

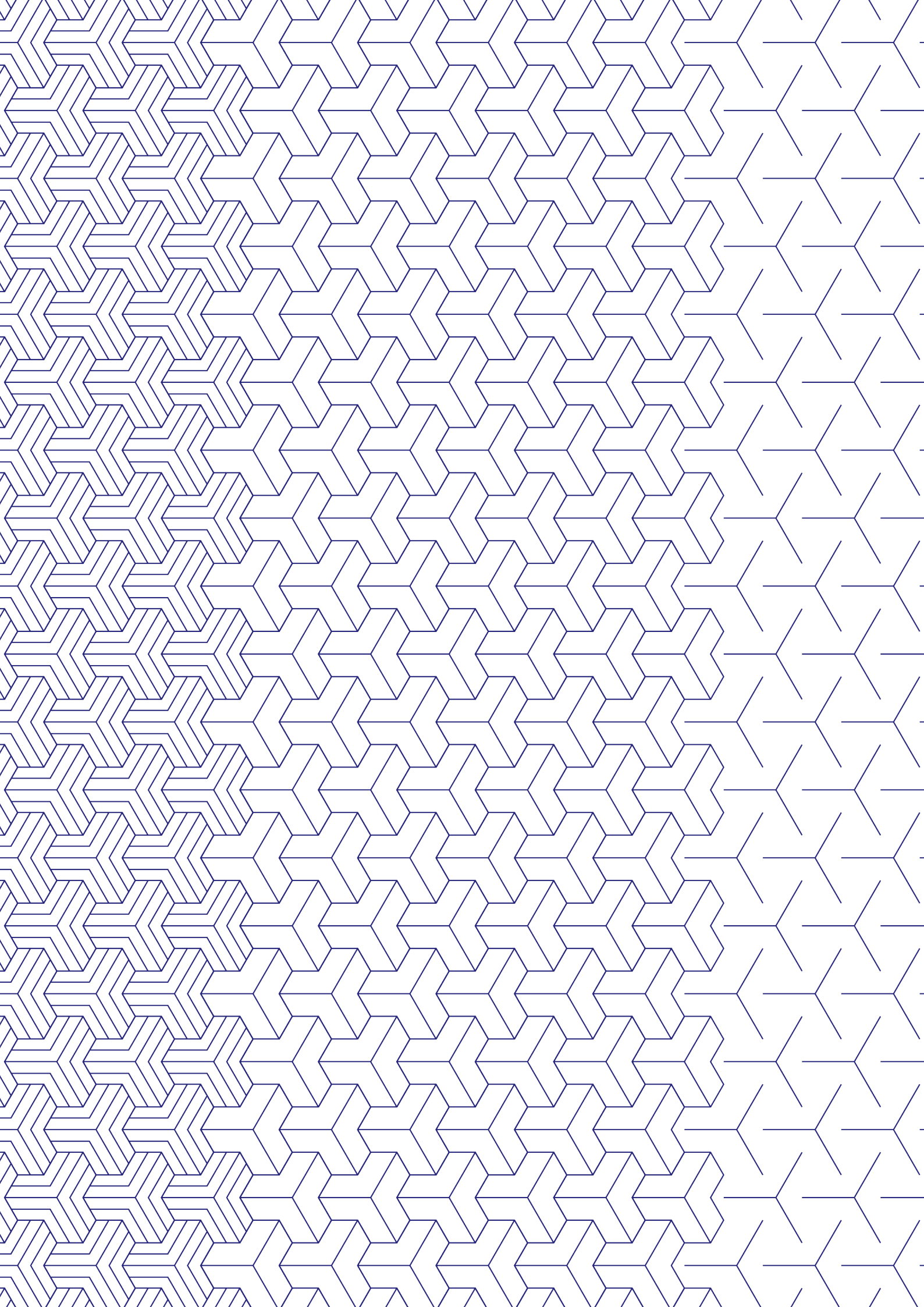


MINISTRY OF INVESTMENT,  
TRADE AND INDUSTRY

NEW INDUSTRIAL  
MASTER PLAN 2030

# RAIL INDUSTRY







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## PREFACE

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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:

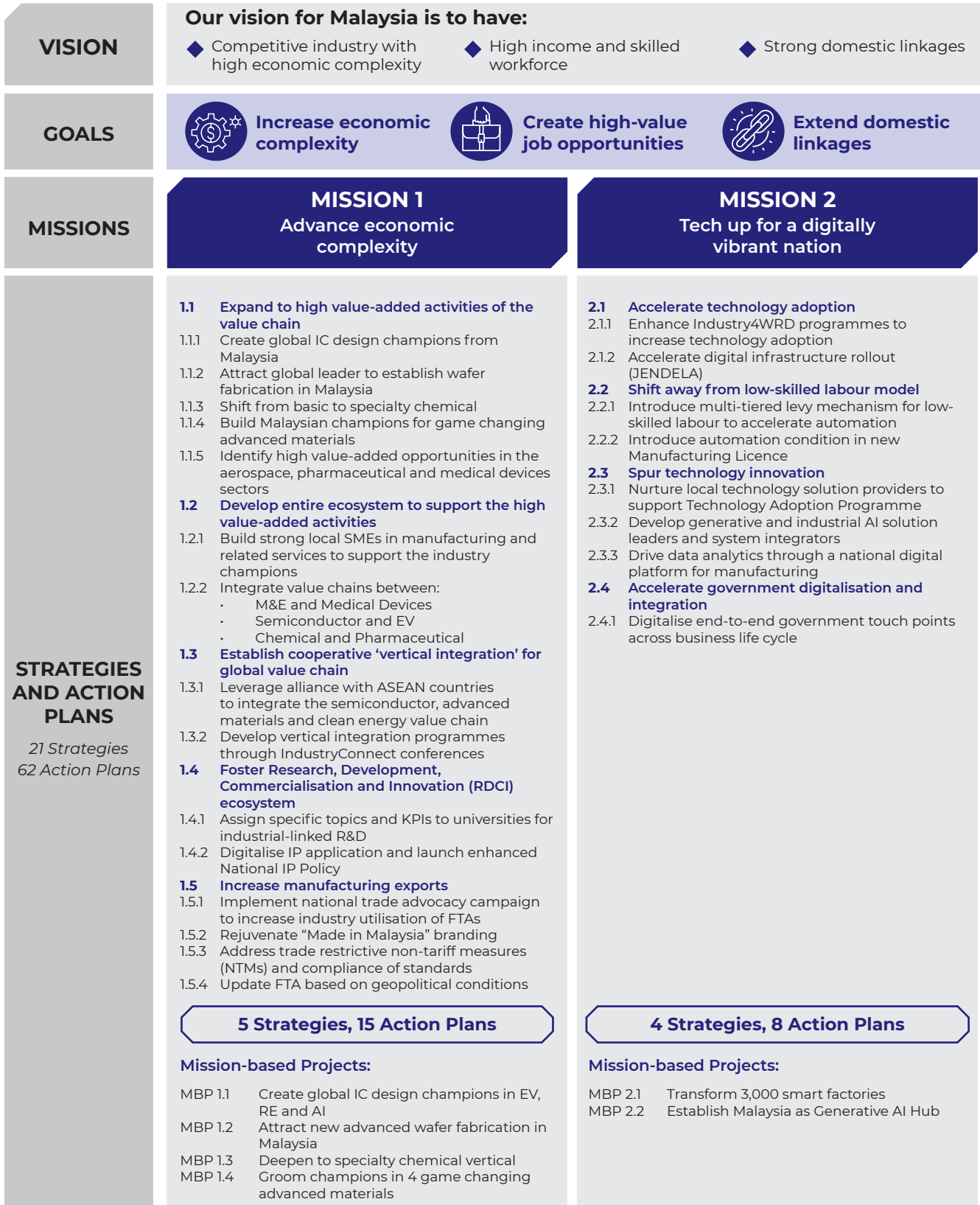
- Provide national strategic direction to lead the industrial development policies;
- Be a conversation piece for investors and other economies on Malaysia's position and direction; and
- Feature the role of the Malaysian Government in shaping the economy.

# 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:





◆ 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
<b>Priority Sectors</b>	<ol style="list-style-type: none"> <li>1. Aerospace</li> <li>2. Chemical</li> <li>3. Electrical and Electronics (E&amp;E)</li> <li>4. Pharmaceutical</li> <li>5. Medical Devices</li> </ol>
<b>Sectors</b>	<ol style="list-style-type: none"> <li>6. Digital and Information and Communication Technology (ICT)</li> <li>7. Automotive</li> <li>8. Food Processing</li> <li>9. Global Services and Professional Services</li> <li>10. <i>Halal</i></li> <li>11. Machinery and Equipment (M&amp;E)</li> <li>12. Manufacturing-Related Services (MRS)</li> <li>13. Metal</li> <li>14. Mineral</li> <li>15. Palm Oil-based Products</li> <li>16. Petroleum Products and Petrochemicals</li> <li>17. Rail</li> <li>18. Rubber-based Products</li> <li>19. Shipbuilding and Ship Repair (SBSR)</li> <li>20. Textile, Apparel and Footwear</li> <li>21. Wood, Paper and Furniture</li> </ol>

This document is the [NIMP 2030 Sectoral Plan – Rail Industry](#).

# OVERVIEW OF THE DOCUMENT

This NIMP 2030 Sectoral Plan – Rail 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.<sup>1</sup>
- 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.

<sup>1</sup> Incentives available for this industry as of time of writing can be found in Appendix 1

## SECTION 1 BACKGROUND

### Areas Covered

- The rail industry in Malaysia can be divided into three segments (Table 17.1):

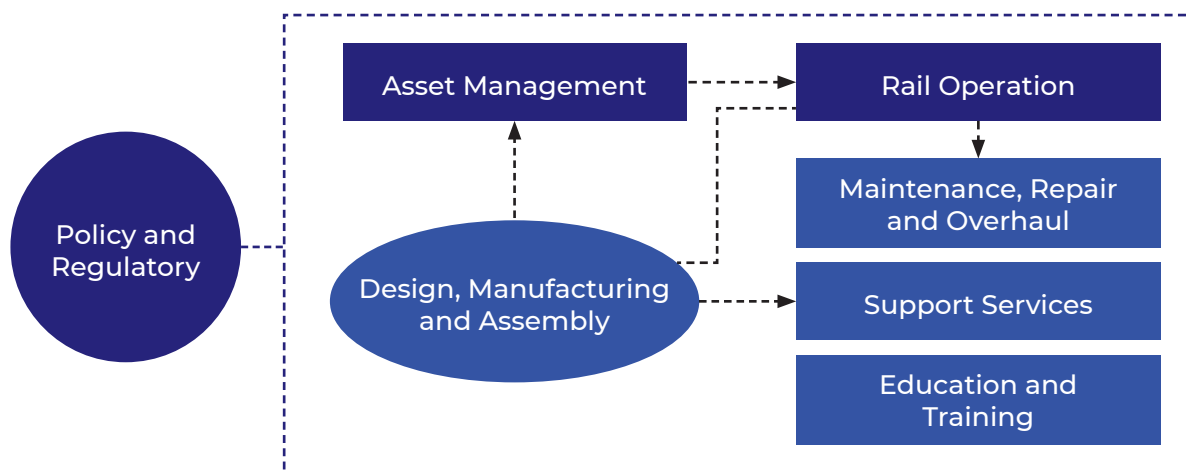
**Table 17.1: Segments of Rail Industry**

Segments	Examples of Activities and Products		
<b>Infrastructure and Civil</b>	<ul style="list-style-type: none"> <li>Engineering</li> <li>Construction</li> <li>Commission of stations, bridges, tunnels, viaducts, auxiliary buildings and depots</li> </ul>		
<b>Railway Systems</b>	Rolling stocks	<ul style="list-style-type: none"> <li>Light Rail Vehicle (LRV)</li> <li>Electric Train Sets (ETS)</li> <li>Electrical Multiple Unit (EMU)</li> <li>Diesel Multiple Unit (DMU)</li> </ul>	<ul style="list-style-type: none"> <li>Locomotive</li> <li>Wagons</li> <li>Passenger Coach</li> <li>Power Generating Car (PGC)</li> </ul>
	Signaling and communication	<ul style="list-style-type: none"> <li>Point Machine</li> <li>Automatic Train Protection</li> <li>Automatic Train Operation (ATO)</li> </ul>	<ul style="list-style-type: none"> <li>Automatic Train Supervision (ATS)</li> <li>Audio and Video (AV) system</li> </ul>
	Trackwork	<ul style="list-style-type: none"> <li>Rail</li> <li>Fastening System</li> </ul>	<ul style="list-style-type: none"> <li>Ballast</li> <li>Sleepers</li> </ul>
	Electrification	<ul style="list-style-type: none"> <li>Overhead Line 25kVAC</li> <li>Third Power Rail (750 VDC)</li> </ul>	
	Automated Fare Collection (AFC)	<ul style="list-style-type: none"> <li>Ticket Vending Machine</li> <li>Automated Platform Gate</li> </ul>	
<b>Operations and Maintenance</b>	<ul style="list-style-type: none"> <li>Train operators to ensure efficient train services with two income generation methods, fare and non-fare revenue</li> </ul>		

Source: Malaysia Rail Development Corporation (MRDC)

- Figure 17.1 illustrates the seven major components of the rail industry, which covers:
  - policy and regulatory;
  - asset management;
  - rail operation;
  - design, manufacturing and assembly;
  - maintenance, repair and overhaul;
  - support services; and
  - education and training.

**Figure 17.1: Structure of Rail Industry**

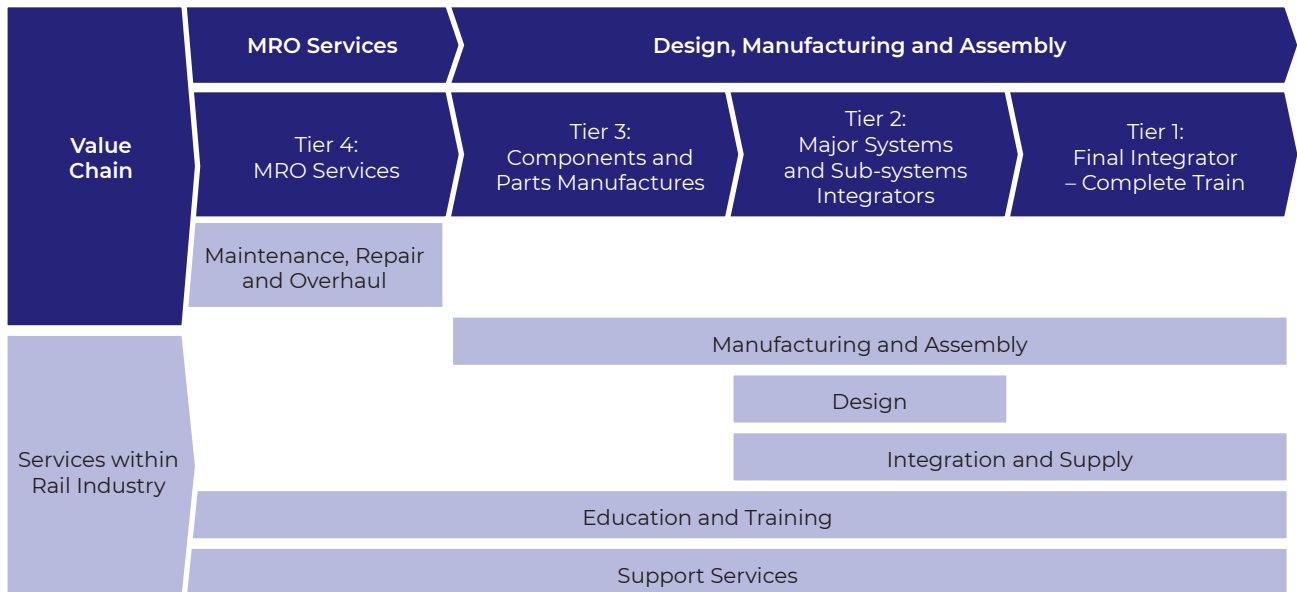


Source: Malaysian Rail Supporting Industry Roadmap 2030

## Value Chain

3. The value chain for the rail industry is illustrated as follows (Figure 17.2).

Figure 17.2: Value Chain of Rail Industry



Source: Ministry of Investment, Trade and Industry (MITI)

4. The rail industry value chain is classified into four tiers:
- Tier 1: Final integrator – top tier in the Malaysian rail industry which includes players who design and produce the complete train systems for rail operators.
  - Tier 2: Major systems and sub-system integrators – players that supply and integrate major systems and sub-systems such as the propulsion, electrical and electronics systems, bogies and others.
  - Tier 3: Components and parts manufacturers – suppliers for Tier 1 and Tier 2 players that supply rolling stock subsystems, trackwork, electrification, signaling and automated fare collections.
  - Tier 4: Manufacturing, repair and overhaul (MRO) services – provides MRO services to rail network operators.

## Market Players

5. The stakeholders in Malaysia's rail industry can be divided into three categories:
- industry players;
  - industry associations; and
  - Ministries and Government Agencies.
6. Presently, there are over 100 organisations which are directly involved in rail-related activities.
7. Malaysia Rail Industry Corporation (MARIC) plays a key role in representing the rail industry by safeguarding the interests of the industry and engaging with the authorities.



8. Ministries and Government Agencies have prominent role in promoting the growth and development of the rail industry. These include:
- i. Ministry of Transport (MOT);
  - ii. Ministry of Investment, Trade and Industry (MITI);
  - iii. Ministry of Entrepreneur Development and Cooperative (KUSKOP);
  - iv. Land Public Transport Agency (APAD);
  - v. Malaysia Rail Development Corporation (MRDC);
  - vi. Malaysian Investment Development Authority (MIDA); and
  - vii. Malaysia External Trade Development Corporation (MATRADE).

### **Policies, Laws and Regulations**

9. The industry's development is guided by the following:
- i. National Transport Policy (NTP) 2019-2030; and
  - ii. Malaysian Rail Supporting Industry Roadmap 2030.

## SECTION 2 PERFORMANCE

### IMP3 Focus and Performance

10. During the IMP3 period (2006 to 2020), major focus areas were:
  - i. development of the rail industry as part of the logistics sector with focus on freight services; and
  - ii. strengthening of the institutional support through inter-ministry and agency coordination.
11. During the period, the rail industry contributed RM1.4 billion to Malaysia's Gross Domestic Product (GDP),<sup>2</sup> with a CAGR<sup>3</sup> of 2.0 per cent from 2015 to 2022.
12. As of 2022, Malaysia has an extensive rail network of more than 3,264 kilometres.

### Investments

13. The investment performance (2007 to 2022) of the rail industry is recorded as follows (Table 17.2).

**Table 17.2: Approved Investments of Rail Industry**

Items	Units	IMP3			2021	2022	2021-2022
		2007	2020	2006-2020			
<b>Total Investment</b>	RM million	135.1	25.1	1056.8	97.3	-	97.3
<b>Domestic Investment</b>	RM million	135.1	25.1	534.0	97.3	-	97.3
<b>Foreign Investment</b>	RM million	-	-	522.7	-	-	-
<b>Number of projects</b>	#	1	2	15	1	-	1
<b>Employment</b>	persons	231	85	1,610	48	-	48

*Note: No projects were approved in 2006, 2008, 2009 and 2022  
Source: MIDA*

14. During the IMP3 period, a total of 15 projects were approved in the rail industry with a total investment of RM1.1 billion. These investments committed a total of 1,610 job opportunities.
15. The rail industry remained resilient through the construction of new lines and the upgrade of existing lines throughout the IMP3 period.
16. In 2021 and 2022, a total of one project were approved with total investment of RM97.3 million. The investment committed a total of 48 job opportunities.
17. Investments in the rail industry are characterised by projects with high capital expenditures that require large investments, resulting in sporadic investments.
18. From 2006 to 2022, 14 (87.5 per cent) out of the 16 approved projects were implemented.

<sup>2</sup> Includes GDP contribution by rail and aerospace industries

<sup>3</sup> Compound annual growth rate

## Exports

19. Export performance (2006 to 2022) of the rail industry is depicted in Table 17.3.

**Table 17.3: Exports of Rail Industry**

Item	IMP3			2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020	2006-2020			CAGR <sup>3</sup>	Annual Growth	
<b>Exports (RM million)</b>	10.5	43.4	600.6	77.6	67.1	10.6%	78.9%	-13.6%

Source: MATRADE

20. Between 2006 to 2020, the industry's exports grew by a CAGR of 10.6 per cent from RM10.5 million (2006) to RM43.4 million (2020).
21. In 2021 and 2022, exports increased by 78.9 per cent amounting to RM77.6 million and then decreased by 13.6 per cent to RM67.1 million.
22. The upward trend was driven by the exports of rolling stock parts and signalling devices.
23. In 2022, major export destinations were:
- United States (US) (RM23.0 million, 34.3 per cent);
  - Indonesia (RM8.1 million, 12.1 per cent);
  - Viet Nam (RM6.3 million, 9.4 per cent);
  - Australia (RM5.6 million, 8.4 per cent); and
  - Singapore (RM3.7 million, 5.5 per cent).
24. In 2022, the top exported products were:
- railway rolling stock parts (RM30.8 million, 45.9 per cent);
  - signaling devices for railways, waterways and airports and parts thereof (RM28.9 million, 43.3 per cent);
  - locomotive parts (RM2.2 million, 3.3 per cent);
  - rail locomotives, diesel-electric (RM1.3 million, 2.0 per cent); and
  - axles, wheels and parts (RM1.3 million, 1.9 per cent).

## Imports

25. The table below presents the import performance of the rail industry (2006 to 2022) (Table 17.4).

**Table 17.4: Imports of Rail Industry**

Item	IMP3			2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020	2006-2020			CAGR	Annual Growth	
<b>Imports (RM million)</b>	165.5	467.5	10,114.1	569.7	546.9	7.7%	21.9%	-4.0%

Source: MATRADE

26. During the IMP3 period, the industry's imports grew by a CAGR of 7.7 per cent from RM165.5 million (2006) to RM467.5 million (2020).
27. In 2021 and 2022, the industry's imports increased by 21.9 per cent totalling to RM569.7 million and then decreased by 4.0 per cent to RM546.9 million.
28. The trend in total imports was primarily driven by the construction of Klang Valley Mass Rapid Transit (MRT) projects and the East Coast Rail Link (ECRL) that were undertaken throughout the period.
29. In 2022, major import sources included:
- China (RM328.0 million, 60.0 per cent);
  - Canada (RM113.5 million, 20.7 per cent);
  - Germany (RM37.6 million, 6.9 per cent);
  - US (RM15.8 million, 2.9 per cent); and
  - United Kingdom (RM11.2 million, 2.0 per cent).
30. In 2022, major import products were:
- self-propelled railway cars powered from external source of electricity (RM404.9 million, 74.0 per cent);
  - signaling devices for railways, waterways and airports and parts thereof (RM39.2 million, 7.2 per cent);
  - railway rolling stock parts (RM32.1 million, 5.9 per cent);
  - locomotive parts (RM18.1 million, 3.3 per cent); and
  - rail locomotives and diesel-electric (RM14.1 million, 2.6 per cent).

## Value-added

31. The industry's value-added (GDP) between 2010 to 2022 is recorded in Table 17.5.

**Table 17.5: Value-added of Rail Industry**

Item	IMP3		2021	2022	2006-2020	2020-2021	2021-2022
	2006	2020			CAGR	Annual Growth	
<b>Value-added<sup>4</sup> (RM billion)</b>	0.5	1.3	1.2	1.4	7.2%	-13.9%	-17.6%

Source: Department of Statistics Malaysia (DOSM)

32. During the IMP3 period, the industry's GDP contribution has grown by a CAGR of 7.2 per cent from RM0.5 billion (2010) to RM1.3 billion (2020).
33. In 2021 and 2022, the industry's GDP contribution declined by 13.9 per cent and then grew 17.6 per cent to RM1.2 billion and RM1.4 billion respectively.
34. The Government's commitment towards developing an integrated and efficient rail network was a key contributor to the industry's GDP growth.

<sup>4</sup> Value added is measured by the GDP of the industry; data includes GDP contributed by aerospace and rail industries, which includes manufacture of railway locomotives, rolling stock, air and spacecraft, related machinery, military fighting vehicles and transport equipment; 2010 GDP data is based on constant 2010 prices, while 2020 to 2022 data are based on constant 2015 prices

## Employment

35. The rail industry's employment (2019 to 2022) is tabulated in Table 17.6.

**Table 17.6: Employment in Rail Industry**

Item	IMP3		2021	2022	2019-2022
	2019	2020			CAGR
<b>Employment<sup>5</sup> (persons)</b>	15,890	13,839	14,129	14,244	-3.4%

Source: DOSM

36. Employment declined by a CAGR of 3.4 per cent, from 15,890 persons (2019) to 14,244 persons (2022).
37. The decline of the employment in the rail industry was due to the COVID-19 pandemic which caused a decline in passenger traffic and suspension of construction projects.

## Labour Productivity

38. The industry's labour productivity (2019 to 2022) is tabulated in Table 17.7.

**Table 17.7: Labour Productivity of Rail Industry**

Item	IMP3		2021	2022	2019-2022
	2019	2020			CAGR
<b>Labour Productivity<sup>6</sup> (RM)</b>	86,983	97,345	82,129	95,761	3.1%

Source: DOSM

39. The labour productivity of the industry grew by a CAGR of 3.1 per cent from RM86,983 (2019) to RM95,761 (2022).
40. Overall, the growth in labour productivity was driven by the adoption of new technologies to automate tasks in the areas of operations and maintenance.

<sup>5</sup> This employment data is based on Monthly Manufacturing Statistics December 2022; data includes employment in rail and aerospace which includes manufacture of railway locomotives, rolling stock, air and spacecraft, related machinery, military fighting vehicles and transport equipment. Due to the change in methodology for employment statistics tabulation in 2019, industry's employment breakdown from 2006 to 2018 is not available

<sup>6</sup> Annual labour productivity is derived from value added per employment



## SECTION 3 TRENDS AND OPPORTUNITIES

41. Moving forward, the global rail transportation market size is expected to reach RM3.1 trillion<sup>7</sup> by 2030.<sup>8</sup> Factors contributing to this growth include:
  - i. increasing demand for sustainable transportation solutions;
  - ii. growing urbanisation and industrialisation;
  - iii. Government initiatives to promote rail transportation; and
  - iv. technological advancements in the rail industry.
42. This prospective growth has created opportunities for Malaysia to expand and strengthen the local industry.

### Urbanisation and Migration to City

43. The growing urban population in Malaysia will result in the increase of rail passengers in the coming years.
44. The population in urban areas are expected to increase steadily, leading to a surge in demand for reliable transportation.
45. Based on global trends, rail will be the preferred mode of commute and travel. Enhancing the rail network including the construction of new lines and upgrade of existing lines will be crucial to meet this demand.
46. Projects in the rail industry has contributed to the growth of the industry such as:
  - i. ECRL;
  - ii. Klang Valley MRT3 Circle Line;
  - iii. Johor Bahru – Singapore Rapid Transit System (RTS Link);
  - iv. Light Rapid Transit (LRT) Penang; and
  - v. Sarawak Autonomous Rapid Transit (ART).
47. In addition, the construction of the MRT3 Circle Line have been approved by the Government and is expected to be operational by 2028.
48. These projects stimulate economic growth, create job opportunities and drive demand for components and services across different sectors such as electrical and electronics (E&E), telecommunications and power systems.
49. As the rail industry progresses, new technologies or processes in other mature industries such as E&E, automotive and aerospace can be developed in alignment with rail project objectives.
50. Refer to Action Plan 5 (AP5) in Section 5 for strategies and action plans related to the establishment of a common standard across matured local industries for local rail development in Malaysia.

<sup>7</sup> USD692.2 billion, converted based on exchange rate USD1.0 to RM4.48

<sup>8</sup> Source: Research and Markets

## SECTION 4 CHALLENGES

### Reliance on Foreign Manufacturers

51. Malaysia has been reliant on importing rail components in the past for the development of new projects.
52. Presently, the strength of Malaysian companies is in the civil infrastructure and the integration of railway systems.
53. The localisation rate is relatively low – 10.0 to 30.0 per cent in rolling stocks and systems. This indicates that a substantial portion of the components and technologies are imported rather than being produced domestically.
54. As a result, there has been limited transfer of knowledge and technology to the local industry, hindering the growth of domestic capabilities for new projects.
55. To address this, the development of a self-sustaining and competitive rail industry will be needed to boost the domestic economy and strengthen the country's overall capabilities in the rail industry.
56. Refer to Action Plan 1 (AP1) and 2 (AP2) in Section 5 for strategies and action plans related to localisation.

### High Dependence on Government

57. Train operators rely on financial support (i.e. subsidy) provided by the Government to cover operational costs and maintain profitability. This is mainly attributed to the restrictions to set ticket prices independently – resulting in lower revenues.
58. Operators require an opportunity to implement cost-saving measures, explore alternative revenue streams or introduce improvements that can increase ridership, thus alleviating the financial strain on the train services.
59. An industry-led research and technology (R&T) platform leads to the potential advancements of new technologies and techniques that can improve the efficiency, safety and sustainability of rail transportation.
60. Organisations share resources and expertise to accelerate the development of new ideas and solutions – this is to support small and medium enterprises (SME) that may not have the resources to fund its own R&D activities.
61. Rail operators can enhance their services, reduce costs and improve overall efficiency by exploring possible advancements such as:
  - i. train design;
  - ii. signaling systems;
  - iii. safety features;
  - iv. energy efficiency; and
  - v. maintenance processes
62. By fostering collaboration and innovation, establishment of an industry-led R&D platform could pave the way for increased ridership, increased freight traffic and increased profits for the rail industry.
63. Refer to Action Plan 3 (AP3) in Section 5 for strategies and action plans related to sharing of knowledge, best practices and research findings, leading to a collective improvement in the industry.

## Lifecycle Support

64. Most rail assets such as rolling stock and other system components have a lifespan of 30 years. Rail operators perform mid-life refurbishments for trains and track rehabilitation aimed to restore and improve the operational efficiency and passenger experience, in addition to maximising the lifespan of train fleet and tracks.
65. At present, rail operators are reliant on maintenance support from vendors and lack the capabilities to perform higher levels of maintenance.
66. Remanufacturing activities and energy efficient practices will reduce emissions in the industry.
  - i. Remanufacturing involves restoring used components (i.e. locomotive engines, traction systems, brakes and electronics) to original specifications, often with improvements that enhances performance and lifespan.
  - ii. Energy efficient practices involve optimisation of processes to minimise energy consumption from rail operations and maintenance. This may include application of advanced technologies such as artificial intelligence and big data analytics for predictive maintenance, which would minimise downtime and improve overall operations.
67. By harnessing the strengths of well-established local industries and promoting cross-industry collaboration, the rail sector can achieve cost efficiency and sustainable development while leveraging on established expertise and resources.
68. For instance, incorporating common electronics or propulsion systems used in other industries into rail vehicles can reduce development costs and lead time.
69. Incorporating mid-life refurbishments and track rehabilitation practices underlines the rail operators' commitment to deliver high-quality train services while maintaining the safety and functionality of the railway infrastructure.
70. Refer to:
  - i. Action Plan 4 (AP4) in Section 5 for strategies and action plans related to reducing emissions and extending lifespan of rail infrastructure; and
  - ii. Action Plan 5 (AP5) in Section 5 for specific rail industry action plan related to collaboration with matured industries for local rail development.

# SECTION 5 STRATEGIES AND ACTION PLANS

## NIMP 2030 Focus

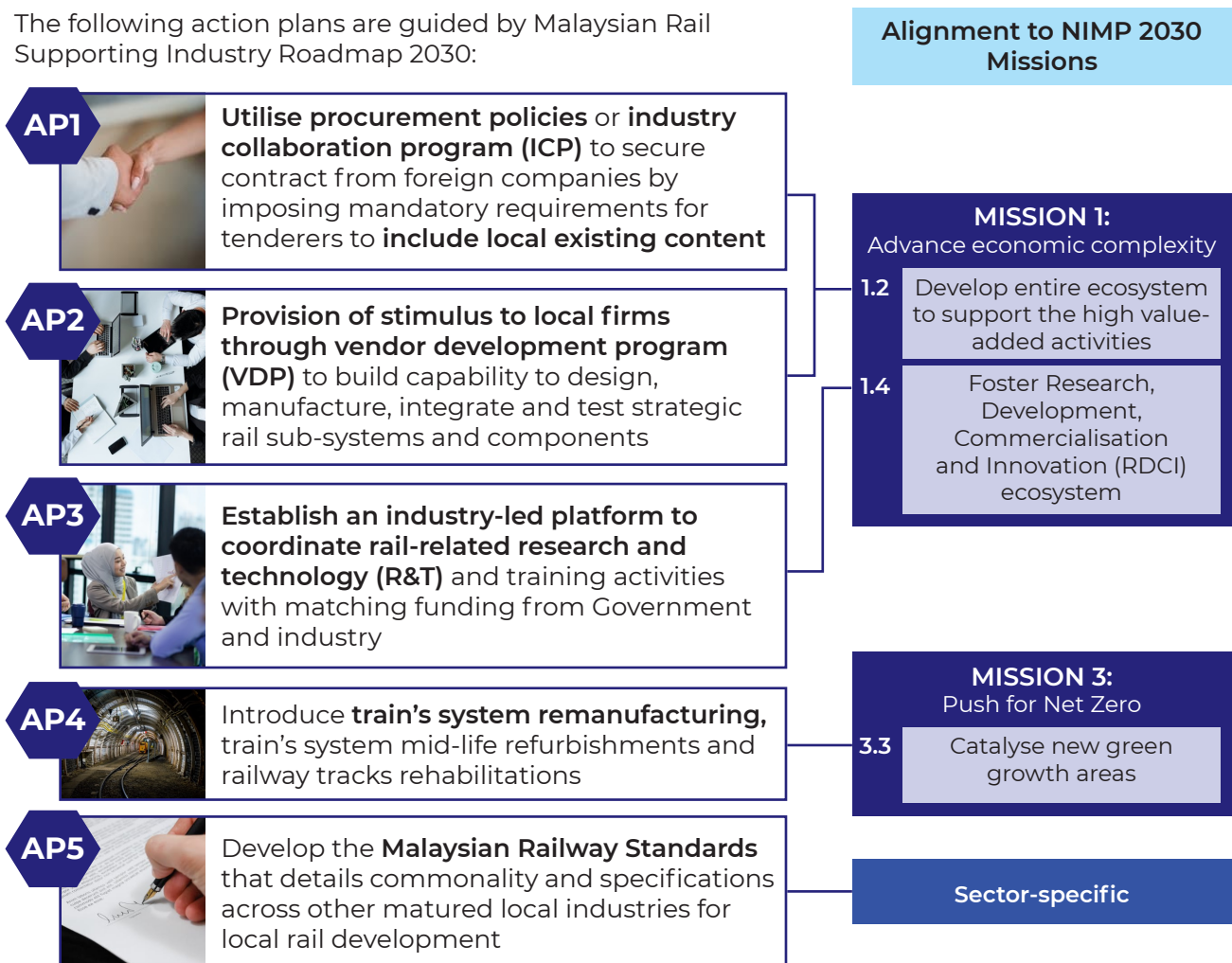
- 71. During the period of the NIMP 2030, the industry will continue to:
  - i. enhance capabilities of the Malaysian rail industry to be competitive by moving into higher value activities; and
  - ii. stimulate the industry by increasing private sector involvement and financing support from the Government.

## Action Plans

- 72. Strategies and Action Plans relating to the NIMP 2030’s Missions and Enablers are applicable to this industry (Figure 17.3).
- 73. Further action plans specific to this industry shall be guided by the Malaysian Rail Supporting Industry Roadmap 2030.

**Figure 17.3: Strategies and Action Plans for Rail Industry**

The following action plans are guided by Malaysian Rail Supporting Industry Roadmap 2030:



## APPENDIX 1 INCENTIVES

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

Incentives	Agency
Pioneer Status	Malaysian Investment Development Authority (MIDA)
Investment Tax Allowance (ITA)	







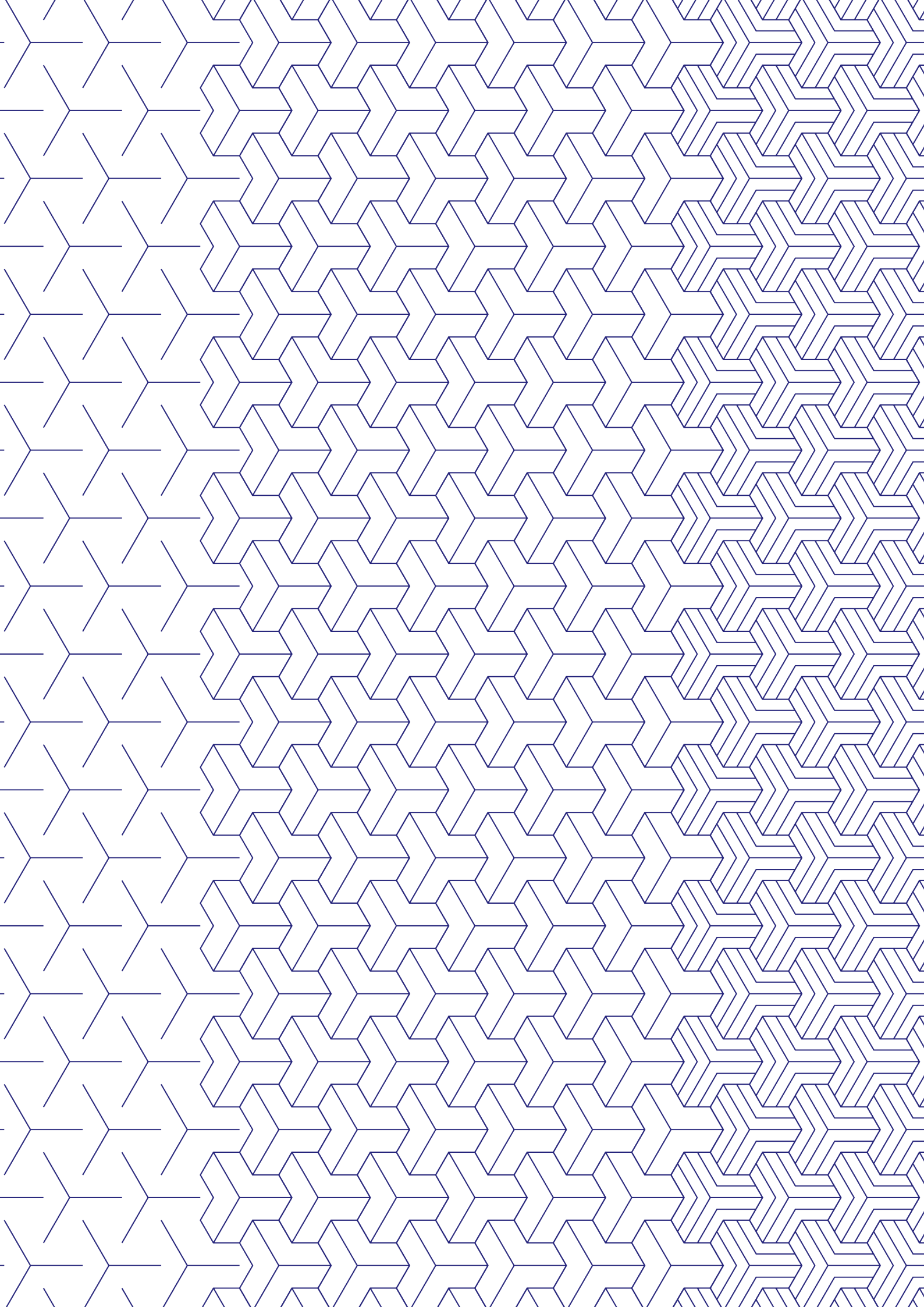




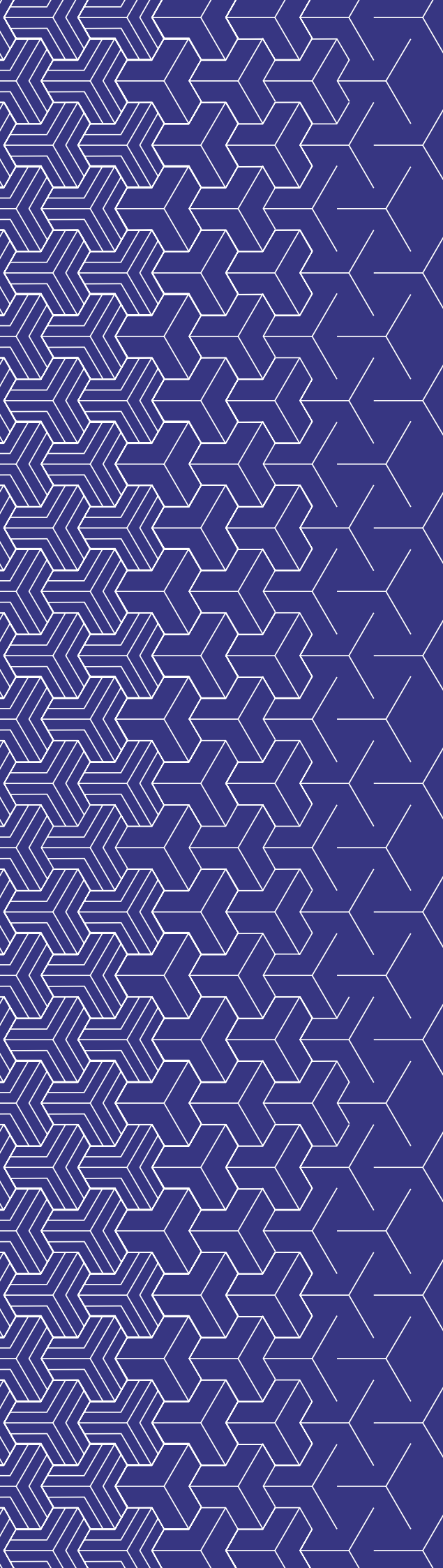












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