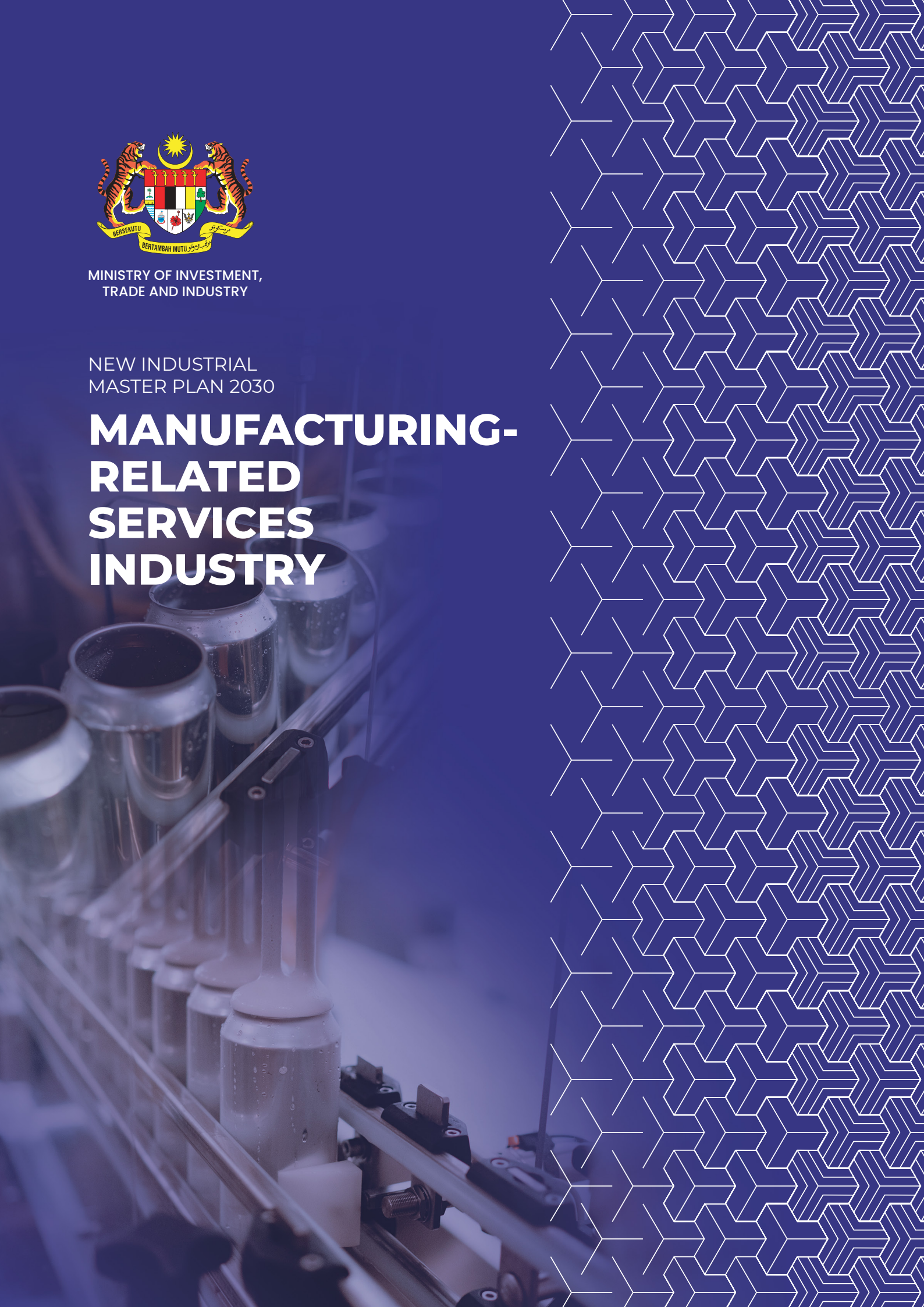
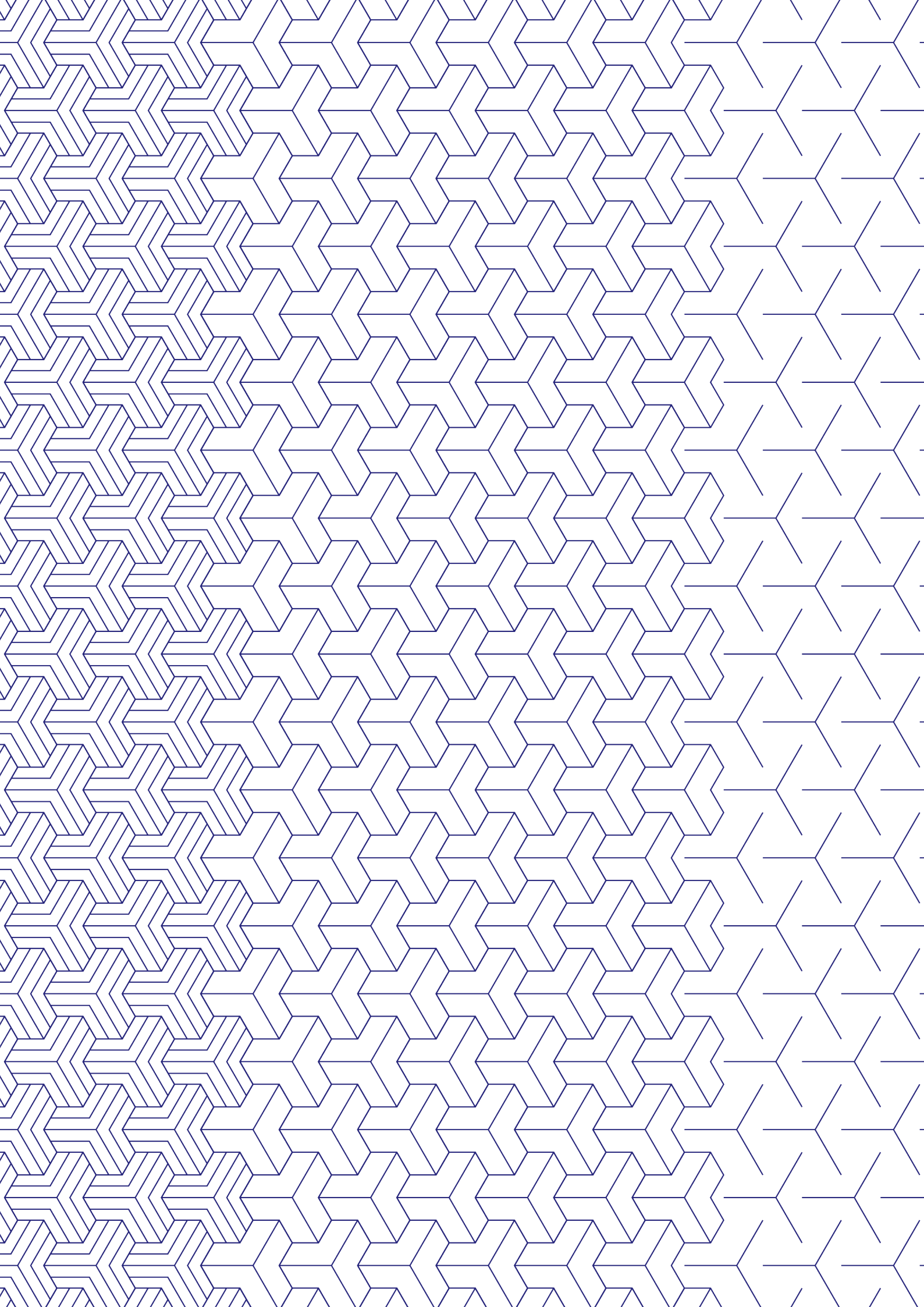
MINISTRY OF INVESTMENT,
TRADE AND INDUSTRY

NEW INDUSTRIAL
MASTER PLAN 2030

MANUFACTURING-RELATED SERVICES INDUSTRY





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PREFACE

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 unchartered 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.

INTRODUCTION

New Industrial Master Plan 2030

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. The NIMP 2030 strategic framework is illustrated below:

VISION

Our vision for Malaysia is to have:

- Competitive industry with high economic complexity
- High income and skilled workforce
- Strong domestic linkages

GOALS

- **Increase economic complexity**
- **Create high-value job opportunities**
- **Extend domestic linkages**

MISSIONS

MISSION 1
Advance economic complexity

1.1 Expand to high value-added activities of the value chain
1.1.1 Create global IC design champions from Malaysia
1.1.2 Attract global leader to establish wafer fabrication in Malaysia
1.1.3 Shift from basic to specialty chemical
1.1.4 Build Malaysian champions for game changing advanced materials
1.1.5 Identify high value-added opportunities in the aerospace, pharmaceutical and medical devices sectors

1.2 Develop entire ecosystem to support the high value-added activities
1.2.1 Build strong local SMEs in manufacturing and related services to support the industry champions
1.2.2 Integrate value chains between:
- M&E and Medical Devices
- Semiconductor and EV
- Chemical and Pharmaceutical

1.3 Establish cooperative 'vertical integration' for global value chain
1.3.1 Leverage alliance with ASEAN countries to integrate the semiconductor, advanced materials and clean energy value chain
1.3.2 Develop vertical integration programmes through IndustryConnect conferences

1.4 Foster Research, Development, Commercialisation and Innovation (RDCI) ecosystem
1.4.1 Assign specific topics and KPIs to universities for industrial-linked R&D
1.4.2 Digitalise IP application and launch enhanced National IP Policy

1.5 Increase manufacturing exports
1.5.1 Implement national trade advocacy campaign to increase industry utilisation of FTAs
1.5.2 Rejuvenate "Made in Malaysia" branding
1.5.3 Address trade restrictive non-tariff measures (NTMs) and compliance of standards
1.5.4 Update FTA based on geopolitical conditions

5 Strategies, 15 Action Plans

Mission-based Projects:

MBP 1.1 Create global IC design champions in EV, RE and AI
MBP 1.2 Attract new advanced wafer fabrication in Malaysia
MBP 1.3 Deepen to specialty chemical vertical
MBP 1.4 Groom champions in 4 game changing advanced materials

MISSION 2
Tech up for a digitally vibrant nation

2.1 Accelerate technology adoption
2.1.1 Enhance Industry4WRD programmes to increase technology adoption
2.1.2 Accelerate digital infrastructure rollout (JENDELA)

2.2 Shift away from low-skilled labour model
2.2.1 Introduce multi-tiered levy mechanism for low-skilled labour to accelerate automation
2.2.2 Introduce automation condition in new Manufacturing Licence

2.3 Spur technology innovation
2.3.1 Nurture local technology solution providers to support Technology Adoption Programme
2.3.2 Develop generative and industrial AI solution leaders and system integrators
2.3.3 Drive data analytics through a national digital platform for manufacturing

2.4 Accelerate government digitalisation and integration
2.4.1 Digitalise end-to-end government touch points across business life cycle

4 Strategies, 8 Action Plans

Mission-based Projects:

MBP 2.1 Transform 3,000 smart factories
MBP 2.2 Establish Malaysia as Generative AI Hub

STRATEGIES AND ACTION PLANS

21 Strategies
62 Action Plans

- 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

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 Strategies, 10 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

MISSION 4
Safeguard economic security and inclusivity

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

4 Strategies, 10 Action Plans

ENABLERS

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, 19 Action Plans

NIMP 2030 SECTORAL PLAN

There are individual enclosures of 21 sectors included as a supplementary reference to the main NIMP 2030 document.

They provide a view of the respective sectoral perspective in the context of the main NIMP 2030 document, and were developed with reference to individual sectoral roadmaps, where applicable.

The 21 sectors are:

Category	Industry
Priority Sectors	1. Aerospace 2. Chemical 3. Electrical and Electronics (E&E) 4. Pharmaceutical 5. Medical Devices
Sectors	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

NIMP 2030 Services Sectoral Plan

The services sector is the enabler for other economic activities, including connecting supply chains and facilitating trade in goods.

In 2022, Malaysia's Gross Domestic Product (GDP) recorded the highest annual growth rate in more than two decades at 8.7 per cent with the services sector recording the highest growth at 10.9 per cent.

Total trade in services accounted for RM336.9 billion, contributing 18.8 per cent to the GDP at current prices. The deficit in services trade narrowed to RM56.4 billion year on year compared to 2021. Exports of services grew faster than imports, from RM88.1 billion in 2021 to RM140.3 billion in 2022, while imports rose to RM196.7 billion in 2022 from RM153.7 billion in 2021.

The Government of Malaysia is supporting the continuous growth of the services industry by implementing policies and incentives aimed at enhancing its productivity.

There are three services sectors as part of the NIMP 2030 document, which are:

1. Digital and ICT;
2. Global Services and Professional Services; and
3. Manufacturing-Related Services.

This document is the **NIMP 2030 Sectoral Plan – Manufacturing-Related Services Industry.**

OVERVIEW OF THE DOCUMENT

This NIMP 2030 Sectoral Plan – Manufacturing-Related Services Industry (Document) provides insights into the sector and its prospects during the NIMP 2030 period.

This Document offers a comprehensive understanding of the industry's direction during the NIMP 2030 period based on its historical performance, opportunities and strategies to overcome existing challenges and achieve its targets.

The Document is presented in five sections:

1. Background

- This section sets the foundation to help readers understand the industry.
- It delves into the industry's focus area, encompassing its sub-sectors, for a comprehension of the industry's breadth.[1]
- Readers will find details about the industry's value chain and its key players, including the relevant industry associations, in this section.
- The section lists the policies that are related to the industry.

2. Performance

- This section reports the industry's performance during specific periods.
- There are two notable periods for the review of the industry's historical performance:
  - the IMP3 period (2006 to 2020); and
  - from 2021 to 2022.
- The performance review of the industry's development includes its investment trends, export and import dynamics, employment figures, value-added and productivity measures.

3. Trends and Opportunities

- This section highlights the opportunities and potential avenues for growth that the industry can leverage during the NIMP 2030 period.

4. Challenges

- This section provides insights into potential obstacles that could impact the industry's growth and development.

5. Strategies and Action Plans

- The final section of the document outlines the future trajectory for the industry.
- This section provides the Strategies and Action Plans that are intended to catalyse the industry during the NIMP 2030 period.
- The Strategies and Action Plans set in this Document have been aligned to the Missions set in the main NIMP 2030 document.

[1] *Incentives available for this industry as of time of writing can be found in Appendix 1*

SECTION 1 BACKGROUND

Areas Covered

1. The manufacturing ecosystem has evolved as companies incorporate more high value manufacturing-related services.

2. In the pursuit of business process re-engineering, Manufacturing-Related Services (MRS) industry has evolved significantly through the advancement of technologies.

3. MRS encompass a wide range of activities that support and complement the manufacturing activities throughout the supply chain and value chain, which include:
   i. research and development (R&D) services;
   ii. conformity assessment services;
   iii. transport and logistics services; and
   iv. global establishments.

R&D Services

4. R&D refers to any systematic investigative and experimental study that involves novelty or technical risks carried out in the field of science or technology, aimed at acquiring new knowledge or using the results for production or improvement of materials, devices, products, produce or processes.

5. R&D does not include:
   i. quality control or routine testing of materials, devices or products;
   ii. research in the social sciences or the humanities;
   iii. routine data collection;
   iv. efficiency surveys or management studies;
   v. market research or sales promotion;
   vi. routine modifications or changes to material, devices, products, processes or production methods; or
   vii. cosmetic modifications or stylistic changes to materials devices, products, processes or production methods.

6. R&D covers the following three main works:
   i. basic research – experimental or theoretical work undertaken primarily to understand a subject matter and acquire new knowledge of the underlying foundations of phenomena and observable facts, without any particular application or use in view;
   ii. applied research – an original investigation work undertaken to acquire new knowledge, directed towards a specific objective which aims to determine methods to address a specific customer or industry need or requirement regarding products or processes; and
   iii. experimental development – systematic work drawing on existing research results and directed specifically towards the creation of new and improved products or processes.

7. R&D has played a crucial role in Malaysia's transition towards becoming an export-oriented economy. This is driven by the commercialisation of R&D outcomes into improved products and services which subsequently creates higher value-add and expands market opportunities for the manufacturing sector.

8. Commercialisation often involves registering Intellectual Property (IP), which include:
   i. patents for inventions;
   ii. trademarks to distinguish goods or services; and
   iii. industrial designs for visually appealing articles.

9. Registering IP helps create, protect and monetise products and services for long-term competitiveness and sustainability.

Conformity Assessment Services

10. Conformity assessment services refers to activities ranging from auditing and inspection to testing, verification, quality assurance and certification.

11. The International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) are international standard-setting bodies to define the process for MRS (ISO/IEC 17000:2004 Conformity Assessment):
   i. testing – ensuring products meet quality, safety and performance standards through lab tests;
   ii. inspection – examining goods to ensure compliance with buyers' expectations, industry regulations and Government standards; and
   iii. certification – services that confirm test or inspection results against established standards set by Governments and international institutions.

Transport and Logistic Services

12. Transport and logistic services comprise several activities, which includes:
   i. land transport;
   ii. sea transport;
   iii. air transport;
   iv. warehousing;
   v. freight forwarding; and
   vi. value-added support activities (e.g. break bulking, palletising and labelling).

13. Logistics services encompass the supply chain management process from the point of origin to the point of consumption to meet customer requirements, such as:
   i. planning;
   ii. implementing; and
   iii. controlling the efficient and effective flow of goods, services and related information.

14. Transport and logistics services will be further guided by the National Transport Policy (NTP) 2019-2030.

Global Establishments

15. Malaysia is a strategic location for multinational corporations (MNCs) to establish their global operation headquarters.

16. The Government introduced the Principal Hub (PH) scheme to encourage MNCs to use Malaysia as a base to conduct their regional or global businesses and operation to manage, control and support key functions, including:
    i. management of risks;
    ii. decision-making;
    iii. strategic business activities;
    iv. finance;
    v. management; and
    vi. human resource.

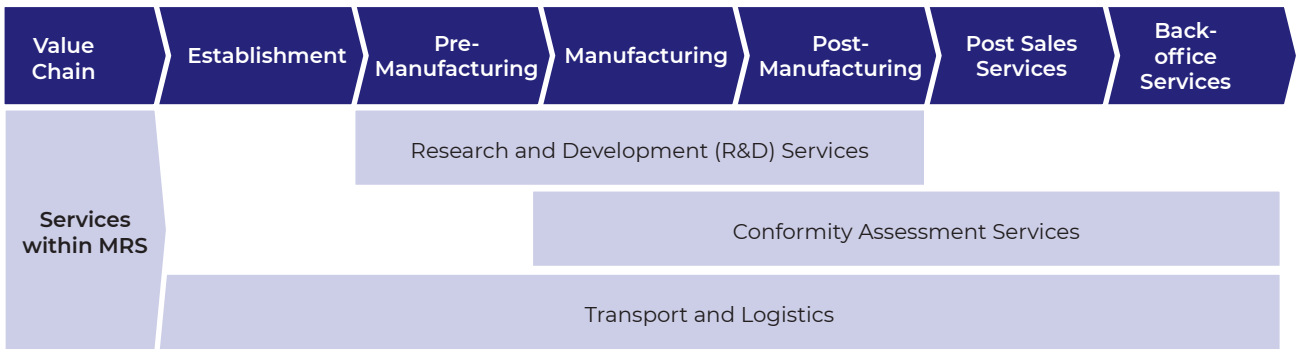
17. Similarly, Global Establishments in Malaysia include Global Business Services (GBS), which encompass shared services and outsourcing-enabled operating models. This model comprises three main categories:
    i. business process outsourcing (BPO);
    ii. information technology outsourcing (ITO); and
    iii. knowledge process outsourcing (KPO).

18. Further details on Global Establishments in the NIMP 2030 will be covered in the NIMP 2030 Sectoral Plan – Global Services and Professional Services Industry.

Value Chain

19. The MRS value chain can be divided into six main processes (Figure 12.1):
    i. establishment;
    ii. pre-manufacturing;
    iii. manufacturing;
    iv. post-manufacturing;
    v. post sales services; and
    vi. back-office services.

Figure 12.1: Value Chain of the MRS Industry



Source: Asia-Pacific Economic Cooperation (APEC), Ministry of Investment, Trade and Industry (MITI)

20. The focus of NIMP 2030 for MRS industry is on R&D services and conformity assessment services – selected based on their importance in enhancing the manufacturing value chain as well as their distinctive traits as high value services:
    i. knowledge-intensive;
    ii. technology-based;
    iii. high income jobs creation; and
    iv. tradability.

Market Players

21. The companies undertaking R&D in Malaysia can be categorised into three types:
    i. in-house R&D – activities are carried out within a company for the purpose of using the results of the R&D activity for furthering its own business;
    ii. contract R&D company – R&D Status company that provides R&D services to other companies; and
    iii. R&D company – approved as a R&D Status company that provides R&D services to its related companies and other companies.

22. Several Government Ministries and Agencies have prominent roles in the development of the industry, including:
    i. Ministry of Investment, Trade and Industry (MITI);
    ii. Ministry of Science, Technology and Innovation (MOSTI);
    iii. Department of Standards Malaysia (JSM);
    iv. Malaysian Investment Development Authority (MIDA);
    v. Malaysia External Trade Development Corporation (MATRADE);
    vi. MIMOS Berhad;
    vii. SIRIM Berhad (SIRIM); and
    viii. Intellectual Property Corporation of Malaysia (MyIPO).

Policies, Laws and Regulations

23. The industry's development is guided by the following:
    i. National Policy on Science, Technology and Innovation (NPSTI) 2021-2030; and
    ii. 10-10 Malaysian Science, Technology, Innovation and Economy (MySTIE) Framework.

24. Laws related to the MRS industry are:
    i. Promotion of Investments Act 1986; and
    ii. Income Tax Act 1967.

SECTION 2 PERFORMANCE

IMP3 Focus and Performance

25. The IMP3 that spanned from 2006 to 2020 did not specifically address the diverse activities of the MRS Industry. There is no available data for MRS as it currently overlaps with other industries. The performance during the IMP3 period was measured solely using R&D services data.

Investments

26. The investment performance (2006 to 2022) of the MRS industry is recorded as follows (Table 12.1).

Table 12.1: Approved Investments of MRS Industry

Items	Units	IMP3			2021	2022	2021-2022
		2006	2020	2006-2020			
Total Investment[2]	RM million	100.3	137.9	4,505.1	40.6	139.3	179.9
Domestic Investment	RM million	89.9	97.1	3,660.3	27.7	131.7	159.4
Foreign Investment	RM million	10.4	40.7	844.8	12.9	7.6	20.5
Number of projects	#	21	45	1,352	20	57	77
Employment	persons	317	264	12,914	156	111	267

Source: Compilation of data from MIDA and various Ministries/ Agencies

27. During the IMP3 period, a total of 1,352 projects were approved in the MRS industry with a total investment of RM4.5 billion. These investments committed a total of 12,914 job opportunities.

28. In 2021 and 2022, a total of 77 projects were approved with a total investment of RM179.9 million. These investments committed a total of 267 job opportunities.

29. In 2021, the investment trend was influenced by the global economic slowdown during the COVID-19 pandemic.

30. Subsequently, in 2022, the investment trend was driven by businesses shifting towards creating products with higher complexity and Government policies aimed to attract high value-added investments in the R&D industry.

Exports

31. Export performance of the MRS industry is depicted in the table below (Table 12.2).

Table 12.2: Exports of MRS Industry

Item	IMP3			2021	2022	2006-2020	2020-2021	2021-2022
	2010	2020	2006-2020			CAGR[3]	Annual Growth	
Exports[4] (RM billion)	0.7	2.5	15.9	2.8	3.8	13.0%	9.9%	37.1%

Source: Department of Statistics Malaysia (DOSM)

[2] *Includes R&D services only.*
[3] *Compound Annual Growth Rate*
[4] *Includes R&D services only*

32. Between 2010 to 2020, the exports of the industry grew by a CAGR of 13.0 per cent from RM0.7 billion (2010) to RM2.5 billion (2020).

33. In 2021, exports grew by 9.9 per cent to RM2.8 billion. Subsequently, in 2022, total exports expanded further by 37.1 per cent from the previous year to RM3.8 billion.

34. The growth is driven by global trends of businesses shifting towards higher value-added activities.

Imports

35. The import performance of the industry (2010 to 2022) is reported in Table 12.3.

Table 12.3: Imports of MRS Industry

Item	IMP3			2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020	2006-2020			CAGR	Annual Growth	
Imports[5] (RM billion)	0.5	2.4	11.3	5.6	11.8	16.0%	136.7%	110.2%

Source: DOSM

36. During the IMP3 period, the imports of the industry grew by a CAGR of 16.0 per cent from RM0.5 billion (2010) to RM2.4 billion (2020).

37. In 2021 and 2022, the imports of the industry increased significantly, totaling RM5.6 billion and RM11.8 billion, respectively.

38. The growth can be attributed to the higher demand for R&D services, driven by accelerated digital adoption during the COVID-19 pandemic.

Value-added

39. The value-added (GDP) of the industry during the period of 2006 to 2022 is recorded in Table 12.4.

Table 12.4: Value-added of MRS Industry

Item	IMP3		2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020			CAGR	Annual Growth	
Value-added[7] (RM billion)	1.4	2.0	1.9	2.0	2.2%	-3.2%	3.9%

Source: DOSM

40. During the IMP3 period, the GDP contribution of the industry has grown by a CAGR of 2.2 per cent from RM1.4 billion (2006) to RM2.0 billion (2020).

41. In 2021, the GDP contribution of the industry declined by 3.2 per cent to RM1.9 billion and subsequently grew by 3.9 per cent to RM2.0 billion in 2022.

42. The GDP contribution of the industry declined in 2021 due to the impact of the COVID-19 pandemic and rebounded in 2022 owing to increased demands and recovery from the pandemic.

[5] Includes R&D services only
[6] Value added is measured by the GDP of the industry includes GDP contributed by the aerospace industry, which includes R&D services only; 2006 GDP data is based on constant 2005 prices, while 2020 to 2022 data are based on constant 2015 prices

Employment

43. The MRS industry's employment (2019 to 2022) is tabulated in Table 12.5 below.

Table 12.5: Employment in MRS Industry

Item	IMP3		2021	2022	2019-2022
	2019	2020			CAGR
Employment[7] (persons)	14,600	13,400	11,900	7,300	-20.6%

Source: DOSM

44. Eployment grew by a CAGR of 1.8 per cent from 91,161 persons (2019) to 96,289 persons (2022).

45. During the period, many factories faced temporary closures or reduced operations to comply with Government-mandated COVID-19 restrictions. This led to layoffs which contributed to the decline in the industry's employment.

Labour Productivity

46. Performance of the labour productivity of the industry (2019 to 2022) is tabulated as follows (Table 12.6).

Table 12.6: Labour Productivity of MRS Industry

Item	IMP3		2021	2022	2019-2022
	2019	2020			CAGR
Labour Productivity[8] (RM)	142,077	146,487	159,655	270,324	23.9%

Source: DOSM

47. The labour productivity of the industry grew by a CAGR of 23.9 per cent from RM142,077 (2019) to RM270,324 (2022).

48. Overall, the labour productivity growth was due to the increase in the adoption of digitalisation and automation in the manufacturing services processes.

[7] This employment data includes research and development on natural sciences; research and development on engineering and technology; research and development on medical sciences; research and development on biotechnology; research and development on agricultural sciences; research and development on Information Communication Technology (ICT); and research and development on other natural science and engineering not elsewhere classified
[8] Annual labour productivity is derived from value added per employment

Institutional Support

49. The Government offers various incentives for investments in R&D to R&D companies as well as clients of R&D status companies.

50. Main R&D incentives include double deduction on R&D expenditure for clients of:
    i. R&D status;
    ii. contract R&D company;
    iii. R&D company; and
    iv. in-house R&D.

51. SIRIM has collaborated with Government Agencies, industry players and institutes of higher learning to establish several Industrial Centres of Innovation (IC-Innovation) and Technology Centres:
    i. IC-Innovation Smart Manufacturing – provides innovation in industrial designs through Industry 4.0 solutions;
    ii. Environmental Technology Research Centre (ETRC) – focuses on environmental research, eco-materials technology, emerging technology and sustainable products;
    iii. Industrial Biotechnology Research Centre (IBRC) – leads Malaysia's biotechnology R&D and industrial innovation by spearheading the development of high-end products through technological partnerships; and
    iv. Machinery Technology Centre (MTC) – provides engineering and advisory in sustainable mechanical and electrical services.

52. The industrial research centres are valuable resources for companies, providing them with essential support, expertise and access to facilities, ultimately enabling them to enhance their capabilities, drive innovation and stay competitive in their respective industries.

SECTION 3 TRENDS AND OPPORTUNITIES

53. The MRS global market size is expected to reach RM291.2 billion[9] by 2030 with a growth of 7.0 per cent.[10] Factors contributing to this growth include:
    i. increase in business complexity which requires specialised expertise and services;
    ii. rising trend of environmental, social and governance (ESG) in sustainable and environmentally friendly manufacturing; and
    iii. increased adoption of advanced technologies.

54. This prospective growth has created opportunities for Malaysia to expand and strengthen the local industry, enabling it to remain competitive globally. These opportunities include:
    i. Industry 4.0 and digitalisation;
    ii. growing emphasis on ESG; and
    iii. the transition into the development of new investment clusters such as energy transition, green energy transition and digital economy.

Industry 4.0 and Digitalisation

55. Digitalisation in MRS in Malaysia presents promising prospects for companies seeking growth by embracing new technologies for smart manufacturing.

56. The increase adoption of new technologies among businesses enables them to stay ahead and meet domestic and global demands.

57. Advanced and new technologies include but are not limited to:
    i. artificial intelligence (AI) and machine learning;
    ii. 5G technology;
    iii. Internet of Things (IOT);
    iv. Virtual Reality (VR) and Augmented Reality (AR);
    v. blockchain; and
    vi. automation.

58. Technologies related to MRS for smart manufacturing adoption include but are not limited to:
    i. cyber security and data protection;
    ii. supply chain digitalisation;
    iii. additive manufacturing; and
    iv. collaborative platforms.

59. To capitalise on this opportunity, it is important to enhance the skills and knowledge of the Malaysian workforce and the unemployed impacted by the COVID-19 pandemic through upskilling and reskilling to keep pace with the evolving industry trends and embracing continuously advancing technologies. and support services.

60. With a proactive approach to digitalisation, the MRS industry can unlock new growth opportunities, competitiveness and sustainable development in the global market.

61. Refer to Action Plan 2 (AP2), Action Plan 3 (AP3) and Action Plan 7 (AP7) in Section 5 for strategies and action plans related to digitalisation and talent.

[9] USD65.0 billion, converted based on exchange rate USD1.0 to RM4.48
[10] Source: Precedence Research

Environmental, Social and Governance

62. Sustainable manufacturing is a significant trend in the global MRS, driven by the growing emphasis on ESG considerations.

63. Companies are recognising the importance of aligning their manufacturing practices with sustainability principles in order to capture long-term value and ensure responsible business operations.

64. Examples of sustainable manufacturing practices include:
    i. eco-friendly processes;
    ii. minimising resource consumption;
    iii. reducing waste generation; and
    iv. promoting circular economy.

65. Sustainable practices can enhance brand reputation, attract environmentally conscious customers and comply with evolving ESG regulations globally.

66. Companies can conduct education and training programmes to create awareness on sustainable practices, leading to a culture of environmental responsibility among employees.

67. Refer to Action Plan 6 (AP6) in Section 5 for strategies and action plans related to talent.

Energy Transition Economy, Green Energy Transition and Digital Economy

68. R&D activities should focus on applied and experimental development as Malaysia transitions towards the development of new investment clusters such as:
    i. energy transition economy;
    ii. green economy (including decarbonisation);
    iii. circular economy; and
    iv. digital economy.

69. This is crucial as basic research is often theoretical and does not have a clear path to commercialisation, whereas applied and experimental development aids the development of new products and services.

70. R&D activities should be spearheaded by large local companies (LLCs) and mid-tier companies (MTCs) with Government facilitation to accelerate commercialisation of R&D activities.

71. The R&D activities should consider the targeted growth sectors under the National Investment Aspirations (NIA) such as:
    i. electrical and electronics (E&E) – to focus on integrated circuit (IC) design;
    ii. aerospace – to consider Sustainable Aviation Fuels (SAF); and
    iii. chemical – to focus on low-carbon products such as green hydrogen.

72. R&D activities in the growth sectors should be identified based their contribution towards energy transition, the green economy and the digital economy on new investment clusters and should focus towards achieving the targets under these agendas.

73. Refer to Action Plan 1 (AP1) in Section 5 for strategies and action plans related to high value-added activities.

SECTION 4 CHALLENGES

Coordination with Key Stakeholders

74. Enhanced collaboration between Government agencies and industry players is necessary to align R&D efforts to meet industry needs. This enables greater progress and exploration across sectors and regions.

75. By actively involving industry players in the R&D process, the focus shifts towards addressing real-world challenges and industry-specific needs. This approach allows for R&D efforts to be aligned with market demands, increasing the relevance and potential commercial value of the output.

76. The establishment of a coordinating body or a collaborative platform becomes essential – facilitates efficient resource allocation and enables a broader range of sectors and region to be explored, which further propels the development of the R&D industry.

77. Refer to Action Plan 4 (AP4) in Section 5 for strategies and action plans related to collaboration support.

Awareness and Demand from the Industry

78. Manufacturers deprioritises conformity assessment services and show limited interest in applying for IP protection. The impact is twofold:
    i. Firstly, it leads to a mismatch between the supply of MRS and manufacturers' actual demands – resulting in inefficiencies, compromised quality control and missed market expansion opportunities.
    ii. Secondly, the low number of IP applications signifies missed potentials for safeguarding innovative ideas and technologies – limiting overall competitiveness and intellectual capital development.

79. It is important for industry stakeholders, Government agencies and educational institutions to collaborate in creating awareness on:
    i. conformity assessment services; and
    ii. IP protection.

80. Refer to Action Plan 8 (AP8) in Section 5 for specific MRS industry action plan related to promotion of MRS.

Concerted Funding and Facilitation Efforts

81. Malaysia has various Government Agencies that offer incentives for the MRS industry. These incentives can be used to fund R&D, attract investments and support other activities that are important to the industry.

82. The industry can benefit from a cohesive approach adopted by the Government in ensuring that resources are effectively allocated and supporting vital activities. Streamlining incentives from various Government Agencies is essential to ease the access of funds for the industry players.

83. Concerted funding and facilitation ensure that the industry's development can be accelerated through targeted support to R&D companies.

84. Refer to Action Plan 1 (AP1) and Action Plan 5 (AP5) in Section 5 for strategies and action plans related to funding.

SECTION 5 STRATEGIES AND ACTION PLANS

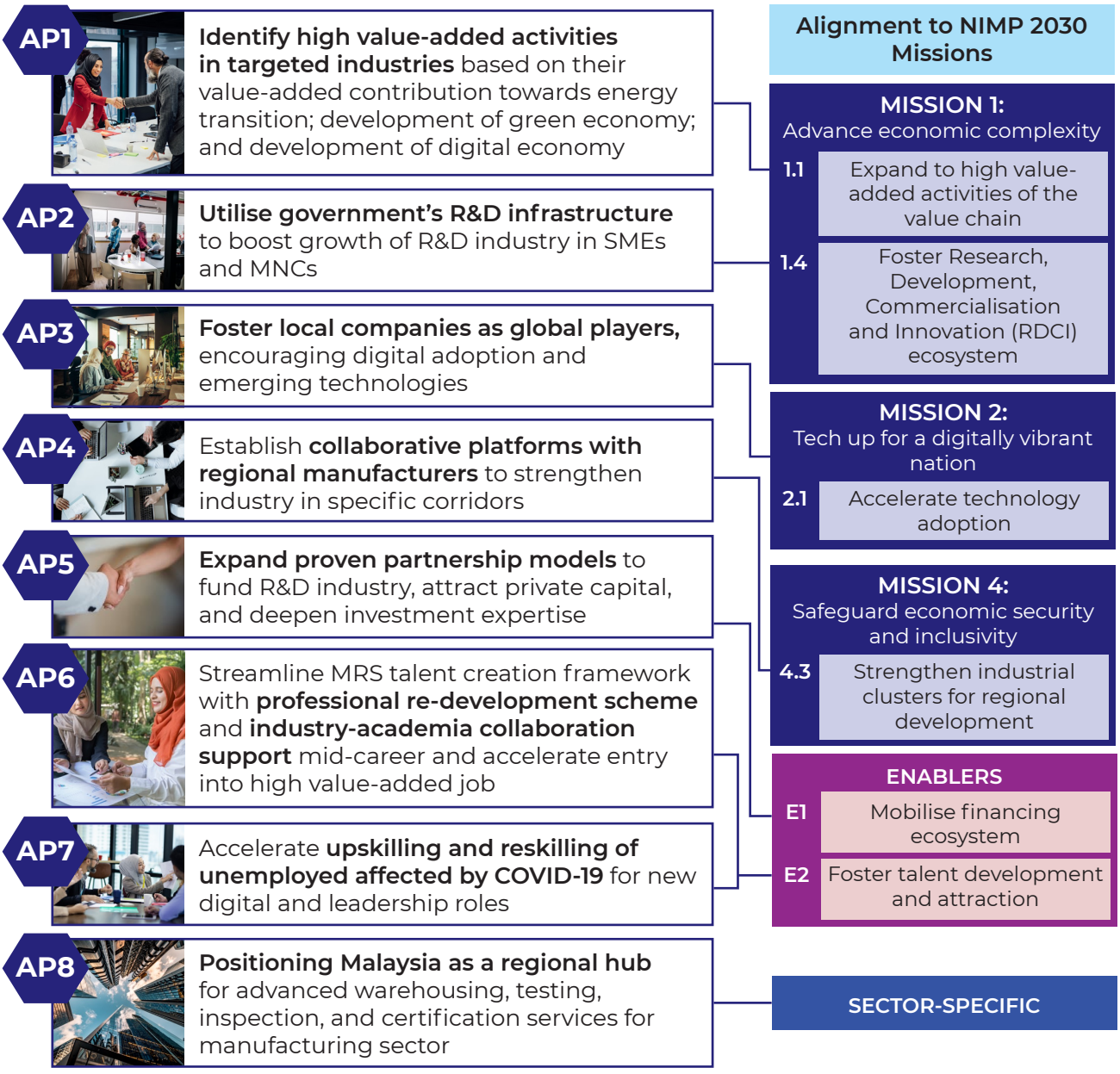
NIMP 2030 Focus

85. During the period of the NIMP 2030, the industry will continue to:
    i. focus on the upskilling and reskilling of the existing workforce to meet the future demands in manufacturing;
    ii. establish Malaysia as a regional hub for conformity assessment services to support the manufacturing sector in Malaysia and regionally; and
    iii. growing the R&D sector in Malaysia with a strong focus on the manufacturing sector, leveraging on digitalisation, Industry 4.0 and other emerging technologies.

Action Plans

86. Strategies and Action Plans relating to the Missions and Enablers of the NIMP 2030 are applicable to this industry (Figure 12.2).

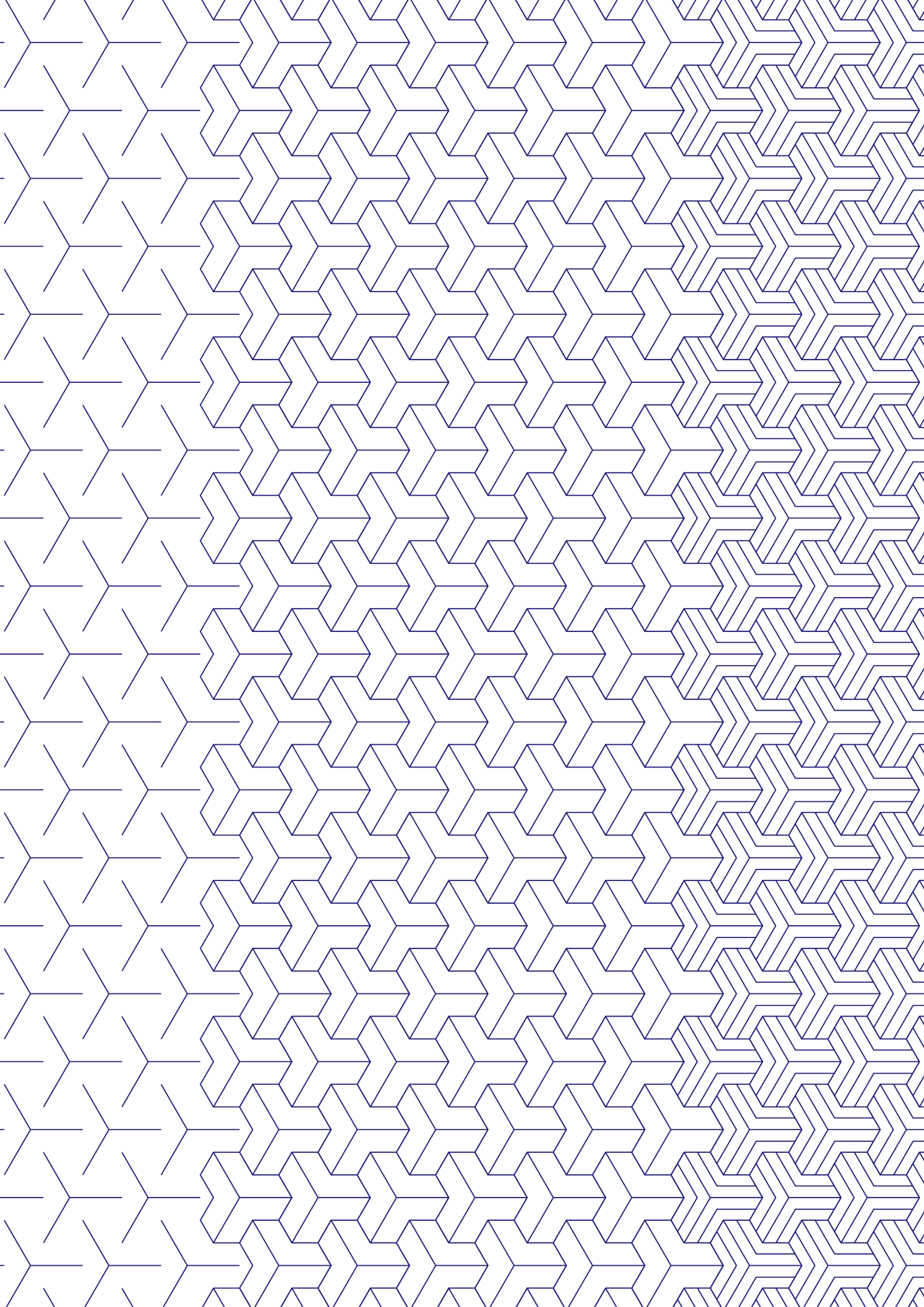
Figure 12.2: Strategies and Action Plans for MRS Industry



APPENDIX 1 INCENTIVES

There are a few incentives offered for key players of MRS industry, these include the following:

Incentives	Agency
Incentives for Research and Development (R&D): • **In-House R&D** • **Contract R&D Company** • **R&D Company**	Malaysian Investment Development Authority (MIDA)



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