds like the Malaysia Co-Investment Fund (MyCIF);
 - Allocation of the strategic funds;
 - Design structures to support the evaluation of eligible high impact projects; and
 - Monitoring of performance and evaluation of outcomes.
- The Government will engage the public and private players to explore investment opportunities and participation in the co-investment fund. This includes the GLICs, other international and institutional investors and state governments.

ACTION PLAN
E.1.2**Boost financing for digitalisation and decarbonisation transition**

There are various financing options available for SMEs to support their digitalisation and sustainable transition towards a low-carbon economy. These include:

- BNM High Tech and Green Facility, RM1.1 billion allocation (available until full utilisation);
- BNM SME Automation and Digitalisation Facility, RM1.5 billion allocation (available until full utilisation);
- BNM Low Carbon Transition Facility, RM1 billion allocation on matching basis (available from February 2022 until full utilisation); and
- Funds from financing institutions which have been allocated for transition financing in their sustainability agenda.

To increase the take-up rate of financing by SMEs, the Government will encourage the banks to provide financing in technology and sustainability areas by:

- Coordinating funding between the manufacturing players, such as MNCs, LLCs, SMEs and financial institution through programmes such as supply chain and vendor development programmes led by MIDA;
- Working closely with the banks to identify and finance bankable projects and initiatives in digitalisation and decarbonisation transition;
- Facilitating to strengthen the banks' capabilities in evaluating and assessing technological and innovative projects. The Government will explore the potential to leverage the Readiness Assessment from the Technology Adoption Programme and BNM's TechUP and GreenUP initiatives for preliminary view of applicants' risk level;
- Collaborating with international financial institutions or multilateral development banks for blended financing and expertise on appropriate financial structures and risk sharing and risk mitigation mechanisms; and
- Collaborating with other countries with experience and expertise to develop innovative financial instruments and risk sharing or risk mitigation mechanisms suited to the needs of the green transition in Malaysia.

Box Article 8.3: The European Green Deal

What is the European Green Deal?

Transform EU into a modern, resource-efficient and competitive economy by ensuring:



Net-zero greenhouse gas emissions by 2050



Economic growth decoupled from resource use



Inclusivity - no person and no place left behind

The European Green Deal to mobilise at least €1 trillion from 2021-2027

EU Budget



1/3 of EU Budget will finance the EU Green Deal

Just Transition Mechanism

Tool to ensure transition towards a climate neutral economy



Co-funded by:
- EU Budget
- European Investment Bank (EIB)
- EU Member States
- InvestEU

InvestEU



Supports sustainable investment, innovation and job creation in Europe



Funded by private and public sector



Includes guarantee (from EU Budget) for:
- International Banks
- National Promotion Banks

Modernisation Fund



Support 10 lower-income EU Member States in transitioning to climate neutrality



Funded by revenues from EU Emissions Trading Systems

Supported by EU's Sustainable Financing Framework

Corporate disclosure

EU labels - benchmarks

Disclosure by financial services sector

EU taxonomy

EU green bond standard

International Platform on Sustainable Finance

Source: The European Commission

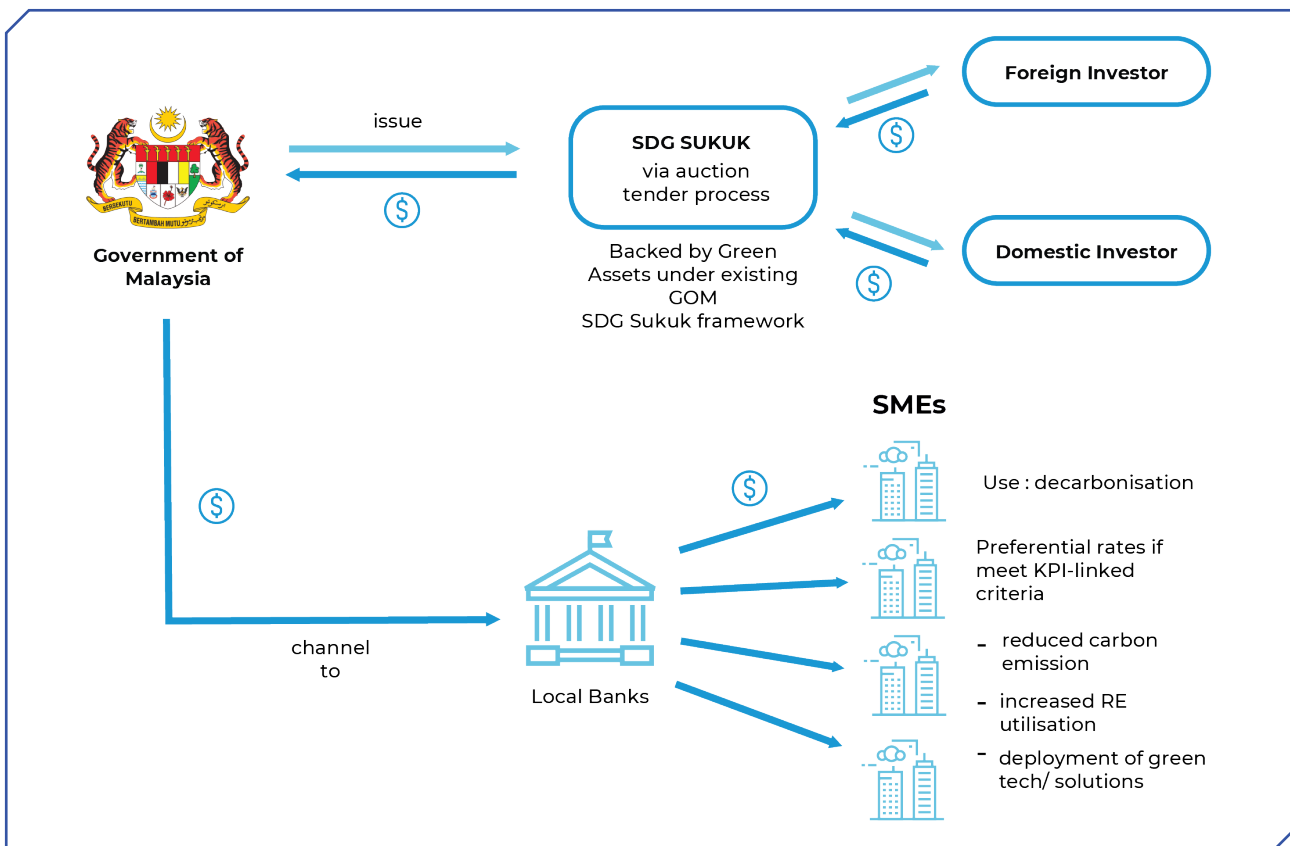
ACTION PLAN
E.1.3
Establish green *sukuk* to facilitate transition

For further support of the decarbonisation transition, Malaysia will be exploring the issuance of a Sustainable Development Goal (SDG) Bond, which can be in the form of a Green, Sustainability or Sustainability-Linked bond or *sukuk*.

These bonds and *sukuk* are key transition finance instruments as they channel financing to green or sustainable activities or link sustainability targets to financing. Such green bond issuance will serve as reference for the corporate green bond market, deepen market liquidity for green bonds and attract green issuers, capital and investors. This avenue will create greater availability of funds to support the SMEs involved in high emission intensity industries to decarbonise their operations.

This approach involves the issuance of Sustainable Malaysian Government Securities (MGS) or Government Investment Issue (GII) through BNM as part of the annual auction calendar. It will be backed by the Green Assets under the existing Government of Malaysia's SDG *Sukuk* framework. Foreign and domestic investors can subscribe to the Sustainable MGS or GII. The Government will manage the invested funds and channel through the local banks to provide transition financing to the SMEs. A KPI-linked model for the transition financing can be considered, where SMEs will be given preferential rates as they meet the decarbonisation criteria such as reduced carbon emissions, increased RE utilisation or deployment of green tech or solutions.

Figure 8.2: Green, Sustainability and Sustainability-linked *Sukuk* to Tie to Decarbonisation Targets by SMEs



This deepening of capital market to support Malaysia's ESG transition can be instrumental in:

- Accelerating the greening of value chain;
- Supporting business with ESG principles to thrive and create high-value jobs;
- Attract diversified FDI investments; and
- Enhance Malaysia's reputation as a pre-eminent ESG market.

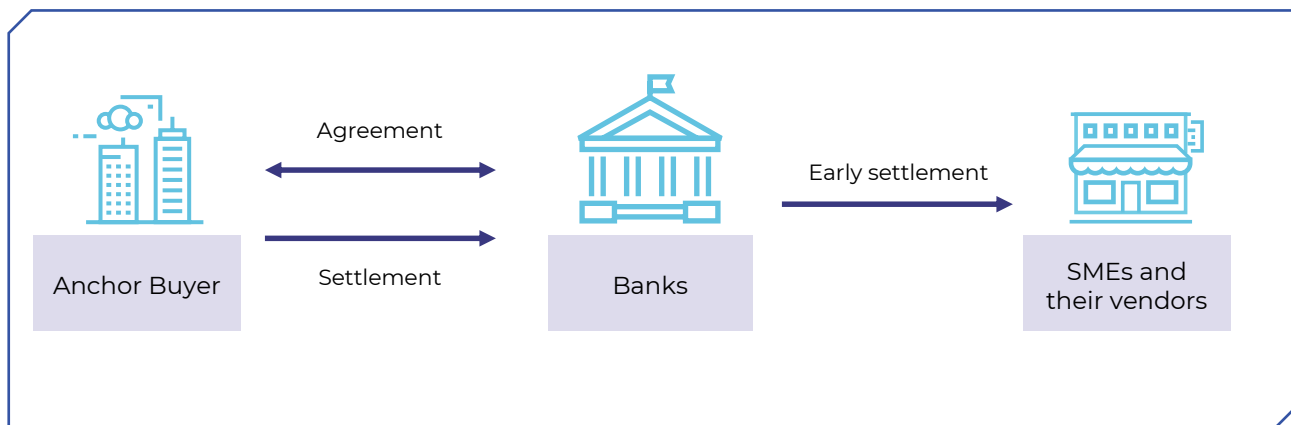
ACTION PLAN
E.1.4**Establish supply chain financing for SMEs**

As part of the efforts to support the SMEs ecosystem, Malaysia is encouraging more supply chain financing facilities to be made available. Supply chain financing is a financial arrangement where the banks will provide a facility to anchor buyers, especially MNCs or LLCs, to provide financing to their SME suppliers in their supply chain. It facilitates the smooth flow of funds within a supply chain network and allows SMEs to have healthy cash flow. Sustainable supply chain financing can also be considered to help accelerate decarbonisation efforts at the supply chain level and support disclosure initiative.

The Banks offer early payment to the SMEs and their vendors or suppliers on behalf of the anchor buyer and the anchor buyer repays the banks on a later agreed-upon date. Supply chain financing benefits the entire supply chain ecosystem where:

- SMEs and their vendors or suppliers have access to funds faster, improving cash flow;
- Buyers can optimise their working capital by extending the payment terms while still supporting their suppliers; and
- Banks will earn a fee in providing the supply chain financing service.

Figure 8.3: Supply Chain Financing for SMEs



This action plan will be led by BNM and the banks. The following activities will be conducted:

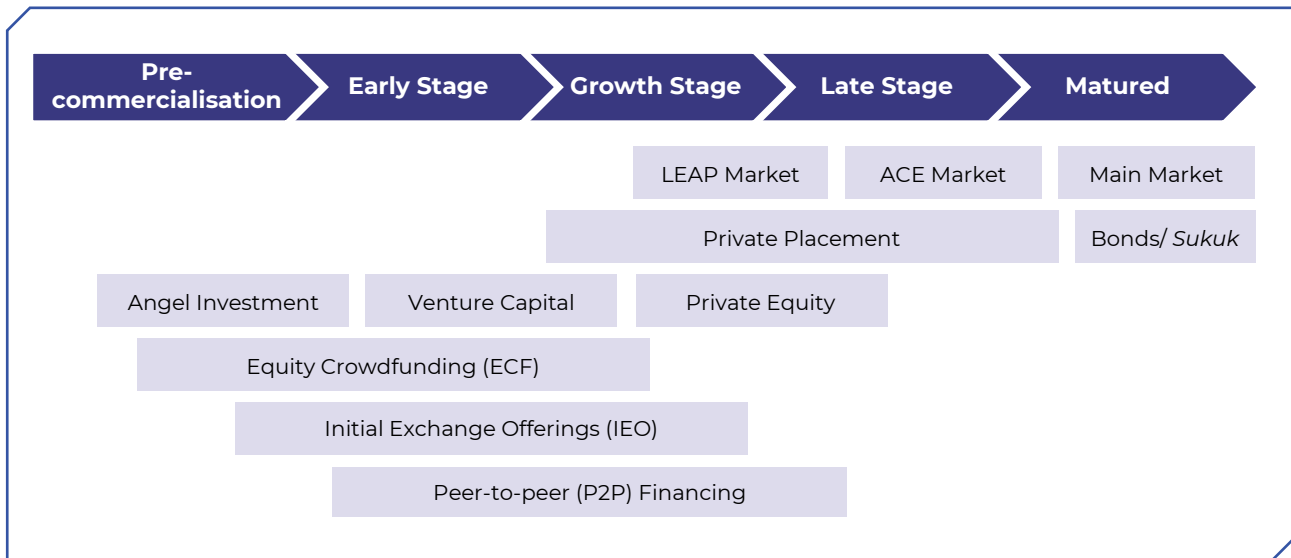
- Engage banks to encourage them to offer supply chain financing facilities;
- Encourage efforts by corporates to collaborate with the financial sector to promote the design and offering of supply chain finance solutions to their vendors; and
- Educate industry players on the availability and benefits of the supply chain financing facilities.

Apart from that, supply chain financing facilities can be offered by P2P platforms to assist SME suppliers optimise their working capital and cash flows.

**ACTION PLAN
E.1.5****Increase utilisation of the capital market**

The capital market provides a multi-layered market ecosystem with multi-product solutions for efficient capital allocation and fund intermediation. Malaysia has a well-established capital market with proven financing options, including digital platforms, to cater for the different financing needs of companies across their growth cycles.

Figure 8.4: Funding Stages of Companies and Capital Market Solutions



Source: Securities Commission Malaysia

The range of capital market financing options to support businesses at various stages of growth are as follows:

- Bonds and *Sukuk* – for businesses or projects that have large financing requirements;
- Equity Market (Main Market, ACE Market and LEAP Market) – for mature, late-stage and even growth companies;
- Equity Crowdfunding (ECF) digital platforms – for smaller companies and start-ups;
- P2P Financing digital platforms – for growth to late-stage companies to raise funds for business or working capital purposes; and
- Venture Capital and Private Equity (VC and PE) – for companies and start-ups at early to growth stages, as well as late-stage companies (involving PE investment).

The industry can gain several benefits from leveraging the capital market:

- Ability to access wider range of capital and funding sources, including investors with specific mandates to invest in listed stocks with better liquidity;
- Enhanced profiling, branding and increased visibility will enhance attractiveness to domestic and international investors;
- Better access to both equity and bond markets will enable companies to optimise their capital structure and valuation. It enhances merger and acquisition opportunities;
- With transparent reporting requirements as a listed entity, companies are in a better position to obtain bank borrowings. Listed entities can utilise shares for acquisitions and share transactions will not be subject to capital gains tax;
- Flexible terms and structure – flexible repayment structures, collateral requirements and equity ownership. This can be beneficial depending on the growth stages of the company; and
- Advisory from specialised experts – often involves partnerships with private investors such as VC or PE that have industry knowledge and expertise. Companies can gain insights, guidance and mentorship to grow their business.

There is much more opportunity for companies, particularly SMEs, to increase their utilisation of capital market financing in Malaysia. Currently, SME fundraising from the capital market accounts for less than 5 per cent.

The Securities Commission Malaysia (SC), capital market intermediaries and MITI will collaborate to increase the utilisation of the capital market by:

- Guiding industry players on how to access and utilise the capital market. This will be done by increasing awareness of the capital market funding channels available, ranging from the equity market, bond market, Recognised Market Operators (e.g. ECF, P2P) to the private market (VC or PE);
- Providing transparent frameworks, processes and a supportive market-based financing ecosystem to build industry players' confidence to utilise the capital market;
- Facilitating the provision and accessibility of lower cost financing options for issuers from the industry;
- Enhancing the efficiency of the fund intermediation process to facilitate sizeable funds at scale to finance the industry;
- Promoting the capital market as an attractive investment option for foreign investors, as well as domestic institutional and individual investors;
- Uplifting market capabilities and services, including debt and equity analysis, to enhance the flow of information to investors; and
- Improving Malaysia's attractiveness through easing of tax rules and a facilitative regulatory process, including for the VC and PE ecosystem, in consultation with MOF and LHDN.

Box Article 8.4:

Market-based financing avenues in Malaysia

Capital market presents financing avenues (including VC and PE) for firms that require capital for digitalisation and decarbonisation

Bonds and *Sukuk*

- Average amount raised: RM300 million
- Highest amount raised: RM30.6 billion

Main Market

- Average amount raised: RM400 – 500 million
- Highest amount raised: RM12.8 billion

ACE Market

- Average amount raised: RM50 – 60 million
- Highest amount raised: RM275 million

LEAP Market

- Average amount raised: RM3 – 5 million
- Highest amount raised: RM12.5 million

ECF

- Average amount raised: RM1.7 million
- Highest amount raised: RM20 million

P2P Financing

- Average amount raised: RM70,700
- Highest amount raised: RM19.2 million

Source: Securities Commission Malaysia

**ACTION PLAN
E.1.6**

Expand the imSME platform to show all available funding options including Government funding and capital market

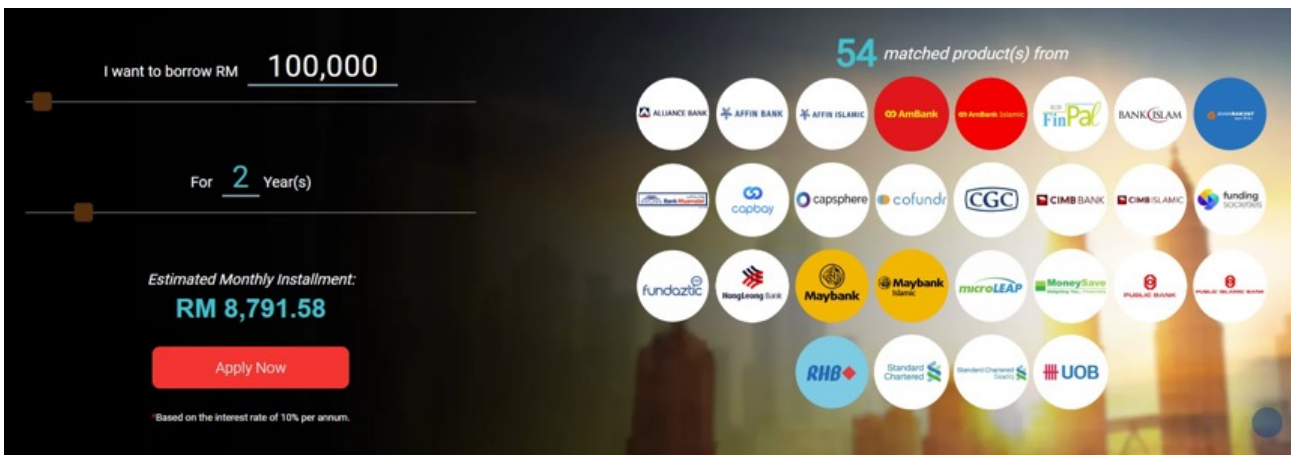
There are multiple funding options for industry players, which include government funding and private sector funding from banks and capital market. However, information on available funding options is disparate causing challenges, such as:

- Low awareness of available funding options; and
- Difficulty in tracking government grant disbursements by different agencies.

In 2018, a single financing platform was launched by CGC, called the imSME which aggregates financing information from financial institutions, agencies and alternative financiers. Expanding the imSME platform to include Government funding will provide a comprehensive coverage of the funding options available. The platform will provide the Government an avenue to better:

- Trace interest in the funding options;
- Coordinate campaigns to increase awareness on the funding options with low take up; and
- Track Government fund application to enable fairer access to Government funding.

Figure 8.5: CGC imSME Platform



Source: CGC

This action plan will be led by CGC in collaboration with MOF, KE, MITI, BNM, SC and Bursa. This is a timely national initiative for CGC because it had, in July 2022, established a wholly owned data and fintech subsidiary, namely, CGC Digital, to:

- Develop the imSME platform with embedded finance that provides MSMEs in Malaysia with a one-stop digital marketplace for financing and assistance to accelerate their business. CGC Digital is taking a Mission-based, MSME-centric approach to all its development and offerings, prioritising outcomes over outputs;
- Develop innovative digital credit guarantee and other digital credit supplementation products and services that are essential to facilitate MSMEs in obtaining the financing that they need;
- Increase the chances of MSMEs, especially the thinner-file ones, in obtaining financing with embedded digital credit guarantee. CGC Digital is developing algorithms and its proprietary credit model using traditional and alternative data to advance financial inclusion among MSMEs in Malaysia; and
- Identify and collaborate with partners to:
 - Increase synergistic effects on imSME's digital ecosystem; and
 - Improve efficiency in the areas of funding and facilitating online buyer-seller marketplace for ease of doing business along the supply chain.

The imSME platform will partner with relevant companies to provide MSMEs with better access to the local supply chain, which can be integrated to foreign supply chain, to increase Malaysian MSMEs' competitiveness locally and internationally.

Box Article 8.5: Digital platform for SME financing (imSME)



- + One stop portal makes it easy for SMEs to browse and apply for compatible financial products
- + Acts as a hub for FIs to manage financing applications
- + One stop portal can act in advisory capability to help SMEs capability build and close gaps in financing applications

Case Study: imSME partners with 30+ organisations to help SMEs secure financing



4 EASY STEPS TO APPLY FOR A LOAN / FINANCING



Total Visitors
2.5 million



Total Registered MSMEs
72,700

Total Approved Financing
5,700 approvals
RM 589 million

Source: imSME, CGC

**ACTION PLAN
E.1.7****Review Government funding for consolidation**

Multiple Government Agencies have been allocating government funding to facilitate industrial development, aligned to their respective objectives. They include MIDA, SMECorp, SME Bank, MIDF, MDEC, MTDC, Cradle, MAVCAP, MDV and TERAJU.

Several challenges have been identified with this current model, among others:

Table 8.1: Issues in Government Funding

No.	Issues	Location
1	Confusion regarding the types of funding assistance available, documentation required, requirements, approval process, etc.	Applicants
2	Multiple constraints that limit the types of companies that may apply for funding	
3	Insufficient fund allocation that limits the number of companies that can be assisted with government funding	
4	Fragmented and duplicated funding programmes that cause administrative burden (multiple funding programmes require independent assessments by multiple agencies)	The Government
5	The distribution of Government funding is not optimised	

To address the challenges, MOF and KE together with MITI and MIDA will review government funding for consolidation. The following activities will be conducted:

- Identify available Government funding offered by various Ministries and Agencies;
- Review the Government funding and consolidate funds for similar focus areas, where necessary. Consolidating the funding options will allow the Government to create larger fund size, reduce its administrative duties and monitor the use of public funds more effectively;
- Establish the governance to oversee the Government funding and conduct periodic reviews to monitor the take-up and effectiveness of the funding; and
- Create database of industry players and their financial information to improve matchmaking opportunities for funding and corporate deals.

ENABLER 2**Foster talent development and attraction**

In the pursuit of the Missions involving higher value-added activities, innovation and new growth opportunities, Malaysia will require a large pool of high-skilled talent. Malaysia's workforce boasts high education attainment levels and proficiency in the English language. It is critical for Malaysia to capitalise on these strengths and continue to foster the development of local talent apart from attracting the right foreign talent to cater to the industry's requirements.

It is important to upskill and reskill current talent and develop and guide new talent into high value job pathways. The ambition is to elevate the skill level of all Malaysians, providing the opportunity to command high wages. This helps strengthen Malaysia's middle-class society.

Talent mismatch is a key challenge in Malaysia, where trainings provided are not aligned with the industry's requirements. Malaysia aims to close the gap, creating more relevant higher-skilled talent.

The Government emphasises on public-private partnership model for talent development. To achieve this, five Action Plans have been formulated:

**ACTION PLAN
E.2.1****Leverage mynext and MYFutureJobs for strategic workforce planning to address long-term demand-supply requirement**

Recognising the challenge on talent mismatch, establishing a strategic workforce planning will address the long-term talent demand-supply requirement. The strategic workforce planning forecasts the talent-supply based on current education and training and the talent-demand based on the industry's requirements. This forecast model requires significant data as input.

The mynext and MYFutureJobs platforms can be leveraged to serve as the platform for the data gathering. The data that will be gathered covers:

- **Demand:** skills and number of talents required from the industry players; and
- **Supply:** education, internships and training programmes provided by the higher learning and TVET institutes.

The mynext and MYFutureJobs platforms will be the holistic employment platform for the nation that serves the purpose for national workforce planning, targeting different segments of the workforce.

MOHR and MOHE, will lead this action plan with the support of TalentCorp, PERKESO, Human Resource Development Corporation (HRD Corp), National Employment Council (NEC), and MITI. The following activities will be conducted:

- Assess the talent supply from the workforce and learning institutions such as government and private universities and colleges and TVET institutions;
- Assess the demand for talent from the industry by engaging anchor companies and developing estimates for talent needs of the future; and
- Align courses to meet the demands of key sectors, where necessary.

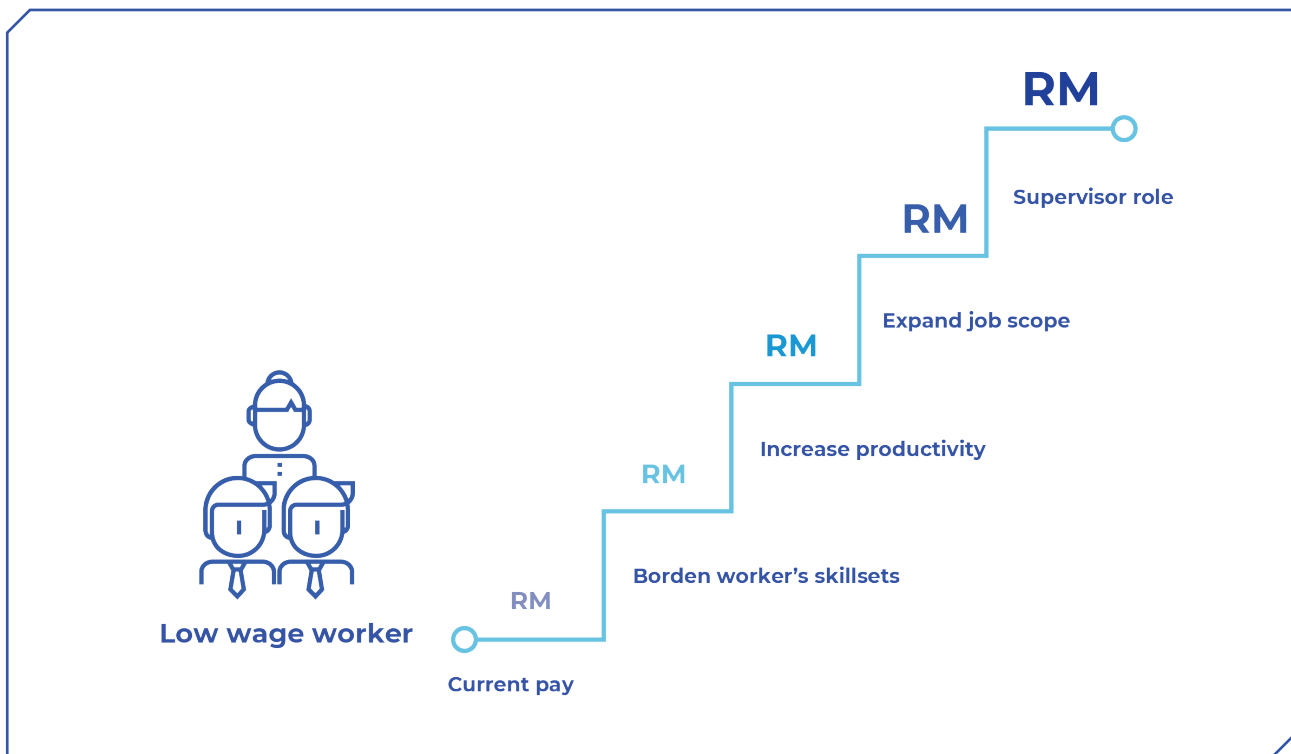
**ACTION PLAN
E.2.2****Introduce progressive wage system policy**

Wages play a key role in building the livelihood of the society. Malaysia has seen a shrinking middle-class society as wages have remained stagnant over the years. It has become increasingly difficult for Malaysia to attract and retain high-skilled talent as they move to countries that offer more attractive wages.

Currently, Malaysia has enforced the minimum wage system, which imposes the same levels of minimum wages for workers from all sectors. While this offers social protection, there is great opportunity to introduce an intervention to support the wage increase in strengthening Malaysia's middle-class society.

The Government, with the leadership of KE, is exploring the potential to introduce a progressive wage system (PWS) policy to increase the wages in Malaysia. With the PWS, employees are classified into different skill level, each with a baseline wage level.

Figure 8.6: Progressive Wage System



The PWS maps out a career pathway for employees to improve skills, earn fair wages and enhance career prospects. It incentivises employees to upskill and acquire more experience to progress to higher levels and wages. In turn, that will lead to higher productivity for employers.

KE and MOHR will lead this action plan with the support of MITI, MOF, MPC and MIDA. The following activities will be undertaken:

- Conduct a study on PWS by assessing its impact in benchmark countries and potential challenges in adoption;
- Engage selected industry players to receive feedback in the short-term impact of PWS on businesses and support required to facilitate adoption; and
- Develop a plan to implement PWS in Malaysia, including measures to facilitate adoption.

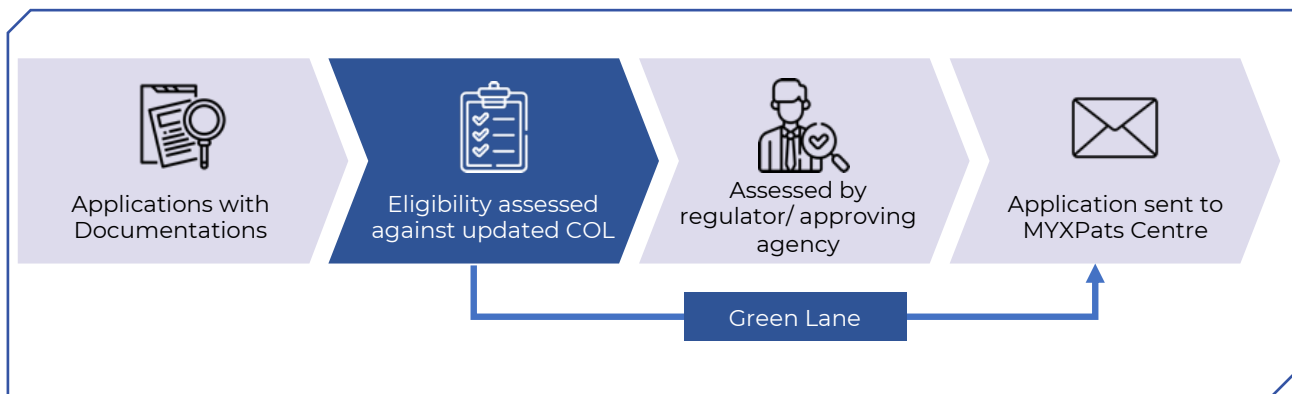
**ACTION PLAN
E.2.3****Improve policy to enable fast and hassle-free access to high-skilled foreign talents**

As Malaysia moves towards higher value-added activities and build an innovation-led economy, the industry needs highly specialised talents with niche capabilities that Malaysia may not currently have. The Government is committed to ensure the availability of sufficient high-skilled talent to propel the local industry. Malaysia aims to attract high-skilled foreign talent to support the demand for talent in certain critical jobs, where the supply of local skilled talent is limited.

In line with this, TalentCorp currently provides a special visa called the Residence Pass-Talent for eligible foreign talent, where successful applicants are given a 10-year work permit.

Malaysia will further facilitate access to high-skilled foreign talent by introducing a green lane process for specific critical jobs to support Malaysia's strategic industrial objectives. The Malaysia Critical Occupation List (MyCOL) developed by MOHR and TalentCorp will be the key reference for the critical jobs eligible for the green lane. This list will be reviewed and updated on a more frequent basis.

Figure 8.7: Green Lane Process for Specific Critical Jobs



The green lane will be applicable for the highest tier of Employment Pass (EP) applications and will include additional benefits such as shortened application process and accelerated approvals for dependents. The introduction of this green lane will ease access to foreign high-skilled talent and enable Malaysia to quickly attract top global talents.

MOHR and TalentCorp, will lead this action plan, with the support of Ministry of Home Affairs (KDN), Immigration Department and MITI. The following activities will be conducted:

- Identify critical occupations for which the green lane applies;
- Enhance the current national single window for foreign talent to incorporate the green lane application flow; and
- Implement the green lane and develop programmes to socialise the enhanced single window for foreign talent.

**ACTION PLAN
E.2.4****Expand TVET programmes for high-skilled jobs in critical sectors**

Malaysia is committed to strengthen the quality of local talent to support the industry. TVET is a crucial pathway to provide technical education and elevate the skills level of Malaysia's local talent pool. TVET programmes in Malaysia are offered at certificate, diploma and degree levels. However, the TVET take up rate has reduced by 11.6 per cent CAGR between 2018 and 2020.

The Government will work closely with the private sector to enhance the quality of the TVET programmes. The Penang Skills Development Centre (PSDC) Model will be a benchmark, which includes:

- Reducing skills mismatch by working closely with industry partners to identify the skill needs of the workforce;
- Offering flexibility via a variety of class options (full-time, part-time and online courses); and
- Offering career support for job search, job placement opportunities, resume writing and interview skills.

The National TVET Council (MTVET) will lead this action plan with the support of MOHR, MOHE, MITI, TalentCorp and Department of Skills Development (JPK). Selected industry players will be engaged for input to develop TVET programmes for the critical sectors and offer job placement opportunities. The following activities will be conducted:

- Identify critical high-skilled jobs at risk of insufficient talent;
- Co-develop TVET syllabus with industry players from critical sectors; and
- Build an attractive brand for the TVET programmes by socialising the benefits in terms of high-skilled job opportunities, wages and role in the industrial development.

**ACTION PLAN
E.2.5****Raise profile of high-tech manufacturing career to attract interest in STEM subjects**

Similarly, STEM education plays a critical role to advance growth in technology and innovation. Driving economic complexity, tech up and digital innovation and decarbonisation transition are enabled by STEM.

Malaysia targets 60 per cent STEM enrolment by 2025. However, STEM enrolment has been on a negative trend, with a reduction of 5.5 per cent CAGR between 2018 and 2020. This can be attributed to several negative perception of STEM:

- Difficult course and subjects;
- Adverse job prospects; and
- Low wages.

Raising the profile of high-tech manufacturing career can attract students' interest in STEM subjects, improving take-up. MOHE and MOE will lead this action plan, in collaboration with MITI, TalentCorp, JPK and selected industry players. The following activities will be conducted:

- Highlight potential for high wages depending on sector, skills and qualification;
- Socialise success stories of STEM professionals;
- Socialise the role of STEM in the making of exciting everyday products e.g. drones, smartphones, Virtual Reality and Augmented Reality headsets; and
- Boost the reputation and brand strength of local manufacturing companies as desirable workplaces.

ENABLER 3**Establish best-in-class investor journey for ease of doing business**

It is imperative for Malaysia to improve the ease of doing business to strengthen its position as a competitive investment destination. Improving the ease of doing business enables Malaysia to attract new FDIs and encourage long-term reinvestments. This strategic approach can potentially reverse the net capital outflow from the country.

FDIs indirectly increase DDIs as MNCs based in Malaysia source products and services from local companies. This uplifts the capacity and capabilities of local companies and contributes to Malaysia's strengthened participation in the global value chain.

It is crucial for Malaysia to improve the ease of doing business to ensure that the investment projects are attracted and expeditiously implemented, leading to the realisation of benefits which can be reaped by Malaysia's economy such as creation of high-value jobs for Malaysians.

Among the areas which need to be addressed to improve the ease of doing business are:

- Strengthening Government synergy to simplify and speed up business processes;
- Enhancing communication of information to investors; and
- Providing improved fiscal and non-fiscal incentives.

To achieve this, four Action Plans have been formulated:

**ACTION PLAN
E.3.1****Establish a unified investment strategy and align investment evaluation to new parameters under NIA**

Investments have contributed significantly to Malaysia's economic and industrial development, particularly by spurring the creation of robust ecosystems for entrepreneurship, technology and innovation. Over the years, Malaysia has implemented initiatives to facilitate the transfer of knowledge and technology from foreign investments to local companies, thus building the capabilities of the local industries.

Malaysia continues to pursue the development of its local industries in line with the shifting global trends and evolution of technology.

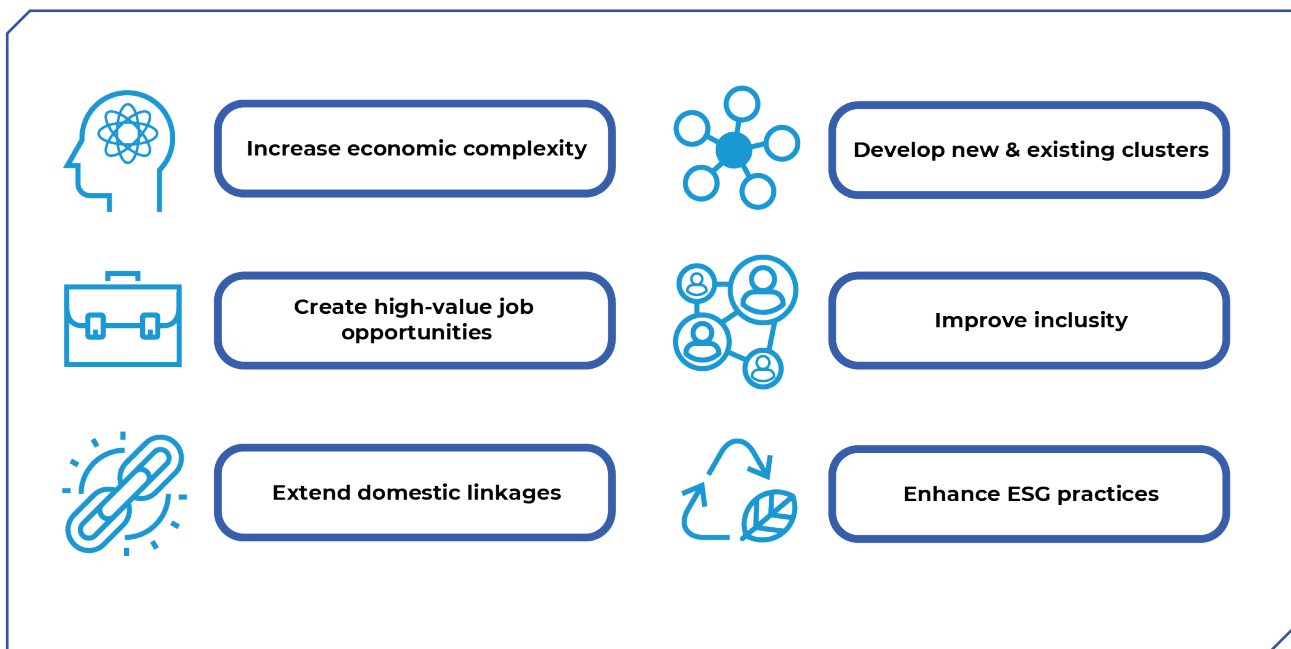
The global geopolitical situation which has driven companies to adopt a "Plus One" strategy and consider Southeast Asia as a preferred investment destination, provides Malaysia with the prime opportunity to attract high-quality investments.

Malaysia's industrial direction towards becoming knowledge-intensive and innovation-driven serves as the guiding position for the Government's investment policy decisions and initiatives. Moving forward, the Government will strengthen its synergy across Ministries and Agencies in driving towards the National Investment Aspirations (NIA) as the country's unified development goals.

Firstly, the unified investment strategy will require a legislative refresh of the Promotion of Investment Act (PIA). The current PIA's promoted areas are sector-centric, overlapping and limiting for reinvestments. The PIA will shift from sector-centric approach to Mission-based approach in line with national priorities such as RE and digital economy. Apart from that, the reinvestment scope is targeted to expand to include more thematic opportunities, encouraging investors to intensify reinvestments. The refresh of the PIA will be undertaken in line with the tax incentive review undertaken by MOF.

Secondly, the Government will review the investment evaluation criteria leveraging the cost-benefit analysis (CBA) to align to the NIMP 2030 Goals (aligned to the National Investment Aspiration's pillars). This will ensure that the investments attracted into Malaysia contribute towards achieving the desired end outcomes. Another key driver is the Government synergy across various Ministries and Agencies in the investment process. It is important to form a holistic view across all stakeholders to align on the national priorities. This will require for a review of the KPIs to strengthen alignment across the Ministries and Agencies.

Figure 8.8: Parameters under NIA



The action plan will be led by MITI in collaboration with key stakeholders such as MIDA, MOF, LHDN and KE.

ACTION PLAN E.3.2

Harmonise and streamline functions and KPIs across IPA landscape

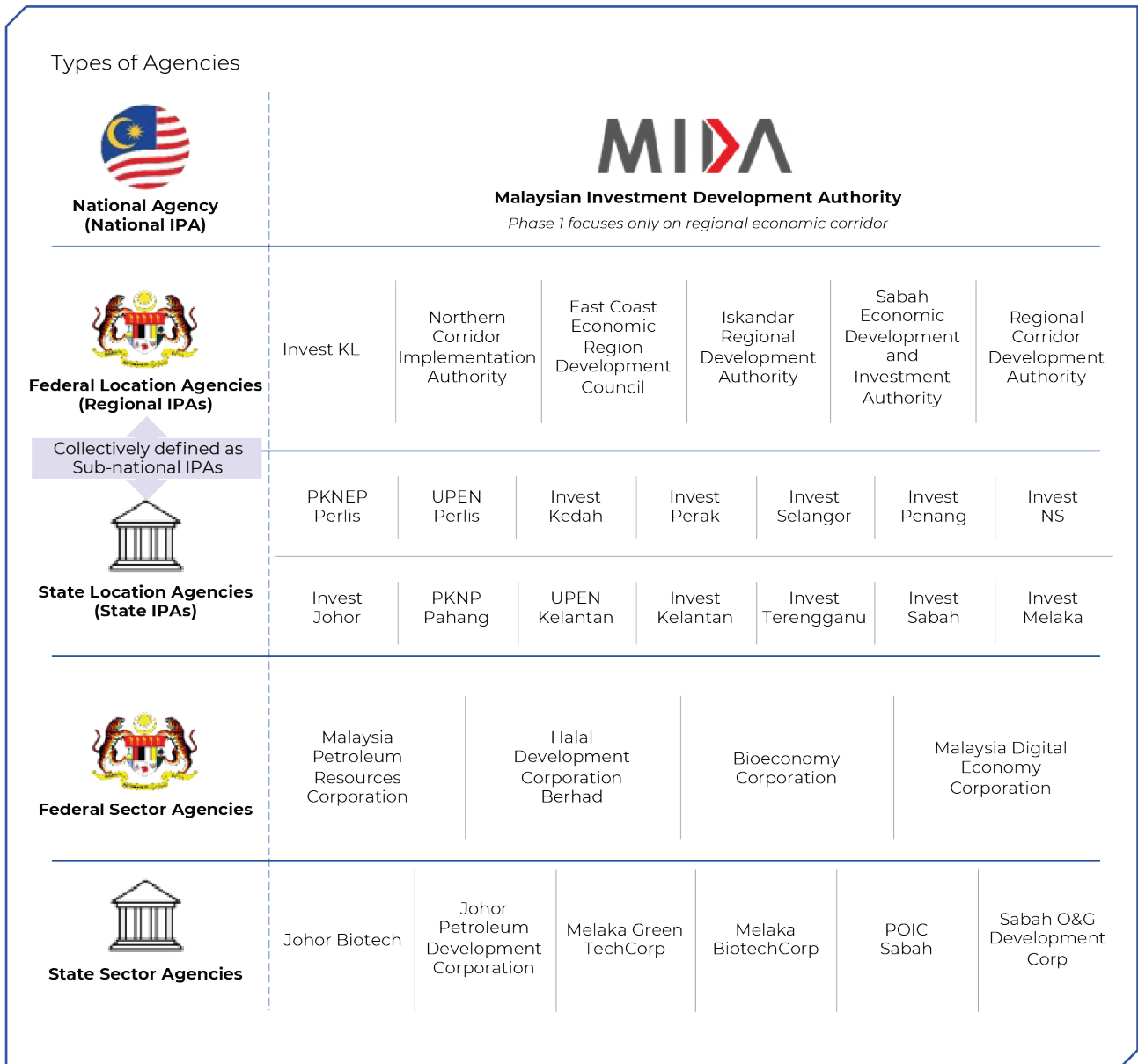
Malaysia has recognised the challenge in its investment promotion landscape, which comprises over 30 IPAs, each with their own direction and potential overlapping responsibilities. Malaysia aims to streamline the roles and responsibilities of all IPAs.

Through this:

- MIDA is mandated as the national body to centralise investment promotion and marketing;
- Project Implementation and Facilitation Office (TRACK), formerly known as Project Acceleration and Coordination Unit (PACU), a unit under MIDA, will be empowered to accelerate investment implementation; and
- The functions of subnational IPAs will be streamlined to support the investment ecosystem.

Apart from that, there is a need to streamline KPI across IPAs to drive synergistic value creation in the investor journey. The National Committee on Investment (NCI) is tasked to redesign a new set of KPIs to encourage collaboration amongst IPAs.

Figure 8.9: Entities Identified as Carrying Investment Promotion Mandates



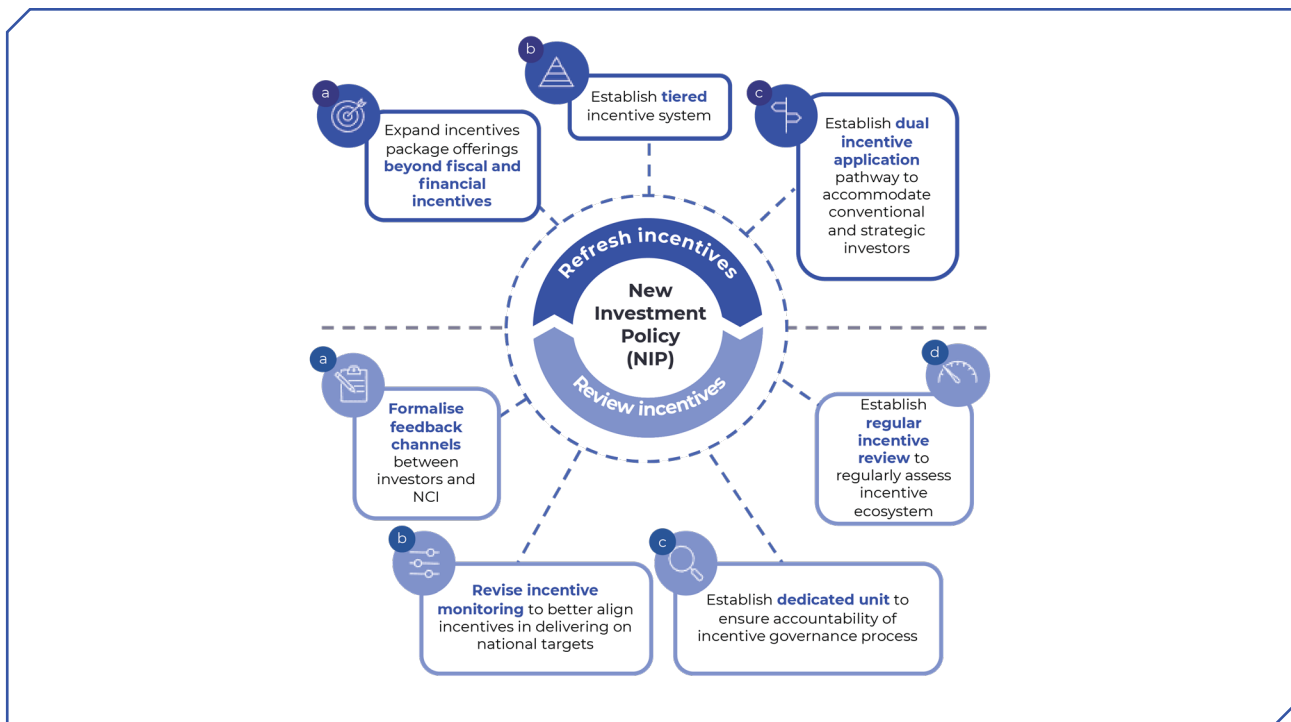
The action plan will be led by MITI in collaboration with key stakeholders such as MIDA and subnational IPAs.

**ACTION PLAN
E.3.3****Review and design competitive, agile and relevant incentives**

The incentive mechanism of the Government will be improved to ensure that the incentives offered remain attractive for investors and approvals are accelerated to speed up investment implementation. This initiative will be undertaken in line with the tax incentive review led by MOF and entails the review of incentives to:

- Strengthen the competitiveness of the existing incentives; and
- Ensure the incentive outcomes are better aligned with national targets (NIAs).

Figure 8.10: Incentive Mechanism



Three actions will be undertaken:

- **Review and design competitive, agile and relevant incentives**
- Investors seek broader value propositions when making investment decisions, with non-fiscal factors such as the business regulatory environment as well access to talent becoming increasingly important considerations. Therefore, the Government will focus on incorporating non-fiscal incentives, such as easing access to talent and creating simplified and expedited business processes to facilitate project implementation. This is especially important due to impending introduction of the Global Minimum Tax (GMT).
- **Establish tiered incentive system**
- A tiered incentive system acts as a funnel to prioritise national resources based on investor contribution to the national agenda. Each tier has incremental access to more generous benefits e.g. exemptions on import duties and income taxes, talent visa, etc.
- **Establish dual incentive application pathway**
- Conventional investments – Introduce self-assessment mechanism to allow incentives below a certain value to be disbursed without requiring further approval from relevant authorities.
- Strategic investments – National Committee on Investment (NCI) to tailor the right set of incentives that are aligned to CBA tools.

To review incentives, four actions are required:

- Formalise feedback channels between investors and NCI;
- Review incentive monitoring to align incentives in delivering national targets;
- Establish dedicated unit to ensure the accountability of the incentive governance process; and
- Establish regular incentive review to assess the incentive ecosystem.

The action plan will be led by MITI in collaboration with key stakeholders such as MOF, MIDA and KE.

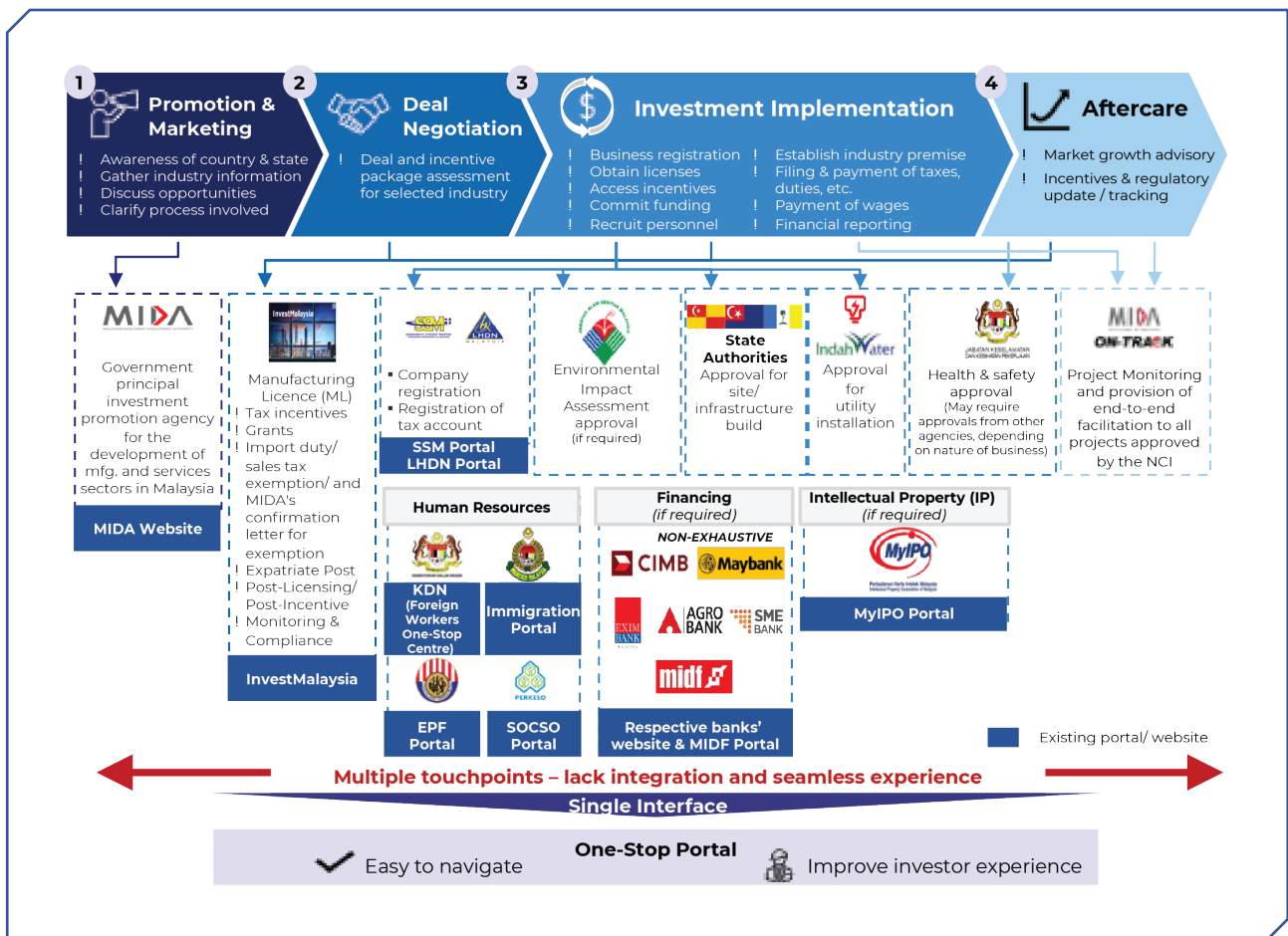
ACTION PLAN E.3.4 **Improve One-Stop Portal for seamless investor experience**

Malaysia is committed to creating a seamless and efficient journey in doing business for investors. Currently, throughout the investor’s journey, there are multiple touchpoints requiring the investors to access different systems, affecting their experience.

A One-Stop Portal (OSP) will be established as a central platform for investors across the investor journey by:

- Integrating different systems into a single interface;
- Covering end-to-end investment processes which includes, among others, set-up, taxation, legal advisory, talent recruitment, financing, exporting and IP registration;
- Customising to the respective investors’ journey; and
- Acting as a reliable source for information and for problem resolution.

Figure 8.11: Investors’ Journey in the Manufacturing and Selected Services Sectors



The action plan will be led by MIDA in collaboration with key stakeholders, which include but are not limited to, MITI, MPC, SOCSO, Royal Malaysian Customs Department (RMCD), MATRADE, SSM, LHDN, KPKT, EPF, MIDF, other financial institutions, MyIPO, State Authorities and MOF.

ENABLER 4

Introduce whole-of-nation governance framework

The success of the NIMP 2030 hinges upon an integrated whole-of-nation approach, where Government Ministries and Agencies synergise and align towards establishing a robust ecosystem that covers:

- High-skilled talent;
- Robust infrastructure, including industrial facilities;
- Investment facilitation;
- Financing;
- Digital connectivity;
- Balanced regional development; and
- Vibrant RDCI ecosystem.

To achieve this, three Action Plans have been formulated:

ACTION PLAN E.4.1

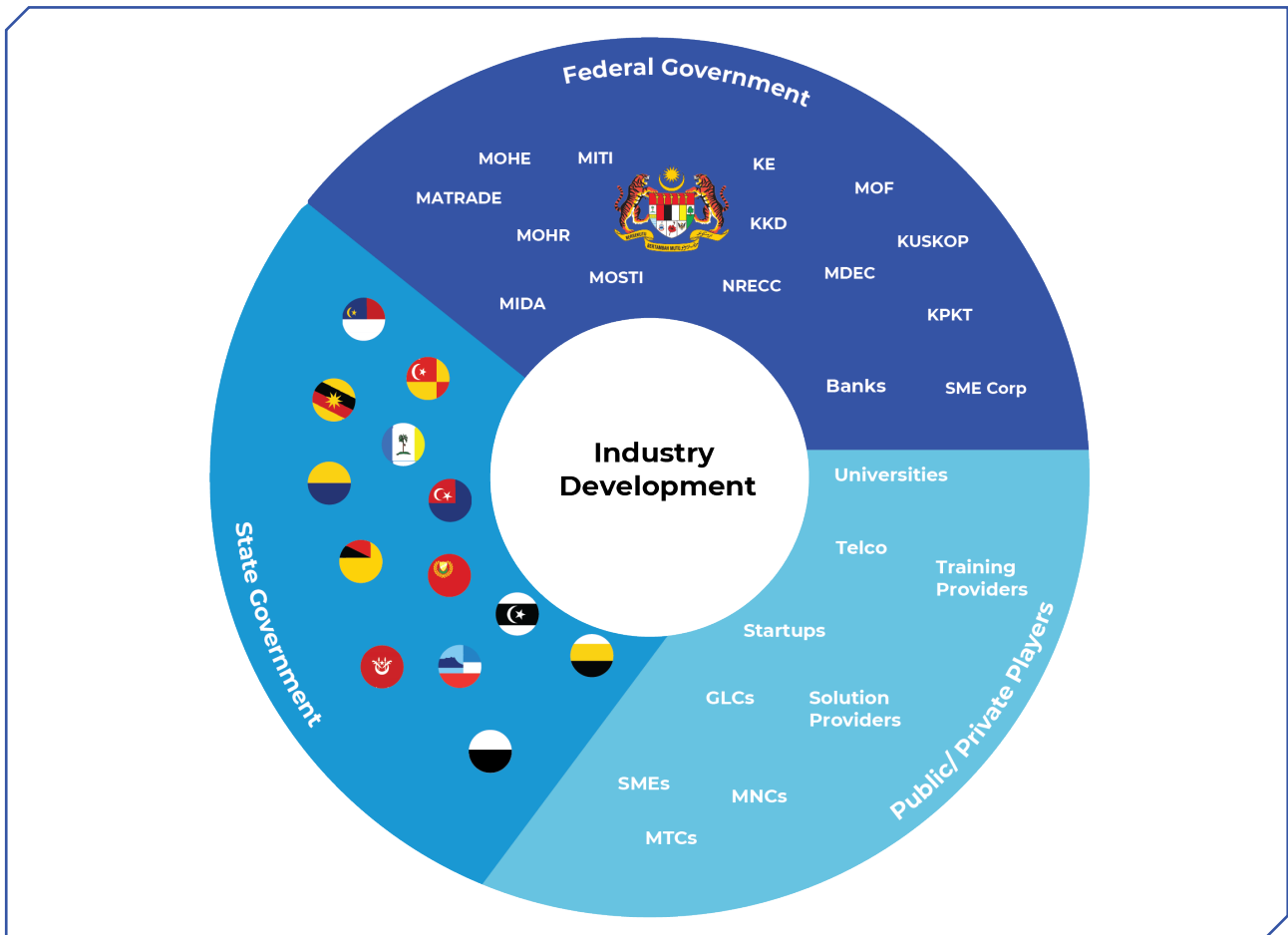
Establish public-private collaborative councils

Collaborative councils comprising stakeholders from the Federal Government, State Government and public and private sectors will be established to ensure the timely and effective implementation of the NIMP 2030.

The objectives of establishing the public-private collaborative council are to:

- **Promote collaboration**
 - leverage strengths and expertise to ensure the success of the NIMP 2030;
- **Foster co-ownership in the implementation of the NIMP 2030**
 - drive accountability and transparency; and
- **Spur proactive and continuous flow of two-way feedback**
 - ensure alignment to Goals, effective communication and swift decision-making.

Figure 8.12: Industry Development



This initiative will be undertaken through the collaboration of MITI along with the Federal Government, State Governments and public or private sector players and involve the following activities:

- Define the terms of reference (TOR) that outline the scope, objectives and guidelines for the NIMP 2030 governance;
- Identify the stakeholders and representatives from the Federal Government, State Government and public or private sector players to be part of the committee;
- Design the governance structure with clearly defined roles and responsibilities; and
- Determine the meeting and reporting cadence with clear agendas outlined.

**ACTION PLAN
E.4.2**

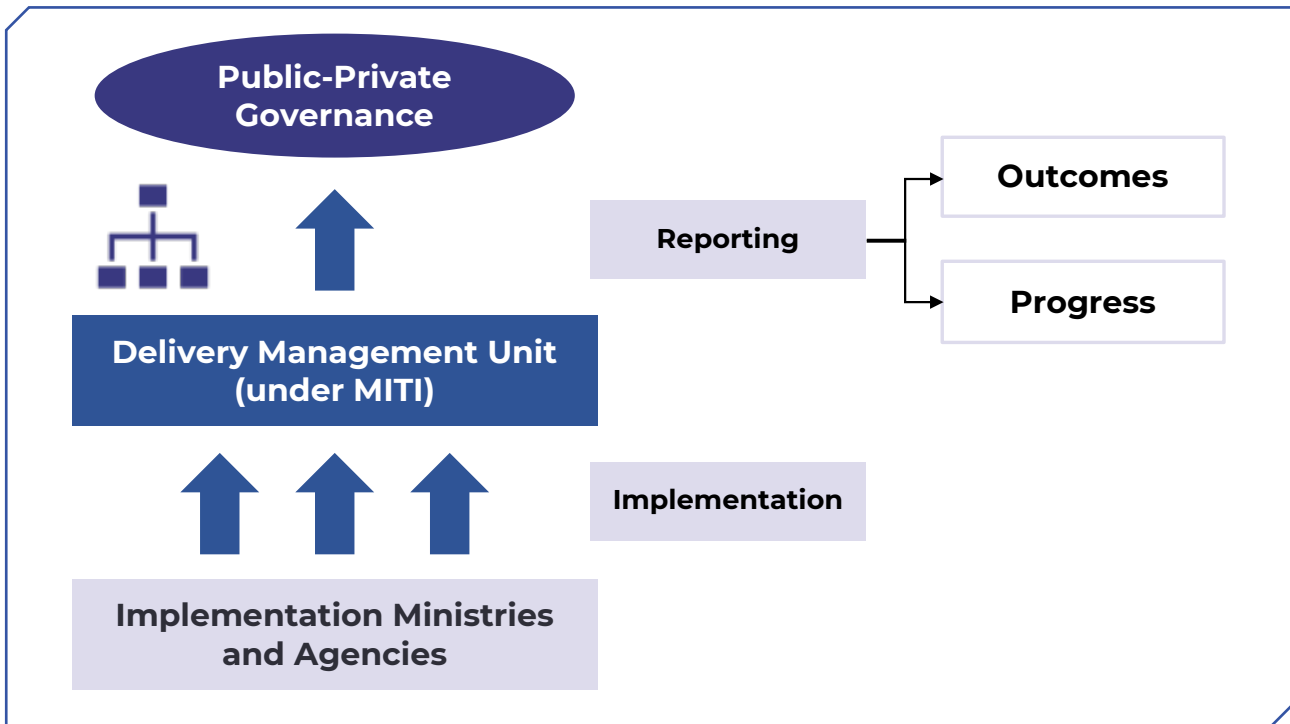
Set up NIMP 2030 Delivery Management Unit

MITI will establish a NIMP 2030 Delivery Management Unit (DMU) to coordinate all efforts across stakeholders and ensure the timely implementation of the NIMP 2030.

The roles of the DMU will be to:

- Track and monitor progress of the NIMP 2030 in meeting the Goals and targets;
- Mitigate risks and resolve issues effectively and efficiently;
- Facilitate cross-collaborations between Ministries, Agencies, State Government and industry players;
- Ensure alignment to other national policy plans;
- Develop and execute an effective communication plan; and
- Develop a digital dashboard for effective tracking and monitoring.

Figure 8.13: NIMP 2030 Delivery Management Unit Structure



The setup of the NIMP 2030 DMU is critical and requires strategic planning. The following activities will be conducted:

- Define the purpose and objectives of the DMU to ensure alignment to the NIMP 2030 Goals and targets;
- Establish the DMU structure and role, with the right resource expertise to drive the NIMP 2030; and
- Ensure tools and platforms are available for effective project management and communication.

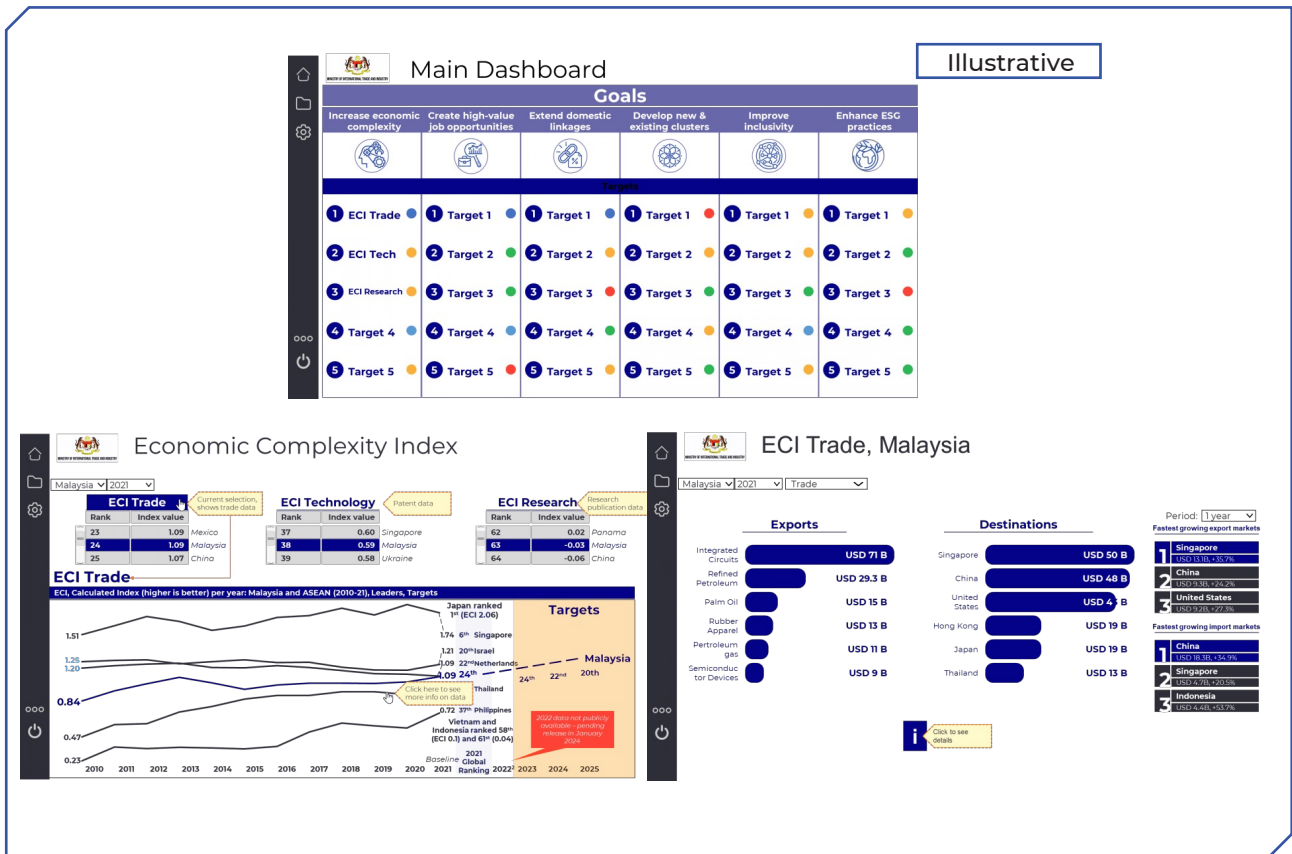
ACTION PLAN E.4.3

Develop NIMP 2030 dashboard system

A single interface digital dashboard will be developed to track and monitor the progress of the NIMP 2030. The digital dashboard will contribute to:

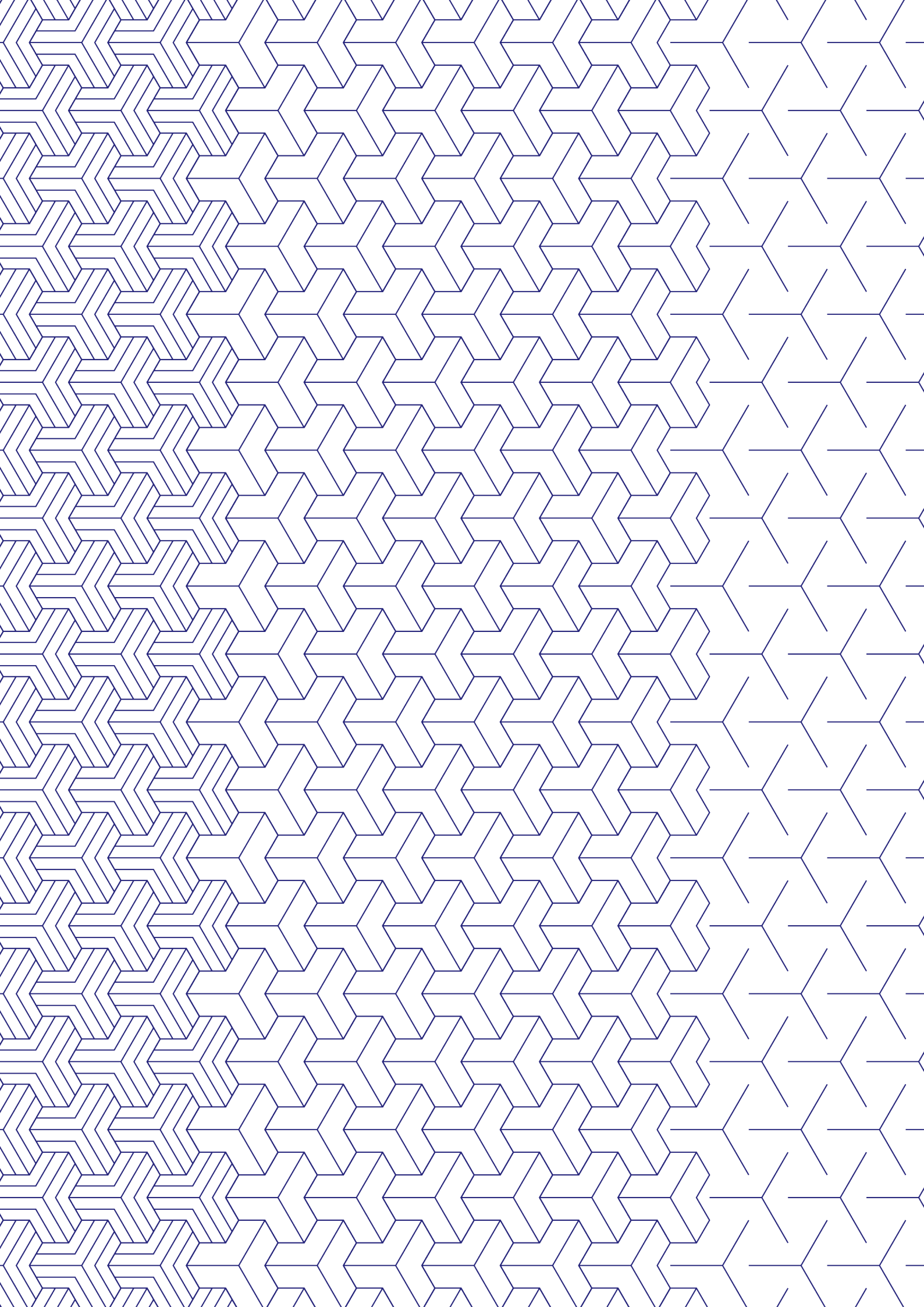
- **Real-time visibility**
 - Provide real-time information allowing for proactive decision-making and timely intervention;
- **Effective performance tracking**
 - Track and measure performance against pre-defined targets and objectives with visual presentation to assess progress;
- **Data-driven decision making**
 - Provide access to data that facilitates data analysis, contributing to making informed decisions based on real-time insights; and
- **Transparency and accountability**
 - Enhance visibility on progress and performance of the NIMP 2030 to create a sense of ownership in ensuring the projects are executed successfully.

Figure 8.14: NIMP 2030 Dashboard



This action plan will be led by MITI and supported by the relevant stakeholders including the Federal Government, State Government and industry players. The following activities will be conducted:

- Clearly define the metrics and parameters to measure the targets and progress of the NIMP 2030;
- Identify data sources from the relevant Ministries and Agencies, State Government, as well as industry players to track the implementation;
- Develop the dashboard considering the following:
 - User-friendly interface and visualisation for ease of data analysis;
 - Back-end infrastructure to collect data from various sources, process and store data from various Ministries and Agencies; and
 - Security and privacy measures to safeguard data and information from the dashboard.
- Deploy and maintain the dashboard – the deployment will include communication with all relevant stakeholders on how to leverage the dashboard.





9

SMALL AND MEDIUM ENTERPRISES (SME) INDUSTRIALISATION



OVERVIEW

Malaysia's SMEs including micro enterprises as seen in the past, have always played an important role in promoting economic growth, employment and income. SMEs in Malaysia are diverse, ranging from traditional businesses to growing sectors such as manufacturing, services and technological industries.

SMEs form the backbone of the Malaysian economy, creating roughly 97 per cent of total business establishments in the country. They account for a substantial portion of employment (circa 48 per cent) in Malaysia⁵⁵.

In the NIMP 2030, SMEs have a significant role, acting as key suppliers of local content, providing value chain and export support and contributing to overall regional development. These position them as crucial economic

contributor towards achieving the NIMP 2030 Goals and Missions.

The economic contribution by the SMEs is, however, not without challenges. There are several key areas that must be addressed, such as technical skills shortage, low technology adoption, access to financing and regulatory compliance.

SMEs contribute to about 38 per cent of the total GDP in Malaysia and 8.5 per cent of SMEs participate in the manufacturing industry. Labour productivity rate of SMEs is 20 per cent lower than the national average and this is largely due to the size of SMEs (78 per cent of total Malaysian MSMEs are classified as micro enterprises)⁵⁶.

ROLE OF SME IN THE NIMP 2030

Malaysian SMEs will play an integral role in fulfilling the Missions and Goals set in the NIMP 2030.

Advance economic complexity

SMEs form a crucial part in the value chain of larger industries. They support the larger corporations by acting as suppliers and subcontractors, providing components, raw materials and specialised services.

SMEs are a source to innovation in the economy. As the country moves towards climbing the value chain by providing higher value-added activities, SMEs are deemed to be more agile and flexible to introduce new products and specialised services. This will springboard Malaysia towards economic growth and diversification.

The NIMP 2030 will provide access for SMEs to support activities in new higher value-added opportunities in manufacturing and MRS. Efforts will be put in place to encourage SMEs to collaborate with LLCs and MNCs to deliver solutions at scale, addressing any resource limitations faced and bridging any technical gaps that may arise.

Tech up for a digitally vibrant nation

SMEs in Malaysia are poised to adopt digitalisation to improve labour productivity. There will be opportunities to develop innovative digital solutions that are scalable and agile to support the NIMP 2030's mission to transform Malaysia into a digitally-driven nation.

The NIMP 2030 will enhance technology adoption programmes for manufacturing SMEs to increase labour productivity and reduce reliance on foreign low-skilled labour. There will be programmes to develop technology solution providers for start-ups and SMEs to complement the need for local solution providers under the Technology Adoption Programme.

Push for Net Zero

Following the nation's pledge to achieve Net Zero carbon emissions as early as 2050, Malaysian SMEs are given the opportunity to contribute towards the country's sustainability goals and in adopting ESG principles. The opportunity will allow SMEs to become early adopters in areas such as RE, energy efficient solutions, eco-friendly manufacturing and green technologies.

To support this adoption, the NIMP 2030 can play a crucial role by providing policy frameworks, incentives as well as funding avenues specifically tailored for SMEs.

Safeguard economic security and inclusivity

SMEs play a critical role to ensure economic security and inclusivity. SMEs contribute to job creation, thus providing employment opportunities. Their close connection to surrounding communities fosters localised economic development. SMEs that are involved in higher value manufacturing and services draw higher demand in salary.

Businesses that are established in rural or less developed areas stimulate economic growth in those areas. The NIMP 2030 provides access to more opportunities for local production from the expansion to higher value-added activities to the integration into the larger supply chain.

The NIMP 2030 looks to ensure Malaysian businesses, particularly SMEs, are resilient to supply chain disruptions and external economic shocks to ensure long-term sustainability.

KEY SUCCESS FACTORS

The success of Malaysian SMEs in the manufacturing and MRS sectors rely on several key factors:

Skilled workforce and nurturing talent

SMEs attract, nurture and retain talents to be equipped with required technical expertise for the businesses. Continuous training and development programmes are vital to enhance the capabilities of employees and ensure they stay relevant to the industry's advancements.

Technological adoption and digitalisation

Embracing technology and digital tools can significantly enhance SMEs' competitiveness. This includes implementing productivity-enhancing software, exploring automation opportunities and embracing Industry 4.0 technologies, to improve operational efficiency, support innovation and enable SMEs to stay ahead in a digital-driven economy.

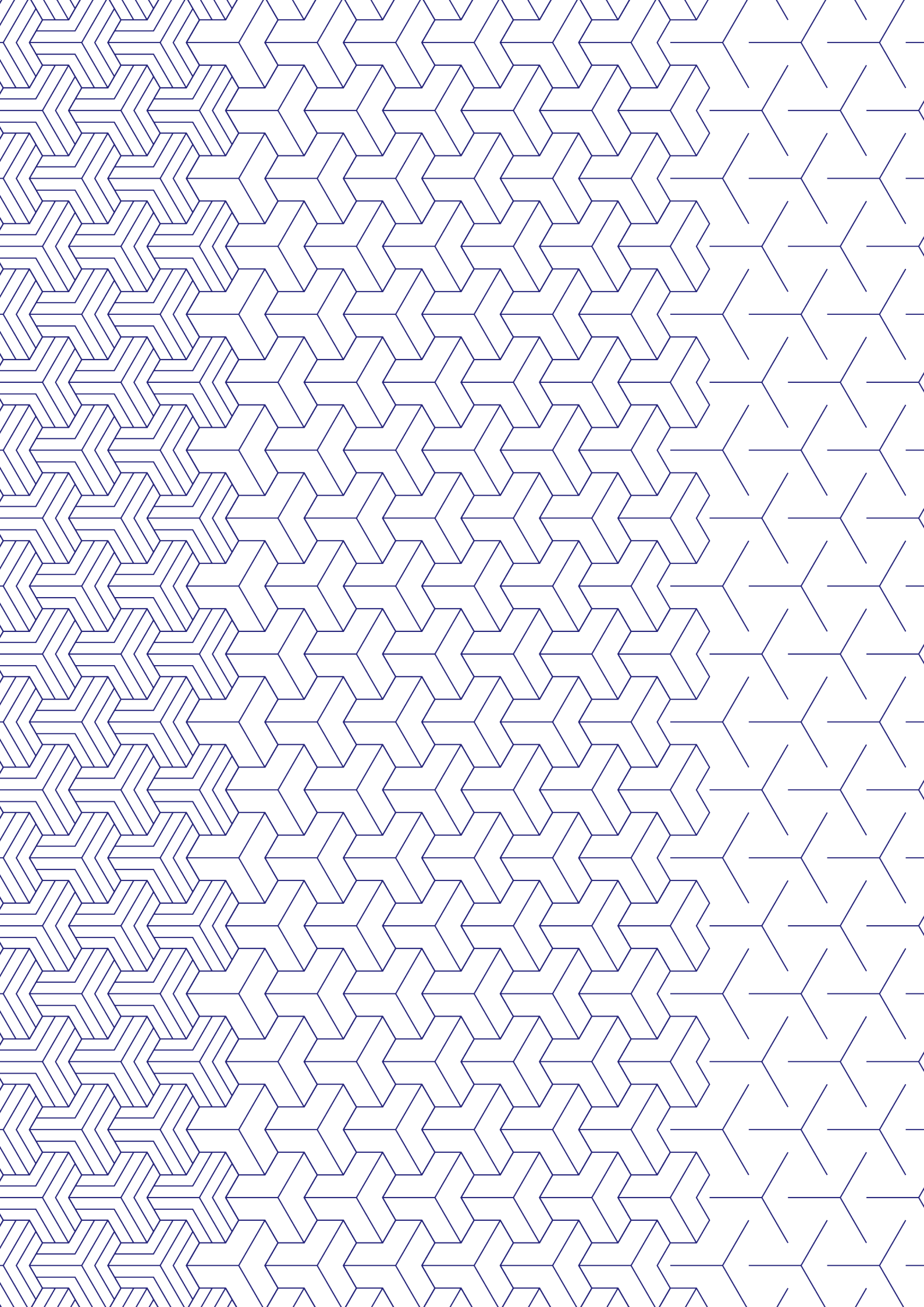
Networking and collaboration

By building strategic partnerships with suppliers, distributors and industry associations, SMEs can access new markets, share resources and leverage each other's strengths. Collaborative initiatives and knowledge sharing can foster innovation, enhance market presence and open doors to business opportunities.

Access to financing

Adequate financial support is essential to invest in equipment, technology upgrades and working capital. Access to various funding options, from capital market investments, financial institutions and government support programmes tailored to SMEs will enable SMEs to seize growth opportunities, expand their operations and stay competitive in the manufacturing and services sector.

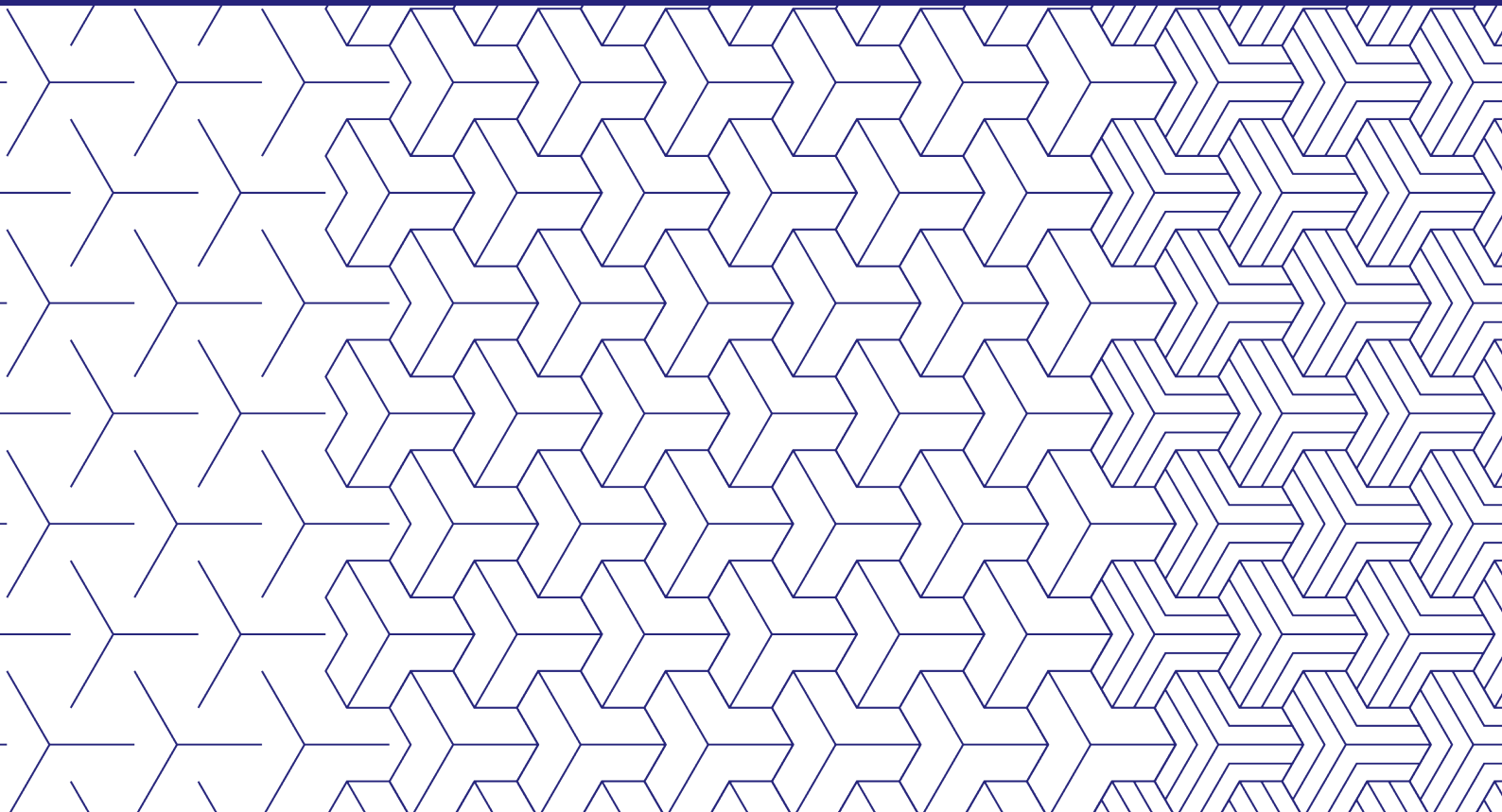
By focusing on these key success factors, the Malaysian manufacturing and MRS SMEs can position themselves for growth, innovation and long-term success. These factors, when combined with effective management, enable SMEs to thrive and contribute to the overall economic landscape of Malaysia.





10

IMPLEMENTATION – WHOLE-OF-NATION



Implementation is crucial to convert the NIMP 2030 into tangible actions and measurable outcomes. The NIMP 2030 adopts a whole-of-nation approach that involves both public and private to work collaboratively to achieve the Vision and Goals. This inclusive approach promotes visibility and transparency throughout the implementation of the NIMP 2030. All stakeholders will have shared accountability to ensure the success of the NIMP 2030 implementation.

The whole-of-nation implementation approach has the following success factors:

Accountability and responsibilities:

Both public-private stakeholders will be directly involved in the implementation and governance of the NIMP 2030. It is important to define the respective accountability to ensure collective efforts are put in for the success of the NIMP 2030.

Transparency:

Periodic reporting of the NIMP 2030 progress will provide transparency in the implementation of Strategies and Action Plans.

Linkages with multiple stakeholders:

Consistent and effective communication for sharing of information is key to ensure stakeholders are always informed, made aware and aligned. Engagement with relevant stakeholders is crucial to nurture collaboration across sectors and help leverage diverse expertise, perspectives and resources, which can then lead to effective solutions.

Execution with discipline:

It is imperative for the implementation of the NIMP 2030 Action Plans to be undertaken with strict discipline to meet the milestones set. This is to ensure timeliness of the implementation to meet the overall Vision and Goals.

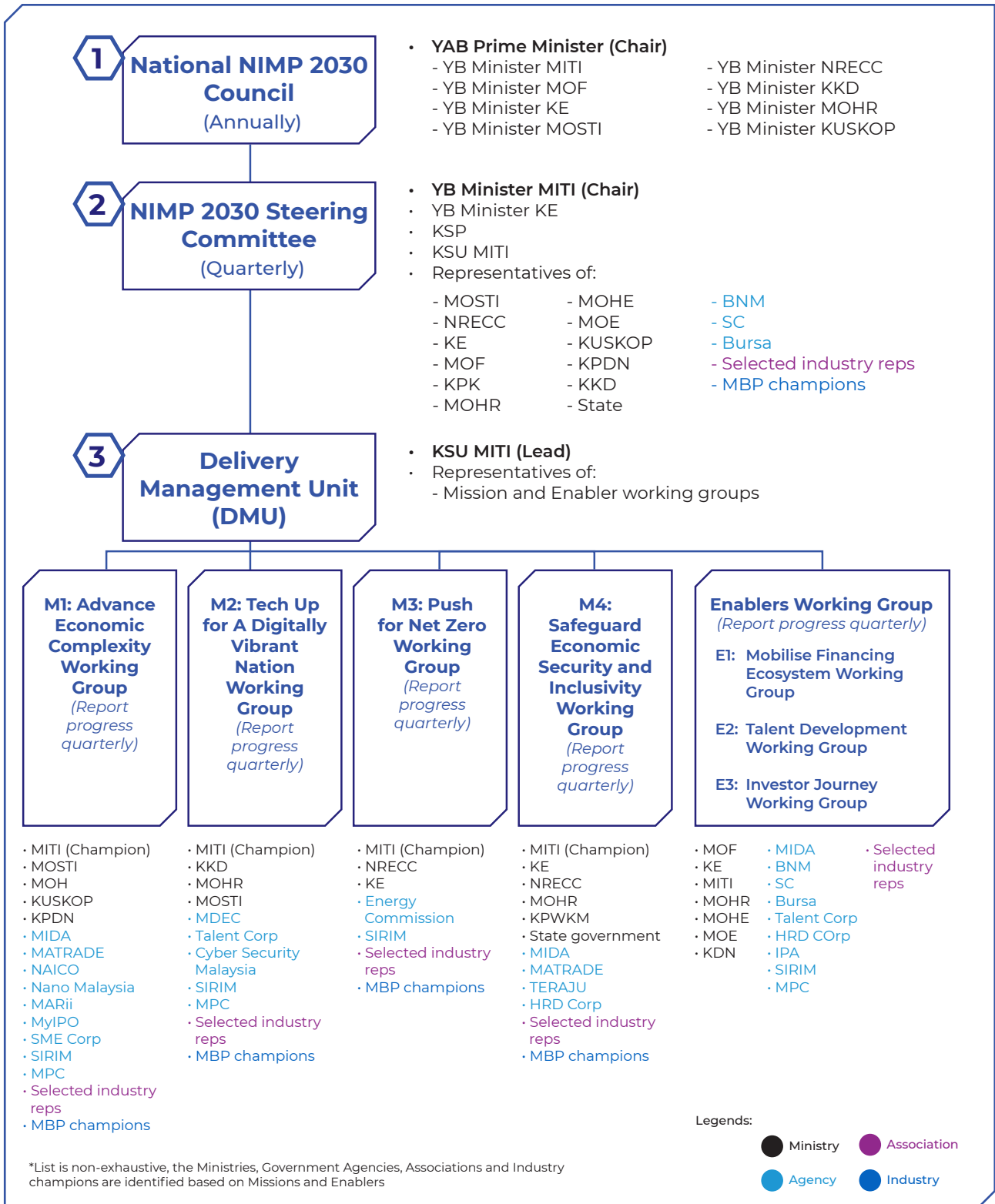
This chapter focuses on the approach of implementation, governance structure, monitoring mechanism, communications with stakeholders and implementation phases.

GOVERNANCE AND MONITORING MECHANISM

GOVERNANCE

The structure below outlines the governance for the implementation of the NIMP 2030:

Figure 10.1: Governance Structure of the NIMP 2030



National NIMP 2030 Council

A dedicated National NIMP 2030 Council, chaired by YAB Prime Minister, will be responsible for the successful achievement of the NIMP 2030. The council will be responsible for offering strategic oversight throughout the implementation period of the NIMP 2030.

The council will review industrial strategies undertaken for a whole-of-Government policy coherence, undertake tactical decisions and endorse the annual reports on implementation progress approved by the NIMP 2030 Steering Committee prior to disclosure to the public. This includes a mid-term review report will be prepared by the NIMP 2030 Steering Committee by the end of Phase 1 (2026).

NIMP 2030 Steering Committee

Participation of private sectors in the governance structure is essential to ensure close collaboration between the industry players and the Government. As such, the NIMP 2030 Steering Committee, chaired by YB Minister of MITI, will be established with permanent members of KE, MOSTI, *Ketua Setiausaha Perbendaharaan* (KSP), KSU MITI and two selected industry representatives. There will be other representatives on invitation basis.

The key responsibilities of the Steering Committee include the following:

- Provide advice and strategic direction on the industrial strategy and potential corrective actions;
- Make decisions and endorse recommendations from DMU on policies relating to the NIMP 2030;
- Resolve strategic issues on ecosystem and funding related matters;
- Assess relevance of 'industry deal' proposals in delivering Missions, with the support of technical experts;
- Approve the NIMP 2030 funding requests;
- Review NIMP 2030 progress, annual and mid-term review reports;
- Facilitate independent, expert evaluation of economic outcomes by the industrial strategies and policies and MBP deliverables – including by independent advisory groups for timely reviews of success metrics; and
- Facilitate collaboration across Ministries, States, Agencies and private industry players.

Delivery Management Unit (DMU)

The DMU will drive the implementation of the NIMP 2030 via the five Working Groups. As the Secretariat to the NIMP 2030 Steering Committee led by KSU MITI, the DMU will be monitoring all the progress of the NIMP 2030 delivery.

Key responsibilities of DMU are as follows:

- Track and monitor progress of Mission-based Strategies, Action Plans and Projects in delivering the NIMP 2030 Goals and targets;
- Facilitate to resolve and formulate recommendations for strategic and operational issues;
- Manage the NIMP 2030 funding related matters;
- Manage the Working Groups to ensure implementation timeliness;
- Manage the communication plan and implementation;
- Manage, track and report on utilisation of NIMP 2030 funds; and
- Prepare the annual report for the NIMP 2030.

Working Groups

The Working Groups will be responsible to implement the respective Strategies and Action Plans. Each Working Groups will be chaired by identified champions.

The Working Group's key responsibilities are as follows:

- Manage the implementation of the Strategies and Action Plans to achieve required milestones and deliverables;
- Resolve operational issues;
- Assess and evaluate the NIMP 2030 fund request; and
- Support DMU in preparing the progress report of the NIMP 2030.

MONITORING MECHANISM

The DMU will measure the performance in terms of timeliness and effectiveness of implementation. It will establish a dashboard to monitor achievements of the Targets as well as the progress of implementation. The dashboard will provide visibility on insights to assist in decision making. The Targets will require more granular data to evaluate the achievements. The DMU will work closely with DOSM to obtain the NIMP 2030 requirements to track along with collaboration with the different Ministries, Agencies and industry players.

Annual reports will be published periodically on the progress thus far to ensure the implementation is in line with the Vision and Goals and timeliness of the implementation against the planned timeline.

Mid-term review will be conducted and report will be generated and published on the challenges identified throughout the implementation in the first phase along with proposed potential mediation. Alignment will be made to ensure the implementation is on track.

COMMUNICATION

As the governance shifts towards a more inclusive approach, communication has played a vital role to ensure strategic objectives and Goals are aligned among the stakeholders. Cadence will be set for communication among the NIMP 2030 committees upon the launch of the NIMP 2030 by the Government. This can lead to a more efficient communication and thus expedite the implementation process.

The key components of the strategic communication plan include:

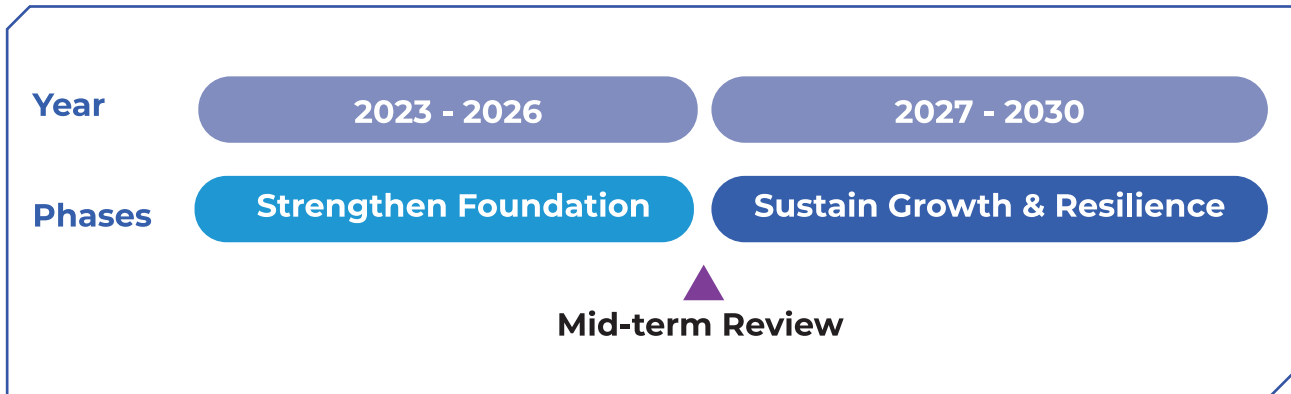
- **Establish open feedback channel:** Feedback channel will be set up to promote two-way communication via receipt of feedback from public and for DMU to respond to any suggestion, recommendation and clarification relating to the NIMP 2030. This will improve collaboration between the Government and public via active participation from the stakeholders;
- **Facilitate 'industry deals':** Industry will be provided opportunity to submit inputs and proposals on 'industry deals'. There will be a governance mechanism to assess the proposals and subsequently the Government will facilitate financing for the champions;
- **Increase transparency of the NIMP 2030's progress:** Periodic reporting and disclosure on progress of the NIMP 2030 will increase transparency of the NIMP 2030 in achieving the Goals and targets. Such can be achieved with the publication of progress via dashboard reporting;
- **Constant alignment on the policies relating to the NIMP 2030:** Policies and master plans developed by other Ministries will be aligned to ensure the implementation is in line with the Vision and Goals of the NIMP 2030 for the benefit of the *Rakyat*; and
- **Promote Malaysia as the preferred investment destination:** Awareness will be raised continuously to gain traction of the industry and public to support the implementation of the NIMP 2030.

Continuous engagement with the industry players will be undertaken to obtain time-to-time update and input from the industry. The recommendations gathered via any of the communication channels will be considered and fit in the Action Plans, where necessary.

PHASED APPROACH

The NIMP 2030 will be executed in two phases over the period of seven years to achieve the Vision and Goals.

Figure 10.2: Phases of the NIMP 2030



Phase 1 – Strengthen Foundation (2023 to 2026)

The immediate priority for the next three years until the end of 2026 is to strengthen the collaboration between the public and private sector and set the foundation for the implementation of the NIMP 2030. The focus of Phase 1 will be to:

- **Set up and institutionalise the governance:** The governance structure will be formalised and implementation processes will be defined (e.g. funding, industry collaboration and deals, etc.);
 - The NIMP 2030 Steering Committee will focus on unblocking systematic challenges related to talent, funding and ease of doing businesses.
 - The 5 Working Groups will be responsible for respective Action Plans and delivering the respective milestones.
- **Establish foundation stones for SMEs**
 - Manufacturing sector SMEs will be identified, qualified and onboarded to related programmes under the NIMP 2030; and
 - As nurturing the growth of SMEs requires time, it is imperative to commence involvement of SMEs at this stage to achieve full potential by 2030.
- **Set MBPs to take off:** MBPs are catalysed projects that will spur the economy and provide high impact to escalate Malaysia to high value-added activities and venture into green growth economy. It is crucial to ensure the required ecosystem are in place for the MBPs to achieve its success.

By the end of Phase 1, key foundation will be established. Most programmes will be deployed and continue its implementation. Ecosystems have started taking shape and regulatory reforms have been iterated with the industry and taken place. Most MBPs have begun implementation, while new MBPs will be explored. Malaysia's industries will be positioned to take the leap into Phase 2.

Mid-term review (end of 2026)

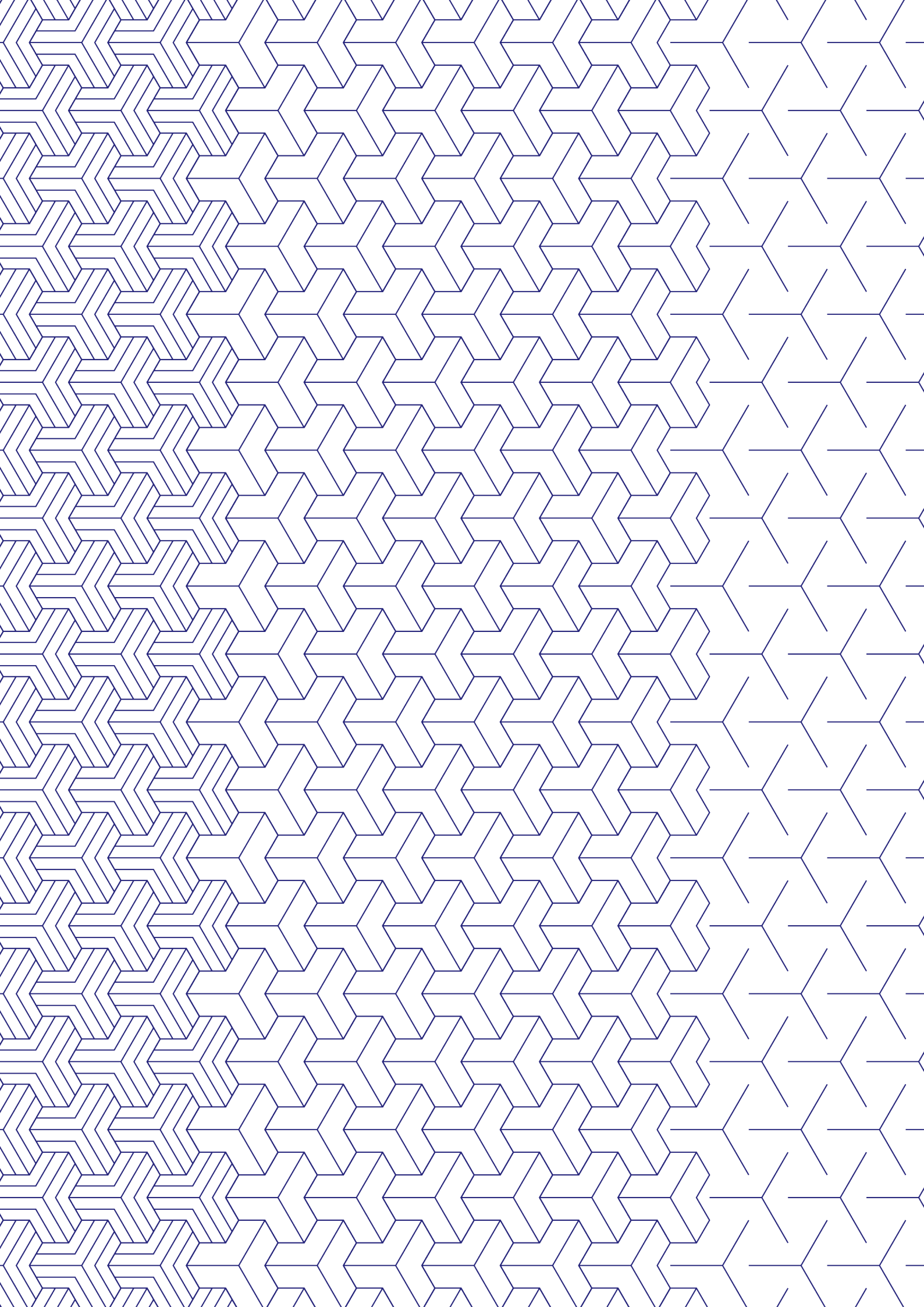
A mid-term review will be conducted by end of 2026 to review the targets and implementation progress of the NIMP 2030. It will provide the opportunity to assess any further global trends and recalibrate any gaps to achieve the NIMP 2030 Goals.

Phase 2 – Sustain Growth and Resilience (2027 to 2030)

The foundation set during the first phase will create the growth momentum of the nation's manufacturing industry. This phase of the NIMP 2030 will focus on:

- **Driving implementation at scale:** Both the public-private sectors will take necessary measures to intensify implementation to capture the growth opportunities apart from addressing any gaps from the mid-term review findings; and
- **Creating resilience:** Diversify the economic base, create stronger local linkages and strengthen global cooperation for greater economic resilience that enable sustained growth given any economic conditions.

By the end of Phase 2, Malaysia will be home to competitive industries with high economic complexity that create high income and skilled workforce with strong domestic ecosystem. Malaysia will be in the forefront of new industry clusters while existing clusters will be strengthened. This will contribute to a balanced and inclusive participation across the nation, doing so in a sustainable manner.





CONCLUSION

CONCLUSION

The NIMP 2030 is a comprehensive industrial master plan that sets a clear direction for Malaysia over seven years from 2023 to 2030. Its successful implementation is crucial to maintain the global competitiveness of the manufacturing industry and its related services in the country, with overall aim to bolster the country's GDP, create better job opportunities and increase the salary.

The NIMP 2030 underscores the significance of the whole-of-nation approach, where collaboration and unity are emphasised, breaking down silos that may impede progress. By rallying together, Malaysia can harness the collective strength of its public and private sectors as well as academia, propelling Malaysia towards achieving its Goals.

The NIMP 2030 Missions prioritise inclusive growth, recognising that no single entity can single-handedly drive this forward. Empowering local communities and supporting SMEs are essential to ensure economic success.

By investing in human capital and promoting research and innovation, Malaysia fosters a knowledge-driven economy that fuels sustainable growth and competitiveness on the global stage. The implementation of the NIMP 2030 emphasises transparency, open communication and collaborative governance.

As Malaysia rallies together, united in purpose, the NIMP 2030 Missions will pave the way for a vibrant future that benefit the Rakyat of Malaysia, particularly by expanding Malaysia's middle-class society. The NIMP 2030 Missions will catalyse economic success and social well-being, improving the quality of life of the people and ensuring a prosperous future for generations to come.

APPENDIX I: LIST OF POLICIES AND ROADMAPS

32 current and to-be-launched policies and roadmaps were assessed to the NIMP 2030 and are aligned across the government, which is essential for successful implementation.

No.	Policy/ Roadmap Name
1	Malaysia MADANI
2	Twelfth Malaysia Plan (RMKe-12)
3	New Investment Policy 2022-2027
4	National Trade Blueprint 2021-2025
5	Industrial Master Plan 3 2006-2020
6	Industry4WRD 2025
7	MyDIGITAL Blueprint
8	Malaysia Productivity Blueprint 2020
9	E&E Roadmap 2021-2030
10	Aerospace Industry Blueprint 2030
11	National Advanced Materials Technology Roadmap 2021-2030
12	National Science, Technology and Innovation Policy 2021-2030
13	MySTIE 10-10
14	National Automotive Policy 2020
15	Jalanan Digital Negara
16	National AI Roadmap 2021-2025
17	National Energy Policy 2022-2040
18	Malaysia Renewable Energy Roadmap
19	National Mineral Industry Transformation Plan 2021-2030
20	Tindakan Pembangunan Bumiputera 2030
21	Chemical Industry Roadmap
22	National Energy Transition Roadmap
23	RMKe-12 Mid-Term Review*
24	Research, Development, Innovation & Commercialisation Ecosystem Plan*
25	National IP Policy*
26	SME Development Roadmap*
27	SME Digitalisation Roadmap*
28	Long Term Low Emission Development Strategy*
29	Nationally Determined Contributions*
30	iESG Framework*
31	Hydrogen Economy and Technology Roadmap*
32	National Mineral Policy*

**Indicates policies and roadmaps yet to be launched*

APPENDIX II: GLOSSARY

Acronym	Definition
4IR	Fourth Industrial Revolution
AANZFTA	ASEAN-Australia-New Zealand Free Trade Area
ACE	Access, Certainty, Efficiency
ACFTA	ASEAN-China Free Trade Area
ADB	Asian Development Bank
AHKFTA	ASEAN-Hong Kong, China Free Trade Area
AI	Artificial Intelligence
AIFTA	ASEAN-India Free Trade Area
AJCEP	ASEAN-Japan Comprehensive Economic Partnership
AKFTA	ASEAN-Korea Free Trade Area
ASEAN	Association of Southeast Asian Nations
ATIGA	ASEAN Trade in Goods Agreement
BMS	Building Monitoring System
BNM	Bank Negara Malaysia
Bursa	Bursa Malaysia
CAGR	Compound Annual Growth Rate
CBA	Cost-Benefit Analysis
CBAM	Carbon Border Adjustment Mechanism
CCaaS	Carbon Capture-as-a-Service
CCCC	China Communications Construction Company Ltd.
CCS	Carbon Capture and Storage
CCU	Carbon Aapture and Utilisation
CCUS	Carbon Capture, Utilisation and Storage
CGC	Credit Guarantee Corporation
CHIPS Act	Creating Helpful Incentives to Produce Semiconductors Act
CIS	Commonwealth of Independent States
CMM	Capital Markets Malaysia
CO ₂	Carbon Dioxide
CoE	Centre of Excellence
COO	Certificate of Origin
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership

Acronym	Definition
CREST	Collaborative Research in Engineering, Science and Technology
DDI	Domestic Direct Investments
DMU	Delivery Management Unit
DOE	Department of Environment
DOSM	Department of Statistics Malaysia
DVX	Indirect Value-Added
E&E	Electrical and Electronics
EAP	Economic Accelerator Projects
ECF	External Crowdfunding
ECI	Economic Complexity Index
ECRL	East Coast Rail Link
EMS	Electronic Manufacturing Services
EP	Employment Pass
EPF	Employees Provident Fund
ESG	Environment, Social and Governance
ETS	Emissions Trading System
EU	European Union
EV	Electric Vehicle
FDI	Foreign Direct Investments
FMM	Federation of Malaysian Manufacturers
FTA	Free Trade Agreement
FVA	Foreign Value-Added
G2B	Government-to-Business
G2G	Government-to-Government
GDP	Gross Domestic Product
GERD	Gross Expenditure on Research and Development
GHG	Greenhouse Gas
GHP	Gambang Halal Park
GII	Government Investment Issue
GLIC	Government-linked Investment Company
GMT	Global Minimum Tax
GNI	Gross National Income
GRI	Global Reporting Initiative
GVC	Global Value Chain
HLI	Higher Learning Institution

Acronym	Definition
HRD Corp	Human Resource Development Corporation
IC	Integrated Circuit
ICT	Information and Communication Technology
IEO	Initial Exchange Offerings
IF	Intervention Fund
IMD	Institute for Management Development
IMF	International Monetary Fund
IMP3	Third Industrial Master Plan
Industry4WRD	National Policy on Industry 4.0
IOT	Internet-of-Things
IP	Intellectual Property
IPAs	Investment Promotion Agencies
IPPU	Industrial Processes and Product Use
ISSB	International Sustainability Standards Board
JENDELA	Jalinan Digital Negara
JMG	Jabatan Mineral dan Geosains
JPK	Department of Skills Development
KDN	Ministry of Home Affairs
KE	Ministry of Economy
KHIP	Kemaman Heavy Industrial Park
KKD	Ministry of Communications and Digital
KKR	Ministry of Works
KPDN	Ministry of Domestic Trade and Costs of Living
KPI	Key Performance Indicator
KPKT	Ministry of Local Government Development
KPWKM	Ministry of Women, Family and Community Development
KRI	Khazanah Research Institute
KSP	Ketua Setiausaha Perbendaharaan
KSU	Secretary General
KUSKOP	Ministry of Entrepreneur and Cooperatives Development
LCD	Liquid Crystal Display
LHDN	Inland Revenue Board of Malaysia

Acronym	Definition
LEAP	Leading Entrepreneur Accelerator Platform
LED	Light Emitting Diode
LLC	Large Local Company
M&E	Machinery and Equipment
MAMPU	Malaysian Administrative Modernisation and Management Planning Unit
MARii	Malaysia Automotive, Robotics & IoT Institute
MATRADE	Malaysia External Trade Development Corporation
MAVCAP	Malaysia Venture Capital Management Berhad
MBP	Mission-based Project
MCC	Microcrystalline Cellulose
MCCG	Malaysian Code on Corporate Governance
MCKILP	Malaysia-China Kuantan International Logistic Park
MCKIP3	Malaysia-China Kuantan Industrial Park
MDA	Medical Device Authority
MDEC	Malaysia Digital Economy Malaysia
MDV	Malaysia Debt Ventures Berhad
MGS	Malaysian Government Securities
MGTC	Malaysian Green Technology and Climate Change Corporation
MIDA	Malaysian Investment Development Authority
MIDF	Malaysian Industrial Development Finance
MIGHT	Malaysian Industry-Government Group for High Technology
MITI	Ministry of Investment, Trade and Industry
ML	Manufacturing Licence
MNC	Multinational Corporations
MOF	Ministry of Finance
MoFA	Ministry of Foreign Affairs
MOH	Ministry of Health
MOHE	Ministry of Higher Education
MOHR	Ministry of Human Resources

Acronym	Definition
MOHR	Ministry of Human Resources
MOSTI	Ministry of Science, Technology and Innovation
MOT	Ministry of Transport
MOU	Memorandum of Understanding
MPC	Malaysia Productivity Corporation
MRA	Mutual Recognition Agreements
MRANTI	Malaysian Research Accelerator for Technology and Innovation
MRM	Malaysia Design Council
MRS	Manufacturing-Related Services
MSIA	Malaysia Semiconductor Industry Association
MSME	Micro, Small and Medium Enterprise
MTC	Mid-Tier Company
MTDC	Malaysian Technology Development Corporation
MTFTA	Malaysia-Turkey Free Trade Agreement
MTVET	National TVET Council
MyCIP	Malaysia Co-Investment Fund
MyCOL	Malaysia Critical Occupation List
MyIPO	Intellectual Property Corporation of Malaysia
MyRER	Malaysia Renewable Energy Roadmap
NAICO	National Aerospace Industry Corporation
NCI	National Committee in Investment
NDC	Nationally Determined Contributions
NEC	National Employment Council
NEP	National Energy Policy
NETR	National Energy Transition Roadmap
NIA	National Investment Aspirations
NIDF	NIMP 2030 Industrial Development Fund
NIMP 2030 CoSIF	The NIMP 2030 Strategic Co-Investment Fund
NIP	New Investment Policy
NRECC	Ministry of Natural Resources, Environment and Climate Change
NRI	National Research Institution

Acronym	Definition
NR-REE	Non-Radioactive Rare Earth Elements
NTM	Non-Tariff Measures
OECD	Organisation for Economic Co-operation and Development
OSP	One-Stop Portal
P2P	Peer-to-Peer
PACU	Project Acceleration and Coordination Unit
PDPA	Personal Data Protection Act
PE	Private Equity
PERKESO	Pertubuhan Keselamatan Sosial
PIA	Promotion of Investment Act
PM	Prime Minister
PSDC	Penang Skills Development Centre
PTP	Pahang Technology Park
PWS	Progressive Wage System
R&D	Research and Development
RA	Readiness Assessment
RCEP	Regional Comprehensive Economic Partnership
RDCI	Research, Development, Commercialisation and Innovation
RDICE	Research, Development, Innovation, Commercialisation and Economy
RE	Renewable Energy
RM	Ringgit Malaysia
RMCD	Royal Malaysian Customs Department
RMKe-12	Twelfth Malaysia Plan
ROO	Rules of Origin
SBSR	Shipbuilding and Ship Repair
SC	Securities Commission Malaysia
SCF	Social Climate Fund
SDG	Sustainable Development Goal
SEB	Sarawak Energy Berhad
SEDA	Sustainable Energy Development Authority Malaysia
SEDG	Simplified ESG Disclosure Guide
SESB	Sabah Electricity Sdn Bhd
SIRIM	Standard and Industrial Research Institute of Malaysia

Acronym	Definition
SME	Small and Medium Enterprise
SME Corp	SME Corporation Malaysia
SOCSO	Social Security Organisation
SOP	Standard Operating Procedure
SPS	Sanitary and Phytosanitary
SSM	Companies Commission of Malaysia
STEM	Science, Technology, Engineering and Mathematics
TBIP	Tok Bali Industrial Park
TBT	Technical Barriers to Trade
TCFD	Task Force on Climate Related Financial Disclosures
The NIMP 2030	The New Industrial Master Plan 2030
TIV	Total Industry Volume
TNB	Tenaga Nasional Berhad
TOR	Terms of Reference
TPB	Tindakan Pembangunan Bumiputera
TRACK	Project Implementation and Facilitation Office
TUSAS	Turkish Aerospace Industries
TVET	Technical and Vocational Education and Training
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USD	United States Dollar
VC	Venture Capital
WIPO	World Intellectual Property Right Organisation
WWF	Worldwide Fund for Nature
YAB	Yang Amat Berhormat
YB	Yang Berhormat
YBHG	Yang Berbahagia
YBRS	Yang Berusaha

APPENDIX III: ACKNOWLEDGEMENTS

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2. Ministry of Communications and Digital (KKD)
3. Ministry of Domestic Trade and Cost of Living (KPDN)
4. Ministry of Economy (KE)
5. Ministry of Entrepreneur Development and Cooperatives (KUSKOP)
6. Ministry of Finance (MOF)
7. Ministry of Health (MOH)
8. Ministry of Higher Education (MOHE)
9. Ministry of Human Resources (MOHR)
10. Ministry of Natural Resource, Environment and Climate Change (NRECC)
11. Ministry of Plantation and Commodity (KPK)
12. Ministry of Science, Technology and Innovation (MOSTI)
13. Ministry of Transport (MOT)
14. Prime Minister's Office of Malaysia (PMO)

Government Agencies and Regulators

1. Bank Negara Malaysia (BNM)
2. Bursa Malaysia
3. Collaborative Research in Intelligence, Science and Technology (CREST)
4. Department of Standards Malaysia (JSM)
5. Department of Statistics Malaysia (DOSM)
6. East Coast Economic Region Development Council (ECERDC)
7. Export-Import Bank of Malaysia (EXIM Bank Malaysia)
8. Halal Development Corporation (HDC)
9. Intellectual Property Corporation of Malaysia (MyIPO)
10. InvestKL
11. InvestPerak
12. Jabatan Mineral dan Geosains (JMG)
13. Malaysia Automotive, Robotics, IoT (MARII)
14. Malaysia External Trade Development Corporation (MATRADE)
15. Malaysia Digital Economy Corporation (MDEC)
16. Malaysia Productivity Corporation (MPC)
17. Malaysia Steel Institute (MSI)
18. Malaysian Communications And Multimedia Commission (MCMC)
19. Malaysian Design Council (MRM)
20. Malaysian Foresight Institute (MyForesight)
21. Malaysian Industry-Government Group for High Technology (MIGHT)
22. Malaysian Investment Development Authority (MIDA)
23. Malaysian Meteorological Department (MMD)
24. Malaysian Railway Development Corporation (MRDC)
25. Medical Device Authority (MDA)
26. MIMOS Berhad
27. Malaysia's Digital Economy Blueprint (MyDIGITAL)
28. NanoMalaysia Berhad
29. National Aerospace Industry Corporation (NAICO)
30. National Chamber of Commerce and Industry of Malaysia (NCCIM)
31. National Measurement Council (MPK)
32. National Pharmaceutical Regulation Agency (NPRA)
33. Securities Commission Malaysia (SC)
34. SIRIM Berhad
35. SME Corporation Malaysia (SME Corp)
36. Talent Corporation Malaysia Berhad (TalentCorp)
37. Unit Peneraju Agenda Bumiputera (TERAJU)

Government-Linked Investment Companies (GLICs) and Financial Institutions

1. Bank Pembangunan Malaysia Berhad (BPMB)
2. Credit Guarantee Corporation (CGC)
3. CIMB Group
4. Employees Provident Fund (EPF)
5. HSBC Malaysia
6. Khazanah Nasional Berhad (KNB)
7. Kumpulan Wang Persaraan (KWAP)
8. Lembaga Tabung Angkatan Tentera (LTAT)
9. Lembaga Tabung Haji (LTH)
10. Malaysian Industrial Development Finance Berhad (MIDF)
11. Malayan Banking Berhad (Maybank)
12. Permodalan Nasional Berhad (PNB)
13. Public Bank Berhad
14. RHB Group
15. Sumitomo Mitsui Banking Corporation (SMBC)
16. The World Bank Group

Chambers and Industry Associations

1. ACCESS Blockchain Association Malaysia
2. American Malaysian Chamber of Commerce (AMCHAM)
3. Association of Accredited Advertising Agencies (4As Malaysia)
4. Association of Malaysian Medical Industries (AMMI)
5. Association of Marine Industries of Malaysia (AMIM)
6. Board of Engineers Malaysia (BEM)
7. British Malaysian Chamber of Commerce (BMCC)
8. Chemical Industries Council Malaysia (CICM)
9. China Enterprises Chamber of Commerce in Malaysia (CECCM)
10. Confederation of Malaysian Tobacco Manufacturers (CMTM)
11. Confederation of Master Brewers Berhad (CMBB)
12. Danish Chamber of Commerce Malaysia (DamCham Malaysia)
13. Dewan Perniagaan Melayu Malaysia (DPMM)
14. Electric Vehicle Association Malaysia (EVAM)
15. Environmental Management and Research Association of Malaysia (ENSEARCH)
16. Federation of Goldsmiths and Jewellers Associations of Malaysia (FGJAM)

17. Federation of Malaysian Fashion, Textile and Apparel (FMFTA)
18. Federation of Malaysian Foundry and Engineering Industries Associations (FOMFEIA)
19. Federation of Malaysian Manufacturers (FMM)
20. Federation of Malaysian Skills Development Centre (FMSDC)
21. Federation of Sabah Industries (FSI)
22. Japanese Chamber of Trade & Industry, Malaysia (JACTIM)
23. Kuala Lumpur & Selangor Indian Chamber of Commerce & Industry (KLSICCI)
24. Machinery and Engineering Industries Federation (MEIF)
25. Malaysia Aerospace Industry Association (MAIA)
26. Malaysia Association of Sustainable Supply Chain & Innovation (MASSCI)
27. Malaysia Medical Device Association (MMDA)
28. Malaysia Paper Association (MaPA)
29. Malaysia Printers Association (MPA)
30. Malaysia Quarries Association (MQA)
31. Malaysia Rail Industry Corporation (MARIC)
32. Malaysia Semiconductor Industry Association (MSIA)
33. Malaysia Shipowners' Association (MASA)
34. Malaysia Steel Association (MSA)
35. Malaysian Air-Conditioning & Refrigeration Association (MACRA)
36. Malaysian American Electronics Industry (MAEI)
37. Malaysian Automotive Association (MAA)
38. Malaysian Automotive Component Parts Association (MACPMA)
39. Malaysian Association of Convention & Exhibition Organisers & Suppliers (MACEOS)
40. Malaysian Association of Facility Management (MAFM)
41. Malaysian Association of Pharmaceutical Suppliers (MAPS)
42. Malaysian Cable Manufacturers Association (MCMA)
43. Malaysian Ceramic Industry Group (MCIG)
44. Malaysian Consortium of MidTier Companies (MCMTC)
45. Malaysian Corrugated Carton Manufacturers' Association (MACCMA)
46. Malaysian Cosmetics and Toiletries Industry Group (MCTIG)
47. Malaysia Entrepreneurs' Development Association (PUMM)
48. Malaysian Food Manufacturing Group (MAFMAG)
49. Malaysian Footwear Manufacturers' Association (MFMA)
50. Malaysian Furniture Council (MFC)
51. Malaysian International Chamber of Commerce & Industry (MICCI)
52. Malaysian Institute of Accountants (MIA)
53. Malaysian Insulation Manufacturers Group (MIMG)
54. Malaysian Iron and Steel Industry Federation (MISIF)
55. Malaysian Knitting Manufacturer's Association (MKMA)
56. Malaysian National Computer Confederation (MNCC)
57. Malaysian Oil and Gas Services Council (MOGSC)
58. Malaysian Oleochemical Manufacturers Group (MOMG)
59. Malaysian Organisation of Pharmaceutical Industries (MOPI)
60. Malaysian Palm Oil Board (MPOB)
61. Malaysian Petrochemicals Association (MPA)
62. Malaysian Photovoltaic Industry Association (MPIA)
63. Malaysian Photovoltaic Manufacturers Association (MPMA)
64. Malaysian Plastics Manufacturers Association (MPMA)
65. Malaysian Pulp and Paper Manufacturers Association (MPPMA)
66. Malaysian Rubber Products Manufacturers' Association (MRPMA)
67. Malaysian Service Providers Confederation (MSPC)
68. Malaysian Spanish Chamber of Commerce & Industry (MSCCI)
69. Malaysian Structural Steel Association (MSSA)
70. Malaysian Textile and Apparel Center (MATAC)
71. Malaysian Timber Association (MTA)
72. Malaysian Timber Council (MTC)
73. Malaysian Wood Industries Association (MWIA)
74. Malaysian Wood Moulding & Joinery Council (MWMJC)
75. Malaysian-Finnish Business Council (MFBC)
76. Motorcycle & Scooter Assemblers and Distributors Association of Malaysia (MASAAM)
77. Muar Furniture Association (MFA)
78. P.W. Gold & Silver Ornament Merchants Association (PWGS)
79. Perak Footwear Industry Association (PFIA)
80. Perodua Suppliers Associations (P2SA)

81. Persatuan Pengusaha Gaharu Bumiputera Malaysia (PENGHARUM)
82. Pharmaceutical Association of Malaysia (PHAMA)
83. Proton Vendors Association (PVA)
84. Sabah Timber Industries Association (STIA)
85. Safety Glass Processors Association of Malaysia (SGPAM)
86. Sarawak Manufacturers' Association (SMA)
87. Sarawak Timber Association (STA)
88. Selangor and FT Chinese Printing Presses' Association (SFTCPPA)
89. Semiconductor Fabrication Association Malaysia (SFAM)
90. Small and Medium Enterprise Association Malaysia (SAMENTA)
91. Steel Wire Association of Malaysia (SWAM)
92. Technological Association Malaysia (TAM)
93. The Associated Chinese Chambers of Commerce (ACCCIM)
94. The Association of Bumiputera Women in Business and Profession (Peniagawati)
95. The Association of Malaysia Bumiputera Timber and Furniture Entrepreneurs (PEKA)
96. The Cement & Concrete Association of Malaysia (C&CA)
97. The Electrical & Electronics Association of Malaysia (TEEAM)
98. The Federation Of Malaysia Hardware, Machinery & Building Materials Dealers' Association (FMHMBA)
99. The Malaysian Institute of Certified Public Accountants (MICPA)
100. The Malaysian Panel-Products Manufacturers' Association (MPMA)
101. The National Tech Association of Malaysia (PIKOM)
102. Timber Association of Sabah (TAS)
103. US-ASEAN Business Council Institute (USABCI)
8. Ann Joo Steel Berhad (AJSB)
9. Arkitek Mustapha Kamal Sdn Bhd (AMK)
10. Aspirational Breakthrough Consultancy (ABC)
11. Asia Digital Engineering Sdn Bhd (ADE)
12. Asia Food & Beverages Sdn Bhd
13. Associated First Rubber (M) Sdn Bhd
14. Austria Technologie & Systemtechnik Malaysia (AT&S)
15. Avago Technologies (Malaysia) Sdn. Bhd
16. AWS Technologies Sdn Bhd
17. Bahru Stainless Sdn Bhd
18. B.Braun Medical Supplies Sdn Bhd
19. BrandMe Associate Sdn Bhd
20. BASF PETRONAS Chemicals Sdn Bhd
21. Boston Consulting Group (BCG)
22. Cochlear Malaysia Sdn Bhd
23. Composites Technology Research Malaysia Sdn Bhd (CTRM)
24. Continental Tyre Malaysia Sdn Bhd
25. CSC Steel Sdn Bhd
26. Curge Advance Shd Bhd
27. Daiki Aluminium Industry (M) Sdn Bhd
28. DASC International Sdn Bhd
29. Deloitte Consulting Malaysia Sdn Bhd
30. Duopharma Biotech Berhad
31. Duta Edge Sdn Bhd (DESB)
32. EB Frozen Food Sdn Bhd
33. Ecava Sdn Bhd
34. Ernst & Young Consulting Sdn Bhd (EY)
35. Euto Capital Partners Ltd (HK)
36. Fraser & Neave Holdings Bhd (F&NHB)
37. Falah Al Hadid (M) Sdn Bhd
38. Falcon Safe Marketing Sdn Bhd
39. Fonterra Brands Malaysia Sdn Bhd
40. Global Turbine Asia Sdn Bhd
41. Goodyear Malaysia Berhad
42. Grid Vision T&D Sdn Bhd
43. Haleon Malaysia
44. Hartalega Holdings Berhad
45. Hexcel Composites Sdn Bhd
46. Honda Malaysia Sdn Bhd
47. Hong Leong Yamaha Motor Sdn Bhd
48. Hovid Berhad
49. Hyundai-Sime Darby Motors Sdn Bhd
50. Ichia Rubber Industry (M) Sdn Bhd
51. Idaman Pharma Manufacturing Sdn Bhd
52. Infinecs Systems Sdn Bhd
53. Infineon Technologies (M) Sdn Bhd
54. Inmage Group Sdn Bhd
55. Innotech Textile (M) Sdn Bhd
56. Intel Corporation
57. Intermedex (M) Sdn Bhd
58. International Business Machines Corporation (IBM)
59. Japan External Trade Organization (JETRO)
60. Jin Huo Gold & Jewellery Industries (M) Sdn Bhd

Industry Players

1. Aerospace Composites Malaysia Sdn Bhd (ACM)
2. Aerospace Malaysia Innovation Centre (AMIC)
3. Ain Medicare Sdn Bhd
4. Airlift Associates Sdn Bhd
5. Alpine Pipe Manufacturing Sdn Bhd (APMSB)
6. AM Alloy Industries Sdn Bhd
7. AMTECH Chemical Sdn Bhd

61. Johnson & Johnson Sdn Bhd
62. Kamstrup Asia Pacific Sdn Bhd
63. KCK Pharmaceutical Industries Sdn Bhd
64. Knight Frank Malaysia Sdn Bhd
65. Kotra Pharma (M) Sdn Bhd
66. KRA Group
67. Linaco Specialty Industries Sdn Bhd
68. Linatex Rubber Products Sdn Bhd
69. Longcane Industries Sdn Bhd
70. Maersk Malaysia
71. MAI Q Consult & Services
72. Malayan Flour Mills Berhad (MFM)
73. Malaysia Marine and Heavy Engineering Holdings Berhad (MHB)
74. Malaysian Consortium of Rubber Products Sdn Bhd (MALCORP)
75. Master Pack Group Berhad
76. Murni Allianze Consult Sdn Bhd
77. Micron Memory Malaysia Sdn Bhd
78. Mitsubishi Motors Malaysia Sdn Bhd
79. Motosikal dan Enjin Nasional Sdn Bhd (Modenas)
80. Monitor ERP System Sdn Bhd
81. Motorola Solutions Malaysia
82. MyCreative Ventures Sdn Bhd
83. Mycron Steel CRC Sdn Bhd
84. My-Sutera Sdn Bhd
85. Nichias FGS Sdn Bhd
86. Nicom Steel Centre Sdn Bhd
87. Northport (Malaysia) Bhd
88. Nike Sales Malaysia Sdn Bhd
89. Nippon Paint (M) Sdn Bhd
90. OMRON Electronics Sdn Bhd
91. One Auto Worldwide (M) Sdn Bhd
92. Pahang Pharmacy Sdn Bhd
93. Petroliaam Nasional Berhad (PETRONAS)
94. PETRONAS Carbon Management Division
95. PETRONAS Chemicals Group Berhad (PCG)
96. PETRONAS Chemicals Marketing Labuan Ltd (PCML)
97. Pharmaniaga Berhad (Pharmaniaga)
98. Powerista Technologies Sdn Bhd
99. Proton Holdings Berhad
100. PS Food and Beverages Sdn Bhd
101. REDtone International Bhd
102. Ramly Food Industries Sdn Bhd
103. Rentokil Initial (M) Sdn Bhd
104. Respimedica Sdn Bhd
105. Ricky Tan & Co
106. Robolab Technology Sdn Bhd
107. Selasih Aman Sdn Bhd
108. Senior Aerospace UPECA Sdn Bhd
109. SERC Sdn Bhd
110. Shorubber (Malaysia) Sdn Bhd
111. Singularity Aerotech Asia Sdn Bhd
112. SME Aerospace Sdn Bhd
113. Southern Steel Berhad
114. Spirit Aerosystems Malaysia Sdn Bhd
115. Sri Majutex Sdn Bhd
116. Sri Nona Food Industries Sdn Bhd
117. Star Medik Sdn Bhd
118. Strand Aerospace Malaysia Sdn Bhd
119. StanleyCo Corporate Services Sdn Bhd
120. Sydney Cake House Sdn Bhd
121. Teksoft (SEA) Sdn Bhd
122. Toyo Tyre Malaysia Sdn Bhd
123. Trinity Group
124. T7 Global Berhad
125. UMW Aerospace Sdn Bhd
126. Unex Industries Sdn Bhd
127. ViTrox Corporation Berhad (ViTrox)
128. WEG South East Asia Sdn Bhd
129. Western Digital Tech and Regional Center (M) Sdn Bhd
130. ZALORA

Research Institutes and Higher Education Institutions

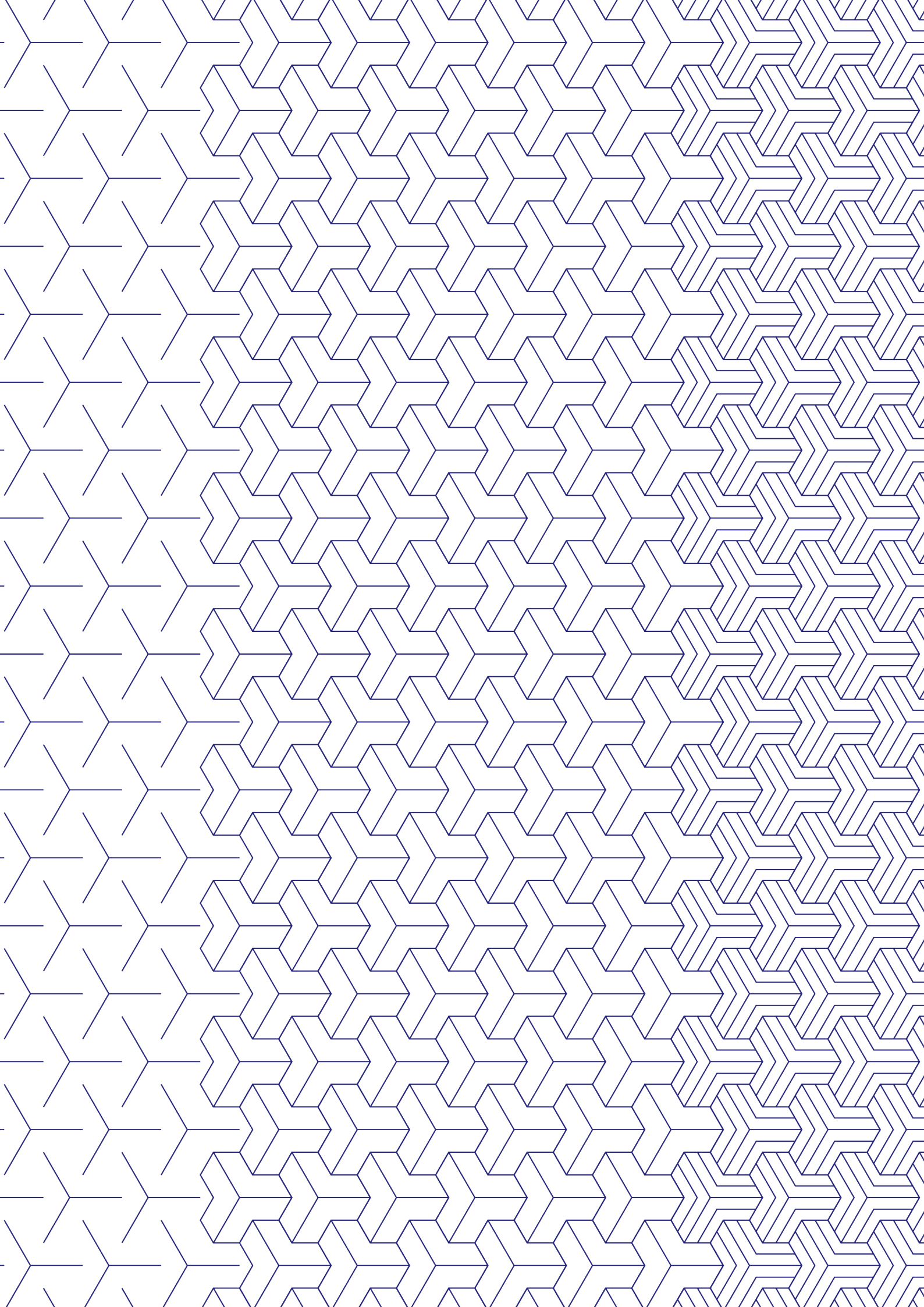
1. Academy of Sciences Malaysia (ASM)
2. Construction Research Institute of Malaysia (CREAM)
3. International Islamic University Malaysia (IIUM)
4. Khazanah Research Institute (KRI)
5. MARA University of Technology (UiTM)
6. National University of Malaysia (UKM)
7. PETRONAS University of Technology (UTP)
8. Putra University of Malaysia (UPM)
9. Raffles College of Higher Education
10. Sunway University
11. The National Energy University (UNITEN)
12. University of Kuala Lumpur (UniKL)
13. University of Malaya (UM)
14. Universiti Malaysia Pahang (UMP)

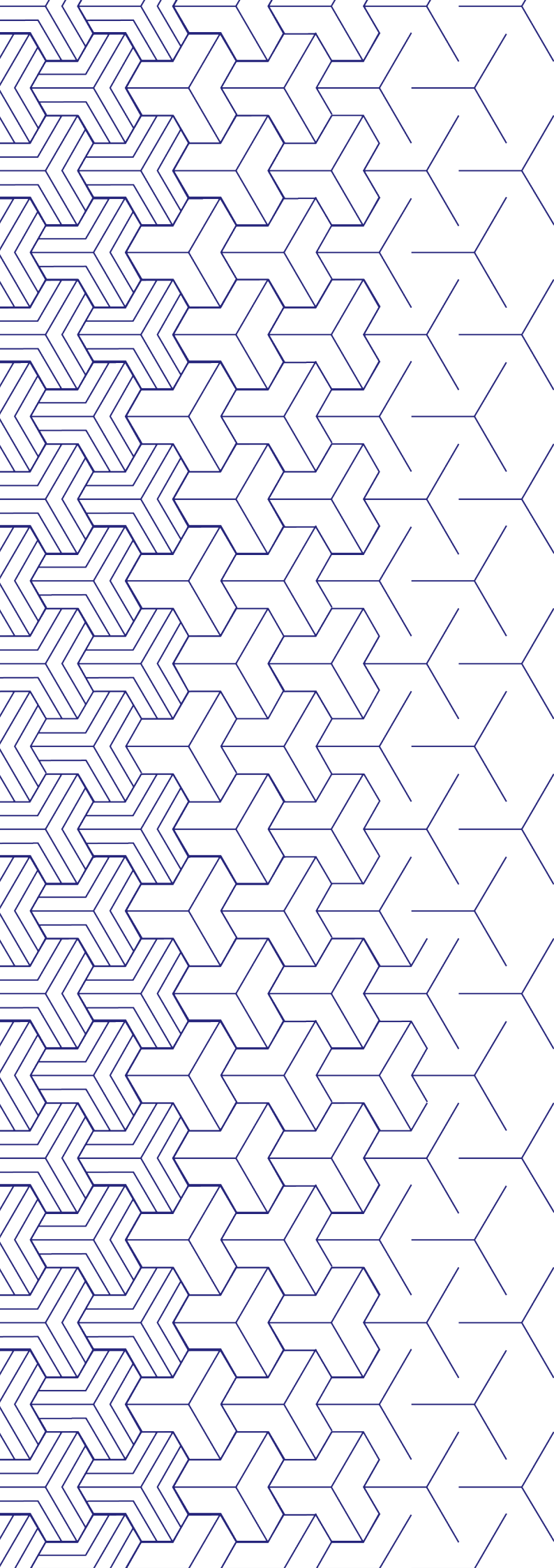
APPENDIX IV: FOOTNOTES AND REFERENCES

No.	Footnotes and References	Page
1	Cassey Lee (2019). "Manufacturing Performance and Services Inputs: Evidence from Malaysia", ISEAS Economics Working Paper, No. 2019, No.2.	20
2	The most recent IMP, IMP3 spanned from 2006 to 2020. The industry's performance was measured until 2022 instead of 2020 due to the COVID-19 pandemic and associated supply chain disruptions.	20
3	Constant price GDP is a measure of all goods and services produced in a year, adjusted for inflation and expressed in the prices of a base year. It allows for more meaningful comparisons of GDP by considering both the quantity and value of goods and services.	20
4	The implemented data is compiled based on the results from a survey conducted by MIDA on the implementation status of projects. Projects that are implemented are those that are in the production or machinery installation/factory construction stages, which are used as a proxy measure for realised investments. Projects can take one to two years to be implemented depending on the project gestation period. The coverage for the survey is projects that were approved under MIDA, which would be those under the manufacturing and selected services sectors. Baseline 2005 figures are the total for 1996-2005 (IMP2 period) and breakdown for manufacturing and services across this period is not available. Target 2020 figures are targets set for 2006 to 2020 (IMP3 period). Realised 2020 figures refer to investments for IMP3 period.	20
5	Realised 2020 figures refers to investments for 2006 to 2020. Services realised investment data is under the purview of MIDA only.	20
6	Realised 2022 figures refers to investments for 2006 to 2022. Services realised investment data is under the purview of MIDA only.	20
7	The services sector's share may be underestimated as the data only covers services under the purview of MIDA.	21
8	World Bank (March 2022). "Strengthening Services Trade in the Malaysian Economy".	21
9	ECI covers two dimensions of exports, namely product diversity (number of products a country can export competitively) and product complexity (number of countries able to export each of these products competitively). See "Complexity and Growth: Malaysia's Position and Policy Implications" by BNM (March 2018) for more information.	21
10	EPU (2014). "Complexity Analysis Study of Malaysia's Manufacturing Industries".	21
11	The servicification of manufacturing pertains to the increasing dependence of manufacturing firms on services as intermediate inputs, and the number of workers within manufacturing that are performing service-related activities. Services are increasingly embedded in goods to create more value.	22
12	R&D investment measured in terms of Gross Expenditure on R&D (GERD) increased from 2008 to 2016 but fell back to slightly less than the 2010 share in 2018.	22
13	World Intellectual Property Right Organisation (WIPO).	22
14	2018 is the most recent data available.	23
15	World Bank (2020). "Towards a Resilient Recovery". Development Digest, Issue 9, November 2020.	23
16	Defined as tertiary-educated workers in jobs that do not require tertiary education (i.e. semi-skilled and low-skilled jobs).	23
17	According to the "STEM Education in Malaysia" report by MOHE: In 1967, Higher Education Planning Committee reports recommended that the range of students in Science or Technical stream compared to that in art stream is to be at the proportion of 60:40, or what is called now 60:40 policy.	24

18	World Economic Forum (2020). "The Future of Jobs Report 2020".	24
19	Domestic exports: Products manufactured in Malaysia, including imported products from foreign countries that have been significantly changed or enhanced in value domestically; Re-exports: Products of foreign origin that have entered Malaysia but are "re-exported" in substantially the same condition as when imported.	25
20	Masahiro Kawai and Kanda Naknoi (2015). "ASEAN Economic Integration through Trade and Foreign Direct Investment: Long-Term Challenges", ADBI Working Paper Series, No. 545.	25
21	The bilateral agreements are with Australia, Chile, India, Japan, New Zealand, Pakistan and Türkiye. The regional trade agreements are the ASEAN Trade in Goods Agreement (ATIGA); ASEAN-China Free Trade Area (ACFTA), ASEAN-Japan Comprehensive Economic Partnership (AJCEP), ASEAN-Korea Free Trade Area (AKFTA), ASEAN-India Free Trade Area (AIFTA), ASEAN-Australia-New Zealand Free Trade Area (AANZFTA) and ASEAN-Hong Kong, China Free Trade Area (AHKFTA); the Regional Comprehensive Economic Partnership (RCEP); and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).	25
22	Masahiro Kawai and Kanda Naknoi (2015). "ASEAN Economic Integration through Trade and Foreign Direct Investment: Long-Term Challenges", ADBI Working Paper Series, No. 545.	26
23	Choong, P W & Khalifah, N.A. & Nor, Abu & Ismail, Mohd. (2018). "Free Trade Agreements and Production Sharing in Malaysian Manufacturing Industries", Jurnal Ekonomi Malaysia. 52. 97-111. 10.17576/JEM-2018-5203-7.	26
24	The Ministry of Health Malaysia is responsible for 70.4 per cent of the NTMs in the country, followed by Ministry of Agriculture and Food Security (MAFS) at 12.1 per cent, Ministry of Natural Resources and Environment at 5.5 per cent, Ministry of Plantation Industries and Commodities at 3.8 per cent, with the balance by 9 other institutions.	28
25	Malaysia participates in GVCs mainly through backward linkage, measured by share of foreign value-added (FVA), rather than forward linkage (measured by indirect value-added exports, or DVX). In 2019, the DVX share accounted for 29 per cent, up from 18 per cent in 1995. The share of FVA remained higher than the DVX, at 36 per cent in 2019.	29
26	The statistics on this are not fully comprehensive and would not be comparable to the total approved investments published in MIDA's website which includes investments or projects compiled from other Ministries and Agencies.	29
27	A country can participate in GVCs through either backward GVC participation (backward linkage) as measured by the share of foreign value-added (FVA), or forward GVC participation (forward linkage) as captured by the share of domestic value-added incorporated in third countries' exports (indirect value-added exports, or DVX) in gross exports.	30
28	SME Corp. (2021). Economic Performance and Outlook 2021. World Bank (2022). "Malaysian SME Program Efficiency Review, March 2022".	33
29	ERIA (2023). "ASEAN's Role in the Threat of Global Economic Decoupling: Implications from Geographical Simulation Analysis".	34
30	IMF (2023). "COVID-19 Crisis Implications for Productivity and Labour Markets in Advanced Economies". Staff Discussion Note.	34
31	AlphaBeta (2021). "Positioning Malaysia as a Regional Leader in the Digital Economy: The Economic Opportunities of Digital Transformation and Google's Contribution".	34
32	Reuters (2022). "Large companies' assets at growing risk of climate impact - S&P Global".	35
33	Bank Negara (2023). "Navigating Malaysia's Economic Transition towards a Decarbonised Future". Economic and Monetary Review 2022.	35

34	Global Risk Insights (2015). "The Economic Impact of Climate Change in Southeast Asia".	35
35	Zhan, James. (2021). "GVC transformation and a new investment landscape in the 2020s: Driving forces, directions, and a forward-looking research and policy agenda". Journal of International Business Policy. 4. 10.1057/s42214-020-00088-0	36
36	MATRADE (2023). "MATRADE Kicked-Off International Sourcing Programme (INSP), Promoting Malaysia's Strengths & Capabilities in The Semiconductor Industry".	38
37	Malaysia Aerospace Industry Blueprint 2030	57
38	Department of Statistics Malaysia	58
39	UNCTAD (2023). "Technology Innovation Report 2023", page 154	76
40	Gartner. "Smart Manufacturing"	79
41	Malaysian Communications and Multimedia Commission (March 2023). "Digital Connectivity. Ensuring Everyone Gets Connected: A Glance at Malaysia's Digital Connectivity Journey"	81
42	Oxford Insights (2022). "Government AI Readiness Index 2022".	85
43	United Nation Climate Change (2022). "Malaysia Fourth Biennial Update Report Under the United Nations Framework Convention on Climate Change".	96
44	World Economic Forum (2022). "CBAM: What you need to know about the new EU decarbonization incentive".	98
45	Sustainable Energy Development Authority (2021). "Malaysia Renewable Energy Roadmap (MyRER)".	101
46	Ministry of Economy (2023). "National Energy Transition Roadmap (NETR)".	101
47	Sustainable Energy Development Authority (2021). "Malaysia Renewable Energy Roadmap (MyRER)".	102
48	xEV refers to all types of EVs (battery EV, plug-in hybrid EV, hybrid EV, fuel cell EV).	105
49	Economic Planning Unit (2022). "National Energy Policy 2022-2040".	105
50	SIRIM (2020). "Eco Industrial Parks (MyEIP)".	109
51	World Economic Forum (2023), "The Global Risks Report 2023 18th Edition".	117
52	Swiss Re (2021), "The Economics of Climate Change: Impacts for Asia".	122
53	OECD (2018), "Climate-Resilient Infrastructure".	123
54	Department of Statistics Malaysia (2022), "Bumiputera Statistics 2022".	129
55	Department of Statistics Malaysia (2020). "Small and Medium Enterprises (SMEs) Performance 2020".	162
56	Department of Statistics Malaysia (2020). "Profile of MSMEs in 2016-2022".	162





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