

Automotive **Australia** 2020 VISION



AUTOMOTIVE AUSTRALIA



The Automotive Australia 2020 project would like to thank the following workshop participants. Their knowledge and insight has shaped this vision of the automotive industry.

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Foreword

The Automotive Industry Innovation Council (AIIC) was formed in late 2008 with an objective that includes building innovation capacity through the nurturing and development of new and existing capability. The achievement of this goal requires the development of a strategic vision and an associated long term plan. The Australian automotive industry cannot be internationally competitive on all fronts. There are however, distinctive opportunities where Australia can be competitive in the short, medium and long term.

The Rudd Government's New Car Plan for a Greener Future encompasses a \$6.2 billion investment which is designed to reshape Australia's automotive industry and improve its competitiveness. This funding must be invested strategically to develop the capabilities that underpin these distinctive opportunities. To clearly identify both these opportunities and the underlying capabilities, the AIIC has endorsed the development of an industry roadmap.

In July 2009, AutoCRC, in partnership with the Australian National University (ANU) and Australian Commonwealth Scientific Industrial and Research Organisation (CSIRO), in collaboration with the University of Cambridge, and supported by the Australian and Victorian Governments, began working with the Australian automotive industry to develop a roadmap to 2020 and beyond – the Automotive Australia 2020 Project.

The development of an Australian automotive industry roadmap has been designed as a six phase programme with each phase serving to populate a corresponding section of the roadmap. The six phases include:

- **Phase 1** – Establishing a vision
- **Phase 2** – Defining immediate domestic and long-term future global market need
- **Phase 3** – Understanding national capability
- **Phase 4** – Identifying key tactical & strategic opportunities
- **Phase 5** – Strategic opportunity roadmap development
- **Phase 6** – Prioritisation

Phase 1, establishing a vision, identifies a strategic vision for the industry, which is the primary driver for the roadmapping process. This has been achieved through extensive research, interaction with industry (through interviews and surveys), and culminated in a one day Vision Workshop. During this workshop a strategic vision for the industry was defined through the identification of trends and drivers, resulting technology needs and required capabilities. Another key outcome of this workshop was the definition of broad evaluation criteria which will be used to prioritise both shorter and longer term strategic opportunities in Phase 4 of the programme.

The Vision workshop was held on the 4th of September 2009, and was hosted by the Victorian Department of Innovation, Industry and Regional Development. The workshop drew together 26 participants representing significant stakeholders within the automotive sector and related industries. The active involvement of all participants ensured a successful workshop process, resulting in significant outcomes. This report summarises these outcomes, which form the focus for the subsequent phases of the roadmap – Automotive Australia 2020.



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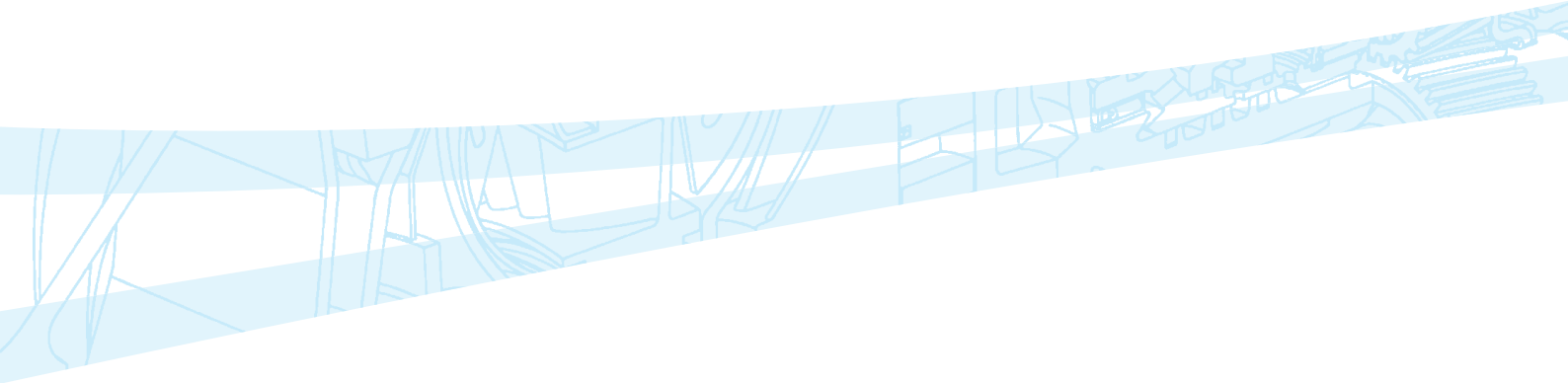
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Introduction

This report presents the vision developed in the first phase of the Automotive Australia 2020 Project. Building on extensive research and industry consultation, this phase culminated in a Vision Workshop on September 4th, 2009.

The context for the project is outlined in the section below. A vision for the future of the Australian automotive industry is presented in “A Vision for the Automotive Industry” which includes a graphical overview of identified trends and drivers, technology needs, and capabilities. This is followed by the evaluation criteria that will be used to assess the opportunities identified in future phases of the roadmapping programme.

Trends and drivers across short, medium and long time horizons have been categorised and are presented in “Trends and Drivers”. Customer requirements then lead to the technologies identified in “Technology Needs”. Technology needs have been categorised and prioritised. These technologies are underpinned by industry capabilities that are identified in “Capabilities”.

The outcomes of this first phase form the basis for the remaining five phases, which are outlined in “Next Steps”.

The Australian Automotive Industry

Australia's automotive industry includes three Motor Vehicle Producers (MVPs) and more than two hundred specialist component suppliers. The industry's main activities include production of vehicles, components, engineering, tooling and design. There is also a vibrant specialised tooling and services industry that comprises in excess of 500 firms that support large vehicle production in Australia for domestic and export markets.

While the vehicle manufacturing industry in Australia dates back to the late 1890s, it was not until the end of World War II that serious industrialisation and local manufacturing commenced. At this time local production, which was supported by subsidies, tariffs and quota systems, climbed to an historical peak of 2 percent of worldwide production. In the 1960's increasing national wealth saw major investment and growth in the Australian market. International investment created a local automotive market that had a variety of brands and products, including multiple manufacturers and assemblers.

As production reached a plateau in the 1980's, the Australian government initiated a major strategic realignment of the industry through the Button Plan. This saw a reduction in the number of models produced from 13 to 4 and the gradual reduction of import tariffs and other industry protection systems. Continuing government support was put in place through the creation of the Automotive Competitiveness and Investment Scheme (ACIS) replacing the export facilitation and duty compensation schemes. This approach worked well serving to increase exports of vehicles and components. In addition, the gradual reduction of tariffs and the strengthening of the Australian dollar against the American dollar have increased the affordability of imported vehicles across all segments.

In 2002, a Productivity Commission review of the industry concluded that “in recent years, the automotive industry has transformed itself to become a major exporter and innovator”. The Australian vehicle market is one of the most open and competitive in the world. The industry employs over 46,000 people (source: ABS) and in 2008 local production volumes reached approximately 325,000 vehicles (source: DIISR 2008 Key Automotive Statistics). The Australian automotive industry accounts for approximately 0.6 percent of Gross Domestic Product. In 2006, local component producers supplied Australian MVPs with 75% of their components (worth \$4.6 billion).

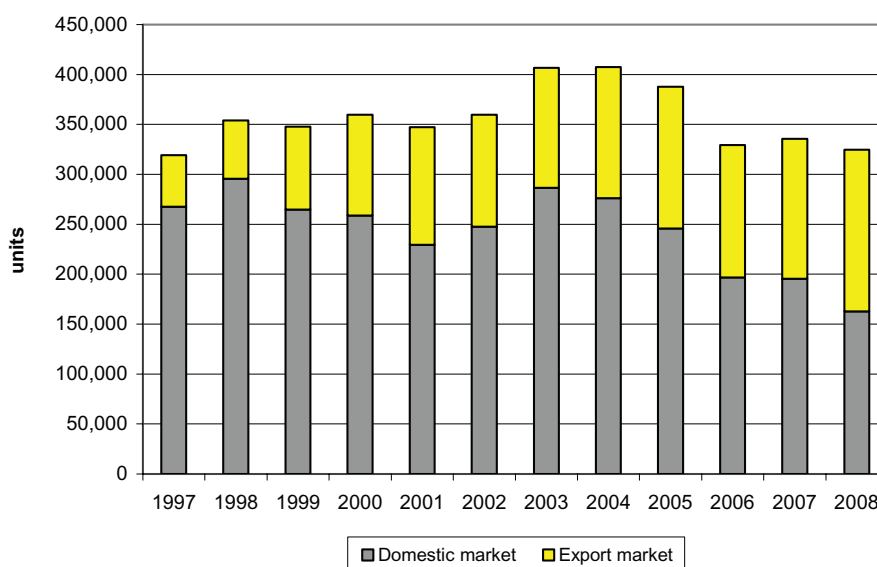


Figure 1 – Australian Vehicle Production

Source: DIISR 2008 Key Automotive Statistics

The global economic crisis has severely impacted the global automotive industry resulting in dramatic decreases in sales. Global climate change is becoming a key issue with growing pressure to reduce emissions worldwide. Coupled with increasing fuel prices, a resultant shift in consumer preferences towards ‘greener’ products is placing pressure on the global automotive industry to meet rising expectations. Intense competition from emerging automotive players in Asia – the emerging centre of mass of the global light vehicle market, makes conditions for the Australian automotive industry particularly challenging.

These pressures open up many opportunities, several of which require significant and sustained innovation and investment. The Australian Government’s New Car Plan for a Greener Future provides \$6.2 billion of investment to reshape the Australian automotive industry. Such investment needs to be targeted carefully based on an understanding of the opportunities that will reap real reward for the industry, ensuring its continued development and growth.

A Vision for the Automotive Industry

Australia's automotive industry must achieve recognition as a strategic element of the global automotive industry to be attractive to global companies and their investors. Australia must have a sustainable, profitable vehicle manufacturing industry with global reach that maximises opportunities in local and international markets. The industry must be bigger, more productive, and provide more jobs in the manufacturing and supply sectors. This can be achieved through leveraging existing strengths and building new capabilities.

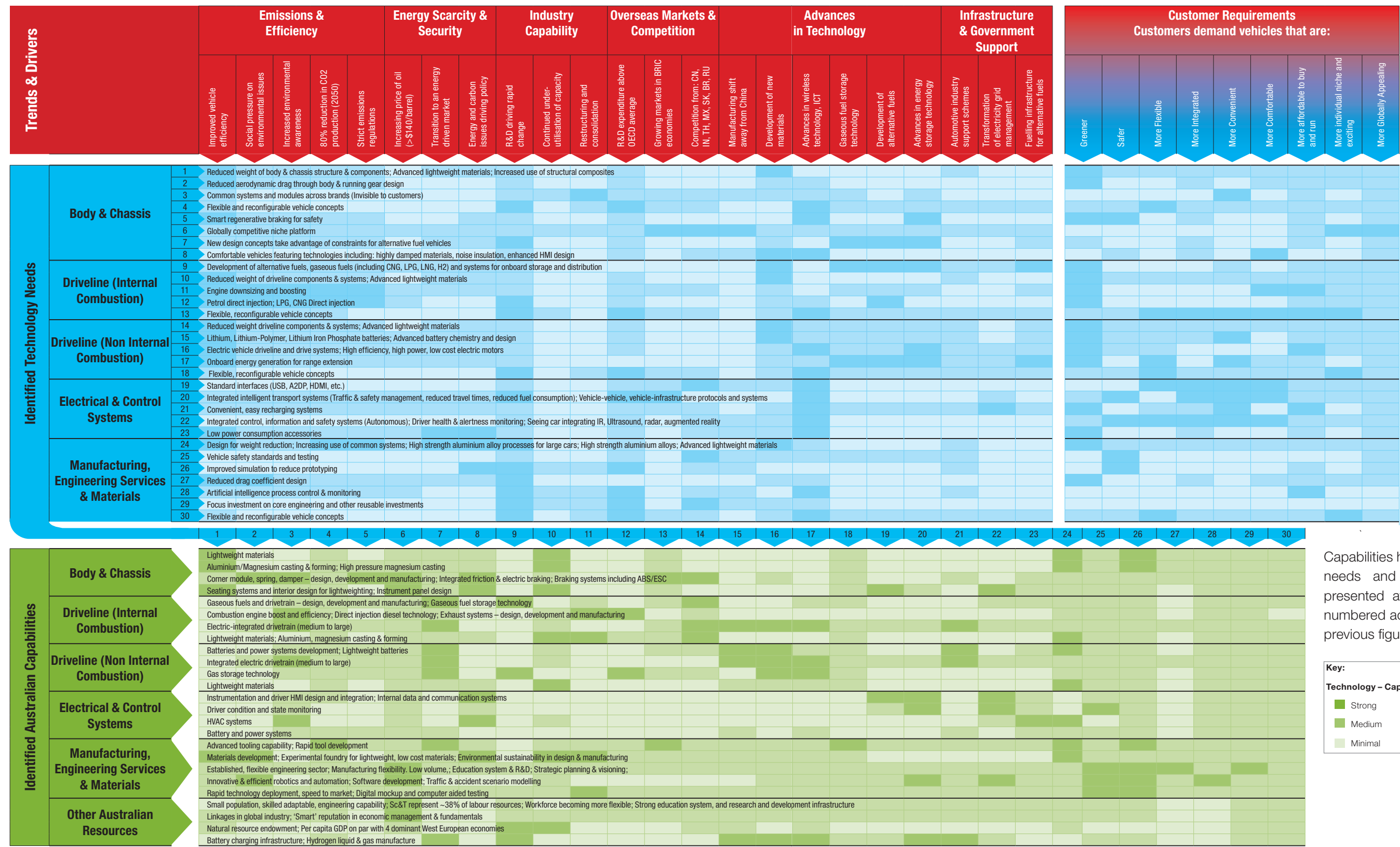
Australia has a globally integrated industry including three vehicle manufacturers and more than 200 specialist suppliers with the capacity to develop a vehicle from concept to release. The industry is capable of producing cars that excite consumers in local and overseas markets through environmental compliance, safety excellence and value for money. By aligning development with leading technologies, Australian suppliers can develop and expand distinctive global leadership positions in key systems and components, assuring the long term survival of the industry. Excellence in design, development and implementation of new technologies, combined with an increasingly flexible labour force, will result in developing and expanding export markets for Australian products and expertise.

Through advanced green car initiatives with global export potential, Australia can become one of the world's leading designers and producers of competitive, large, powerful, zero emission passenger vehicles. This game changing initiative will use Australia's strategic strengths and capabilities, supported by investment attraction and focused government support, and will meet the identified and emerging needs of the global automotive market. By leading development in this segment, Australia will own a greater portfolio of IP and become the industry of choice for design, engineering and testing of globally desirable fuel efficient and environmentally responsible products.

As concerns over environmental challenges and energy security drive increased public awareness of emissions and efficiency, a paradigm shift is looming in the automotive market. A radical shift presents opportunity to benefit from a fundamental change in strategy and vision, but emerging economies with large automotive sectors are becoming increasingly competitive for investment dollars in the global industry. These are significant challenges for the Australian industry, but a commitment to long term development targeting vital gaps in technology and capability will lead to a sustainable, innovative growth industry. This revitalised automotive industry will create more wealth and more skilled, well paid jobs for Australians.

A Roadmap to the Future

The realisation of the vision for the automotive industry is represented in the roadmap below.



Evaluation Criteria

Beyond setting a vision, the workshop participants developed evaluation criteria. Focusing on aspects of the attractiveness of opportunities and their fit with Australian capability, the following criteria have been identified as they apply to two time horizons: the short-term (next vehicle model) and longer-term (new car plan and beyond). Opportunities identified in the following phases of the programme will be prioritised against these criteria.

Short-term Opportunities

Next vehicle model

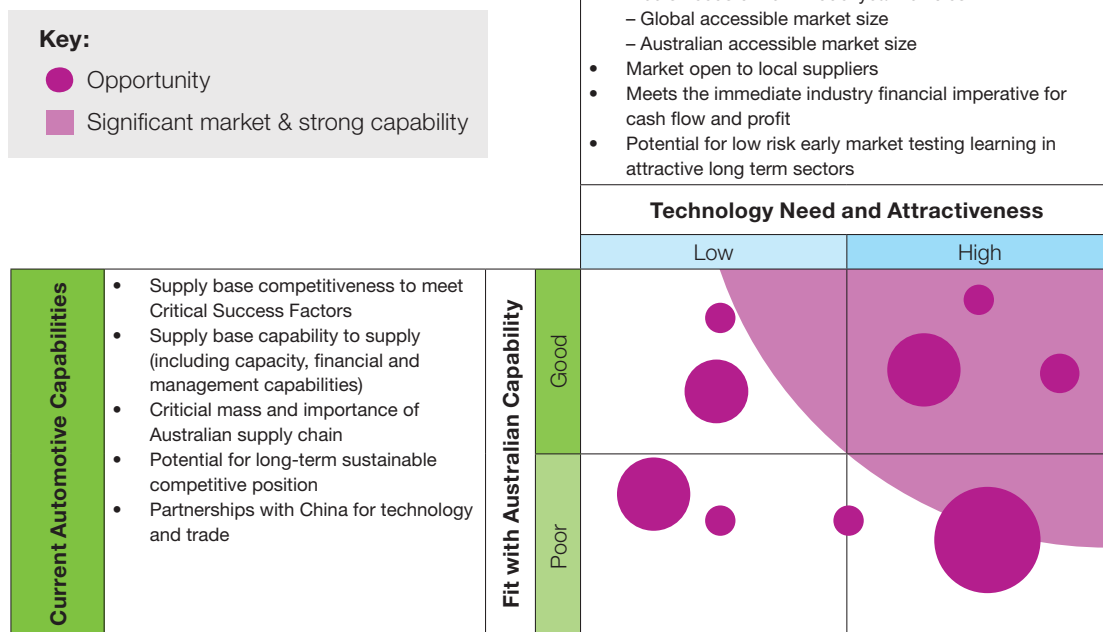


Figure 3– Short-term opportunity evaluation criteria

Long-term Opportunities

New car plan and beyond

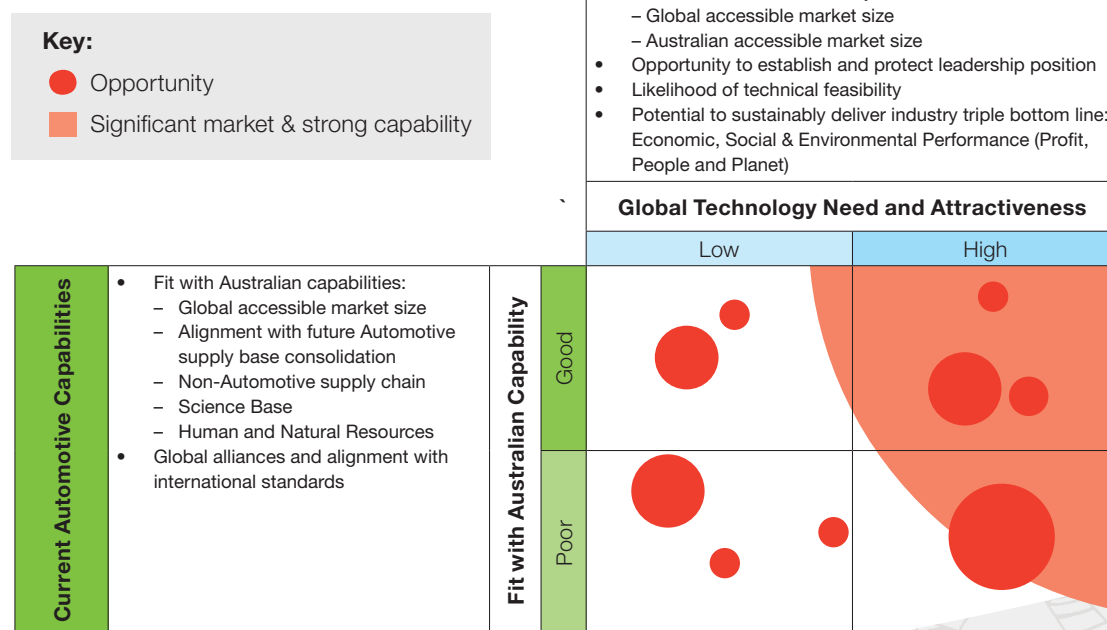


Figure 4– Long-term opportunity evaluation criteria

Trends and Drivers

The Australian automotive industry is influenced by internal and external forces. These external forces, realised as trends, will determine the technology required in the automotive industry to 2020 and beyond. The trends and drivers, as deemed most relevant by the participants, can be categorised into six key focus areas: Emissions & Efficiency; Energy Scarcity & Security; Industry Capability; Overseas Markets & Competition; Advances in Technology; and Infrastructure & Government Support. Within these categories, the workshop participants identified the most relevant trends and drivers and their relative importance as presented in Figure 5.

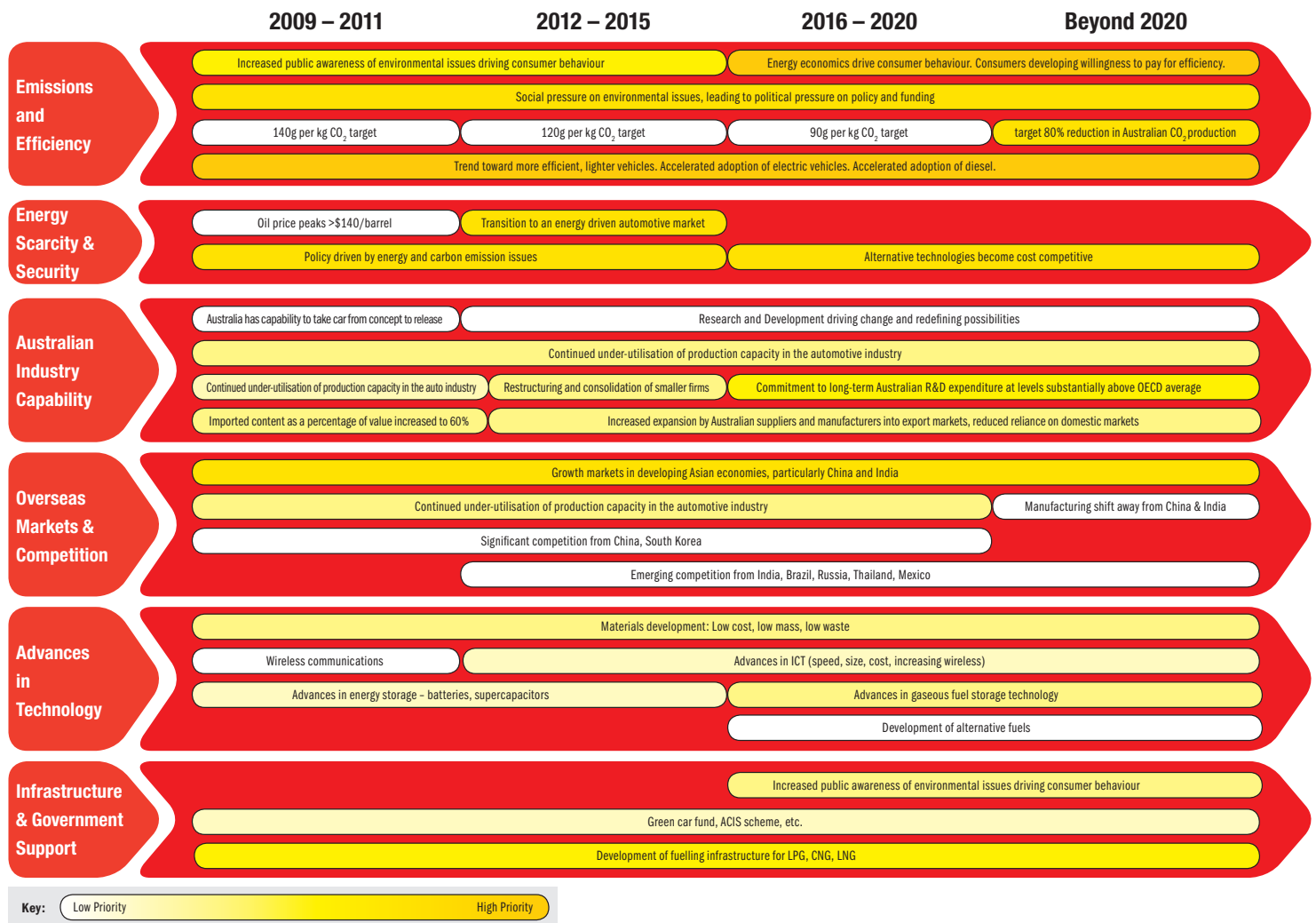


Figure 5 – Prioritised Trends and Drivers.

Trends and drivers are linked to technologies by customer demands. Though this link can be made implicitly, the workshop participants identified nine key areas of customer requirement. Identified customer requirement areas are presented in Figure 6.

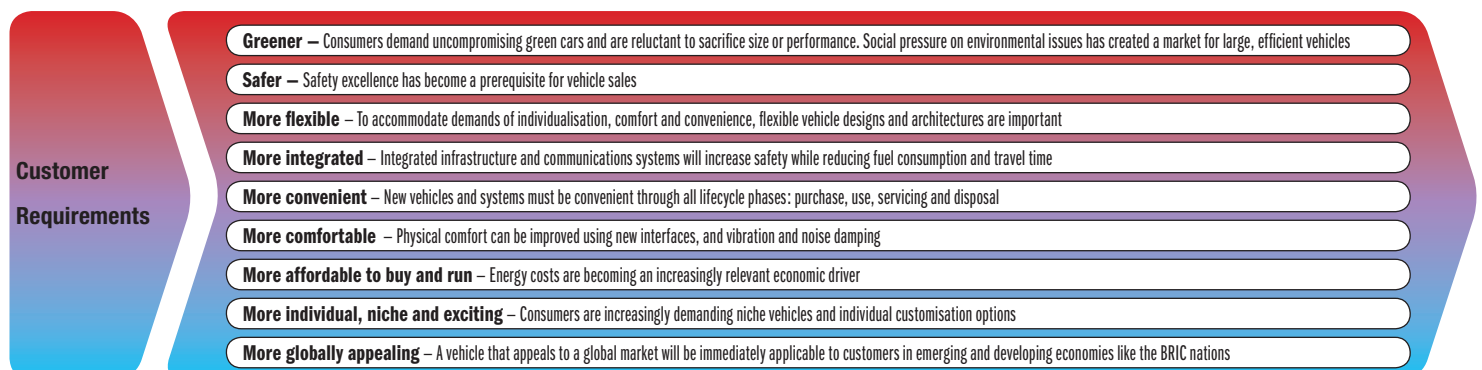


Figure 6 – Customer Requirements.

Technology Needs

Technologies will be applied or developed to respond to trends and drivers. The workshop participants identified a wide range of technologies which have been categorised according to the automotive systems or manufacturing processes where they will be applied. These systems include: Body & Chassis; Driveline (Internal Combustion); Driveline (Non-IC); Electrical & Control Systems; and Manufacturing, Engineering Services & Materials. In the same way as the trends and drivers, the technology needs identified by the participants have been distributed across four time horizons and have been prioritised as shown in Figure 7.

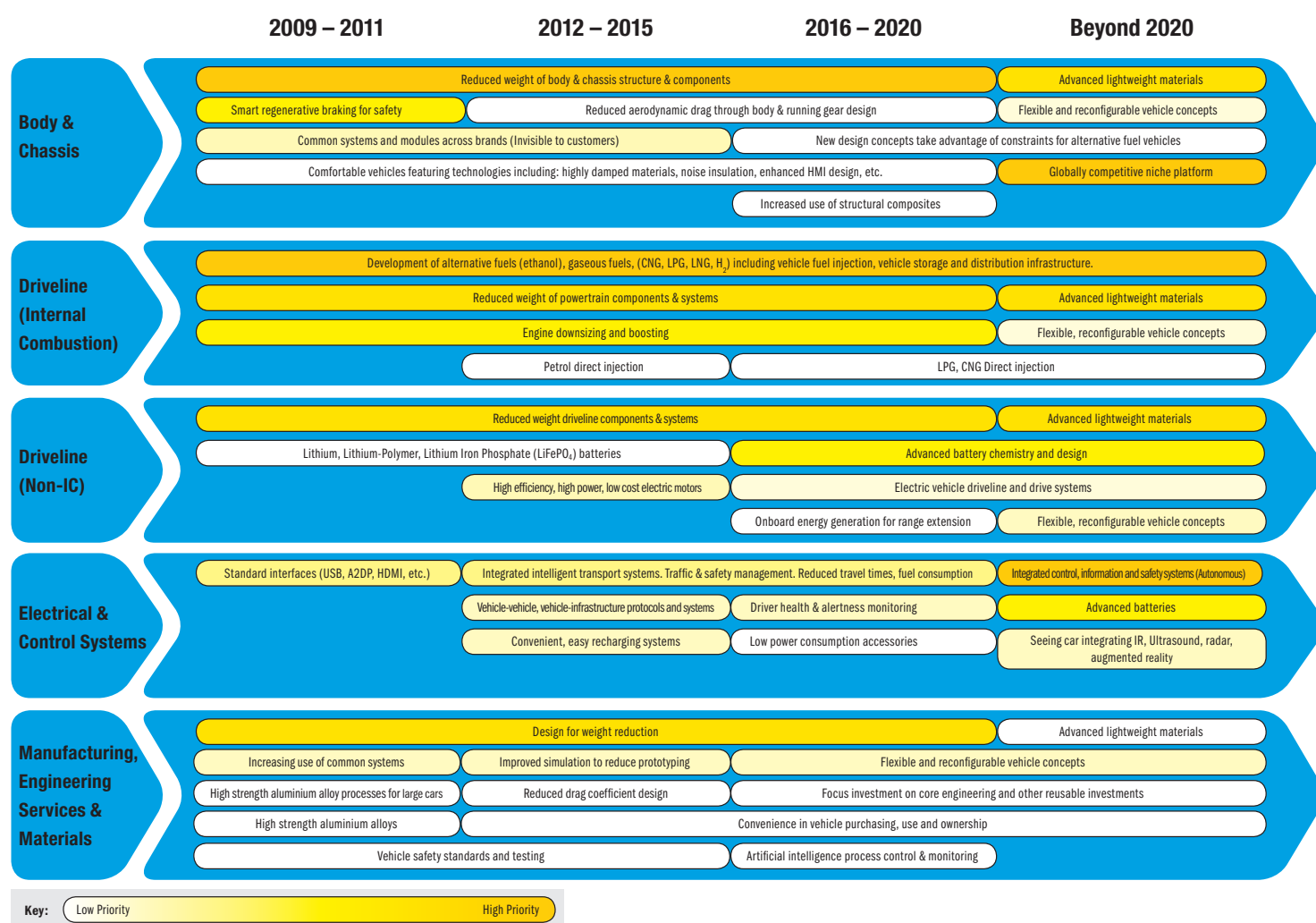


Figure 7 – Prioritised Technology Needs.

Driven by trends and drivers, these technology needs will help in achieving Australia's strategic vision. To realise these technologies, the enabling capabilities must exist. Current capabilities need to be identified along with critical gaps relating to future strategic opportunities.

Capabilities

The Australian industry provides capabilities to realise identified technology needs. In the short term, technologies can only build on existing capabilities. As timelines stretch into the future, research capabilities can develop into production capacity.

The workshop participants identified a subset of important capabilities existing in the Australian industry as well as a number of emerging capabilities. These have been categorised, according to relevant automotive systems, in the same manner as technology needs. The participants then identified priority areas as presented in Figure 8.

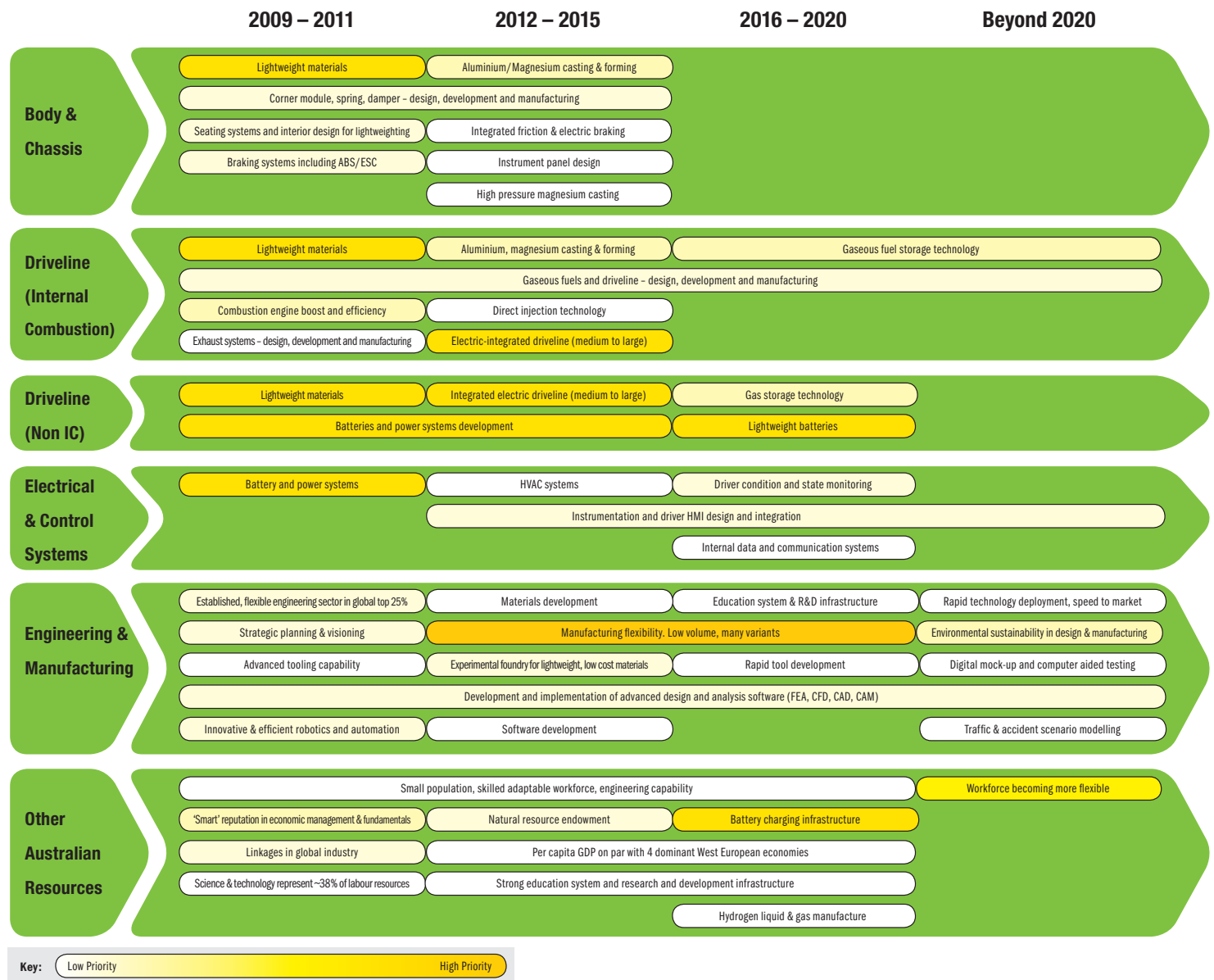


Figure 8 – Prioritised Australian Capability.

Capabilities and Technology Needs that have been identified in the workshop will provide baseline data in the following phases of the Automotive Australia 2020 project. The remaining phases of the programme are outlined in the following section – Next Steps.

Next Steps

Phases 2 & 3: Understanding Global Technology Needs and Australian Capabilities

An important output from the Vision Workshop has been to establish the most promising technology opportunity areas and strongest capabilities for the Australian Automotive Industry, identified in sections 4 and 5. These will be refined through further detailed discussions with the MVPs, suppliers and other stakeholders and used to focus the data gathering during phases 2 – *Understanding Technology Needs* and 3 – *Understanding National Capability*. These will involve over 200 surveys and interviews across the industry, science and technology base. Key areas for investigation will be quantifying these opportunities and understanding the factors that will be critical for success, and researching relevant capabilities and assessing their strengths and competitive position.

Phase 4: Matching Needs and Capabilities

The objective for the Automotive Australia 2020 Roadmap is to identify opportunities where Australia can be competitive in the short-term and longer-term (2020 and beyond) horizons. In both timescales it will be important that attractive opportunities are supported by matched Australian capabilities and resources, whether these are currently deployed in the automotive sector or elsewhere. Only by building on the foundations of these distinctive capabilities will a sustainable and differentiated competitive position be established. Phase 4 of the programme will establish these “matching points” in workshops covering each of the time horizons; with the outputs reviewed by the AICC in a final workshop to maximise the linkages between short and long term opportunities. The prioritisation will be achieved using a portfolio approach embracing the evaluation criteria developed in the Vision Workshop (see page 10)

Phases 5 & 6: Roadmapping Opportunities to Action

Phase 5 of Automotive Australia 2020 programme will develop detailed roadmaps towards the implementation of the prioritised strategic opportunities; identifying necessary enablers such as skills, funding, policy and technology development. These will then be reviewed by the AICC in phase 6 to prioritise investment decisions.

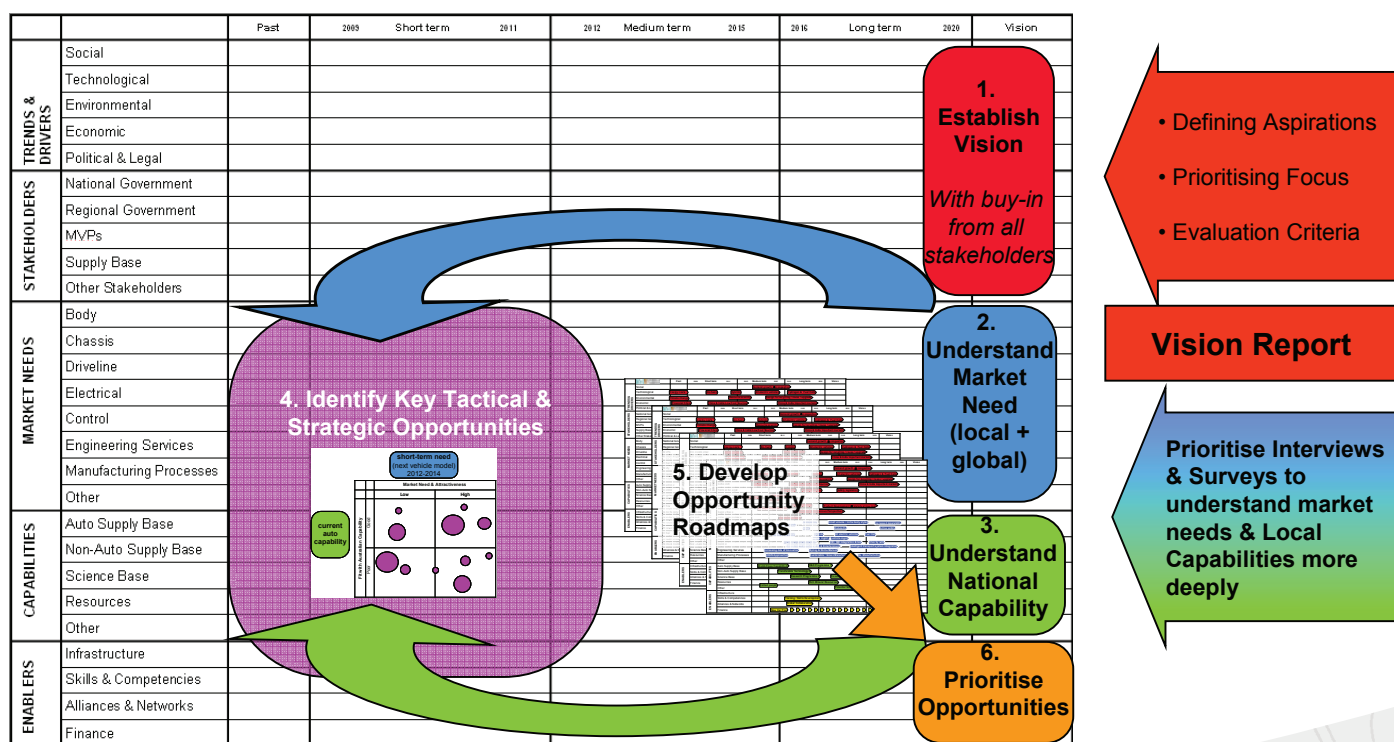


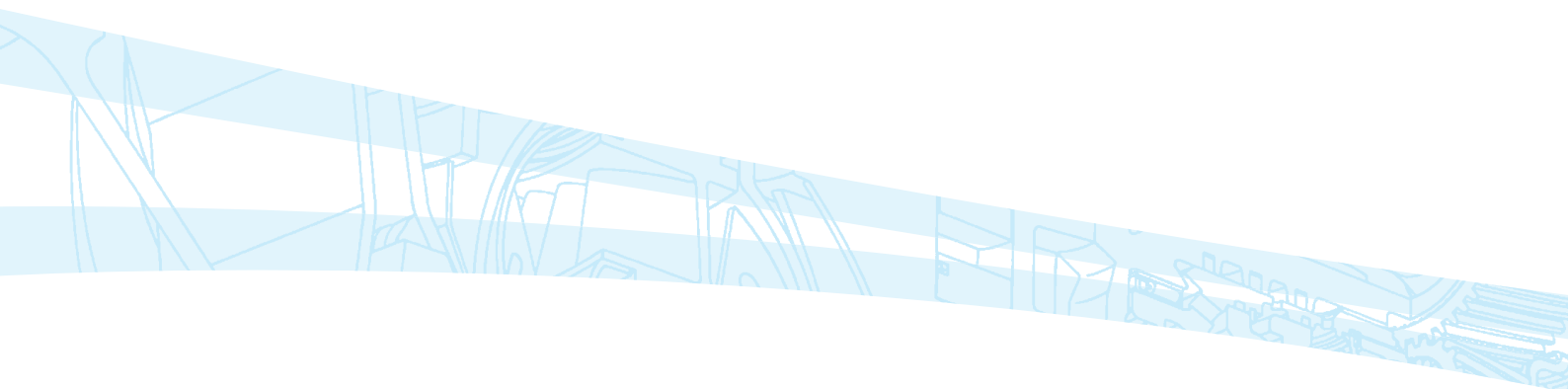
Figure 9 — Automotive Australia 2020 Program Phases

Acknowledgements

Automotive Australia 2020 would like to acknowledge the contributions of the following partner organisations:



Australian Government



Further Information

An appendix containing supplementary information will be available, on request, through the Automotive Australia 2020 website. For further information, please visit www.autocrc.com/2020.htm or contact the Automotive Australia 2020 Project Office at:

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