Final Draft Automotive Mission Plan 2016-26

“A roadmap for Indian Automotive industry - automobiles, tractors and auto components”
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<tbody>
<tr>
<td>ABS</td>
<td>Anti-lock Braking System</td>
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<td>ACMA</td>
<td>Automotive Component Manufacturers Association</td>
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<td>ADAC</td>
<td>Accident Data Analysis Centre</td>
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<td>AFTO</td>
<td>Auto Freight Train Operators</td>
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<td>AMP</td>
<td>Automotive Mission Plan</td>
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<td>ARAI</td>
<td>Automotive Research Association of India</td>
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<td>ASDC</td>
<td>Automotive Skill Development Corporation</td>
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<td>ASDC</td>
<td>Automotive Skills Development Council</td>
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<td>ASEAN</td>
<td>Association of South East Asian Nations</td>
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<tr>
<td>ATI</td>
<td>Apprentice Training Institute</td>
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<td>BRT</td>
<td>Bus Rapid Transit</td>
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<td>bn</td>
<td>Billion</td>
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<td>BS</td>
<td>Bharat Stage</td>
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<td>CAFE</td>
<td>Corporate Average Fuel Efficiency</td>
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<td>CAGR</td>
<td>Compounded Annual Growth Rate</td>
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<tr>
<td>CBU</td>
<td>Completely Built Unit</td>
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<td>CFMTTI</td>
<td>Central farm Machinery Training and Testing Institute</td>
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<tr>
<td>CGD</td>
<td>City Gas Distribution</td>
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<tr>
<td>CIRT</td>
<td>Central Institute for Road Transport</td>
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<tr>
<td>CKD</td>
<td>Completely Knocked Down</td>
</tr>
<tr>
<td>CNG</td>
<td>Compressed Natural Gas</td>
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<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
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<td>CV</td>
<td>Commercial vehicle</td>
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<td>DEPB</td>
<td>Deposit Entitlement Pass Book</td>
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<tr>
<td>DFC</td>
<td>Dedicated Freight corridor</td>
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<td>DHI</td>
<td>Department of Heavy Industries</td>
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<td>EFTA</td>
<td>European Free Trade Area</td>
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<td>EoL</td>
<td>End of Life</td>
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<tr>
<td>EV</td>
<td>Electric Vehicle</td>
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<tr>
<td>FADA</td>
<td>Federation of Automobile Dealers Association</td>
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<td>FMS</td>
<td>Focus Market Scheme</td>
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<tr>
<td>FTA</td>
<td>Free Trade Agreement</td>
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<td>FTP</td>
<td>Foreign Trade Policy</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>GOI</td>
<td>Government of India</td>
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<tr>
<td>GST</td>
<td>Goods and Services Tax</td>
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<td>HEV</td>
<td>Hybrid Electric Vehicle</td>
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<td>HP</td>
<td>Horse Power</td>
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<tr>
<td>I&amp;C</td>
<td>Inspection &amp; Certification</td>
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<tr>
<td>ICAT</td>
<td>International Centre for Automotive technology</td>
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<td>ICES</td>
<td>Indian Customs EDI System</td>
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<td>Acronym</td>
<td>Full Form</td>
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<tr>
<td>IHMCL</td>
<td>Indian Highways Management Company Limited</td>
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<tr>
<td>IIM</td>
<td>Indian Institute of Management</td>
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<tr>
<td>IIT</td>
<td>Indian Institute of Technology</td>
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<tr>
<td>IIT</td>
<td>Indian Institute of Technology</td>
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<tr>
<td>IMaCS</td>
<td>ICRA Management Consulting Services Limited</td>
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<tr>
<td>Rs.</td>
<td>Indian Rupee</td>
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<tr>
<td>ITI</td>
<td>Industrial Training Institute</td>
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<tr>
<td>JNNURM</td>
<td>Jawaharlal Nehru National Urban Renewal Mission</td>
</tr>
<tr>
<td>JNPT</td>
<td>Jawaharlal Nehru Port Trust</td>
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<tr>
<td>LCV</td>
<td>Light Commercial Vehicle</td>
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<tr>
<td>LPG</td>
<td>Liquefied Petroleum Gas</td>
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<tr>
<td>MHCV</td>
<td>Medium and Heavy Commercial Vehicle</td>
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<td>MLFPS</td>
<td>Market Linked Focus Product Scheme</td>
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<tr>
<td>MNRE</td>
<td>Ministry of New and Renewable Energy</td>
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<tr>
<td>MoHIPE</td>
<td>Ministry of Heavy Industries &amp; Public Enterprises</td>
</tr>
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<td>MoPNG</td>
<td>Ministry of Petroleum &amp; Natural Gas</td>
</tr>
<tr>
<td>MoRTH</td>
<td>Ministry of Road transport &amp; Highways</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>mn</td>
<td>Million</td>
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<tr>
<td>MSME</td>
<td>Micro Small and Medium Enterprises</td>
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<tr>
<td>MUV</td>
<td>Multi Utility Vehicle</td>
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<tr>
<td>NAFTA</td>
<td>North American Free Trade Area</td>
</tr>
<tr>
<td>NATriP</td>
<td>National Automotive Testing and R&amp;D Infrastructure Project</td>
</tr>
<tr>
<td>NBFC</td>
<td>Non-Banking Finance Company</td>
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<tr>
<td>NEMMP</td>
<td>National Electric Mobility Mission Plan 2020</td>
</tr>
<tr>
<td>NH</td>
<td>National Highways</td>
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<tr>
<td>NHAI</td>
<td>National Highway Authority of India</td>
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<tr>
<td>NIC</td>
<td>National Informatics Centre</td>
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<tr>
<td>NMEM</td>
<td>National Mission on Electric Mobility</td>
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<td>NOS</td>
<td>National Occupational Standards</td>
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<tr>
<td>NRFMTTI</td>
<td>Northern Region Farm Machinery Training &amp; Testing Institute</td>
</tr>
<tr>
<td>NSDC</td>
<td>National Skill Development Corporation</td>
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<tr>
<td>NVH</td>
<td>Noise, Vibration and Harshness</td>
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<tr>
<td>OEM</td>
<td>Original Equipment Manufacturer</td>
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<tr>
<td>OICA</td>
<td>Organisation Internationale des Constructeurs d'Automobiles, (International Organization of Motor Vehicle Manufacturers)</td>
</tr>
<tr>
<td>PMP</td>
<td>Phased Manufacturing Programme</td>
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<tr>
<td>PV</td>
<td>Passenger Vehicle</td>
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<tr>
<td>QR</td>
<td>Quantitative Restrictions</td>
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<tr>
<td>R&amp;D</td>
<td>Research &amp; Development</td>
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<tr>
<td>RCEP</td>
<td>Regional Comprehensive Economic Partnership Agreement</td>
</tr>
<tr>
<td>RDSO</td>
<td>Research Designs &amp; Standards Organisation</td>
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<tr>
<td>RTA</td>
<td>Regional Trade Agreement</td>
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<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>RTSB</td>
<td>Road Transport and Safety Bill</td>
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<tr>
<td>SAARC</td>
<td>South Asian Association for regional Cooperation</td>
</tr>
<tr>
<td>SCV</td>
<td>Small Commercial Vehicle</td>
</tr>
<tr>
<td>SH</td>
<td>State Highways</td>
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<tr>
<td>SIAM</td>
<td>Society of Indian Automobile Manufacturers</td>
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<tr>
<td>SIS</td>
<td>Served from India Scheme</td>
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<tr>
<td>STU</td>
<td>State Transport Undertaking</td>
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<tr>
<td>SUV</td>
<td>Sports Utility Vehicle</td>
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<tr>
<td>tn</td>
<td>Trillion</td>
</tr>
<tr>
<td>ULB</td>
<td>Urban Local Body</td>
</tr>
<tr>
<td>UNECE</td>
<td>United Nations Economic Commission for Europe</td>
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<tr>
<td>USD/US$</td>
<td>US Dollars; Exchange Rate assumed @ 1US$ = Rs.62.50</td>
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1. Executive Summary

1.1. What is AMP 2026?

1.1.1. The Automotive Mission Plan 2016-26 (AMP 2026) is the collective vision of Government of India (Government) and the Indian Automotive Industry on where the Vehicles, Auto-components, and Tractor industries should reach over the next ten years in terms of size, contribution to India’s development, global footprint, technological maturity, competitiveness, and institutional structure and capabilities. AMP 2026 also seeks to define the trajectory of evolution of the automotive ecosystem in India including the glide path of specific regulations and policies that govern research, design, technology, testing, manufacturing, imports/exports, sales, use, repair, and scrapping of automotive vehicles, components and services. AMP 2026 is a document that is aimed at multiple stakeholders in India and overseas, and seeks to communicate the Government’s policies pertaining to the Indian Automotive industry, comprising the automotive vehicle manufacturers, the auto-component manufacturers and tractor manufacturers who operate in India. The list of stakeholders (not exhaustive) includes the following:

a) Vehicle manufacturers (referred to as OEMs in this document)
b) Automotive component manufacturers
c) Engine manufacturers
d) Tractor manufacturers
e) Manufacturers and suppliers of raw materials and consumables to the Automotive industry
f) Machinery and capital goods manufacturers
g) Buyers, users, consumers, traders, and dealers of automobiles, tractors, and auto components
h) Commuters, pedestrians, and co-users of roads across the country
i) Persons employed in the Indian Automotive industry directly and indirectly
j) Automotive dealers, traders, and other participants in the Auto supply chain
k) Automotive repair shops and workshops
l) Financial Services industry engaged with the Automotive sector, and includes banks, NBFCs, insurance companies, and equity investors
m) Governments (including state and local governments) and other regulatory bodies/institutions that formulate policies that impact the Automotive sector
n) Fuel suppliers (including oil refineries, gas utilities, pipeline companies, and oil retailing companies)
o) Non-government organisations, activists, and supporters of various causes that have a relationship with the Auto industry in some manner
p) Institutions and entities concerned with infrastructure related to automotive sector, such as, road designing and building institutions, traffic planning and management authorities, ports, logistics companies, and the like
q) The media sector

1.1.2. The comprehensive list of stakeholders indicates the ubiquitous and fast expanding footprint of automobiles in our society and the diverse manner in which automotive products and services interact with different kinds of persons, groups, institutions, and organisations. Each stakeholder has a different perspective (read advantage, cost, benefit, and expectation) of the Automotive sector, and therefore AMP 2026 is an attempt to provide a “same page” view to all of them in a coherent and cogent manner of Government’s vision and policies for the Automotive sector.

1.2. Objectives of AMP 2026

1.2.1. The core objectives of AMP2026 can be summarised under five themes as follows:

a) AMP 2026 aims to propel the **Indian Automotive industry to be the engine of the “Make in India” programme**, as it is amongst the foremost drivers of the Manufacturing sector: Over the next decade, the Indian Automotive sector is likely to contribute in excess of 12% of the country’s GDP and comprise more than 40% of its manufacturing sector. Around 13% of the excise duty collection of the Government can be attributed to the Indian Automotive industry. The Automotive industry can be termed as the mother of the manufacturing sector in an economy, as its fortunes directly impact the fortunes of several related manufacturing industries (e.g. Iron & Steel, Aluminium, Lead, Rubber, Plastics, Glass, Machine tools, Moulds & dies, Chemicals, and Capital Goods) and several in the Services sector (e.g. Logistics, Banking, Insurance, Sales & distribution, Service & repair, and Fuels). The rapid growth of the Indian Automotive industry will provide a strong fillip to the Micro, Small and Medium industries of the country across multiple sectors, the development of which is one of Government’s principal objectives.
b) AMP 2026 aims to make the **Indian Automotive Industry a significant contributor to the “Skill India” programme** and make it one of the largest job creating engines in the Indian economy: The incremental number of jobs to be created by the Indian Automotive industry over the next decade is 65 million. This is over and above the 25 million jobs created in the previous decade. The automotive industry has numerous backward and forward linkages with over two dozen industries across manufacturing and service sectors, across rural and urban India, and across the formal and informal sectors of the economy. Most of the jobs in the Indian Automotive industry involve acquiring specialist skills, and confer to the person sufficient technical and soft skills to progress professionally within and outside the automotive sector. In addition to creating high skilled jobs, the industry also provides employment opportunity to a large number of semi-skilled and low skilled workers.

c) **AMP 2026 seeks enhancing mobility**: The focus of AMP 2026 is to promote safe, efficient and comfortable mobility for every person in the country, with an eye on environmental protection and affordability through both public and personal transport options. The objective is to provide a choice to the consumer to access multiple options for mobility. AMP 2026 aims to enhance mobility in the country while also addressing the need to minimize the negative externalities arising from the use of automobiles, such as, congestion, air pollution, global warming, and road accidents. AMP 2026 seeks to achieve a healthy balance between the human aspiration of personal transport and efficiency of public transport in India.

d) **AMP 2026 seeks to increase net exports of the Indian Automotive industry several fold**: AMP 2026 recognises that the Indian Automotive industry (both vehicles and auto components) has the potential to scale up exports to the extent of 35-40% of its overall output over the next ten years and become one of the major automotive export hubs of the world. In line with this, AMP 2026 makes several prescriptions to improve competitiveness, technological advancement, infrastructure investment, and branding. On the flip side, the import intensity of automobiles is likely to increase in the coming years on account of the increasing use of electronics and the enhancement in the value of design and engineering in making of vehicles and components. At present, India is deficient in skills and capabilities in both these areas, namely auto-electronics and design/engineering. AMP 2026 seeks to increase the share of local manufacture of vehicles and components, in particular, automotive electronics, light-weighting materials,
moulds & dies, and machinery, which will save the country substantial foreign exchange and be a shot in the arm for the “Make in India” programme as well. AMP 2026 also aims to increase the quantum of indigenously carried out research, design, engineering and manufacturing in both automotive vehicles and components. Developing a robust ecosystem for design and development of automobiles in India is an important pillar that will determine the industry’s success. This will also go a long way in building Brand India from current Low Cost Manufacturer tag to something more aspirational.

e) **Comprehensive and stable policy dispensation required:** Given the distinctive contributions of the Indian Automotive Industry to the socio-economic development of the country, it is imperative that the industry is subjected to a comprehensive and predictable policy regime that governs it in a stable and sustainable manner. World over, every economically advanced nation has succeeded in attaining its developed status with Government’s support and nurturing of its automotive industry. Given the widespread and differential impact of the Automotive sector on different stakeholders and the vibrancy of India’s democracy, regulations and policies that govern the Auto sector are subject to pulls and pressures of several lobbies. Therefore, to ensure a fair and predictable governing environment for the Indian Automotive industry, AMP 2026 spells out the Government’s views on the path of evolution of key policies for the Auto sector, so that all regulations impacting the industry are formulated comprehensively in scope and scale to be implemented harmoniously across the nation and both at the centre and the states.

1.3. **Achievements and Learning’s of Automotive Mission Plan 2006-16**

1.3.1. As we come to the end of the first Automotive Mission Plan (AMP 2006-2016, or AMP 2016 in short), many of its objectives have been met or will come close to being fulfilled by the end of its period. Some of the key achievements are:

i) The Automotive industry has achieved the target of incremental employment creation of 25 million jobs over the past decade.

ii) India has attracted significant quantum of investments from global and local OEMs as well as component manufacturers, exceeding the target of Rs.1,57,500 crore.

iii) While, the cumulative domestic sales volumes targets of commercial vehicles, passenger vehicles, and tractors have been achieved, two and three wheelers have
fallen short of their targets. In comparison to the base case scenario of Rs. 5,49,000 crore the industry is on course to achieve this target by end of FY16. In the case of exports, by end of FY16, automobiles will have exceeded the target of Rs. 54,000 crore. Considering that almost five years during the past decade had recessionary characteristics, including the global financial crisis of 2008, the performance of the Indian Automotive industry over AMP2016 has been commendable.

iv) The emergence of India as a global hub for small cars is a significant accomplishment that AMP 2016 had envisaged. As of FY15, around 31% of the global sales of small cars are manufactured in India. Besides small cars, India has also emerged as a world leader in the manufacture of the following: (i) diesel and petrol engines of small capacity; (ii) commuter two wheelers and three wheelers; (iii) low powered tractors; (iv) engine and transmission related auto components, especially those that require complex machining, grinding, forging etc., and possibly assembly operations; and (v) components that require relatively lower scale and complexities in manufacture.

v) India has become the largest exporter in the world of sub 100HP tractors. This has also enabled development of globally accepted indigenous technology for such tractors.

1.3.2. There are two lessons from the first Mission Document (AMP 2016) that AMP 2026 seeks to incorporate. The first pertains to including more sections of the Government (central, state, and local levels) in implementing the AMP, and in a more coordinated manner. For instance, several policies and regulations for use of automobiles in India are enacted by other central Ministries, such as, Ministry of Urban Development, Ministry of Roads & Highways, Ministry of Petroleum & Natural Gas, Ministry of Environment and Forests, and Ministry of Finance, besides various institutions and arms of the state and local governments all over the country. To the extent possible, the central government will seek the participation of various arms of the government and other institutions in implementing the AMP 2026. Second, the AMP 2026\(^1\) is positioned as a guiding document for all institutions that frame policies impacting the manufacture and use of automotive products in India. The intent here is to avoid conflicting policies or knee-jerk regulatory responses to unforeseen situations that

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\(^1\) Implicitly, AMP 2016 was positioned as a document mainly meant for the manufacturers of automotive vehicles and automotive components, and not so much positioned keeping in view other stakeholders. AMP 2026 seeks to be much more inclusive by design.
could have a detrimental impact on the smooth development of the Indian automotive industry.

1.4. Vision and targets

1.4.1. Vision statement AMP 2026: “Vision 3/12/65”: “By 2026, the Indian automotive industry will be among the top three of the world in engineering, manufacture and export of vehicles and auto components, and will encompass safe, efficient and environment friendly conditions for affordable mobility of people and transportation of goods in India comparable with global standards, growing in value to over 12% of India’s GDP$, and generating an additional 65 million jobs.”

1.4.2. Growth targets: AMP 2026 envisages that the Indian Automotive Industry will grow 3.5 - 4 times in value from its current output of around Rs. 4,64,000 crore (circa 2015) to about Rs.16,16,000 - 18,89,500 crore by 2026 based on a base case with average GDP growth of 5.8% and an optimistic case with an average GDP growth of 7.5% during the period. The following chart provides current and projected composition of the industry over the next decade.

Source: MOSPI, SIAM, ACMA, TMA, IMaCS Analysis

Note: All values in the above chart are in Rs. crore and at current prices (2015): Refer Appendix-1 for chart in US$ terms.

# Component – Domestic includes systems and in-house components manufactured by OEMs

$ Estimated GDP at constant prices (2004-05 base)
1.5. **Interventions**

1.5.1. **Auto fuels and Emission norms:** This is one of the most critical policy pronouncements that interest several stakeholders of the automotive industry. There is a general perception that a bulk of the atmospheric pollution in many Indian cities today is contributed by automobiles, which does not appear to be borne out by facts. Therefore, AMP 2026 advocates the need for a scientific and transparently conducted study of the causes of air pollution in Indian cities. It also proposes the introduction of world class emission standards to be implemented all over the country in a transparent and orchestrated manner allowing all stakeholders to make the necessary adjustments required and to ensure a harmonious implementation. AMP 2026 pronounces a glide path for fuel usage by automobiles in India and the norms for emissions control as follows:

i) While the earlier plan for adoption of emission norms for passenger vehicles conforming to Bharat Stage V (BS V) was by 2019 and Bharat Stage VI (BS VI equivalent of Euro VI) by 2023, given the recent developments and judicial interventions related to vehicular pollution, GOI has decided to skip BS V and introduce BS VI norms directly by 2020. However, there is a need for adequate measures to address the challenges associated with this move, mainly of creating indigenous production capability for necessary components and systems and significant upfront investments by the industry.

ii) Introduction of fuel/emission norms will be done all over India simultaneously and not in a phased manner or in select regional areas only. Government will also ensure unfettered availability of the right grade(s) of fuel across the country as such norms are introduced.

iii) Fuel policies will specify outcomes required (emission from various engines) and will be technology agnostic. Similarly, the Government will ensure cognisance of internationally established methodologies and suitability to local conditions before announcing fuel efficiency norms for all types of fuels/engines.

iv) By 2026, the lag between global norms and the mandatory norms in India should be brought down from the present 7-8 years.

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3 As on date, only norms for engines of Passenger Vehicles have been announced, while norms for other vehicle categories are yet to be announced.
v) DHI shall coordinate amongst concerned central ministries and state
governments to ensure consistent policy environment for universal availability of
fuels, stable relative pricing amongst competing fuels, subsidies accorded to
various fuels, and taxes for automotive fuels (e.g. CNG, Diesel, LPG, Petrol, EV,
and Hybrid). Conventional powertrains are expected to hold sway over the next
decade also while hybrids and electric vehicles are expected to increase their
share significantly from the current levels.

vi) The FAME\textsuperscript{4} policy lays down the roadmap to support the development of electric
and hybrid vehicles market and its manufacturing eco-system with a view to
achieve self-sustenance as early as 2020. Technology development, demand
creation, pilot projects, and charging infrastructure are the focus areas of the
scheme. While the policy is clear for the initial two years, the roadmap for the
rest of the AMP 2026 period needs to be formulated. Adequate incentives should
be given for the speedy development of an indigenous component design and
manufacturing base for the electric and hybrid vehicle industry to take off in
India.

1.5.2. Safety standards: Safety concerning automobiles encompasses two dimensions,
namely concerning safety of vehicles and road safety. The first dimension deals with
safety of vehicles and that of passengers within the vehicle, while road safety deals
mainly with safety of persons outside a moving vehicle (say on the road) who may
potentially come into physical contact with a vehicle. AMP 2026 recognises the need
for articulating a clear roadmap over the next decade that will make Indian vehicles
and auto components comply with global standards of safety (in line with the UNECE
World Forum for Harmonization of Vehicle Regulations [WP.29]). Standards will be
adopted and implemented in a manner that ensures, that they are relevant in the
Indian context, and, importantly, do not render vehicles or components unaffordable
for Indian consumers. Another area where greater vigil and stronger regulation is
called for is in the aftermarket where the menace of spurious and sub-standard
automotive components and insufficiently trained or governed workshops
compromise vehicle safety taking advantage of ineffective administrative controls.
AMP 2026 advocates the formulation of appropriate regulations along with
monitoring and enforcement agency to check proliferation of spurious components,

\textsuperscript{4}Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India
including adoption of standards, testing procedures, labelling, and punitive measures for ensuring conformance. Making Procedure for Type Approval and Establishing Conformity of Production for Safety Critical Components mandatory will help in ensuring quality of safety critical parts. AMP2026 also stresses the need for providing quality training and up-skilling of technicians and mechanics to be available all over the country in sufficient numbers.

Road Safety is a critical area that needs active regulation and monitoring, as the number of casualties in accidents outside the vehicle is in multiples of number of casualties within the vehicles. AMP 2026 envisages the following actions to improve India’s record of safety:

a) Alignment of road safety rules with norms proposed in the Road Transport and Safety Bill 2015 (RTSB 2015)

b) Enforcement of on-road regulations will be improved in coordination with various authorities and agencies

c) Adoption of scientific and technology driven measures in traffic management, pedestrian access, highway engineering, road furniture, driver license issuance, and signage

d) Strict implementation of the ban on overloading of commercial vehicles

e) Identification of ‘Black Spots’ through safety audits to address issues pertaining to road furniture, road geometry and signage.

f) The necessary legislations and regulatory authorities that will deal with the safety related issues are envisaged under RTSB 2015.

1.5.3. **Inspection & Certification (I&C) Regime:** AMP 2026 seeks to implement a coherent I&C regime in a comprehensive manner. AMP 2016 also indicated that an I&C regime should be ushered in, and towards that end, a few tentative steps were undertaken. These were not sufficient to address the rising number of vehicles in the park, the increasing burden on the environment due to auto pollution, and the rising number of accidents and casualties due to poor condition of vehicles on the road. All this clearly points to the need for a comprehensive I&C policy that regulates the roadworthiness of vehicles in use. AMP 2026 envisages the implementation of an appropriate I&C policy across the nation over the next five years. Some of the salient features of the I&C policy would be as follows:

i) All vehicles in the country should be subject to a test of roadworthiness periodically, in line with laid down standards of testing. The results of such a
roadworthiness test should determine the eligibility (or otherwise) for a vehicle to be on-road.

ii) Government will define the mandatory tests for roadworthiness for different categories of vehicles.

iii) The I&C policy will unambiguously state consequences of vehicles failing the fitness test

iv) The implementation of the I&C policy will be countrywide, so that all vehicle owners anywhere in the country are not unduly inconvenienced in terms of access to a fitness testing centre. Accordingly, the implementation may be done under a suitable business model - e.g. a franchisee or PPP model with appropriate regulation through credible agencies.

v) The necessary legislations and regulatory authorities that will deal with I&C regime are envisaged under RTSB 2015.

1.5.4. **End of Life (EoL) policy:** As a logical complement and extension of the I&C regime, AMP 2026 envisages the implementation of an End of Life policy for automotive vehicles and components in a manner that is in line with safety and the preservation of the environment. AMP 2016 also envisioned such a policy, but there was not much progress towards this objective. However, keeping in mind the implementation of an I&C policy, a logical plan to retire vehicles and components that do not meet the emission norms and are not conducive for further use must be in place. Some of the salient aspects of implementing an EoL and vehicle scrapping policy are as follows:

i) The EoL policy would have a national footprint, and not be confined to specific towns or regions. All vehicle owners anywhere in the country should be provided with vehicle scrapping centres within a reasonable distance. Introduction of scrapping centres in selective areas would undermine the whole policy and may result in concentration of “unroadworthy” vehicles in areas where the policy is not enforced.

ii) Standards for scrapping and for EoL for different categories of vehicles and components will be defined in conjunction with the I&C policy.

iii) Government may consider introducing appropriate fiscal support for scrapping vehicles, including by way of innovative financial instruments, such as tradable certificates. This would be required as the person scrapping a vehicle may not be the user of the new vehicle. Such support for scrapping vehicles could be
introduced especially those with old technology so that there is a positive impact on the environment.

iv) The Government will also introduce a fleet modernisation programme as and when required.

v) The necessary legislations and regulatory authorities that will deal with EoL issues are envisaged under RTSB 2015.

AMP 2026 aims to complete the implementation of EoL along with I&C policy by the mid of its term.

1.5.5. Trade policy: The trade policy of the Government has a huge impact on the growth and well-being of the automotive industry in multiple ways, and given the large socio-economic footprint of the Indian Automotive industry, AMP 2026 purports to make several inputs in this regard.

i) Duty structure in the automotive value chain: AMP 2026 supports rationalisation of the custom duties on all raw materials, intermediates, components, and assemblies that are used in automotive components and vehicles in a manner that there is no inverted duty structure. Policy should incentivise domestic capacity creation of imported items which contribute to a large proportion of imports such as electronic component and systems, high end plastics, and moulds and dies. The use of these items (especially automotive electronics) is likely to increase sharply in terms of value per vehicle in the future, and therefore AMP 2026 stresses the need for stepping up incentives for encouraging local capacity creation. The prevailing duty structure on Completely Built Units (CBUs) and policies for import of used vehicles shall continue in order to provide impetus to local manufacturing. Stability of trade and tariff policy regime will be an important criterion for improving the export potential of the Indian auto industry.

ii) Free Trade Agreements (FTAs): World trade amongst countries and trading blocs is increasingly being shaped by FTAs and RTAs, and India is no exception. As the global centre of gravity of automotive production and consumption is rapidly moving in favour of certain large and emerging economies like India, FTAs will have a big impact on the fortunes of the vehicle and auto component sectors in India. Given that manufacturing in India is globally competitive, India should follow a strategy of signing up FTAs with those countries that have a similar market for automobiles, and especially those, that do not have a significant
manufacturing base for automobiles. Such countries would include Algeria, Egypt, Nigeria, South Africa, Peru, Chile, Colombia, Brazil, Iran, Argentina and Russia. In addition there is a need to pursue bilateral agreements with countries like Philippines, Myanmar, Vietnam even though they are already part of other regional trade agreements. If there are other compulsions to enter into FTAs with countries/blocs that have a significant automotive production base, there should be reasonable time provided for the Indian industry to gear up to such competition.

iii) **Foreign Trade Policy (FTP):** The current foreign trade policy is for a five year period with a provision for mid-term course correction. Similar approach will be adopted in the next FTP also, that would cover the remainder of the period of AMP 2026. This will allow the industry to plan investments and be more prepared for competition that will inevitably come.

1.5.6. **Fiscal & Taxation measures:** One of the major factors impeding the growth of the automotive industry has been the domestic taxation system that is quite complicated, with multiplicity of taxes, applicable at different points in time during the whole process of manufacture to sale of the product. Automobiles are today one of the most heavily taxed manufactured products in India and very few countries where automobiles are manufactured have such a high level of tax incidence. A total tax incidence of 53% to 78% for cars hinders this industry significantly and there is a need to address this urgently. It is expected that the introduction of GST would resolve this issue to a large extent. The measures taken by governments post the 2008 financial crisis in bailing out or financially supporting automotive companies around the world demonstrates the fact that fiscal support to the automotive industry is a necessary factor for long term growth, particularly during times of economic distress. This also follows from the strong economic contribution made by the automotive industry to the countries they operate in. The excise duty concessions provided by the Government of India has also helped the Indian Automotive Industry weather the downturn. AMP 2016 proved unambiguously that government support had helped the Indian automotive industry grow in multiple ways. Given that India does not have a perfect set off of all taxes (even for exports where a duty drawback is allowed) and the fact that India suffers from a significant infrastructure deficit vis-à-vis other global manufacturing centres, it would help Indian auto exports if an
additional drawback is given to both auto component and vehicle exports. AMP 2026 envisages five principal fiscal supports for the Indian Automotive industry:

i) Mass-market vehicles including passenger vehicles (small cars, commuter motor cycles & scooters), commercial vehicles (including three wheeler vehicles used for public transport, trucks and buses) and tractors shall be levied with a lower level of taxes (Excise duty or GST) than other vehicles.

ii) The weighted tax deduction for Research & Development expenditure (200% Weighted Deduction under section 35(2AB) for In-House R & D facility and 175% Weighted Deduction on outsourced R&D from approved Institutions i.e. National Laboratories, Universities, Scientific Research Institutes and IITs) shall be continued. Further, the benefit shall be extended to outsourced R&D expenditure as well. This scheme has been well-received by the Indian Automotive industry and the results in terms of enhanced level of R&D activity in India has helped the country climb higher in the value chain.

iii) A Technology Acquisition Fund with government support may be set up to finance the Indian Automotive industry’s attempts to acquire cutting edge technology (viz. light weighting, engine, powertrain and auto electronics) through technology transfers, joint ventures, acquisitions, and buy outs. This would be a big step for the Indian Automotive industry particularly the auto component industry to leapfrog and acquire global best capabilities for research, design, engineering and testing.

iv) The Government shall facilitate longer tenure terms loans with principal moratorium to Automotive MSMEs.

v) To support the Government’s “Make in India” programme to boost the manufacturing capabilities in India, one of the key policies shall be to provide accelerated depreciation rates for the capital equipment manufactured in India for use by the Indian Automotive industry. Similarly, domestic design and manufacture of automotive electronic components/sub-assemblies and high technology plastic parts shall be actively encouraged by incentivising creation of local manufacturing capacities.

1.5.7. **Skill Development:** The Automotive industry offers one of the highest potential for providing skills to youth and up-skilling existing labour force, amongst all sectors. The
Auto Sector Skill Council\textsuperscript{5} will be the apex industry body for skill development under the programmes by Government of India. This will be strengthened to become an independent testing and certifying agency for automotive industry skills. All trainers and training programmes for skill development in the Indian Automotive industry will be accredited by the Auto SSC, which will enable standardisation in the long run. The Auto Sector Skill Council will track continually the skill gap\textsuperscript{6} in the Indian Automotive industry and take corrective actions by effecting changes in curriculum design, training the trainers, examination and certification methods.

1.5.8. **Automotive specific infrastructure:** The Government recognises that the rapid growth of the automotive industry in the coming decade will involve a big increase in the movement of physical goods (e.g. raw materials, components, assemblies, and finished vehicles) both within the country and across the sea ports. This will call for an order of magnitude step up in the logistics infrastructure in the country including the following:

i) Dedicated facilities such as berths, parking and faster clearance for automotive exports at Mundhra, Chennai, JNPT, and Mumbai ports

ii) Flexi deck auto-wagons “BCACBM”\textsuperscript{7} for movement of vehicles

iii) Coastal shipping and inland waterways policy to facilitate automotive logistics

iv) Weighbridges at an interval of every 100 kilometres on national highways and state highways

v) Electronic tolling – Interoperable electronic tolling using FASTag (RFID tag) affixed at the centre of the windscreen of vehicles to be implemented speedily across the country.

vi) Wayside facilities: Amenities like parking, repairs, rest areas, recreation, eateries to be created on all national and state highways at an interval of 50 kilometres

vii) Transport Nagars: Facilities for transhipment of goods shall be created outside major cities and trade hubs where all necessary infrastructure including multimodal access, backward and forward linkages for regulatory and other clearances needed for shipment of goods are included.

\textsuperscript{5}Automotive Skill Development Corporation (ASDC) to play this role

\textsuperscript{6}For instance, the skills in short supply in 2015 are seen at the level of shop floor, design, quality, service, and finance functions

\textsuperscript{7}Bi-level Auto Car wagon type ‘BCACBM’ been developed by Research Designs & Standards Organisation (RDSO)
viii) City Development Plans of all major towns should make adequate provision for automobile showrooms, service centres and parking facilities.

ix) There should be a planned establishment of sufficient charging stations for electric vehicles in both cities and rural areas.

x) Digital infrastructure (e.g. VAHAN, Accident data, and ICES) should be set up expeditiously.

xi) State governments should be encouraged to set up Auto Supplier Parks that ensure continuous power supply, park-to-port rail links, tooling centres, technical training centres for workmen skill upgradation, and proximate banks for providing easy access to capital.

1.5.9. **Accelerating the establishment of physical infrastructure:** As with any sophisticated manufacturing activity that particularly involves significant extent of logistics, the quality of physical infrastructure has to be world class. AMP 2026 envisages the provision of world class infrastructure to the Indian Automotive industry along the following lines:

i) **Electricity:** High captive power on account of unavailability of continuous power supply from state grid leading to higher power costs.

ii) **Ports:** Indian Auto industry’s exports likely to increase 5X (vehicles) and 7.5x (components). Facilitate comprehensive development of dedicated facilities for Auto sector in other ports on both western and eastern coasts; Last mile connectivity to ports to be significantly improved.

iii) **Railways:** Requirement of multiple Dedicated Freight Corridors (DFCs) and DFCs should have capacity to facilitate movement of triple deck wagons.

iv) **Roads:** ULBs and NHAI/State Road Development Corporation to speed up development of urban roads and NH/SH/Major District Roads.

v) **Social infrastructure:** Creation of social infrastructure around automotive hubs.

1.5.10. **Improving Business Climate:** It is important that the country has a business climate that facilitates flow of investments. In particular, the automotive sector, with significant backward and forward linkages, requires a favourable business climate where the processes for establishing a business are transparent and smooth. AMP 2026 seeks to clear unnecessary bottlenecks in obtaining clearances etc., and facilitate the goal of GoI of translating ‘Red Tape’ to ‘Red Carpet’.

1.6. **Conclusion**
1.6.1. The Indian Automotive industry has made great strides over the past two decades, sufficient to be noticed at a global level and be counted as a major automotive manufacturing hub. In terms of global rankings in manufacturing output, it is at present, second largest in two wheelers, eighth largest in commercial vehicles, sixth largest in passenger vehicles and the largest in three wheelers and tractors. During the past ten years, India has emerged as one of the most preferred locations in the world for manufacturing high quality automotive components and vehicles of all kinds, narrowing its gap over several established locations in the process.

1.6.2. Over the next decade, the Automotive industry at a global level is likely to see some significant transformations. Principal ones that are expected include the shift of growth in demand for automobiles from developed nations to developing nations (mainly BRICS); a dramatic increase in the share of electronics in automobiles making them a “computer on wheels”; a relentless pursuit of economies of scale and scope in design and engineering of automobiles and components, while also pursuing low cost manufacturing destinations;

1.6.3. AMP 2026 envisages that the Government and the Indian Automotive industry will work together to address all the key issues to take India to its rightful position in the global automotive industry’s sweepstakes. AMP 2026 will help Indian Automotive industry to focus on its strengths and improve its competitiveness in select segments, achieve the annual production target of Rs.16,16,000crore to Rs.18,89,500crore in terms of its size and establish its ‘Right to Win’ on the global stage. By 2026 India could stand first in the world in production/sale of small cars, two wheelers, three wheelers, tractors and buses, third in passenger vehicles and heavy trucks, all adding up to 12% of GDP

8 GDP at constant prices (2004-05 base year); Source: MOSPI, IMaCS Analysis
2. Global Automotive Industry

2.1 The production of passenger and commercial vehicles has reached a new record of 88.24 million units in CY 14. The growth in global sales has been as follows:

<table>
<thead>
<tr>
<th>Years</th>
<th>Global sales</th>
<th>Growth Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>66</td>
<td>3.6%</td>
</tr>
<tr>
<td>2006</td>
<td>68</td>
<td>3.7%</td>
</tr>
<tr>
<td>2007</td>
<td>72</td>
<td>4.7%</td>
</tr>
<tr>
<td>2008</td>
<td>68</td>
<td>-4.5%</td>
</tr>
<tr>
<td>2009</td>
<td>66</td>
<td>-4.0%</td>
</tr>
<tr>
<td>2010</td>
<td>75</td>
<td>14.3%</td>
</tr>
<tr>
<td>2011</td>
<td>78</td>
<td>4.3%</td>
</tr>
<tr>
<td>2012</td>
<td>82</td>
<td>5.1%</td>
</tr>
<tr>
<td>2013</td>
<td>86</td>
<td>4.2%</td>
</tr>
<tr>
<td>2014</td>
<td>88</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

Source: OICA, IMaCS Analysis

2.2 There has been an addition of 22.31 million vehicle sales since CY 05. A majority of this growth is coming from the Asia – Pacific region.
2.3 Global sales of Passenger vehicles increased from 45.18 million units in 2005 to 64.98 million units in 2014 clocking a CAGR of 4.1%. There is a clear shift in the sales of passenger vehicles, with the share of the developing economies (Asia/Oceania/Middle East) increasing significantly. European Union (28 countries) + EFTA have significantly lost share from 34.6% to 20% during the same period. The share of NAFTA has also reduced significantly from 20.4% to 14.1%. Regions like Africa, Central & South America and Russia, Turkey and other Europe have managed to maintain their shares over the years.

![Global commercial vehicle sales (Region-wise)](chart)

Source: OICA, IMaCS Analysis

2.4 Global sales of Commercial Vehicles (CV) increased from 20.76 million units in 2005 to 23.27 million units in 2014 clocking a CAGR of 1.3% showing significant sluggishness in the global economy. NAFTA has continued its dominance; however its share has reduced from 53.1% to 46.1%. There is a clear trend of increased share of sales of CVs in the developing economies (Asia/Oceania/Middle East and Central & South America). Share of Asia/Oceania/Middle East increased from 26.5% to 34.7% during the same period while the share of Central & South America increased from 3.6% to 6.8% during the same period. European Union (28 countries) + EFTA have also lost share from 12.4% to 8.3% during the same period. Regions like Africa, and Russia, Turkey & Other Europe have managed to maintain their shares over the years.
2.5 In 2014, the total two wheeler market globally accounted for 58 million units. This includes various sub segments of motorcycles (On Road, Off Road, Sports, Super Sports, Cruisers, Touring, Naked, Dual Purpose, Enduro, Motocross, and Supercross) and Scooters/ Mopeds. India, the largest motorised two wheeler market globally, has grown at an impressive CAGR of 9.5 percent during 2006-2014 against the triad (The USA., Europe, and Japan) mirroring a decline at 9.5 percent (CAGR) in the same period.

2.6 World over, consumption is moving more towards the developing economies and the production patterns are gradually following suit. For instance, production clusters are moving from Germany, Spain, Italy and France to Poland, Slovakia and Hungary in Europe. In NAFTA, part of production has moved to Mexico while Indonesia and Thailand have established themselves as hubs for supplying to ASEAN. China and India have emerged as manufacturing locations and so have Brazil and Russia.

2.7 Two important reasons can be attributed to the shift in production capacities. First, the market for automobiles is moving to the developing world and manufacturing is locating itself closer to consumption centres. Second, a number of developing countries have emerged as competitive locations for manufacturing, forcing global automotive companies to move to these countries.

2.8 India with its favourable demographics, large skilled labour force, and a stable business and political environment has been successful in attracting significant quantum of investments in the automotive sector.
3. Evolution of Indian Automotive Industry

3.1. Automobiles

3.1.1. While the genesis of Indian Automotive Industry can be traced to the 1940s, the spurt in growth started in the 1970s. Between 1970 and 1984, cars were considered a luxury product in India; manufacturing was licensed, expansion was restricted; there were quantitative restriction (QR) on imports and a tariff structure designed to contain the demand for cars. The automotive industry in India was dominated by six manufacturers – TELCO (now Tata Motors Limited), Ashok Leyland Limited, Mahindra & Mahindra, Hindustan Motors Limited, Premier Automobiles Limited and Bajaj Auto Limited.

3.1.2. The decade of 1985 - 1995 witnessed the entry of Maruti Udyog Limited in the passenger car segment and Japanese manufacturers in the two wheelers and Light Commercial Vehicle segments. Economic liberalisation, started in 1991, led to the de-licensing of the passenger car segment in 1993, though QR on imports continued. The decade of the 1990s witnessed the emergence of Hero Honda Motors (now Hero Motocorp) as a major player in the two wheeler segment and Maruti Udyog as the market leader in the passenger car segment.

3.1.3. Between 1995 and 2000 several international players entered the market. Advanced technology was introduced by various players to gain competitive advantage, and also in response to rising environmental and safety concerns. Automobile manufacturers started investing in expanding their service networks to support maintenance of on-road vehicles and also to gain competitive advantage amongst increasingly discerning consumers. Auto financing started emerging as an important driver of demand for new vehicles.

3.1.4. Starting in 2000, Government introduced several landmark policy changes such as removal of QR and 100 percent FDI through automatic route. In 2003, Core-group on Automotive R&D was set up by Government to identify priority areas for automotive R&D in India. Indigenously developed (Made in India) Vehicles were introduced in the domestic market, and exports were also given a thrust. Automobile manufacturers started collaboration with financiers to extend financing and insurance services to vehicle buyers.
3.2. **Auto Components**

3.2.1. In 1953, the Tariff Commission in its report to Government stressed the need for a balanced and integrated development of the Automotive Industry by promoting the emergence of a strong auto-component sector. As a result of this recommendation, leading entrepreneurs were invited by Government to establish an auto-component manufacturing industry.

3.2.2. Prior to 1985 the auto component sector was protected with high import tariffs. The market was oriented primarily towards supply of components to domestic manufacturers.

3.2.3. In the 1980s, encouraged by the establishment of many Japanese OEMs in the passenger car, two-wheeler and Light Commercial Vehicle (LCV) industry in the country, a number of Indian companies entered into Joint Ventures with Japanese companies and exports also commenced.

3.2.4. The Phased Manufacturing Programme (PMP) introduced in the Indian automotive sector in the 1980s for localisation laid the foundation for the development of the auto component industry. This programme enabled the auto-component industry to modernise technology, improve quality and to imbibe good manufacturing and shop-floor practices and to transform itself into a highly capable industry, while at the same time contribute to localising the component base. In 1990s global OEMs and Tier 1 suppliers started operations in India. This paved the way for a large number of new Joint Ventures in the component industry with European and American component manufacturers and gave the Indian component industry an all-round expertise to manufacture components for applications in Japanese, European as well as American vehicles. After the PMP programme came to an end in 1991, Government introduced the MOU system that continued to place emphasis on the aspect of localisation. With support from this policy, the auto component industry developed further capabilities to manufacture components required for the new generation vehicles.

3.2.5. As a result of successful localisation programme, vehicle manufacturers started outsourcing more and more components rather than manufacturing in-house. Vendors were encouraged to develop components. Where required, OEMs supported component manufacturers through equity participation and/or technical collaboration.
3.2.6. At present, the Auto component Industry manufactures a wide range of products in India both for domestic consumption and exports.

3.3. Size of the Indian automobile industry

3.3.1. The Indian Automobile Industry produced 23.4 million vehicles in FY15 valued at about Rs. 4,64,000 crore. India is the world’s largest market for three wheelers and the second largest market for two wheelers and small cars (in terms of units). In value terms, passenger vehicles constitute the largest segment of the Indian automobile market.

3.3.2. Sales of passenger cars and utility vehicles have clocked a 10.1% CAGR over the last decade (FY05 – FY15). However, over the last three years the growth in the passenger vehicles segment has been muted. Passenger cars have clocked a CAGR of 9.4% in the last decade but the segment has seen decline in growth rates over the last three years. Utility vehicles have clocked a CAGR of 13.3% in the last decade. The segment has largely remained stable but gained significant momentum over the last four years on account of launch of compact utility vehicles. Vans have clocked a CAGR of 10.2% in the last decade, but the segment has seen decline in growth rates over the last three years. Sales of passenger vehicles have been driven by increase in the number of available models, purchasing power of the middle class, availability of car finance, favourable government policies and growth of the used car market.

3.3.3. Exports have also fuelled the growth in the passenger vehicles category by clocking a CAGR of 14.1% over the last decade. Indian passenger vehicles have found acceptance not only in the developing regions like Africa and Latin America but also in developed regions like the European Union.

3.3.4. Commercial Vehicles sales grew at a CAGR of 7.2% over the last decade (FY05 – FY15). LCVs have contributed to a good part of this growth. The last three years have not been the best of times for the CV segment. Light Commercial Vehicle (LCV)-goods clocked a CAGR of 13% while Medium & Heavy Commercial Vehicle (MHCV)-goods registered a CAGR of just 1.7%. LCVs have grown on account of growth in Small Commercial Vehicles (SCVs) which contribute to more than 80% of LCV sales and have grown consistently. Though MHCV-goods have shown significant revival in FY15 it is still 15% lower than the sales in FY07. LCV buses have been doing reasonably better in the domestic market as compared to MHCV buses on account of continued
demand from school and services sector while MHCV buses have been facing issues such as poor financial conditions of State Transport Undertakings (STUs) and slower than expected disbursement under the JNNURM scheme.

3.3.5. Exports of CVs have grown at a slower CAGR of 7.2% over the last decade. While the period 2005 to 2012 witnessed a strong growth of 14.6% CAGR, subdued growth thereafter, especially on account of high tariff barriers levied by Sri Lanka. While the exports of buses have shown consistent growth during the last decade, they have also been subdued since FY12. Growth in the CV sector is dependent on the general economic trend, development of infrastructure projects, transport economics and availability of freight, replacement cycle of vehicles, availability of credit and government policies. Growth in buses has been largely dependent on demand from schools, financial health of STUs and the support from the JNNURM scheme.

3.3.6. Sales of two wheelers grew at a CAGR of 10.9% over the last decade. Scooters segment posted a strong growth by clocking a CAGR of 16.9% followed by motorcycles and mopeds clocking a CAGR of 9.5% and 8.1% respectively. Domestic scooter sales, motorcycles sales and moped sales clocked a CAGR of 17.2%, 8.0% and 8.9% respectively resulting in an overall domestic CAGR of 9.9%. Exports have grown at a much faster pace as compared to the domestic market. Growth in exports at a CAGR of 21% was largely driven by motorcycles (23.3%) as opposed to the domestic market which was dominated by scooters. Scooters are slowly and gradually being accepted as the preferred mode of personalised transport across cities in India. In comparison to the erstwhile geared scooters the gearless scooters have seen significant improvement in terms of better fuel efficiency and better aesthetics thus resulting in a change in consumer preferences. Motorcycles are also seeing steady growth on account of high base.

3.3.7. Sales of three wheelers posted a CAGR of 9.6% over the decade driven by the passenger segment which grew by 13.5%. Goods segment of three wheelers has shown a decline in CAGR by 2.9% during the same period. Domestic three wheeler sales clocked a CAGR of 5.6% driven by 9.7% CAGR in the passenger segment while goods segment declined by 3.1% over the last decade. The domestic goods segment showed significant weakness after the launch of sub-one tonne vehicles in May 2005. This new category afforded higher payload, better cost economics and safety. Passenger three wheelers are largely driven by replacement and permits issued by the Centre/State government.
3.3.8. Export of three wheelers grew at a healthy CAGR of 19.8% over the last decade led by export of passenger segment (20% CAGR) while the goods segment grew at a CAGR of 7.3%. Nearly 50% of the passenger three wheeler produced in India is exported mainly to the African markets.

3.4. **Size of the Indian tractors industry**

3.4.1. India is the largest market in the world for tractors in terms of units. Tractors recorded a 9.5% CAGR over the last decade with the domestic industry growing at 8.8% CAGR and exports posting a strong growth at 15.8%. The less than 20HP and 41-50 HP segments contributed significantly to the growth of the tractor market. While the farmers with small and medium holdings prefer the smaller tractors, the large farmers have moved to the higher capacity tractors which facilitate the use of implements. The share of 31-40 HP which was the mainstay of the Indian tractor market has declined from 53% to 37% over the last decade (FY05 to FY15).

3.4.2. Exports have been largely driven by greater than 51 HP tractors as globally there is a huge demand for high powered tractors. The growth in exports has come primarily from the greater than 51 HP exports which posted a CAGR of 26.2% over the last decade.

3.4.3. At present, India is the largest manufacturer of tractors in the world and the largest exporter of tractors by volume in the sub 100 HP category. Indian industry is the benchmark for sub 100 HP tractors both in terms of technology and in terms of manufacturing excellence.

3.5. **Size of the Indian auto component industry**

3.5.1. The Indian auto component sector (tyres and batteries excluded) has over 700 players in the organised sector and a few thousand players in the unorganised sector. The turnover of the Indian auto component industry has posted a CAGR of 12.1% (8.1% in US Dollar terms) during the period FY06 - FY15 reaching a size of Rs. 2,34,800 crore. Exports have grown from Rs. 13,242 crore in FY06 to Rs. 68,500 in FY15 while imports have increased from Rs. 15,890 in FY06 to Rs. 82,900 crore in FY15.
3.5.2. The Industry produces high quality and cost competitive components for all product segments. In FY15, engine parts dominated the overall turnover of the Indian auto component industry with a share of 31% followed by other categories. The contribution of the other components was as follows:

<table>
<thead>
<tr>
<th>Component type</th>
<th>Contribution to turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine parts</td>
<td>31%</td>
</tr>
<tr>
<td>Drive transmission &amp; Steering parts</td>
<td>19%</td>
</tr>
<tr>
<td>Body &amp; chassis</td>
<td>12%</td>
</tr>
<tr>
<td>Suspension &amp; Braking parts</td>
<td>12%</td>
</tr>
<tr>
<td>Equipment</td>
<td>10%</td>
</tr>
<tr>
<td>Electrical parts</td>
<td>9%</td>
</tr>
<tr>
<td>Others</td>
<td>7%</td>
</tr>
</tbody>
</table>

Source: ACMA, IMaCS Analysis

3.5.3. Of the total supply of components to the OEM industry in FY15, about 45% was to the passenger vehicles segment. The supply of auto components to the various segments of vehicles was as follows:

<table>
<thead>
<tr>
<th>Vehicle segment</th>
<th>Proportion of overall supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger vehicles</td>
<td>45%</td>
</tr>
<tr>
<td>Two wheelers</td>
<td>22%</td>
</tr>
<tr>
<td>Heavy Commercial Vehicles</td>
<td>8%</td>
</tr>
<tr>
<td>Tractors</td>
<td>8%</td>
</tr>
<tr>
<td>Medium Commercial Vehicles</td>
<td>4.5%</td>
</tr>
<tr>
<td>LCVs including SCVs</td>
<td>4.5%</td>
</tr>
<tr>
<td>Three wheelers</td>
<td>4%</td>
</tr>
<tr>
<td>Others</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: ACMA, IMaCS Analysis

3.5.4. Indian auto components, at present, find acceptance in more than 160 countries across the globe. Despite this, Indian suppliers still account just for 1% of the overall global auto components exports of more than USD 1,000 billion. Exports of auto components from India are largely to developed markets like Europe, Asia and North America. Top 5 export destinations from India in FY15 were USA, Germany, Turkey,
UK and Italy. Component exports from India are dominated by diesel engines, gearboxes and parts, Hydraulic Power Steering Systems & Steering Gear Systems and Parts, Crank shaft for engines and Drive-axles and parts.

3.5.5. Imports of auto components into India are largely from other prominent automotive production countries. The top 5 countries from where India imports auto components are China, Germany, Japan, South Korea and Thailand. Imports are also dependent on strategies of OEMs which typically source components from its global supplier bases. Out of total imports from China a substantial proportion is two wheeler parts and aftermarket components.

3.6. Growth Drivers

A. Passenger Vehicles

3.6.1. Two key drivers for passenger vehicle consumption are a rising per capita income and a favourable demographic distribution. India has 70% of its population below the age of 35 years who are potential buyers. Trends indicate that small cars would remain dominant given the affordability of Indian consumers. The compact SUV market is also expected to grow rapidly. Rising disposable incomes and increasingly easier availability of financing options are the key drivers of the growth in the Passenger vehicle segment.

B. Commercial Vehicles

3.6.2. In the commercial vehicle segment, increased investment in road infrastructure and availability of finance has led to a growth in the multi-axle vehicles in India. Investments in rural and urban roads have led to increased last mile connectivity and have fuelled growth of small commercial vehicles. Investments in national and state highways have slowed down in the last 3-5 years leading to sluggish growth in medium and heavy commercial vehicles segment. The JNNURM scheme has led to a growth in demand for buses. Growth in EXIM trade is expected to fuel a shift to tractor-trailer combinations on account of better operating economics of higher power-to-weight ratio vehicles. A number of MNCs have also entered the commercial vehicle market over the last five years. Regulations on entry-exit norms in cities and implementation of GST are expected to fuel further growth.
C. Two wheelers

3.6.3. Growth in the two wheeler segment growth is a result of rapid urbanisation and the resultant rise in demand from urban and semi-urban areas, increasing income levels, wider product range available to customers, and financing options.

D. Three wheelers

3.6.4. Three wheelers are widely used in India as an affordable means of intermediate public transport (short-to-medium distance public transportation) and last mile connectivity for goods transportation. Apart from the domestic demand, India has also emerged as an important export hub for three wheelers with presence in some of the South Asian, African and Latin American markets where demand for mobility is high but the public transport systems are inadequate.

3.6.5. The success of the Small Commercial Vehicles that provide higher stability, safety, speed, space and style has had a significant impact on the fortunes of the three wheelers. SCVs are gaining popularity in the lower tonnage (0.5T) Cargo and Passenger segments. Further factors such as slower economic growth, moderating consumer goods consumption, high inflation, increase in financing costs and absence of fresh permits by the state governments has impacted domestic three wheeler sales.

E. Tractors

3.6.6. The growth of the Indian tractor industry is dependent on the agricultural output of the country and the international demand for tractors. With a penetration of 19 tractors per 100 ha (source: World Bank), there is low penetration of tractors in India. This translates to 760 HP for 1000 ha for India while international penetration figures range from 4500 to 6400 HP per 1000 ha (which translates to 45 to 64 tractors per 1000 ha). Increasing use of tractors for non-agricultural applications along with strong replacement demand has fuelled growth.

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9 Assuming an average of 40 HP per tractor for India and 100 HP per tractor for overseas markets
F. Auto components

3.6.7. The growth of the Auto component industry is directly linked to the growth of automobile industry, with more than 55% of the output of Indian Auto component industry going to the OEMs. The Indian Auto component industry has several competitive strengths, which are facilitating the emergence of India as a hub for component sourcing. The emergence of global platforms for vehicles and standardisation of models across different markets has helped Indian component manufacturers reach out to global markets. In recent years, component exports has become an important growth driver and it is expected to assume further significance in future. Increasing stock of vehicles on road and increasing awareness about the use of genuine parts has led to a significant growth in after market segment of auto components.

3.7. Challenges faced by the Indian Automotive industry

3.7.1. Sustaining growth rate of output: The Indian automotive industry witnessed two economic down cycles over the last decade; one in FY09 and the other from FY12. The Government of India, in FY10, provided a stimulus package and support by way of reduction in excise duty in order to maintain momentum. However, weakening macro parameters along with subdued sentiments has led to a prolonged down cycle leading to significant deceleration in growth especially over the last three years.

3.7.2. Export related issues: Over the years, several segments of the Indian automotive industry have attained economies of scale and their products are internationally competitive. However, Indian automobile as well as auto component players have been facing several tariff and non-tariff barriers hindering the growth of the industry. The global economic crisis of 2008 also significantly impacted exports from India. Some of the trade agreements signed by India have been more advantageous to the partner country (insofar as the Indian Automotive industry is concerned). This has led to increased imports in certain auto component categories.

3.7.3. Currency depreciation: When AMP 2016 was released (in 2006), the Rupee Dollar exchange rate was Rs. 43.7 per USD which, in July 2015, is at Rs. 62.6 per USD. While this was beneficial for exports from India, this also increased the import bill, given
that the quantum of imports has historically been higher than exports. Further, future generation of vehicles will have a higher level of technology sophistication necessitating higher imports, particularly of electronic components which are not manufactured in India. Hence, the depreciation of the Indian Rupee presents a mixed bag, benefiting some players and adversely impacting some others.

3.7.4. **Congestion and pollution:** More than 50% of the sales of PVs and two-wheelers are in the Tier 1 and Tier 2 cities in India. Several cities lack in town planning and infrastructure development. On top of this, the increasing population in all cities results in acute congestion and an unacceptably high level of air pollution. A proper I&C regime along with well-planned city development plans and parking infrastructure would help in reducing congestion on roads.

3.7.5. **Inadequate infrastructure development:** Just as for sectors, a holistic development of infrastructure is essential for the development of the automotive industry. Infrastructure availability in India, in a number of areas including ports, electricity, and road transport has not kept pace with the overall demand. These inadequacies have affected the competitiveness of the Indian Automotive industry.

3.7.6. **Finance and Taxation:** The cascading impact of taxes continues to erode cost competitiveness of tiered industries, including the Automotive industry, in India. While the situation in 2015 is better as compared to what was prevailing in 2005, the Indian Automotive industry can benefit significantly when a GST regime is introduced. Further, legitimate export incentives, such as duty drawback, does not make good all the taxes paid upstream, which renders exports uncompetitive. Besides, the process of realising the drawback of duties is tedious and calls for further streamlining of procedures.

In order to make India cost competitive and an attractive destination for manufacturing it is essential to address these issues. The success of the “Make in India” programme hinges to a large extent on removing the infrastructure bottlenecks and making India a better place to do business in.
4. Review of AMP 2016

The turnover of Indian Automotive industry was about 45% of the manufacturing GDP\textsuperscript{10} of India during FY15. The importance of the Automotive industry in India to the national economy can be gauged by the Auto industry’s contribution along several parameters as given below:

- 7.2% of India’s GDP\textsuperscript{11} - FY15
- 27% of India’s industrial GDP - FY15
- 4.3% of overall exports (second only to textiles & handicrafts) - FY14
- 13% of excise revenues - FY14
- Incremental employment generation in excess of 19 million - since FY06
- Total investment in excess of Rs.1,57,500 crore of which Rs. 1,08,000 crore is contributed by vehicle makers and Rs. 49,500 crore by automotive component players
- 8% of the country’s R&D expenditure - FY14

4.1. Trends in key macro-economic parameters versus industry performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>FY06-11</th>
<th>FY11-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth (%)</td>
<td>8.6</td>
<td>5.8</td>
</tr>
<tr>
<td>Manufacturing GDP growth (%)</td>
<td>9.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Growth in Gross Fixed Capital Formation (GFCF) (%)</td>
<td>10.3</td>
<td>5.7</td>
</tr>
<tr>
<td>Annual Inflation (WPI) (%)</td>
<td>6.5</td>
<td>6.0</td>
</tr>
<tr>
<td>Rs. vs. USD</td>
<td>44.8</td>
<td>56.2</td>
</tr>
<tr>
<td>Annual average crude oil prices (USD/barrel)</td>
<td>64.8</td>
<td>52.2\textsuperscript{#}</td>
</tr>
<tr>
<td>Average growth in production:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger Vehicles (%)</td>
<td>17.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Commercial Vehicles (%)</td>
<td>14.2</td>
<td>-2.2</td>
</tr>
<tr>
<td>Two wheelers (%)</td>
<td>11.9</td>
<td>8.5</td>
</tr>
<tr>
<td>Three Wheelers (%)</td>
<td>13</td>
<td>4.4</td>
</tr>
<tr>
<td>Auto Components (%)</td>
<td>17.6</td>
<td>5.6</td>
</tr>
</tbody>
</table>

\# as on April 2015

Source: MOSPI, SIAM, ACMA, IMaCS Analysis

\textsuperscript{10} GDP at constant prices (2004-05 base year); Source: MOSPI, IMaCS Analysis
\textsuperscript{11} GDP at constant prices (2004-05 base year); Source: MOSPI, IMaCS Analysis
4.1.1. The trajectory of GDP growth, particularly during the second half of the past decade, has not been at the pace envisaged in AMP2016. The average annual rate of growth during FY10-11 was 8.6%, which declined to 5.8% over the period FY11-15.

4.1.2. Development of infrastructure to sustain growth of the economy has not been as expected. The investment in infrastructure as a percentage of GDP was targeted at 10% for the Eleventh Five Year Plan. However, the achievement over the plan period was 6.30%.

4.1.3. Significant progress has been made in the introduction of safe and low cost vehicles in commercial vehicle, passenger vehicle and two wheeler segments. However, in 2005-06 an ambitious target of producing two wheelers at less than USD 300-350 was envisioned. Despite efforts by two wheeler manufacturers to produce low cost models, prices have remained higher than the projected levels. Significant progress has been made in exporting vehicles to new markets in Africa, Latin America, SAARC and ASEAN.

4.1.4. Brand building initiatives by Indian companies have met with reasonable success in the automotive sector as evidenced by rising trends in exports. Today the Indian automotive industry exports to 160 countries across the world.

4.1.5. India continues to be the largest tractor and three wheeler manufacturer and the second largest two wheeler manufacturer of the world. In 2014 (calendar year), India has emerged as the world’s sixth largest car producer and fourth largest heavy trucks manufacturer. India is also the second largest two wheeler manufacturer in the world. The automotive sector, at present, contributes to about 7.2% of the GDP.

4.1.6. The Indian automotive industry has witnessed significant growth during the first half of AMP 2016, i.e. FY06 to FY11. During this period all vehicle segments registered a CAGR in excess of 11%. However, from FY11 the slowdown in global economy coupled with weakness in the fundamental growth drivers resulted in a marginal to flat growth across vehicle segments except for two wheelers, which posted a CAGR of 8.5%. This has resulted in gaps between actual performances of the industry vis-à-vis targets envisaged under AMP 2016. The variance in these assumptions along with high fuel prices and slowdown in global economy have led to lower sale of automobiles.
4.2.  Performance of key automotive segments vis-à-vis stated targets of AMP 2016

4.2.1.  A segment wise snapshot of actual performance vis-à-vis stated targets under AMP 2016 is as follows.

A. Passenger Vehicles

4.2.2.  Actual domestic sales of passenger vehicles vs. AMP 2016 targets

![Graph showing Actual domestic sales vs. Sales as per AMP 2016](image)

<table>
<thead>
<tr>
<th>Passenger Vehicles</th>
<th>2004-05</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total production (mn units)</td>
<td>1.2</td>
<td>3.2</td>
</tr>
<tr>
<td>PV global ranking (based on volumes)</td>
<td>13&lt;sup&gt;th&lt;/sup&gt;</td>
<td>6&lt;sup&gt;th&lt;/sup&gt;</td>
</tr>
<tr>
<td>Small PV global ranking (based on volumes)</td>
<td>5&lt;sup&gt;th&lt;/sup&gt;</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
</tr>
<tr>
<td>No. of players</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>No. of models</td>
<td>55</td>
<td>115</td>
</tr>
<tr>
<td>Inflation index</td>
<td>100</td>
<td>181.2</td>
</tr>
<tr>
<td>Net basic price (indexed) of highest selling car</td>
<td>100</td>
<td>111</td>
</tr>
</tbody>
</table>

Source – SIAM, Various vehicle makers, IMaCS analysis

4.2.3.  The Indian passenger vehicles market has also progressed significantly since 2004-05. Overall passenger vehicles sales from FY06 till FY15 have grown at a CAGR of 10.3%. The automotive industry has contributed to this success with lot of innovative and India specific products. Domestic Small passenger vehicle segment (sub 4 metre length) has grown at a CAGR of 10.6% between FY05 and FY15. This has expanded the share of small passenger vehicles from 64% in FY05 to 71% today. The big passenger vehicles have grown at a CAGR of 6.8% during the same period and have a share of 29% in the domestic passenger vehicle market. Domestic Utility Vehicles clocked a CAGR of 12.1% over the last decade. However, despite weakening macro parameters
the segment has grown at a CAGR of 15.0% since FY12 on account of affordable model launches in the compact SUV segment.

4.2.4. A supportive Government policy, favourable customer demographics, and decisive actions by various car manufacturers have helped India emerge as global hub for small cars. However, over the past three years there is a significant slowdown in the growth rates across various segments and the passenger vehicle industry is, at present, going through its longest and sharpest down cycle. Domestic sales volume of small passenger vehicles from FY12 to FY14 has grown only at 0.2% per annum, while the big passenger vehicles have shown a decline of 1.6%. India today enjoys benefits with regards to small passenger vehicles and Multi Utility vehicles because of the huge volumes and the attendant benefits of positive economies of scale resulting in a competitive positioning in this segment. If the domestic market continues to remain sluggish for a longer period, it will adversely impact Indian Automotive industry’s overall competitive position.

B. Commercial Vehicles

4.2.5. Snapshot of Commercial vehicles industry

<table>
<thead>
<tr>
<th>Commercial Vehicles</th>
<th>2005-06</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total production (mn units)</td>
<td>0.39</td>
<td>0.70</td>
</tr>
<tr>
<td>CV (LCV goods + MHCV goods) global ranking</td>
<td>9th</td>
<td>6th</td>
</tr>
<tr>
<td>(Based on volumes)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modal share of roads in primary goods transport (%)</td>
<td>61%</td>
<td>68%</td>
</tr>
<tr>
<td>No. of players</td>
<td>9</td>
<td>14</td>
</tr>
</tbody>
</table>

Source: SIAM, Various vehicle makers, IMaCS analysis; # is as on FY14

4.2.6. Actual domestic sales of commercial vehicles vs. AMP 2016 targets

Source: SIAM, Various vehicle makers, IMaCS analysis;
4.2.7. Commercial Vehicles sales have grown at a 7.0% CAGR between FY05 and FY15 with a high extent of cyclicality. The sales growth of the CV segment is closely linked to the performance of the overall economy, oftentimes being a lead indicator. In FY14, the domestic commercial vehicles industry registered a steep decline of 20.2%. The domestic light commercial vehicles goods (<7.5 tonnes) is the only sub-segment (within CV) that has shown strong positive grown between FY06 and FY13 (CAGR of 21.6%). Sales of the domestic MHCV-goods sub-segment in FY14 are still below the sales of FY07, and have registered a decline of 0.7% CAGR from FY05 to FY14.

4.2.8. The sales growth of CV segment has shown sharp deceleration over the last three years and has registered a decline of 13.2% from FY12 to FY15. In FY14, the segment registered a steep decline of 20.2% and recovered in FY15 by registering a 21% growth. For the first time since May 2005, the <3.5 tonnes GVW segment has registered a decline for two consecutive years. Exports of commercial vehicles have grown at a CAGR of 11.1% between FY06 and FY15, and despite the depreciating rupee, exports registered a decline of 2.4% from FY12 over FY15.

4.2.9. Growth in the commercial vehicle sector is dependent on several factors, such as, the general economic growth rate, pace of development of infrastructure projects, freight rates and availability of freight, replacement cycle of vehicles, availability and price of credit, and favourable government policies. The general economic scenario remained subdued for the last three years (till FY15) and implementation of infrastructure projects has seen significant delay, leading to an adverse impact on commercial vehicle sales. Among all segments of the Indian automobile industry, CV manufacturers are the only ones to witness heavy financial losses. Significant capacity had been added in the commercial vehicles industry over the last 6-7 years and consequently the capacity utilisation levels has dropped to 30-40% due to significant slowdown witnessed in the segment.

4.2.10. The advent of a new category of vehicles, namely the Small commercial vehicles (sub-one tonne payload) has been the primary driver of growth in sales of commercial vehicles. Buses have also seen significant development with introduction of coach buses for inter-city and low floor buses for intra-city transport. Commercial vehicles with OEM built cabins and ready to use solutions are also available now, which have resulted in vehicles becoming safer, lighter and more comfortable to drive. Telematics solutions have provided customers with real time vehicle tracking capabilities and state of art fleet management solutions.
C. Three Wheelers

4.2.11. Actual domestic sales of three wheelers vs. AMP 2016 targets

*Graph showing actual domestic sales vs. AMP 2016 targets for three wheelers.*

<table>
<thead>
<tr>
<th>Three wheelers</th>
<th>2005-06</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total production (mn units)</td>
<td>0.43</td>
<td>0.95</td>
</tr>
<tr>
<td>Exports (mn units)</td>
<td>0.08</td>
<td>0.41</td>
</tr>
<tr>
<td>Three-wheeler global ranking (based on volumes)</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>No. of players</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

Source: SIAM, Various vehicle makers, IMaCS analysis

4.2.12. Three wheeler sales have grown at 9.6% CAGR over the decade (FY05 to FY15). Sales of passenger three wheelers registered a strong CAGR of 13.5% while that of goods declined by 2.9% during the same period. Exports have grown at a 19.8% CAGR largely dominated by exports of passenger variant of three wheelers which clocked a CAGR of 20%.

4.2.13. In the last ten years, the contribution of three wheelers contributing to personal daily commute is estimated at 20% and has emerged as an important option for last mile connectivity. With improvements in fuel efficiency and a significant contribution to self-employment, the three wheeler segment has played a key role in generating direct employment. Domestic three wheeler goods segment declined primarily because of shift to the Small Commercial Vehicles (sub-one tonne payload category). Domestic demand for three wheelers passenger segment is limited by number of permits issued by local transport authorities.
D. Two wheelers

4.2.14. Actual domestic sales of two wheelers vs. AMP 2016 targets

<table>
<thead>
<tr>
<th>Two Wheelers</th>
<th>2005-06</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total production (mn units)</td>
<td>7.6</td>
<td>18.5</td>
</tr>
<tr>
<td>Global ranking (based on volumes)</td>
<td>2nd</td>
<td>2nd</td>
</tr>
<tr>
<td>Exports (mn units)</td>
<td>0.5</td>
<td>2.5</td>
</tr>
<tr>
<td>No. of players</td>
<td>11</td>
<td>2.5</td>
</tr>
<tr>
<td>No. of models</td>
<td>26</td>
<td>70</td>
</tr>
<tr>
<td>Inflation index</td>
<td>100</td>
<td>181.2</td>
</tr>
<tr>
<td>Basic price (net of taxes)</td>
<td>100</td>
<td>126</td>
</tr>
</tbody>
</table>

Source - SIAM, Various vehicle makers, IMaCS analysis

4.2.15. In FY15 two wheeler sales crossed 18.5 million units, registering a CAGR of 10.9% since FY05. Scooters have registered the highest CAGR of 16.9% during the same period. Mopeds have registered a CAGR of 8.1% while motorcycles have registered a CAGR of 9.5%. Since FY10, scooter sales have more than tripled.

4.2.16. Two wheeler exports have grown at a CAGR of 21% between FY05 and FY15 to reach 2.5 million units. Majority of the growth has been contributed by motorcycles which have clocked a CAGR of 23.3% during this period. Scooters exports have doubled in FY15 while mopeds exports have declined by 10.3% over the same period.

4.2.17. Over the last ten years, penetration of two-wheelers has doubled across India, with 44% of incremental growth contributed by rural India. The number of households owning more than one two-wheeler has also doubled. Due to friendly policies of the Government, the average price of a two-wheeler has come down by 4%; the industry
on its part has been aggressive and the average number of new launches per year has increased from 10 to 14. After a lull of a few years, Scooters have come back into the reckoning as a mode of personalised transport for households across cities in India. In comparison to the erstwhile geared scooters, the gearless scooters of today area significant improvement in terms of better fuel efficiency and aesthetics, thus finding favour with consumers once again. There has also been an increasing trend in demand for motorcycles with higher engine capacity as compared to the traditional 100cc motor-cycles.

E. Tractors

4.2.18. Actual domestic sales of tractors vs. AMP 2016 targets

![Graph showing actual domestic sales vs. AMP 2016 target]

<table>
<thead>
<tr>
<th>Tractors</th>
<th>2005-06</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total production (mn units)</td>
<td>0.25</td>
<td>0.6</td>
</tr>
<tr>
<td>Global ranking (based on volumes)</td>
<td>1st</td>
<td>1st</td>
</tr>
<tr>
<td>Exports ('000 units)</td>
<td>28.1</td>
<td>75.4</td>
</tr>
</tbody>
</table>

Source - TMA, Various tractor manufacturers, IMaCS analysis

4.2.19. The tractors sales have recorded a CAGR of 9.5% over the decade (FY05 to FY15) to reach a figure of 626,839 in FY15. The domestic tractor sales grew at a CAGR of 8.8% between FY05 and FY15 while exports of tractors have clocked a CAGR of 15.8% during the same period. At present, India is the largest tractor manufacturer in the world by way of unit sales.

4.2.20. More than 80% of the domestic sales are in the 30-50hp range. Declining availability of agricultural labour is expected to increase demand for farm mechanisation. The
growth of the tractor industry is dependent on the agricultural output and demand from exports. A penetration of 19 tractors per 100 ha (World Bank) indicates low penetration of tractors in India. This translates to 760 HP for 1000 ha for India while international penetration figures range from 4500 to 6400 HP per 1000 ha (which translates to 45 to 64 tractors per 1000 ha)\(^{12}\). Increasing use of tractors for non-agricultural applications along with strong replacement demand has fuelled growth.

F. Auto Components

4.2.21. Actual turnover (in Rs. crore) of auto components vs. AMP 2016 targets

![Graph showing actual turnover vs. AMP 2016 target over years FY05 to FY15]

<table>
<thead>
<tr>
<th>Automotive Components</th>
<th>2005-06</th>
<th>2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnover (Rs. crore)</td>
<td>83,557</td>
<td>2,34,013</td>
</tr>
<tr>
<td>Exports (Rs. crore)</td>
<td>13,242</td>
<td>69,043</td>
</tr>
<tr>
<td>After market (Rs. crore)</td>
<td>12,800</td>
<td>39,875</td>
</tr>
</tbody>
</table>

Source: ACMA, Various auto-component makers, IMaCS analysis

4.2.22. Slowdown in the sale of automobiles over the last three years has led to deceleration in the demand for auto components. The sale of components in the after-market has exceeded the targets envisaged under AMP 2016. India has also emerged as a world leader in manufacture of diesel and petrol engines of small capacity, engine and transmission related auto components, especially those that require complex machining, grinding, forging, and assembly operations, and components that require relatively lower scale and involve complexities in manufacture. This is a strong

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\(^{12}\) Assuming an average of 40 HP per tractor for India and 100 HP per tractor for overseas markets
achievement for the Auto-component industry and bodes well for Indian component makers bidding for a higher share in more complex auto-components in the future.

4.3. **Status of key interventions of AMP 2016**

A. **Interventions implemented**

4.3.1. **Appropriate tariff policy:** Government’s policies have consistently supported domestic investments, local value addition and increase in employment in the Automotive sector, while not being in favour of trading activities involving CBUs. Key automobile CBUs and a select list of systems and parts have not been included in FTA/RTAs. AMP2026 will continue the extant policy in this regard and will stress on attracting investments in the Automotive sector both from domestic and international players. Long term tariff policy including defining CKD and announcing appropriate tariff regime has conveyed Government’s intention to continue with the erstwhile policies.

4.3.2. **Improved infrastructure:** Improved and expanded road network has played a major role in automobile demand creation. Development of auto wagon rakes will help the industry move its products more efficiently in future. Creation of few specialised ports in the private sector has also helped in smooth movement of goods and Government will push for creation of more infrastructure assets.

4.3.3. **R&D infrastructure:** Setting up of National Automotive Testing and R&D Infrastructure Project (NATRiP) to support testing, certification and homologation. Upgradation of existing centres is at an advanced stage of completion. The North centre, ICAT is already functional, while a new centre in the south is work in progress.

4.3.4. **Specific measures were initiated for expansion of the domestic market:** Basic excise duty rates were brought down from 16% to 12% on small cars, two wheelers and commercial vehicles (including three wheelers). Incentives such as further reduction in excise duties at the time of recession and JNNURM schemes were offered when the industry faced recessionary conditions during the past decade.

4.3.5. **Rationalisation and simplification of taxation on vehicles:** Numerous procedural improvements have already taken place. GST implementation is in the final stages of legislative approval.

4.3.6. **Encouragement of Automobile exports:** Earlier there were five different schemes (Focus Product Scheme, Market Linked Focus Product Scheme, Focus Market Scheme,
Agri. Infrastructure Incentive Scrip, VKGUY) for rewarding merchandise exports with different kinds of duty scrips with varying conditions (sector specific or actual user only) attached to their use. Now all these schemes have been merged into a single scheme, namely Merchandise Export from India Scheme (MEIS), and there would be no conditionality attached to the scrips issued under the scheme.

4.3.7. **Encouraging R&D through fiscal incentives**: Weighted deduction up to 200% of expenditure on R&D for computation of expenses under Corporate Tax U/s 35 (2AB) has been implemented.

4.3.8. **Promotion of electric and hybrid vehicles**: Government launched National Electric Mobility Mission Plan to promote hybrid and electric vehicles. Subsidy is provided by Government to consumers for purchase of electric vehicles.

4.3.9. **Setting up National level board, to coordinate and monitor the regulatory standards and international harmonisation activities**: The National Automotive Board (NAB) has been set up to address the issues related to standards and harmonisation.

4.3.10. ** Adoption of ITIs by OEMs and Tier I component makers**: Several ITIs have already been adopted by OEMs. The Government has established a full-fledged Ministry for Skill development and Entrepreneurship, which is looking at the task of skill development across industry in a wholesome manner. Vocational training has been accorded high priority in the new policy for skill development.

4.3.11. **National Automotive Institute will be set up to look at Human resources training and ensure availability of trained manpower – Auto Skills Council**: Automotive Skill Development Council (ASDC) has been set up as a public private partnership project. It is one of the apex organisations under the Ministry of Skill Development and Entrepreneurship.

4.3.12. **Fiscal and investment promotion policies to make India a hub for manufacturing Small cars, 2Ws, MUVs**: Continued support for small cars and two wheelers by way of lower excise duty has been announced by Government. Cars and MUVs which run as taxis continue to get Government support.

**B. Interventions in progress**

4.3.13. **Incentivising modernisation of vehicle fleet**: Proposal for fleet modernisation has been initiated with the Ministry of Heavy Industries & Public Enterprises (MoHIPE) setting up a committee to look into the details of implementation.
4.3.14. **Institutional and infrastructural structure for networking of RTOs through IT backbone:** VAHAN project is being implemented by Ministry of Road Transport & Highways (MoRTH). Government is taking several measures to make the user interface simple and user-friendly along with support from the Auto industry.

4.3.15. **Long term emission road map beyond 2010:** Report of the Expert Committee set up by Government for this purpose has submitted its report including a roadmap for reducing auto emissions till the year 2025. Ministry of Petroleum & Natural Gas (MoPNG) is working on the details with the oil refineries to ensure future availability of right grades of fuels all over the country within the targeted timelines.

4.3.16. **100% grant for fundamental research, 75% for pre-competitive technology/application and 50% for product development:** Grant up to 50% of investment given to alternative fuel technology development.

4.3.17. **Promote alternative fuels:** CNG as a fuel has supported vehicle sales in the cities where CNG was introduced, but the overall benefit has been limited because of limited availability of infrastructure (bulk gas availability and CNG distribution network). As compared to the earlier plan of setting up CNG stations in around 200 cities, by 2015-16 only 40 cities had CNG stations in 2014. Other alternative fuels like Hydrogen have also not seen much progress. Recent move by MoHIPE on EV/HEV could help in popularisation of such vehicles in India.

4.3.18. **Mandatory Inspection & Certification system through Public-Private Partnership:** The process of setting up I&C centres has been initiated by Government. 10 pilot centres expected by 2016.

4.3.19. **Vehicle Safety Assessment:** Work has started on Bharat new vehicle safety assessment programme even though it was not envisaged in AMP 2016. Manufacturers are also complementing Government’s efforts by gradually introducing contemporary technologies.

### C. Interventions to be taken up

4.3.20. The following interventions as envisaged in AMP2016 are yet to be taken up:

- **a) Investment support at National level:** Tax holiday for auto industry with over Rs 500 crore, Tax deduction of 100% for export profit, preferential allotment of land, ensuring availability of power.
b) Zero taxes/levies on technology transfers (involving new products, features, alternative fuel, and the like).

c) Provide excise duty concession for “Made in India” products.

d) Promoting technology acquisition (for manufacturing) through tax / levy exemption.

e) Creation of special auto component parks and virtual SEZ.

f) Simplification and rationalization of labour laws to ensure availability of Human resources.

4.4. Way forward

4.4.1. AMP 2016 has given significant impetus to the Indian automotive industry. Today Indian automobile industry has arrived at the doorstep of global leadership position in many segments and is poised to move further up the ladder. This strength has been conferred in good measure by sound and stable policies across many areas for the automotive industry. AMP 2026 will build on this foundation and pave the way ahead that will help the Automotive industry consolidate the gains.

4.4.2. The sluggish macro-economic environment prevailing over the last three years (FY12-FY15) has led to a prolonged slowdown, arguably one of the most severe that the Indian Automotive industry has witnessed. In spite of these challenges, the Automotive industry will meet the projected aggregate base case scenario revenues of Rs.5,49,000 crore.

4.4.3. The immediate past decade of the Indian automotive industry was predominantly driven by domestic demand. Going forward, industry is geared up to meet both domestic and global demand. Considering this, Government has taken up the formulation of AMP 2016-26 to target new initiatives keeping in mind the current and expected market dynamics. This will enable industry to plan, and realise future potential and thereby contribute much more to the Indian economy.
5. Growth potential of Indian Automotive Industry

5.1. Projected growth

5.1.1. The Indian Automotive Industry has significant growth potential, given the large market (domestic and exports) it seeks to cater to and its overall competitiveness along many dimensions. The future demand of different vehicle categories have been estimated using an econometric model that factors in historical trends, expected growth rates of the economy, and various macro-economic and other variables that affect demand for different types of vehicles. The category-wise forecasts for automobiles (domestic plus exports) for the next decade based on a Base Case (average annual GDP growth rate of 5.8%) and an Optimistic Case (average annual GDP growth rate of 7.5%) are given in the following table.

<table>
<thead>
<tr>
<th>Category-wise demand (mn units)</th>
<th>Base case</th>
<th>Optimistic case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>FY 2015</td>
<td>FY 2026</td>
</tr>
<tr>
<td>Passenger Vehicles</td>
<td>3.2</td>
<td>9.4</td>
</tr>
<tr>
<td>Commercial Vehicles</td>
<td>0.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Two wheelers</td>
<td>18.5</td>
<td>50.6</td>
</tr>
<tr>
<td>Three wheelers</td>
<td>0.95</td>
<td>2.8</td>
</tr>
<tr>
<td>Tractors</td>
<td>0.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Total (mn units)</td>
<td>23.4</td>
<td>66.3</td>
</tr>
</tbody>
</table>

Source: SIAM, TMA, IMaCS Analysis

5.1.2. Based on the projected volume growth and estimated exports, the projected size of the Indian Automotive industry in FY26 is estimated to be in the range of Rs.16,16,000 -Rs.18,89,500 crore. The following chart provides current and projected the composition of the industry over the next decade.
# Component – Domestic includes systems and in-house components manufactured by OEMs

5.1.3. Based on this forecast, the Indian Automotive industry is expected to contribute more than 12% of India’s GDP by FY 2026 thereby contributing significantly to the “Make in India” programme envisioned by the Government of India. In order to achieve the forecast output, the Indian Automotive industry will require additional investments of Rs.4,50,000 - 5,50,000 crore over the tenure of AMP 2026.

5.1.4. The Indian Automotive industry also promises significant employment opportunities. Large number of workers, both skilled and unskilled, will be required to sustain increased level of production. Jobs will be generated through both direct and indirect employment. While direct employment is by way of workers engaged in the production of automobiles and auto components, indirect employment is generated in a number of services that an automobile requires, such as the vehicle financing and insurance, vehicle repair, service and maintenance, automobile and auto component dealers and retailers, vehicle drivers and logistics service providers. Further employment opportunities will arise in tyre and battery industries and their associated industries. It is estimated that there will be an additional employment generation of 60 - 65 million by the Indian Automotive industry by 2026. Apart from this on implementation of I&C regime and establishment of vehicle scrapping centres additional employment would be generated.

Source: MOSPI, SIAM, ACMA, TMA, IMaCS Analysis

**Note:** All values in the above chart are in Rs. crore and at current prices (2015): Refer Appendix-1 for chart in US$ terms.

<table>
<thead>
<tr>
<th>Component</th>
<th>FY 15</th>
<th>FY 26 Base case</th>
<th>FY 26 Optimistic case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components - Domestic #</td>
<td>4,64,000</td>
<td>16,16,000</td>
<td>18,89,500</td>
</tr>
<tr>
<td>OEM Exports</td>
<td>39,900</td>
<td>1,78,700</td>
<td>200,000</td>
</tr>
<tr>
<td>Component Imports</td>
<td>69,000</td>
<td>4,36,700</td>
<td>462,500</td>
</tr>
<tr>
<td>Component Value Addition</td>
<td>62,500</td>
<td>2,23,300</td>
<td>2,95,000</td>
</tr>
<tr>
<td>Component After market</td>
<td>83,200</td>
<td>1,83,800</td>
<td>2,00,000</td>
</tr>
<tr>
<td>Components - Domestic #</td>
<td>84,300</td>
<td>1,48,500</td>
<td>1,83,000</td>
</tr>
<tr>
<td>FY 26 Base case</td>
<td>2,92,600</td>
<td>7,77,300</td>
<td>5,49,000</td>
</tr>
<tr>
<td>FY 26 Optimistic case</td>
<td>4,45,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.1.5. Specialists in the areas of R&D, technology, product development, logistics, and operations would also be required. The Indian Automotive industry will need to upgrade its human resource hiring and development capabilities significantly to ensure that it is able to get on board adequate number of such highly trained and skilled personnel over the next few years.

5.2. **Areas of Focus**

5.2.1. The future challenges for Indian Automotive industry would be to develop a robust and reliable supply chains capable of meeting global standards as exports of automobiles as well as automotive components are expected to be significantly scaled up from current levels. The Indian Automotive industry has to accord due emphasis on managing its production costs and reaping economies of scale, developing the required technical and human capabilities, clearing the endemic infrastructure bottlenecks, stimulating domestic demand and exploiting international business opportunities. The key to success for Indian Automotive industry would be to maintain the current level of competitiveness it enjoys vis-à-vis many other countries, even if its labour costs increase in the future. Keeping these requirements in view, policy would seek to strengthen the industry’s competitiveness in the areas of core manufacturing and flow of technology; demand creation, brand building, and infrastructure; enabling exports and international competitiveness;tightening environmental and safety standards; and, development of human resources. A key deficiency that needs to be addressed for attaining the overall vision is to maintain competitiveness in manufacturing and improve business climate in the country. Systemic deficiencies could be overcome through a long-term and stable policy regime that will support the industry to fulfil its potential.

5.3. **Competitiveness in manufacturing**

5.3.1. The share of the Manufacturing sector in India’s GDP is around 15%. Some East Asian economies that have witnessed rapid economic development have the share of Manufacturing at 25% to 35% of their GDP. For a country such as India, which has over 50% of its labour force in the Agriculture sector (which contributes only 15% of GDP and continues to shrink) and without the necessary skills to take up high level jobs in the Service sector, growing the size and share of the Manufacturing sector (including dependent services sub-sector) becomes an imperative for the Government. Government has embarked on clearly articulated vision of increasing
the share of Manufacturing sector in India’s GDP from the current level of 15% to 25% over the next ten years. This fits in well with the potential of the Indian Automotive Industry and AMP2026 therefore makes it as one of its core objectives to both increase the share of Manufacturing in the economy as well as give a boost to employment generation.

5.3.2. The Global Competitiveness Study, 2014, ranks India at number 60. The country has slipped from 55th to 60th position during the tenure of the last decade, which is a matter of concern. In terms of macroeconomic environment, public institutions and technology India ranks 110, 72 and 98 respectively which is a significant deterioration as compared to the situation a decade ago. On location attractiveness, India is ranked 42, which is just a notch better than the situation 10 years back. The productivity in Automotive industry in India is substantially lower than in other sectors and offers scope for further improvement, which in turn, will pull up the competitiveness of entire manufacturing sector. It is therefore imperative to identify factors that make manufacturing in India uncompetitive and address them expeditiously.

5.3.3. Some of the factors that adversely impact manufacturing competitiveness of India are as follows:

- High import duties in certain categories of raw material
- Some incidence of inverted duty structure
- Higher incidence of indirect taxes than seen in many competing countries
- Sub-optimal levels of operations
- Lower operational efficiencies and higher transaction costs
- Lower labour productivity and higher cost of capital
- Inadequate infrastructure

5.3.4. Some measures in different areas that will improve competitiveness of Indian Manufacturing are as follows:

- Introduction of Goods and Service Tax (GST)
- Flexibility in labour laws
- Achieving scale and reaping the benefits of economies of scale
- Reduction in cost of capital
- Cost, availability and quality of raw materials
- Bridging the technology gap with international standards
- Reduced power costs (including cost of overcoming black outs)
5.3.5. Manufacturing in India suffers from disadvantages as mentioned in the foregoing paragraphs. As a result, the Indian Automotive industry is faced with an uphill task when competing with countries such as China, Indonesia and Thailand. In a study commissioned by SIAM and ACMA, IMaCS evaluated the manufacturing competitiveness of the Indian Automotive industry with those of seven other economies (China, Indonesia, Thailand, Russia, Poland, Slovakia and Brazil).

5.3.6. A comparison of manufacturing costs between India and these countries reveal that the impact on cost of manufacturing on account of cascading impact of taxes continues to adversely affect India’s cost competitiveness. Though the introduction of VAT has mitigated this, non-availability of set off benefits on VAT paid outside the state, erode the full benefits of a value added tax and thereby increase the overall costs. Delay in introducing the GST has resulted in the continuation of cascading impact of taxes for the Indian Automotive industry. The disadvantage arising out of the cascading impact is of the order of about 8%. Design and engineering capabilities of the Indian Automotive industry has been a strong point that contributes to our competitiveness and this continues to draw the attention of the automotive players. The poor state of India’s Power industry (both high tariffs for the industrial category consumers and a high incidence of black-outs that force industry to resort to expensive back-up options) also erodes competitiveness of the Indian Automotive industry. Lack of a world class transportation infrastructure (including ports, railway linkages, warehouses, delays on highways, etc.) also contribute to lowering competitiveness of Indian Automotive industry.

5.3.7. To attain the potential output, the Indian Automotive industry would not only need to think big in terms of scaling up their operations, but also would need to upgrade specific parts of their value chain:

- Invest in R&D and technology
- Deliver on globally acceptable quality levels
- Have a continuing commitment for skill development and education
- Benchmark their performance against best in the industry
- Adopt best manufacturing practices and production techniques
5.3.8. In light of the above, it becomes essential for policy to focus on the automotive sector and address the specific constraints. Investment in R&D for technology development will become one of the most important aspects of future strength of this industry. Given India’s strength in having the skill sets required to promote technology development, the industry needs to invest in research and development to increase innovative breakthroughs for vehicle design as well as in manufacturing technology and incentivisation of such investments will be needed on the part of the Government.

5.4. **Demand creation, brand building and infrastructure**

5.4.1. In order to raise the contribution of the share of the Indian Automotive industry from 7.2% to 12% of GDP\textsuperscript{13}, there has to be a focus both on growing the domestic market as well as exports. As far as the domestic market is concerned, the focus should be on developing and selling appropriate products for different consumer segments constituting the country’s population. These products could include cost effective small carriers, strong and rugged low cost vehicles for the rural market, commuter motorcycles, and small and safe four wheelers for family transport. For exports, the focus should include new geographies for growth beyond traditional markets.

5.4.2. India’s GDP\textsuperscript{14} is expected to grow from Rs. 1,06,44,000 crore in FY15 to between Rs.1,97,90,000 and Rs.2,35,83,000\textsuperscript{15} crore in FY26 if the economy were to grow at a rate of 5.8% to 7.5% per annum over this period. The size of Indian Automotive industry during the corresponding is expected to rise from Rs.4,64,000 crore in FY15 to Rs.16,16,000-18,89,500 crore\textsuperscript{16} in FY26. This translates into a contribution of the Indian Automotive industry to GDP of 4.4% (7.2% of GDP 2004-05 base) in FY15, expected to grow to 8.8-8.2% (more than 12% of GDP 2004-05 base) in FY26. The challenge lies in developing appropriate infrastructure to sustain this growth. Government aims to create a stable, predictable, and sustainable policy environment and partnering with industry to look beyond borders to attain the above potential.

5.4.3. The government will focus on developing a robust ecosystem for design and development of automobiles as well as automotive components in India as it is an

\begin{itemize}
\item \textsuperscript{13}GDP at constant prices (2004-05 base year); Source: MOSPI, IMaCS Analysis
\item \textsuperscript{14}GDP at constant prices (2011-12 base year); Source: MOSPI, IMaCS Analysis
\item \textsuperscript{15}Estimated GDP; Source: IMaCS Analysis
\item \textsuperscript{16}Estimated Industry size; Source: SIAM, ACMA, TMA, IMaCS Analysis
\end{itemize}
important pillar that will determine success of the Indian Automotive industry. This will also go a long way in building Brand India from current low cost manufacturer to something more aspirational.

5.5. International Business (Exports)

5.5.1. Export opportunities for Indian auto component business are the largest on account of India being highly cost competitive with quality matching global standards. The vehicle exports, which at present are at Rs. 62,500 crore (FY15) is expected to reach around Rs. 2,23,300 - 2,95,000 crore by FY26. Export opportunities for four wheelers would lie primarily in the small car segment as Indian (or India based) manufacturers have gained experience, expertise and scale in this segment and enjoy an advantage over other countries in terms of cost. India should further capitalise on this expertise and target to become the largest manufacturing hub for A/B class vehicles by 2020. This is already being leveraged by several OEMs that have set up their manufacturing facilities in India. The exports with respect to Multi Utility Vehicles, three wheelers and two-wheelers are expected to become even more substantial in the coming years. Export of other vehicle categories will be largely driven by strategies of individual companies. The automotive component exports, which is at present Rs.69,000 crore is expected to reach around Rs.4,36,700 -4,62,500 crore. Incentivising exports, encouraging development of domestic competitiveness, and establishing ‘Made-in-India’ brand are some of the initiatives required to promote international business.

5.6. Environment and Safety Regulations

5.6.1. A long term emission roadmap needs to be developed as air pollution from an increasing automobile park has started to become a concern with authorities and society at large. Besides, improving the quality of current mix of automotive fuels, alternative fuels such as Hydrogen and bio fuels need to be promoted by policy to ensure sustainability of the industry over the long term. The industry wants the Government to ensure unfettered availability of fuel across India and requests that a minimum gap of four years between each successive stage to be maintained which will help the industry plan and manage the transition. There is a need for MoHIPE to coordinate amongst concerned Ministries and States to ensure policy stability in availability, relative pricing, subsidies, and taxes for automotive fuels (CNG, Diesel, LPG, Petrol, EV, and Hybrid).
5.6.2. The roadmap for fuel efficiency of PVs has been defined and roadmap for other vehicle categories is in the works. Government’s announcement on FAME scheme is clear for the period up to two years. However, long term clarity is needed to commit investments in Electric and Hybrid Vehicles.

5.6.3. More than 140,000 deaths take place on the Indian roads annually. Going forward, factors such as improving safety of on-road vehicles, quality of road infrastructure, driving habits, issuance procedures of drivers’ licenses, and pedestrian behaviour, will have to be addressed by policy to reduce the number of fatalities and casualties on Indian roads. For instance, passenger vehicles would see innovative use of the technologies including air bags, side curtains, and high strength lightweight materials for safer and affordable mobility solutions.

5.7. Human Resource Development

5.7.1. Employment is always an important factor in measuring the significance of any economic activity. The automotive industry, on account of its backward and forward linkages, is a significant generator of employment across an economy- both direct and indirect.

5.7.2. Direct employment is generated by engaging people in production of automobiles and auto components, while indirect employment is generated by feeder and supplier industries to the automotive industry, such as the vehicle financing and insurance industry, vehicle repair, service and maintenance outfits, automobile and auto component dealers and retailers, vehicle drivers and cleaners, tyre industry, amongst others. Appropriate steps need to be taken in order to ensure that demand – supply gap, both quantitative and qualitative, in terms of human resources, does not arise.

5.7.3. Under the theme of “Skill India”, National Skill Development Council (NSDC) has set up Automotive Skill Development Council (ASDC) which will be the apex industry body for skill development to ensure availability of skilled manpower to the sector.

5.7.4. At present, skill shortage is witnessed largely at certain sections in the shop floor, design, quality assurance, sales, service, and finance functions in the Automotive industry. Besides these areas, the Tractor industry also faces shortage of skills in proper usage and maintenance of tractors and farm equipment. Addressing such shortages will call for more active participation of the Automotive industry in terms of regular dialogues with ASDC for updating of courses and training programmes. All
trainers and training programmes that are required for the Automotive industry should be accredited by ASDC which would bring in standardisation over the long run.
6. Automotive Mission Plan 2016-26

6.1 AMP2016 launched India into the global league of automotive and auto component manufacturing. The small car hub hypothesis that AMP 2016 staked India’s growth on has paid off, with India becoming one of the largest manufacturers of small cars in the world - today about 31% of small cars globally are manufactured in India. Besides being competitive in the small car segment, Indian Automotive industry has become key player in a number of segments across the Automotive value chain. Over the past decade, India has been successful in attracting significant quantum of investments in the automotive and auto component sector; besides, there has been a steady increase in the exports of automobiles and auto components from India over this period, signifying a rising acceptance of Indian costs, quality and manufacturing prowess.

6.2 The next decade is expected to herald in tumultuous changes in the global Automotive industry. The industry is witnessing a structural shift, with the demand for automobiles shifting from developed economies to emerging economies. Manufacturing activity is shifting to locations that are cost competitive. Simultaneously, the automotive industry is becoming more complex with a higher degree of electronification, increasingly stringent emission norms, and alternative power trains such as Hybrids and electric growing steadily. Vehicle safety has also come into sharp focus and measures to reduce vehicle - pedestrian conflict are gaining importance.

6.3 While the shift in demand and accent on low cost manufacturing affords opportunity for manufacture in India, the higher order sophistication that is emerging in the vehicles, the design capabilities that are required by the auto component manufacturers to become preferred suppliers to global OEMs and the need to manage costs are challenges that need to be addressed. Addressing these require a concerted effort on part of the government, the OEMs and the auto component industry. The combined initiatives can build on India’s proven and potential strengths in a bold and definitive manner. AMP2026 seeks to establish the building blocks of India’s “right to win” on the global stage of the Automotive industry. Industry enablers such as infrastructure availability and a conducive business climate are also essential to ensure the growth of the automotive industry.

6.4 AMP 2026 builds on the successes of AMP2016 and seeks to address what the Indian Auto industry should look like in a decade from now in terms of size, global presence, technical maturity, competitiveness, institutional capabilities, and reputation and what each of the stakeholders is expected to do to attain that Vision.
6.5 AMP2026 also seeks to define the trajectory of evolution of the automotive ecosystem in India including the glide path of specific regulations and policies that govern research, design, technology, testing, manufacturing, imports/exports, sales, use, repair, and recycling of automotive vehicles, components and services.

6.6 AMP2026 is a document that is aimed at multiple stakeholders in India and overseas, and seeks to communicate the Government’s policies pertaining to the Indian Automotive industry, comprising the automotive vehicle manufacturers, the auto-component manufacturers and tractor manufacturers who are physically present in India.

6.7 The Indian Automotive Industry will grow 3.5 - 4 times in value from its current output of around Rs. 4,64,000 crore (circa 2015) to around Rs. 16,16,000 - 18,89,500 crore by FY26. Exports are estimated to range between Rs.6,60,000 crore and Rs.7,57,000 crore in FY26 from Rs.1,31,500 crore in FY15. These will translate into the Indian Automotive industry making a contribution of more than 12% to the country’s GDP and accounting for more than 40% of the manufacturing sector.

6.8 Creation of jobs is a significant contribution of the Automotive industry to the India growth story. Having created about 25 million direct and indirect job opportunities over the last decade, AMP2026 envisages an incremental employment generation of about 65 million jobs by way of direct and indirect employment across the various activities in the automotive value chain.

6.9 Vision Statement: Based on the envisaged future scenario, the Vision Statement for the Indian Automotive industry under AMP2026 is as follows:

“By 2026, the Indian Automotive industry will be among the top three of the world in engineering, manufacture and export of vehicles and components, and will encompass safe, efficient and environment friendly conditions for affordable mobility of people and transportation of goods in India comparable with global standards, growing in value to over 12% of India’s GDP\(^{17}\), and generating an additional 65 million jobs”

\( ^{17}\) Estimated GDP at constant prices (2004-05 base)
6.10 AMP2026 seeks to address the following core objectives:

a. AMP2026 will propel the Indian Automotive industry to be the engine of the “Make in India” programme, as it is amongst the foremost drivers of the Manufacturing sector: Given its nature, the automotive industry has significant backward and forward linkages and can energise a number of industries. It will also provide the much needed fillip to the Small and Medium industries which contributes significantly to the auto component industry.

b. AMP2026 aims to make the Indian Automotive Industry a significant contributor to the “Skill India” programme and make it one of the largest job creating engines in the Indian economy: The automotive industry has created an estimated 25 million jobs over the last decade. With linkages across various industries and across the rural and urban landscape the industry has the ability to generate jobs both for skilled workers (automobile and auto component manufacturing) and semi-skilled and unskilled workers (drivers, petrol pump attendants etc.).

c. AMP 2026 seeks to focus on enhancing mobility: One of the key objectives of AMP2026 is to enhance mobility options by providing safe, efficient and environmentally friendly alternatives for movement of people and transportation of goods. AMP2026 also seeks to minimise the negative externalities arising from the use of automobiles, such as, congestion, air pollution, global warming, and road accidents.

d. AMP 2026 seeks to increase net exports of the Indian Automotive industry several fold: AMP2016 succeeded in positioning India as a small car hub which facilitated exports. Auto component exports also rose by nearly 5.2 times from Rs. 13,242 crore in FY06 to Rs.69,000 crore in FY15. Given the foundation laid by AMP2016, AMP2026 seeks to provide a platform for the Indian Automotive industry to scale up exports to reach at least 35% of its overall output over the next ten years. This is sought to be achieved by increasing the quantum of indigenously carried out research, design, engineering and manufacturing in both automotive vehicles and components.

e. Comprehensive and stable policy dispensation required: It is an accepted fact that growth requires stable policies. The automotive industry is impacted by a number of policies governing various areas including emissions, fuel supply, road safety, issuances of driving licenses, and vehicle retirement. It therefore requires a comprehensive and predictable policy regime over the period of the AMP to
6.11 Interventions are required at the level of both Government and the industry. Government will create an environment that provides a stable policy regime and facilitate investment flow through an enabling business environment. The industry will focus on improving manufacturing competitiveness, achieving world class design capabilities and enhancing R&D competencies which will help in the manufacture of products that are globally acceptable.

6.12 The path to implementation will incorporate two important lessons learnt from the implementation of AMP2016. First, significant level of coordination is required amongst various arms of the government (both within the central government and between the central, state and local governments). The industry is impacted by policies and programmes of various ministries and which requires a coordinated effort across the various arms of the government. Second, AMP2026 will be the guiding document for all institutions to frame policies that impact the design, manufacture, sale, use, repair, and recycling of automobiles and auto components in India. This will ensure that there are no conflicting policies or responses that are not well-researched and could have a harmful impact on the development of the automotive industry.
7. Recommended Interventions

In order to realise the Vision and the stated objectives of AMP 2026 and guide the evolution of the automotive ecosystem in India, the following interventions are recommended. This includes the glide path for specific regulations and policies that govern research, design, technology, testing, manufacturing, imports/exports, sales, use, repair, and recycling of automotive vehicles, components and services.

7.1. Investment and Trade

The investment and trade policy of Government has a huge impact on the growth and well-being of the Indian Automotive industry in multiple ways, and given the large socio-economic footprint of the industry, it is necessary that stability in the policies and predictability in their implementation are maintained.

A. Investments

7.1.1. As highlighted in AMP2016, India has followed a very liberal investment route to promoting growth of her Automotive industry by allowing 100% Foreign Direct Investment without any mandatory pre-conditions towards investment, employment, local content, exports, technology /R&D spend and restrictions on foreign exchange repatriation. This has enabled India to attract significant quantum of investments from global Automobile and Auto component manufacturers over the past decade.

7.1.2. Improving Business Climate: It is important that the country has a business climate that facilitates a smooth flow of investments. In particular, the automotive sector, with significant backward and forward linkages, requires a favourable business climate where the processes for establishing a business are transparent and smooth. AMP 2026 will require Government (through its various arms) to streamline approval processes, and clear unnecessary bottlenecks in the path of investments translating to products. Sum and substance, the stated goal of Government of transforming ‘Red Tape’ to ‘Red Carpet’ is critically dependent on its ability to walk the talk in terms of policy implementation at the level of Central and State Governments.

7.1.3. Several States have already announced automobile and auto component sector policies encouraging investments in these industries by providing suitable fiscal and non-fiscal incentives. While most such incentives are targeted at vehicle manufacturers given the scale of investments being made, there is a need to extend
similar benefits to the supporting auto component companies that also invest alongside vehicle manufacturers.

7.1.4. Government shall actively engage with State Governments to address any issues that may hinder investments and setting up of capacities for manufacture of automobiles and auto components.

7.1.5. While significant capacities have been created for manufacture of different categories of vehicles and auto components, India still does not have domestic manufacturing capacities in high technology items, such as, moulds and dies, high end plastics, automotive electronics etc., and these are predominantly imported. The use of these items (especially automotive electronics) is likely to increase sharply in terms of value per vehicle in the future, and therefore there is a need for stepping up incentives to encourage local capabilities and capacity creation.

7.1.6. Auto component manufacturing (including the Tier 2 and tier 3 players) predominantly comprises of MSMEs that face significant challenges not only in securing finances at competitive rates from banks/financial institutions but also in getting loans on longer tenure with moratorium. Government shall endeavour to appropriately address this issue.

7.1.7. In order to encourage domestic manufacturing and provide a boost to the capital goods sector, Government as part of the “Make in India” initiative may consider allowing accelerated depreciation rates for such domestically manufactured capital goods that are deployed for manufacture of automobiles and auto components.

B. Tariff Policy

7.1.8. With the objective to incentivise domestic value addition subject to technical and commercial feasibility, Government shall rationalise custom duties on all raw materials, intermediates, components, and assemblies that are used in automotive components and vehicles in a manner that there is no inverted duty structure

7.1.9. In the context of the “Make in India” programme, the Indian Automotive industry is keen that the existing tariff structure roadmap and conditions of import of vehicles

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18Inverted duty structure refers to a situation where the import duties of upstream goods (raw materials and intermediaries) are higher than downstream goods (intermediaries and components) which makes import of value added items cheaper.
are retained without any modifications. The prevailing duty structure on Completely Built Units (CBUs) and policies shall continue in order to provide impetus to local manufacturing.

7.1.10. Government will continue to discourage imports of used / remanufactured vehicles and components and such remanufactured automotive products shall not be treated as new.

C. Trade Agreements (TAs)

7.1.11. World trade amongst countries and trading blocs is increasingly being shaped by FTAs and RTAs, and India is no exception. As the global centre of gravity of automotive production and consumption is rapidly moving in favour of certain large and emerging economies (including India), FTAs will have a big impact on the fortunes of the vehicle and auto component sectors in India.

7.1.12. Given that manufacturing in India is globally competitive, India shall follow a strategy of signing up FTAs with those countries that have a similar market for automobiles (i.e. consumers needs and tastes for automobiles are similar to those of India), and especially those, that do not have a significant manufacturing base for automobiles. Such countries would include Algeria, Egypt, Nigeria, South Africa, Peru, Chile, Colombia, Brazil, Iran, Argentina and Russia. In addition there is a need to pursue bilateral agreements with countries like Philippines, Myanmar, Vietnam even though they are already part of other regional trade agreements.

7.1.13. At present, Government is negotiating on two significant trade agreements; first, the FTA with European Union and second, the Regional Comprehensive Economic Partnership Agreement (RCEP) comprising ASEAN, China, South Korea, Japan, Australia and New Zealand. As part of AMP 2016, Government in consultation with the industry had identified 77 sensitive items that were to be part of the negative list which would continue for the current as well as future trade agreements. In addition, tractors of less than 130HP shall also be included in the negative list. Government by way of consultations shall actively engage with Indian Automotive industry so that a wide spectrum of inputs can be accessed in deciding if any additional tariff lines are to be included or excluded under the FTAs/RTAs being negotiated.
7.1.14. While negotiating FTAs/RTAs, Government shall also ensure that Rules of Origin are clearly defined to prevent pass through imports and trade deflection as well as address issues related to changes in custom tariff classification at 4-digit level, minimum value addition, minimum operations at the country of origin and non-qualifying processes. Rules of Origin should be certified only by Government Authorities in partner countries.

7.1.15. If there are other compulsions to enter into FTAs with countries/blocs that have a significant automotive production base, Government shall ensure that there is reasonable time provided for the Indian industry to gear up to such competition.

D. Encouraging Exports

7.1.16. The current foreign trade policy (FTP 2015-20) has been implemented with several changes to the schemes, export rewards, simplification of procedures etc., to make them more efficient. It also has an in-built provision for mid-term course correction to address the changing dynamics of international trade. Continuing this approach for the remaining period of AMP 2026, Government can address any issues hindering automotive exports. This will also allow the Indian Automotive industry to be better prepared for competition that will inevitably arise and plan its strategies accordingly.

7.1.17. Given the tiered structure of the automotive value chain and the fact that India does not have a perfect set off for all taxes for exports where a duty drawback is allowed and significant infrastructure deficit vis-à-vis other global manufacturing centres, Government needs to consider providing additional drawback to both auto component and vehicle exports.

7.1.18. A three-tier tariff structure for raw materials, intermediate products and finished products is already in place. Stability of tariff policy regime will be an important criterion for improving the export potential of the Indian auto industry.

7.2. Environment Protection and Safety

7.2.1. This is one of the most critical policy pronouncements that interest several stakeholders of the automotive industry. There is a general perception that a bulk of the atmospheric pollution in many Indian cities today is contributed by automobiles. However, this perception is erroneous and does not appear to be borne out by facts.
In some cases, legislation and policies have been pronounced in response to certain pressure groups or public opinion without the facts or implications of these policies (on industry or the consumers) getting sufficiently researched. Such policy formulation imposes an unreasonably heavy burden on several stakeholders in the automotive industry, but does not deliver the intended benefits. Therefore, AMP2026 advocates the need for a scientific and transparently conducted study to determine the causes of air pollution in Indian cities. Continuous monitoring of air quality and source apportionment studies need further strengthening. Based on such well conducted studies, the Indian Automotive industry will take suitable corrective action as is decided by Government.

A. Emission Roadmap

7.2.2. Environmental concerns have led to India narrowing the gap with European norms on emissions at an improving pace. At present, Bharat Stage IV (BS IV: equivalent of Euro IV) norms for fuel is applicable to a majority of states in India and shall be implemented across India by April 2017. While Indian Automotive industry has adhered to the commitment of developing vehicles conforming to these norms, the challenge has been to make available corresponding quality of fuel across the entire country. Such phased implementation across geographies is fraught with challenges given that vehicles move across locations and therefore are subject to different quality of fuel. Inability of a nationwide rollout of such policies in effect defeats the very purpose of achieving improvement in reduction of emission from vehicles and also contributes to damaging the quality of the engines.

7.2.3. Introduction of world class emission standards shall be implemented all over the country in an orchestrated manner allowing all stakeholders to make the necessary adjustments required and to ensure harmonious implementation. AMP2026 pronounces a glide path for fuel usage by automobiles in India and the norms for emissions control as follows:

i) Policies will specify outcomes required (emission from various engines etc.) and will be technology agnostic.

ii) Introduction of future fuel/emission norms will be done all over India simultaneously and not in a phased manner or in select regional areas only. Government will also ensure unfettered availability of the right grade(s) of fuel across the country as and when such norms are introduced.
iii) Close coordination would be needed amongst concerned central ministries and state governments to ensure consistent policy environment for universal availability of fuels, stable relative pricing amongst competing fuels, subsidies accorded to various fuels, and taxes for automotive fuels (e.g. CNG, Diesel, LPG, Petrol, EV, and Hybrid).

iv) Government in consultation with industry and other stakeholders has finalised the fuel efficiency norms for engines of Passenger Vehicles. The Corporate Average Fuel Efficiency (CAFE) norms have been adopted for this purpose. Government shall adopt internationally accepted methodologies for introduction of fuel efficiency norms for all types of fuels/engines.

v) While it was earlier envisaged that emission norms for passenger vehicles conforming to Bharat Stage V (BS V) would be adopted by India by 2019 and BS VI (equivalent of Euro VI) by 2023. Given the recent developments and judicial interventions related to increasing pollution in cities like Delhi, GOI has decided to skip BS V and directly introduce BS VI norms by 2020. However there is a need for adequate measures to address the following challenges associated with this move:

   o The primary aim of reducing vehicular pollution will not be achieved if unfettered availability of fuel conforming to BS VI requirements is not made available across the country. The additional challenge in ensuring fuel availability is also the need for ensuring adequate availability and dispensing infrastructure for Aqueous Urea Solution along with the fuel in all fuel stations.

   o While technology conforming to BS VI requirements is available outside India, the industry strongly feels that it would be very difficult to develop the capability of the supply chain to meet BS VI requirements by leapfrogging BS V. In such an event, there will be a sudden surge in the import of these components adversely impacting local manufacturing.

   o The investment plans of automotive OEMs and component manufacturers will need to be rescheduled needing higher upfront investments. This coupled with the additional cost of components needed to meet BS VI norms will push up the cost of vehicles which can negatively impact growth in demand.

vi) The lag between global norms and the mandatory norms in India will be brought down from the present 7-8 years.
B. Adoption of cleaner fuels

7.2.4. In line with the proposals of AMP2016, GOI approved the National Mission on Electric Mobility (NMEM) in 2011 and subsequently National Electric Mobility Mission Plan 2020 (NEMMP) was unveiled in 2013.

7.2.5. Conventional power trains are expected to hold sway over the next decade while Hybrids and Electric vehicles are expected to increase their share significantly from their current levels. Under the NEMMP, the latent demand potential for electric and hybrid vehicles by 2020 is expected to reach around 5 million electric two wheelers and around 1.5 million other vehicles like three wheelers, four wheelers, buses and light commercial vehicles.

7.2.6. As part of the mission, DHI has formulated a scheme namely FAME – India (Faster Adoption and Manufacturing of (Hybrid & Electric Vehicles in India). This scheme lays down the roadmap over a period of six years to support the development of hybrid and electric vehicles market and its manufacturing eco-system with a view to achieve self-sustenance. Technology development, demand creation, pilot projects, and charging infrastructure are the focus areas of the scheme.

7.2.7. While the FAME-India scheme has been clearly outlined for the initial two years, the roadmap for the remaining period of the scheme shall be based on the outcome and experience gained in this Phase (2 years). The scheme shall be reviewed appropriately with inputs from stakeholders and shall be considered for implementation beyond March 2017, with appropriate allocation of funds in the future.

7.2.8. Extending this scheme for the entire period of AMP2026 and providing more clarity upfront for the entire period of the scheme will instil confidence in the industry and allow them to plan and commit the requisite investments and create needed capacities. This shall also enable the scheme to align with “Make in India” initiative. This along with development of supporting infrastructure would also enable the country to realise the latent demand potential for electric and hybrid vehicles. It is estimated that by 2026, around 10-12% of the total demand for vehicles would be addressed by these electric and hybrid vehicles. The share of electric vehicles in 2-wheeler segment is expected to be higher at around 15% followed by passenger vehicles, three wheelers, buses and light commercial vehicles.
7.2.9. Under the National Hydrogen Energy Roadmap, the Ministry of New and Renewable Energy (MNRE) has collaborated with several institutions engaged in the research and development of Hydrogen as a fuel to develop vehicular applications of hydrogen fuel. Hydrogen fuelled two wheeler (motor cycles), three wheeler and fuel cell buses have been developed and demonstrated. Further development activities are being undertaken to establish commercial viability of hydrogen fuelled vehicles in the country. Government shall continue to encourage research and development in this area under the aegis of National Hydrogen Energy Board.

7.2.10. Biofuels and biodiesel are being developed under the National Bio-fuel policy. At present 5% ethanol blended gasoline is being supplied by Oil Marketing Companies in select states and cities. However, given the other challenges of availability of ethanol and other biofuels like Jatropha etc., the progress on increasing its usage has been limited. GOI will continue to support research and development so as to increase usage of biofuels in the future.

7.2.11. Compressed Natural Gas (CNG) has been mandated in both Delhi and Mumbai as the fuel for public transport vehicles (buses, taxis and auto rickshaws). Post 2014, GOI has made City Gas Distribution (CGD) under which CNG for vehicles is dispensed as the first priority in the allocation of domestic Natural Gas. This has facilitated better availability and affordability of CNG as a fuel.

7.2.12. It was envisaged that CGD networks shall be established in over 200 cities across India. However, progress on roll out has been slow and it is now operational in around 50 cities. The popularity of CNG as transportation fuel is, at present, limited because of the lack of an extensive network of CNG stations along highways thereby making it inconvenient for long distance and inter-city travel. MoPNG is, at present, formulating guidelines for grant of rights to entities for sale of CNG as transportation fuel through CNG Stations. These guidelines will promote setting up of CNG stations in various cities and towns across the country, including along highways. This would lead to faster rollout of large number of CNG stations across the nation.

C. Safety Standards

7.2.13. Safety encompasses two dimensions, namely vehicle safety and road safety. Vehicle safety deals with safety of vehicles and that of passengers within the vehicle, while road safety deals mainly with safety of persons outside a moving vehicle (say on the road) who may potentially come into physical contact with the vehicle.
Vehicle Safety

7.2.14. **Harmonisation**: With increasing globalization and the vision of taking Indian Automotive Industry to the league of the top 3 in the world, AMP 2026 recognises the need for articulating a clear roadmap over the next decade that will make Indian vehicles and auto components comply with global standards of safety in line with the UNECE World Forum for Harmonization of Vehicle Regulations [WP.29]. India is a member of the 1998 agreement on global technical regulations and both the Government and Automotive Industry have been actively participating to identify potential areas where technology upgrades are necessary. While adoption of such changes is beneficial to the industry and other stakeholders, there is a need to evaluate the cost-benefit impact of these changes specifically in the Indian context before adoption. The testing and homologation infrastructure created under NATRiP shall be utilised to conduct any such cost-benefit evaluations and to suggest appropriate changes.

7.2.15. **Aftermarket**: Another area where greater vigil and stronger regulation is called for is in the aftermarket, where the menace of spurious and sub-standard automotive components and insufficiently trained workshops compromise vehicle safety, taking advantage of consumers’ ignorance. AMP2026 advocates the formulation of appropriate regulations along with appropriate monitoring and enforcement agency to check proliferation of spurious components, including setting of appropriate standards, testing procedures, labelling, and punitive measures for ensuring conformance. Ensuring quality of safety critical parts by making AIS-037 standards *(Procedure for Type Approval and Establishing Conformity of Production for Safety Critical Components)* mandatory will be a useful first step.

Road Safety

7.2.16. Road Safety is a critical area that needs active regulation and oversight as the number of casualties in accidents outside the vehicle is in multiples of number of casualties inside the vehicles involved in accidents. AMP 2026 envisages the following actions to improve India’s record of safety are as follows:

   a) Alignment of road safety rules with norms proposed in the Road Transport and Safety Bill 2015 (RTSB 2015)

   b) Enforcement of on-road regulations will be improved in coordination with various authorities and agencies
c) Adoption of scientific and technology driven measures in traffic management, pedestrian access, highway engineering, road furniture, driver license issuance, and signage  
d) Strict implementation of the ban on overloading of commercial vehicles  
e) Identification of ‘Black Spots’ through safety audits to address issues pertaining to road furniture, road geometry and signage.

**Inspection & Certification (I&C) Regime**

7.2.17. AMP 2026 seeks to implement a coherent I&C regime in a comprehensive manner. AMP2016 also had indicated that an I&C regime should be ushered in and towards that end a few tentative steps were undertaken. GoI sanctioned 10 model automated I&C Centre one each in the States of Andhra Pradesh, Karnataka, Gujarat, Maharashtra, Rajasthan, Himachal Pradesh, Haryana, Madhya Pradesh, U.P and Delhi on a pilot basis. The total cost for setting up one such centre is approximately Rs.14.4 crore. It is expected that out of 10 centres, six Centres will be operational during FY16. GOI also decided to sanction 10 more such centres in the country, during the 12th Five Year Plan.

7.2.18. These are not sufficient to address the rising number of vehicles in the park, the high burden on the environment due to auto pollution, and the rising number of accidents and casualties due to poor quality of vehicles on the road. All this clearly points to the need for a comprehensive I&C policy that regulates the roadworthiness of vehicles in use.

7.2.19. AMP 2026 envisages the implementation of an appropriate I&C policy across the nation over the next five years. Some of the salient features of an I&C policy would be as follows:

i) All vehicles in the country should be subject to a test of roadworthiness periodically, in line with laid down standards of testing. The results of such a roadworthiness test should determine the eligibility (or otherwise) for a vehicle to be on-road.

ii) The inspection for roadworthiness for personal vehicles should be at least once in two years, while it should be at least annual for vehicles used in commercial applications.

iii) Government will define the mandatory tests for roadworthiness for different categories of vehicles.
iv) The I&C policy will unambiguously state consequences of vehicles failing the fitness test

v) On an average, each I&C centre can handle around 100,000 cars per year. Implementation of I&C regime shall be at a countrywide level, so that no vehicle owner anywhere in the country is not unduly inconvenienced in terms of access to an I&C centre. Accordingly, the implementation may be done under a suitable business model - e.g. a franchisee or PPP model with appropriate regulation through credible agencies with at least one centre in each District to start with.

End of Life (EoL) policy

7.2.20. As a logical complement and extension of the I&C regime, AMP 2026 envisages the implementation of an End of Life policy for automotive vehicles and components in a manner that is in line with safety and the preservation of the environment. AMP 2016 also envisioned such a policy, but there was not much progress towards this. However, keeping in mind the implementation of the I&C regime, a logical plan to retire vehicles and components that do not meet the emission norms and are not conducive for further use must be in place. Some of the salient aspects of implementing an EoL and vehicle scrapping policy are as follows:

(a) The EoL policy would have a national footprint, and not be confined to specific towns or regions only. All vehicle owners anywhere in the country should be provided with vehicle scrapping centres within reasonable distance. Introduction of scrapping centres in selective areas would undermine the whole policy and may result in concentration of “unroadworthy” vehicles in areas where the policy is not enforced.

(b) Standards for scrapping and for EoL for different categories of vehicles and components will be defined in conjunction with the I&C policy.

(c) Government may consider introducing incentives for scrapping vehicles, including by way of innovative financial instruments, such as tradable certificates. This would be required as the person actually involved in scrapping a vehicle may not be a user of the vehicle. Such incentives for scrapping vehicles could be introduced for commercial vehicles especially those with old technology so that there is a positive impact on the environment.

(d) The Government shall also introduce a fleet modernisation programme as and when required.
7.2.21. All issues related to environment protection shall be addressed by a taskforce consisting of Ministries of Heavy Industry, Road Transport, Petroleum and Environment. The legislation necessary to implement measures highlighted under Environment Protection and Safety including setting up of appropriate authorities is being addressed under the proposed Road Transport and Safety Bill, 2015 (RTSB 2015).

7.3. Improving competitiveness

7.3.1. The initiatives under AMP 2016 have enabled the Indian Automotive Industry make significant progress in terms of its design, engineering and manufacturing capabilities. Setting up of manufacturing capacities in small cars, two wheelers, tractors and auto components have resulted in the industry achieve economies of scale and cost competitiveness. However, Indian players still have to contend with several challenges related to taxation, infrastructure bottlenecks, higher cost of capital and delays in obtaining regulatory clearances/approvals resulting in erosion of cost competitiveness. Specific interventions by the Government and other stakeholders will enable the Indian Automotive industry to sustain and improve its globally competitive position. AMP 2026 advocates the following measures aimed at improving competitiveness of the Indian Automotive industry:

A. Fiscal and Taxation

7.3.2. One of the major factors impeding the growth of the automotive industry has been the domestic taxation system that is quite complicated, with multiplicity of taxes, applicable at different points in time during the whole process of manufacture to sale of the product. Automobiles are today one of the most heavily taxed manufactured products in India and very few countries where automobiles are manufactured have such a high level of tax incidence. A total tax incidence of 53% to 78% for cars hinders this industry significantly and there is a need to address this urgently. It is expected that the introduction of GST would resolve this issue to a large extent.

7.3.3. The measures taken by governments post the 2008 financial crisis in bailing out or financially supporting automotive companies around the world demonstrates the fact that fiscal support to the automotive industry is a necessary factor for long term growth, particularly during times of economic distress. This also follows from the strong economic contribution made by the automotive industry to the countries they
operate in. The excise duty concessions provided by the Government of India has also helped the Indian Automotive Industry weather the downturn. AMP 2016 proved unambiguously that government support had helped the Indian automotive industry grow in multiple ways. Given that India does not have a perfect set off of all taxes (even for exports where a duty drawback is allowed) and the fact that India suffers from a significant infrastructure deficit vis-à-vis other global manufacturing centres, it would help Indian auto exports if an additional drawback is given to both auto component and vehicle exports. The following fiscal and taxation measures are needed to sustain and improve the competitiveness of Indian Automotive Industry.

7.3.4. Implementation of Goods and Services Tax (GST) on a simple point to point basis would facilitate easy compliance and mitigate the current challenges faced in movement of goods across states.

7.3.5. Government shall set up a Technology Acquisition Fund that finances the Indian Automotive industry’s attempts to acquire cutting edge technology (viz. light weighting, engine, powertrain and auto electronics) through transfers, joint ventures, acquisitions, and buy outs. This will be a big step for the Indian Automotive industry (particularly the auto component industry) to leapfrog and acquire global best capabilities for research, design, engineering and testing.

7.3.6. There is also a need to facilitate term loans for automotive MSMEs with longer tenure and principal moratorium. Options of earmarking funding under priority lending by banks and financial institutions or setting up separate institutions for this purpose shall be evaluated and implemented.

7.3.7. To support the Government’s “Make in India” programme and to boost the manufacturing capabilities in India, one of the key interventions can be to provide accelerated depreciation rates for the Capital equipment manufactured in India for use by the Indian Automotive industry. Similarly, domestic design and manufacture of automotive electronic components/sub-assemblies, additional components needed to meet BS VI emission norms, high technology plastic parts and specially built vehicles needed for public purposes like fire tenders, articulated buses etc., shall be actively encouraged by incentivising creation of local manufacturing capacities.

7.3.8. The weighted tax deduction for Research & Development expenditure (200% Weighted Deduction under section 35(2AB) for In-House R & D facility and 175% Weighted Deduction on outsourced R&D from approved Institutions i.e. National
Laboratories, Universities, Scientific Research Institutes and IITs) shall be continued. Further, the benefit shall be extended to outsourced R&D expenditure as well. This scheme has been well-received by the Indian Automotive industry and the results in terms of enhanced level of R&D activity in India has helped the country.

7.3.9. India has a unique position in the global automotive markets with a significant manufacturing and sales footprint despite a low per capita income of USD 1500. This has been possible because of the thrust given by the Government to support vehicles for mass consumption being taxed at the same rate of excise duty as that of other goods. Recognising the importance of a sustained growth of the Indian Automotive industry, Government will continue to support mass-market vehicles including passenger vehicles (small cars, commuter motor cycles & scooters), commercial vehicles (including three wheeler vehicles used for public transport, trucks and buses) and tractors with a lower level of taxes (Excise duty or GST) than other vehicles.

B. Expanding Domestic Demand

7.3.10. Industry will strive to enhance cost competitiveness on a continuous basis to develop the domestic market by developing and launching products that meet the demands and aspirations of the people. This has been amply demonstrated in the case of small cars where models match the features that can typically be associated with bigger cars.

7.3.11. There is a significant need to improve public transport in the country. Studies\textsuperscript{19} show that around 32% of the population that resides in urban areas has access to around 1.6 million buses which translates to around 1.29 buses for every 10,000 persons, which is woefully inadequate. There are around 50 cities with a million plus population and another 500 cities with population more than 100,000, which require quality public transport that is well organised. There is a need for another 100,000 buses to cater to the transport needs of the people of this country. Government will encourage and support development of public transport infrastructure by dovetailing the funding under various schemes to develop urban infrastructure thereby enhancing the demand for quality buses across the country.

\textsuperscript{19}Study conducted by EMBARQ India
C. Infrastructure

7.3.12. Continuous development of infrastructure is imperative to meet the demands of a growing economy. In the current scenario, the Indian Automotive industry predominantly leverages national highways for transportation of components and finished vehicles. Logistics plays a critical role in the overall supply-chain of Automotive industry, with both forward and backward linkages having a multiplier effect on the system.

7.3.13. Automotive specific infrastructure: The Government recognises that the rapid growth of the automotive industry in the coming decade will involve a quantum increase in the movement of physical goods (e.g. raw materials, components, assemblies, and finished vehicles) both within the country and across the sea ports. This will call for an order of magnitude step up in the logistics infrastructure in the country some of which are detailed below.

Road Infrastructure

7.3.14. Specific requirements with respect to road infrastructure are as follows:

a) Expedite development of new Expressways, National and State Highways and connecting roads, with suitable flyovers at major intersections.

b) Electronic tolling - A lot of time is spent at toll plazas en route during long haul transportation of components and finished vehicles. It would save a lot of time and hassles if Government develops a uniform and transparent policy for collecting tolls on highways and transport friendly system for e-collection of toll charges. The introduction of FASTag, an RFID based electronic toll collection system by GOI is a move in the right direction and this need to cover all tolling booths in the country expeditiously.

c) Wayside facilities: Amenities like parking, repair facilities, rest areas, recreation, and eateries should be developed on all national and state highways. MoRTH has recently initiated measures in this regard by identifying 60 locations along National Highways to develop such amenities. A separate company IHMCL under NHAI has been entrusted with this responsibility. This further needs to be expanded at an interval of every 50 kilometres to cover more locations along National Highways and the replicated along various State Highways as well.
d) Transport Nagars: Facilities for transhipment of goods shall be created outside major cities and trade hubs where all necessary infrastructure including multimodal access, backward and forward linkages for regulatory and other clearances needed for shipment of goods are included.

e) While weighbridges are being established near all operational toll plazas on National highways, such weighbridges need to be established at an interval of every 100 kilometres on national highways and state highways to monitor and enforce issues related to overloading and operator safety.

**Rail Infrastructure:**

7.3.15. If the targets envisaged under AMP2026 are to be achieved then the current situation of heavy dependence on highways/roads for automotive logistics will not be a viable and long term solution, and, hence, a strong need to look for alternative measures. Going forward, use of Railways for automotive logistics is an imperative, going forward. This calls for significant enhancement of Railway network across the country. Work on the Dedicated Freight Corridor (DFC) along the Delhi-Mumbai corridor and western coast of the country needs to be expedited.

7.3.16. Specific rail infrastructure requirements from an automotive industry perspective are as follows:

i. For the transportation of finished vehicles from the manufacturing locations to the dealers across the country, the vehicle manufacturers are increasingly shifting towards transportation by Rail as compared to the practice of transporting by road. At present around 6% of the output is being transported by Rail using conventional wagons. The industry is keen to take this to 15%. With continuous interaction with the railway authorities, steps have been taken with the designing of flexi-deck auto wagon by RDSO called BCACBM. Private designers and 3PLs are also involved in developing new designs for wagons.

ii. Railways have also come out with the Auto Freight Train Operators Policy (AFTO) and the licence agreement for the same has also been announced. Indian Railways need to augment track and locomotive capacities for speedier movement of auto-wagon trains. Automobile sector is quite optimistic on the usage of railways for transportation of finished vehicles, since it is a much safer and convenient mode of transportation. Achieving economies of scale (bulk volume), with time, would make the railways a more preferred option.
iii. Development of Rail Auto-hubs (loading/unloading terminals) to serve key destinations managed by third party logistic players is needed. If distribution centres are developed, big trailers and trucks can operate between such centres, and secondary distribution will be done by small trucks. Railways may identify surplus lands available near rail heads at major terminals, such as Guwahati in the east, Chennai in the south, etc. These lands can be leased to 3PL operators for development of a logistics centre for automotive and auto components.

**Shipping and port Infrastructure**

7.3.17. In order to keep pace with the envisaged increase in both component and vehicle exports significant development of port infrastructure is necessary. While multimodal logistics are effectively deployed in other developed automotive producing countries, there is a need to complement road and rail infrastructure with alternatives so as to achieve efficiency in logistics and improve cost competitiveness.

7.3.18. Coastal shipping and inland waterways are two more areas which require government’s support for transportation of critical components and finished vehicles, along the coastline of the country. Since India has a fairly long coastline and inland waterways, they could be utilised for delivery of vehicles to ports, instead of relying on roads and highways. These could also be used by the manufacturing plants near ports for transportation to consumption points near the coastline. This calls for a comprehensive policy towards coastal shipping and inland waterways for automotive logistics.

7.3.19. Further, specific requirements with respect to port infrastructure are as follows:

i) Connectivity to Ports plays a vital role in expeditious dispatch of automotive export from the country. Since ports handle varied types of cargo, the approach road(s) leading to most of the ports are congested due to heavy traffic; sometimes the roads are not properly paved or are easily damaged given the heavy traffic. Hence, there is an urgent need for improving the condition of approach roads to ports, so that truck trailers could travel smoothly and the delivery could be handled efficiently leading to savings in time and money.

ii) Some of the ports being used by the Indian Automotive industry are at Mundhra, JNPT, Mumbai, Chennai and Ennore. These ports also require intervention in improving the handling of cargo and with regards to dedicated facilities such as berths, and parking.
iii) There is also a need to make administrative and procedural formalities at ports simpler and more cost effective.

**Power infrastructure**

7.3.20. Significant power generation capacities have been added in the last decade. As of January 2015, new projects with more than 100,000 MW of generation capacity have been commissioned across the country. Despite this, the country (including the automotive centres) faces shortages in electricity, which increases the cost of power for the industry.

7.3.21. From a power transmission perspective, there is a need for accelerated implementation of National Power Grid on priority to enable scheduled/unscheduled exchange of power as well as for providing open access to encourage competition in power market. In this regard, nationwide synchronous power grid, interconnecting all the five regional grids, has been established.

7.3.22. Further strengthening of transmission network to establish inter-State and inter-regional links for enhancing the capacity of National Grid in a time bound manner is being undertaken to ensure optimal utilisation of uneven distribution of energy resources. At present the National Grid with inter-regional power transfer capacity of about 46,450 MW has been established. The inter-regional power transfer capacity is envisaged to be augmented to about 72,250 MW by FY 17.

7.3.23. While significant progress has been made in developing power infrastructure, issues related to reliable and uninterrupted supply of power to manufacturing units continue to affect the automotive sector. This has led to manufacturers being forced to rely on captive generation and alternative power sources like diesel generators resulting in very high power cost of 2.5 to 3 times the grid power. Automotive sector, given its significant contribution to the manufacturing sector’s output needs to be accorded priority for supply of uninterrupted and quality power from the national/regional/state grids.

**Testing, Homologation and Validation Infrastructure**

7.3.24. Testing and development capabilities in the public domain are very important aspect of overall technological advancement. One of the key interventions under AMP 2016 was the setting up of world class testing, homologation and certification infrastructure. For this purpose, NATRiP, one of the largest and most significant
initiatives in the automotive sector to create a state of the art Testing, Validation and R&D infrastructure in the country is being implemented.

7.3.25. The Project aims to create core global competencies in the automotive sector in India and facilitate seamless integration of Indian Automotive industry with the world as also to position the country prominently on the global automotive map. Centres of excellence are also being set up in the following areas:

- Noise, Vibration & Harshness (NVH) and Auto components (at Manesar)
- Engine including power train, Fatigue testing and Material testing (at ARAI, Pune)
- Automotive Infotronics and Crash testing (at Chennai)
- Testing Track and Vehicle dynamics (at Indore)

7.3.26. While many facilities planned under this project have been commissioned, several other projects including proving grounds, test tracks and centres of excellence are still in progress and are expected to be completed by FY 18. These centres will have to also play an important role in extensive data collection, advanced research and regulatory support.

7.3.27. In addition to the above centres, other organisations like Central Institute for Road Transport (CIRT), Pune, Central farm Machinery Training and Testing Institute (CFMTTI) Budhani, Northern Region Farm Machinery Training & Testing Institute (NRFMTTI) Hissar are having facilities in the focus areas like Transport Engineering and Agriculture/ farm machinery.

7.3.28. Product development cycle is gradually getting shorter and in order to have a competitive edge, India will have to develop strong competencies in Virtual Engineering and Virtual Testing and minimize extensive dependency on physical testing. Test agencies will have to establish predictive models and simulation environment in following areas. Validation with actual testing should be established in the areas of:

- Power train evaluation, combustion and emission performance
- Alternate fuels, after-treatment devices, EVs/ HEVs
- Hardware-in-loop and Software-in-loop
- Structures and materials, reliability and fatigue life predictions
- Crash compatibility, vehicle stability, ABS
- Ambient air modelling and predictions
7.3.29. Test agencies like ARAI have significant capacity and capabilities to generate data/information of national importance. This data will be vital in designing new products, establishing sound regulations and test standards, policy interventions, etc. In some of the areas, already the data is available as a national repository, through nationally funded projects. Further enhancement should be done in following important areas:

- Advances in Automotive Materials and generation of data bank on continual basis
- Accident data and its correlation with regulatory environment
- Indian anthropometric data and its impact on road safety
- Source apportionment studies at pan-India level and measurements/studies on currently un-regulated emission factors
- Driving cycles and their impact on fuel consumption/emissions
- Effects of adulterated fuels

7.3.30. Stringent emission norms, energy security issues and control of in-use vehicles will be the future challenges. Development and evaluation of alternative solutions to suit domestic situation will be the significant contribution from these centres.

7.3.31. Going forward, these testing centres will have to address the needs of the following emerging areas:

a) India is currently on the path of rapid growth, which will result in providing a big impetus to the Construction Equipment Industry. Dedicated test facilities will be required to address the testing and evaluation needs of this industry.

b) Engines used in auxiliary equipment in vehicles, vehicles used in mining areas, special purpose vehicles, etc. will have to be brought under the ambit of regulatory control. Existing test facilities at the test centres will have to be augmented to cover these requirements

c) Multimodal transportation and other public transportation systems like BRT, Amphibian vehicles, are expected to emerge. Regulatory support will be required to be developed for safety and emission evaluation.

d) With the penetration of EVs and HEVs, standardisation, creation and authorisation of charging infrastructure will have to be handled by the test agencies with approval from Government of India.
Ancillary infrastructure

7.3.32. In addition to the core infrastructure requirements ancillary infrastructure in the form of industrial, social, urban and digital infrastructure also needs to be put in place, that are highlighted below:

a) Industrial infrastructure: State governments should be encouraged to set up Auto Supplier Parks with provision for continuous power supply, park-to-port rail links, tooling centres, technical training centres for skill upgradation of workmen, and proximate banks for providing easy access to capital.

b) City/urban Infrastructure: City Development Plans of all major towns should make adequate provision for parking facilities, automobile retail showrooms and service centres. Establishment of Intelligent Transport and Traffic Management Systems are needed to address the issues of congestion and traffic management in all major cities. There should be a planned establishment of sufficient charging stations for electric vehicles in both cities and rural areas.

c) Digital Infrastructure: The first phase of digital infrastructure in the form of VAHAN – a centralized vehicle registration database and SARATHI – centralised database of driving licenses has been implemented by Ministry of Road Transport and NIC. Under this more than 160 million vehicle registration and 60 million driver license information has been digitised under the State and National registers. Going forward a Unified Vehicle Registration System and Unified Driver License System is planned next level development of the digital infrastructure and legislation to implement these is proposed in the RTSB, 2015, which should be set up expeditiously. In addition to this, the ICES system covering multiple agencies involved in the documentation and approvals of import and exports also need to be expedited. Allocation of Radio Frequencies is needed in order to implement the measures related to systems that use GPS. In order to track data related to accidents, electronic crash data collection and monitoring has been initiated through Accident Data Analysis Centre (ADAC) under NATRiP. This has to further be enhanced to effectively improve monitoring and enforcement of safety regulations.

d) Social infrastructure: An important aspect to also be considered concurrently is creation of supporting social infrastructure around the existing automotive hubs and new clusters to be developed.
D. Ensuring availability of Human Resources

7.3.33. A significant part of India’s manufacturing cost competitiveness is derived from its efficient and less expensive workforce. While India enjoys the demographic dividend of a young population that will be in the most eligible age group to work, ensuring that this population is adequately trained/skilled to address the requirements of various employment opportunities is a challenging task faced by the country. “Skill India” initiative has been launched by GOI to address this challenge. The Indian Automotive industry is expected to generate around 65 million additional job opportunities in both manufacturing and downstream and upstream activities and thereby be one of the central pillars of the Skill India programme.

7.3.34. The challenge of ensuring availability of human resources was highlighted in AMP2016 too and interventions were suggested on two dimensions of Labour Law reforms and creation of adequate infrastructure for training/skilling the workforce.

Labour Law Reforms

7.3.35. The multiplicity of labour laws has adversely impacted India’s cost competitiveness despite being a relatively low labour cost economy. As labour law is part of the Concurrent List of the Constitution, both Centre and State governments have multiple legislations governing this area. There are more than 44 central laws and associated rules and in excess of 100 State legislations.

7.3.36. Very specific recommendations were made in AMP 2016 seeking appropriate amendments to these labour laws. However no significant reforms have been implemented till date. It is imperative that these reforms are expedited so as to ensure that on the one hand necessary flexibility is provided to employers that do not jeopardise the economics of business and on the other hand protect the legitimate interests of employees so that there is no exploitation.

Skill Development and Training Infrastructure

7.3.37. The Automotive industry offers one of the highest potential for providing skills to youth and up-skilling existing labour force, amongst all sectors. As part of the initiatives identified under AMP 2016, the Automotive Skills Development Council (ASDC) the first sector skill council of India was set up in 2012. ASDC is promoted by the Automobile industry through Society of Indian Automobile Manufacturers (SIAM, Automotive Component Manufacturers Association (ACMA) and Federation of
7.3.38. ASDC is mandated to address all the requirements of the automotive industry with respect to research, delivery and quality of skill development making “Skill Development an enabler of growth”. This will be strengthened to become an independent testing and certifying agency for automotive industry skills.

7.3.39. ASDC is engaging across all the functions of the entire Automotive Industry viz., manufacturing, and engineering, R&D, sales and service as well as in related domains like driving and fuel pump operations to develop National Occupational Standards (NOS). It has developed more than 125 such standards across various job roles.

7.3.40. Skill development training providers meeting ASDC guidelines with necessary equipment, tools, classrooms and trainers are being affiliated as “ASDC Affiliated Training Partners” for carrying out skills training apart from class room covering knowledge sessions. Nearly 400 centres offering courses in manufacturing, sales, after-sales service & repairs, engineering, quality and R&D, supply chain & logistics as well as in auto finance, insurance, fuel pump operations and driver training for chauffeurs, taxi drivers and commercial vehicle driving have been established.

7.3.41. All trainers and training programmes for skill development in the Indian automotive industry will be accredited by ASDC, which will enable standardisation in the long run. ASDC will also track continually the skill gap in the Indian automotive industry and take corrective actions by effecting changes in curriculum design, training the trainers, examination and certification methods.

7.3.42. Tier 2 and Tier 3 auto component manufacturers continuously face the challenge of attracting and retaining talent with the right skill. This hinders the capability of such companies in moving up the value chain. ASDC shall devise appropriate mechanisms to address this problem and any fiscal support needed for such initiatives shall be provided by the Government by dovetailing these with MSME cluster development programmes.

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20For instance, the skills in short supply in 2015 are seen at the level of shop floor, design, quality, service, and finance functions
7.3.43. Government may consider the expenditure incurred towards skill development by corporate entities of the Indian automotive Industry as part of the CSR obligations to be met under the Companies Act, 2013.
8. Conclusion

8.1 The Indian Automotive industry has made great strides over the past two decades, sufficient to be noticed at a global level and be counted as a contender for a top table position. In terms of global rankings in manufacturing output, it is second largest in two wheelers, seventh largest in commercial vehicles, sixth largest in passenger vehicles and the largest in tractors. Over the past ten years, India has emerged as one of the most preferred locations in the world for manufacturing high quality automotive components and vehicles of all kinds, narrowing its gap over several established locations in the process.

8.2 Over the next decade, the automotive industry at a global level is likely to see some significant transformations. Principal ones that are expected include the shift of growth in demand for automobiles from developed nations to developing nations (mainly BRICS); a dramatic increase in the share of electronics in automobiles making them a “computer on wheels and connected to the Internet”; a relentless pursuit of economies of scale and scope in design and engineering of automobiles and components, while also pursuing low cost manufacturing destinations.

8.3 AMP 2026 envisages that the Government and the Indian Automotive industry will work together to address all the key issues to take India to its rightful position in the global automotive industry’s sweepstakes. AMP 2026 will help Indian Automotive industry to focus on its strengths and improve its competitiveness in select segments, achieve the annual production target of Rs. 16,16,000 crore to Rs. 18,89,500 crore in terms of its size and establish its ‘Right to Win’ on the global stage. By 2026 India could stand first in the world in production/sale of small cars, two wheelers, three wheelers, tractors and buses, third in passenger vehicles and heavy trucks, all adding up to 12% of GDP.
9. Summary

9.1. Objectives

a) Propel the Indian Automotive industry to become the engine of the “Make in India” programme
b) Make the Indian Automotive Industry a significant contributor to the “Skill India” programme by creating 65 million additional jobs during the tenure of AMP 2026
c) Promote safe, efficient and comfortable mobility for every person in the country, with an eye on environmental protection and affordability through both public and personal transport options.
d) Seek to increase net exports of the Indian Automotive industry several fold to the extent of 35-40% of its overall output
e) Ensure comprehensive and stable policy dispensation for all regulations impacting the industry

9.2. Interventions

1. Investment friendly business climate shall be established by clearing bottlenecks in procedures and regulatory clearance mechanisms
2. Appropriate Tariff Policy will be followed to attract investments promoting manufacturing in India
3. Incremental investment of Rs.4,50,000-5,50,000 crore in the Automotive Industry will be encouraged
4. Creation of domestic capacities in high technology areas like automotive electronics, moulds and dies, etc. shall be incentivised
5. Rules of origin and negative list will be followed while negotiating RTAs/FTAs
6. Policy initiatives that increase export intensity to 35-40% of output shall be taken up.
7. Bharat Stage VI (BS VI) will be adopted by 2020 for passenger vehicles.
8. Emission norms for other categories of vehicles shall also be established based on internationally accepted methodologies
9. Adoption of cleaner fuels like CNG, biofuels, Hydrogen, Fuel cells, EVs and Hybrids shall be incentivised and encouraged
10. Improvement of vehicle safety through harmonisation with global standards with suitable adaptations for local conditions shall be made after establishing its cost-benefits
11. Regulations along with monitoring and enforcement agencies shall be created to check proliferation of spurious components
12. Inspection and Certification policy along with necessary infrastructure shall be established on a pan-India basis
13. End of Life (EOL) policy for retiring unroadworthy vehicles shall be established along with necessary vehicle scrapping infrastructure
14. Scrapping of polluting and old personal vehicles and fleet modernisation of public transport vehicles shall be encouraged
15. Government will continue to support mass-market vehicles including passenger vehicles (small cars, commuter motor cycles & scooters), commercial vehicles (including three wheeler vehicles used for public transport, trucks and buses) and tractors with a lower level of taxes (Excise duty or GST) than other vehicles.
16. Introduction of Goods and Services Tax (GST) on a simple point to point basis will tremendously benefit the automotive industry
17. Technology Acquisition Fund that finances acquisition of cutting edge technology (viz. light weighting, engine, powertrain and auto electronics) through transfers, joint ventures, acquisitions, and buy outs by industry, shall be set up.
18. Development of road infrastructure including measures like electronic tolling, wayside amenities, weighbridges, transport nagars etc. shall be expedited
19. Measures specific to automotive industry like BCABM wagons, last mile infrastructure etc., shall be adopted to increase the usage of railways for automotive logistics
20. Connectivity to hinterland to be improved and automotive industry specific infrastructure at ports shall be enhanced
21. Coastal and inland waterway policies encouraging automotive logistics shall be adopted
22. Charging and other infrastructure required for EVs. Hybrid vehicles etc., shall be created
23. Testing and homologation infrastructure under NATRIP shall be further augmented to meet the emerging needs of automotive industry
24. Digital infrastructure that supports R&D, monitoring and enforcement and online documentation for export/import trade shall be established and implemented
25. Skill development initiatives including strengthening of ASDC, and allowing skill development expenditure as part of CSR obligations by Companies shall be encouraged
### Key Figures – at a glance

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10. Appendix 1

10.1. Current and projected industry size in US$ billion

Source: MOSPI, SIAM, ACMA, TMA, IMaCS Analysis
Note: All values in the chart are in US$ billion (@US$ 1 = Rs.62.50)

(Component – Domestic includes systems and in-house components manufactured by OEMs)