FCAI submission to the Senate Economic Legislation Committee Inquiry into the Future of Australia's Automotive Industry

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July 2015

OVERVIEW

The FCAI welcomes the opportunity to respond to the Senate Committee's inquiry into the Future of the Australian automotive industry.

The FCAI is the peak industry organisation representing vehicle manufacturers and importers of passenger cars, SUVs, light commercial vehicles and motor cycles in Australia.

This submission follows an earlier interim submission that focused on domestic motor vehicle manufacturing in Australia. Consequently, this submission seeks to address the remaining issues canvassed by the Inquiry's Terms of Reference that are relevant to FCAI members.

The Australian automotive industry makes a significant contribution to the Australian economy, in each of its various guises. It is a $74 billion retail industry, selling 1.1 million new motor vehicles each year through more than 4,700 businesses. The industry contributes $6.4 billion in taxes and other charges to Government revenue each year.[1] The research and product development undertaken in Australia contributes to global projects and is highly prized internationally. These projects earn significant export income for Australia. Future technological change, already in development here and overseas, provides a further opportunity to take the domestic industry in a new direction, and offers the prospect of new participants entering the automotive sector. To realise the potential requires a combination of immediate and short-term responses as well as the development of a shared vision by industry and government of what Australia's advanced automotive industry can become. Crucial to this is recognising that motor vehicles are becoming more sophisticated and connected to the world in which they operate.

ONGOING GOVERNMENT ASSISTANCE

Key points:

- If Australia is to maintain the technical and design advantage it currently enjoys across automotive product development, then as a country we must have consistent, long-term internationally competitive policy assistance.
- The ATS eligibility criteria should be amended to encourage further investment in R&D to continue to secure complex design and engineering work for international customers.
- Beyond the expiry of the ATS at its scheduled close in 2021, the FCAI would support a new automotive R&D co-investment policy to maintain and grow the established automotive R&D infrastructure and skills base currently in Australia.

The announcements by the three domestic motor vehicle manufacturers to cease domestic manufacturing by the end of 2017 will change the Australian automotive industry, and consequently changes the policy objectives of existing government support. As canvassed in the FCAIs interim submission, while the cessation of large-scale domestic manufacturing is regrettable, Australia can

[1] Whytcross, D. Motor Vehicle Dealers in Australia. IBISWorld Industry Report G3911, 2014. IBISWorld.

continue to have a valuable link into this important industry through its high-value, innovation-intensive design and product development operations well beyond domestic manufacturing. Indeed, Nissan Australia has recently announced that it will continue as the source of intricate alloy castings for use in a number of its global products. Nissan Australia will continue to be eligible for ongoing ATS assistance after the closure of local vehicle manufacturing.

However, if Australia is to maintain the technical and design advantage it currently enjoys across automotive product development, then as a country we must have ongoing and consistent internationally competitive policy settings and assistance.

As canvassed in the FCAIs interim submission, the automotive industry's competitiveness in attracting global capital is strongly influenced by the level of support, including financial support, provided by the national government. To this end, the FCAI welcomes the Government's announcement on 10 March to reverse its intent to cut the Automotive Transformation Scheme (ATS).

Ongoing policy certainty is crucial to the domestic industry, OEMs and supply chain alike, as it transitions out of large-scale motor vehicle manufacturing. However, ongoing assistance once domestic manufacturing ceases for a broader scope of OEM automotive R&D activities would provide certainty to industry around its future activities.

Consequently, while the Government has flagged in the 2015 budget papers that the Scheme will come to a natural conclusion by the end of 2017, the FCAI encourages the Government to look at ways to continue that funding. To do so would require amending the ATS regulations to allow OEMs to continue accessing funds for automotive R&D, once manufacturing ceases.

The FCAI would support changes to the ATS eligibility criteria once domestic manufacturing ceases to encourage further investment in R&D to continue to secure complex design and engineering work for international customers. The FCAI believes that the ATS rules should be changed to allow for the claiming of the R&D activity contained within engineering services activity across the registration categories.

Amending the regulations to encourage further R&D investment would enable the remaining motor vehicle brands to access government assistance and continue to build the case to retain and grow this high-value part of the industry.

The FCAI would support updating the object of the ATS Act to better reflect the new direction the industry is moving in. Accordingly the FCAI would support a new object that specifies that the ATS is designed for the promotion and growth of an advanced automotive industry in Australia.

Beyond the expiry of the Automotive Transformation Scheme at its scheduled close in 2021, the FCAI would support a new automotive R&D co-investment policy to maintain and grow the established automotive R&D infrastructure and skills base currently in Australia. The FCAI would welcome an opportunity to engage with government to discuss how industry can be supported beyond the closure of domestic manufacturing operations.

THE IMPORTANCE OF ADVANCED MANUFACTURING IN AUSTRALIA'S DIVERSIFICATION

Australia is uniquely placed globally and regionally in having an advanced design and engineering capability. This capability is increasingly recognised around the world, as the Ford Ranger and Everest, and the Buick Avenir and Chevrolet Bolt are testament to. This valuable work will continue following the closure of domestic manufacturing, with both Ford and Holden having committed to maintaining their product design, development and concept work in Australia. Equally, Nissan maintains advanced foundry facilities that provide precision components for Nissan's electric engines, sold around the world.

This work is the high point of automotive design. It provides an ongoing link into the global automotive industry and keeps our engineers and designers at the leading edge of international automotive technologies and trends. The linkages these projects have with the broader Australian industry, including the automotive supply chain, help facilitate knowledge transfer and the application of new processes and technologies to other businesses, including start-up businesses in new sectors such as Cohda Wireless (see case-study below).

This focus by some of the world's most significant companies on Australian product design, engineering and concept work provide an opportunity for the nation to evolve the industry in a different direction. This is not to discount the immediate challenges, which remain and are significant, but to acknowledge the unique strengths the Australian automotive industry continues to have as a mature engineering and design hub. The increasing economic and financial importance of our region, coupled with changing consumer trends and rapidly evolving changes in information technology and how this is impacting on the use and utility of motor vehicles present an enormous opportunity for the Australian automotive industry.

The establishment of a world leading, Australian automotive product development industry has the potential to attract billions of dollars of overseas investment, provide employment for thousands of tertiary qualified professionals and provide Australia with a sound platform to underscore national innovation and technological advancement, as well as provide ongoing spill-over benefits to other sectors of the economy.

To realise this potential requires a unified, shared, vision from industry, federal and state government, with recognition of the strategic role the industry can continue to play in a diversified economy. It is our hope that over the course of this Inquiry, the Committee develops a vision for the industry, and how it proposes that Government can assist in delivering on that.

THE ROLE OF ALL SECTORS OF THE AUTOMOTIVE INDUSTRY IN SUPPORTING AN ADVANCED ECONOMY

Key points:

- Following the cessation of domestic manufacturing at the end of 2017, Australia will continue to have a significant automotive industry, covering engineering, design, retail and aftermarket.
- With the right support from Government, Australia can continue to ensure we retain this nationally significant industry for future economic benefit.

Australia's design advantage

One of Australia's great strengths across each of the three domestic automotive manufacturers rests with the considerable design and innovation functions they have. Currently, Australia is one of only a relatively small number of nations in the world with the capability to produce a car from concept to delivery.

The Australian automotive industry is able to take a vehicle, its component systems and sub-systems from a design concept through prototype safety and durability testing, to production, final delivery, whole of life service and materials recycling. The industry is integrated into global supply chains with strong capabilities in advanced and future technologies. With the skilled workforce, business culture and world class R&D the industry is able to develop innovative products using sophisticated technology.

Case-study: What are the steps in designing a motor vehicle?

There are many steps involved in the development of a new model that bring together a range of different disciplines and professions. This is a unique capability, and that these functions will be kept at varying degrees at Holden, Ford and Toyota after domestic manufacturing ends is testament to the ideas, skills and sophistication of the completed product that is developed in Australia, for the world. Highly skilled professionals attend to each stage of the design process.

1. Exterior and interior creative design

The role of initiating a new concept, including the way it looks and feels and its interior presentation, is central in any new design. This process brings together engineering and manufacturing understanding to ensure effective and efficient design solutions. Other factors, including environmental, safety, ergonomic and social matters all also impact on the design process.

2. Clay modeling, digital sculpting and visualisation

Clay modeling remains crucial to automotive product development. Typically, models are developed at a 30 per cent scale from two dimensional images. These models form the basis for technical assessments and digital surface modeling. Full size clay models are used for size and proportion review.

Digital sculpting is used to deliver exterior and interior digital models for review, and supports designers in delivering advanced design concepts.

Working with this team is a group that translates the various mathematical models into a rendered, high quality digital media product to help understand a design, generates a large quantity of images to explore it and provides the functionality to enable it.

3. Studio Engineering
The purpose of studio engineering is to define the configuration of the vehicle, overall vehicle dimensions and relevant legislative compliance requirements. It also includes identifying the appropriate occupant location and various spatial dimensions associated with the vehicle.

4. Colour and trim design
This focuses on the design of a vehicles finish, its interior and exterior surfaces. The teams working on colour and trim look to influences beyond automotive to identify design and fashion trends. These include looking at fashion, product and interior design as well as architecture. These designers are working on designs at least 4 years before the start of production and the designs need to have longevity when the vehicle is released.

5. Design Fabrication
As the model takes shape, a specialist team will support the creation of the concept and/or show car model, which are typically used in public, such as car shows. The hard model team will be responsible for making the concept components, both interior and external. These moulds are used for development assessment of colour, finish and grain evaluation.

Indeed, automotive design and development is an area where Australia is a world class player. It is an existing competitive advantage that Australia can nurture, grow and exploit given the right policy settings. This is complemented by also having some of the best tertiary institutions in this field in the world.

Case-study: University-automotive industry collaboration[2]
Swinburne University of Technology has helped develop the first electric bus to be designed, engineered and manufactured in Australia. Unveiled in Melbourne in early July, the concept demonstrator bus is the result of applied R&D by the university working in collaboration with Bus Tech, part of Transit Australia Group.

The project brought together expertise from the automotive industry and academia with expertise in electric vehicle technologies, with one objective of the project being to come up with a concept to enable technology upgrades into the future. By reducing the life-cycle costs of electric buses through such future-proofing, electric buses become an attractive fleet proposition. The electric bus is on average 80 per cent cheaper to maintain than conventional diesel buses. Pro Vice-Chancellor, International Research Engagement, Professor Ajay Kapoor, identified the complexity of the project: "Our research and development has involved solving the challenges of integrating electric vehicle technologies using computer-aided engineering to design and configure sub-systems into the bus platform… We developed high- and low-voltage electrical systems for the bus, including the design architecture for electrical circuit motor controls, supervisory control and other control systems to ensure the most efficient operation for the electric bus."

[2] http://www.tandlnews.com.au/2015/07/08/article/all-aboard-australias-own-electric-bus/

Unfortunately, Australia could easily lose this advantage to overseas alternatives if it is neglected or ignored, particularly given that these capabilities are highly valued and sought after in many countries around the world. Indeed, countries in our own region such as India and China have initiatives in place aimed at developing these skills.

The Australian automotive manufacturers have globally significant engineering and design operations. Automotive design is the biggest employer of industrial designers in Australia and the design centres are leaders in clay modeling and digital animation, which are integral to the development of new products and complete motor vehicles. As the industry transitions away from manufacturing motor vehicles, these design functions will remain, with both Ford and Holden announcing their commitment to maintain these comprehensive capabilities.

Case-study: Holden Design
The concept Buick Avenir was featured at the recent Detroit motor show in early 2015. The concept was conceived at the Holden Design studio in Port Melbourne, and successfully launched in Detroit, to international acclaim. Similarly, the Chevrolet Bolt electric small car was designed by Holden Design in Melbourne, and launched at the 2015 Detroit motor show. The Bolt has been confirmed for production in the United States.

The success of these two concept vehicles recognizes the important international role the Holden Design studio plays as an innovative and creative contributor to major General Motors international vehicle programs. The studio is now recognized as the centre of advanced design for GM in the Asia Pacific region and its expertise in advanced and production design is regularly sought by GM affiliates in North and South America and Europe. Because a major part of the brief is to anticipate customers' changing needs, these projects often include studies of emerging market opportunities. There is an emphasis on delivering unique vehicle proposals or features to GM global brands.

The engineering operations at Australian facilities include wide-ranging engineering skills, specialising in mechanical, structural, electrical, safety and powertrain engineering. The proving grounds are technical centres for engineering validation and incorporate world-class safety and emissions laboratories.

These are important national assets that Australia is unique in the region in possessing. They represent an investment by the automotive brands in Australia's unique skills and capabilities and provide an avenue for significant value-adding in and of themselves, generating revenue for the companies and providing a direct link to their parent global operations. These facilities also provide important linkages into the university sector.

Ongoing investment by the motor vehicle companies and support from government is required to continue to realise the benefits of these important assets. As with manufacturing, the additional benefits provided by Australia's considerable design and development capabilities will only continue with commitment from Government to internationally competitive policy assistance.

Case-study: Ford Design

Ford Australia has an enhanced role as a design and engineering "Centre of Excellence" for the Asia Pacific region and is the largest automotive R&D investor in Australia. These investments include recent major upgrades to its Design Studio at Broadmeadows, the construction of a $27 million Research and Development Centre and the expansion of testing facilities at Ford Australia's Proving Ground located at Lara. These facilities include an environmental testing laboratory and an emissions testing cell developed in partnership with the University of Melbourne and the Victorian State Government under the Advanced Centre for Automotive Research and Testing (ACART) collaboration. A key feature of this initiative is the availability of third party usage of the ACART facilities.

Ford Product Development is spread across 3 sites – Broadmeadows, Geelong and Lara. Ford Australia is one of only four design hubs for Ford globally. Ford has the most advanced automotive Product Development operations in Australia. In this role, Ford has a significant Research and Development Centre in Geelong where they had a significant contribution in design and development for the Ford Figo (a small car manufactured and sold in 37 markets) and the Ford Ranger light truck which is manufactured in three global locations and sold in some 180 markets.

One of the emerging workstreams in recent times is that involving product development and research work in the area of connectivity. This includes Ford Australia's "AppLink" collaboration with local developer, Omny, whose app Ford will begin to offer in Australia, and possibly globally, later this year. Major cities around the world are creating technology 'corridors' to attract this kind of investment in innovation.

NEW TECHNOLOGIES INFLUENCING THE AUTOMOTIVE INDUSTRY

Key points:

- With the right policy settings, Australia can continue to be at the forefront of international automotive trends and developments in technology.
- Emerging technologies and applications mean that these settings will go beyond manufacturing and into communications policy, environmental policy and road regulations.
- Setting a timetable for the implementation of Cooperative-ITS is important in ensuring that Australia keeps up to speed with international developments.

The modern motor vehicle is becoming increasingly complex. Changes in design and the pursuit of greater fuel efficiencies have seen new technologies developed and applied. This has ranged from the development and application of new materials, like carbon-fibre and aluminium pressings, to new developments in the motorisation of the vehicle through improvements in engine technology, hybridisation of drivetrains and full electrification of drivetrains.

Motor vehicles are also getting 'smarter'. A modern motor vehicle has as many as 50 computer processors powering different elements of the vehicle and 100 million lines of computer code.[3] These have helped drive efficiencies across engine management, and increasingly as aids to the

[3] http://www.technologyreview.com/view/508231/many-cars-have-a-hundred-million-lines-of-code/

driver. Electronic stability control, for example, prevents drivers from losing control of their cars by braking individual wheels to keep the nose of the vehicle pointing in the driver's intended direction.[4]

As technology advances in motor vehicles, new players are entering the automotive industry. Technology firms are increasingly interested in connected car technologies, with Intel, Cisco and Nokia amongst many others having announced multi-million dollar investment funds for the development of connected car technologies.[5] Google and Apple are also making in-roads to the automotive market, both through the development of driverless cars and through increasing levels of connectedness to other technology platforms. Advanced driver assistance systems (ADAS) such as lane keeping assist, lane departure warning, blind spot monitoring, adaptive headlights and autonomous emergency braking (AEB) assist the driver with warnings or automatic braking to help avoid or mitigate accidents.[6]

Cooperative Intelligent Transport Systems (C-ITS)

Australia has a long history of automotive innovation that has benefited passengers and road users. As motor vehicles become more complex and sophisticated, innovation will continue apace.

Connected and autonomous vehicles are increasingly seen as the new frontier in automotive technology, and already such vehicles are being developed and tested internationally. Over the next few years, brands will introduce vehicles with car-to-car and car-to-infrastructure communications technology. For example, GM will introduce C-ITS on their 2017 model Cadillac CTS using software developed by Cohda Wireless in Australia.[7]

IHS Automotive has forecast that worldwide sales of connected passenger vehicles are "expected to grow to slightly more than 77 million units annually by 2022". It estimates that by 2022, 73 per cent of passenger vehicles sold globally will be connected in some way.[8] Audi's global head of sales, Luca de Meo, said recently at the Consumer Electronics Show in Shanghai that digital services and electronic systems will profoundly change the automotive industry and what it represents:

> *By 2020, 50 per cent of value creation will be based on apps, software, electronic systems and digital services…This will totally change our industry and our offering.*[9]

Cooperative Intelligent Transport Systems (C-ITS) is the term used for advanced applications which provide innovative services relating to transport and traffic management and enable various users to be better informed and make safer, more coordinated and 'smarter' use of transport networks.[10]

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[4] http://www.themotorreport.com.au/35060/federal-government-to-make-electronic-stability-control-mandatory-from-2011

[5] *Five Critical Challenges Facing the Automotive Industry: a guide for strategic planners,* ihs.com

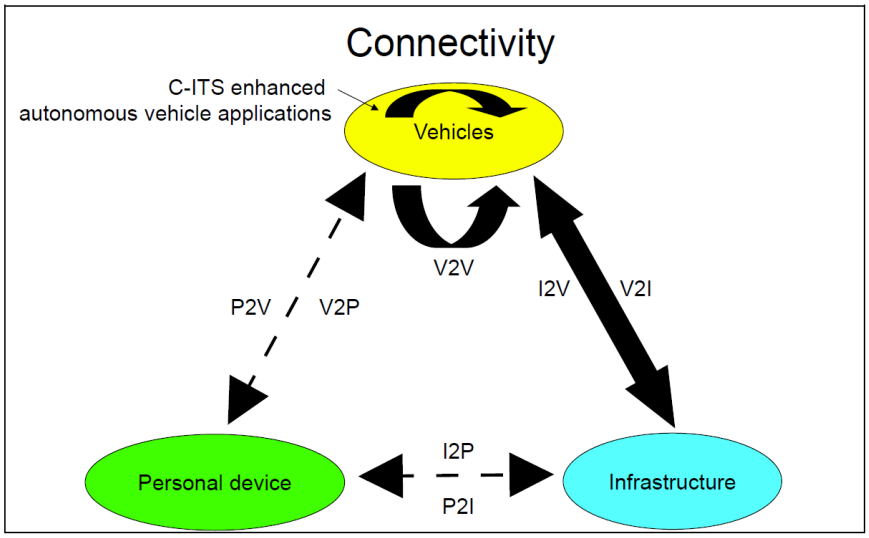
[6] Insurance Institute for Highway Safety, Crash avoidance technologies, www.iihs.org [accessed 6 October 2014]

[7] Cohda Wireless press release, 17 September 2014, Cohda applauds news of GM's first 'connected car', www.cohdawireless.com.au , [accessed 7 July 2015]

[8] *Five Critical Challenges Facing the Automotive Industry: a guide for strategic planners*, ihs.com

[9] http://www.drive.com.au/motor-news/audi-apps-as-important-as-engines-20150527-ghaqfo.html

[10] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:207:0001:0013:EN:PDF



Source: Austroads Research Report, *Cooperative ITS Strategic Plan*, AP-R413-12, p.4

According to Austroads, C-ITS:

> *...enables the time and spatial horizon given to vehicles and drivers to be increased beyond what the driver could naturally see. The increased time and spatial horizon enables information about threats, hazards and road conditions to be relayed to the driver potentially earlier than what the driver could have become aware of naturally…*[11]

EU Directive 2010/40/EU identify that ITS will improve the productive capacity of national economies by improving transport flow:

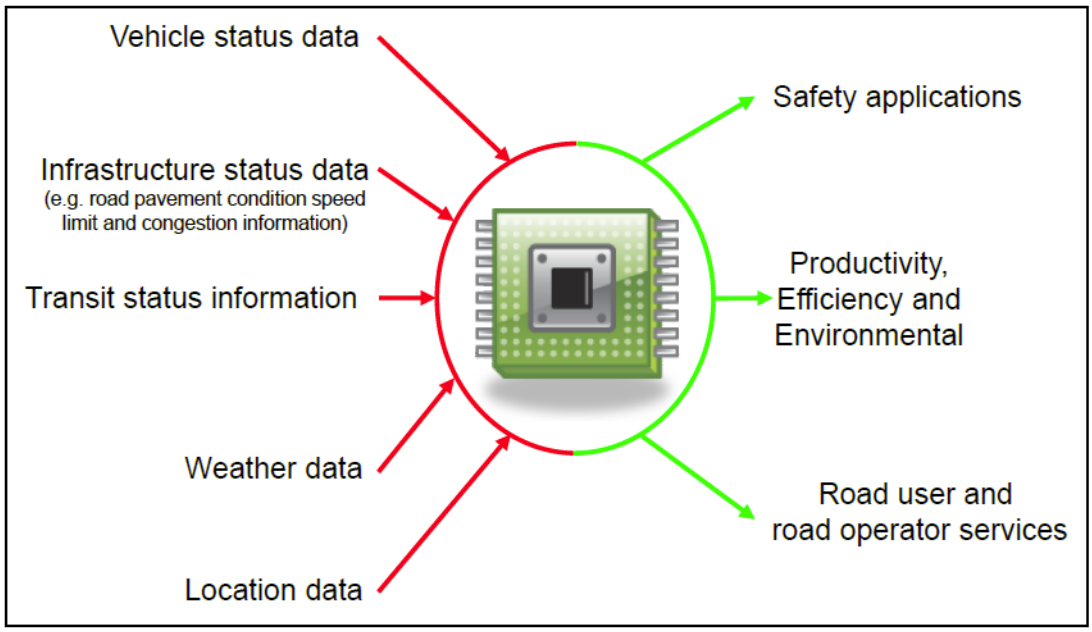
> *ITS integrate telecommunications, electronics and information technologies with transport engineering in order to plan, design, operate, maintain and manage transport systems. The application of information and communication technologies to the road transport sector and its interfaces with other modes of transport will make a significant contribution to improving environmental performance, efficiency, including energy efficiency, safety and security of road transport, including the transport of dangerous goods, public security and passenger and freight mobility, whilst at the same time ensuring the functioning of the internal market as well as increased levels of competitiveness and employment.*[12]

Through the "Internet of Things", C-ITS holds the prospect of delivering a step-change in the way that travel by motor vehicle is undertaken. It offers enormous opportunities, by making driving easier, improving road safety, reducing emissions through better traffic flow and easing congestion.

[11] Austroads Research Report, Cooperative ITS Strategic Plan, AP-R413-12, p.7

[12] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:207:0001:0013:EN:PDF, paragraph 4

C-ITS examples of data in/information out/resultant type of applications



Source: Austroads Research Report, *Cooperative ITS Strategic Plan*, AP-R413-12, p.7

These benefits have been recognised by governments around the world. The UK national government has gone so far as to identify that a national ITS strategy is a crucial element in growing and sustaining its resurgent automotive industry.

> *Driverless vehicle technology has the potential to be a real game changer…altering the face of motoring in the most fundamental of ways and delivering major benefits for road safety, social inclusion, emissions and congestion*[13]

The UK government undertook a review of the legal and regulatory framework with a view to facilitating the testing of automated vehicles on public roads, and thereby growing this important new area of the automotive industry. According to a recent KPMG report, connected and autonomous vehicles are being developed and tested in Bristol, Coventry, Greenwich and Milton Keynes.[14]

ITS in the UK – a driver of innovation

The focus of the UK government's review of the legal and regulatory framework was to ensure that the UK remain at the forefront of the testing and development of the technologies that ultimately will lead to the development of the driverless vehicle. Although the Government found that there exist no legislative or regulatory barriers to testing autonomous vehicles in the UK today, it has identified ways to ensure that the UK remains at the forefront of ITS development.

[13] Claire Perry MP, Parliamentary Under Secretary, Department for Transport, The Pathway to Driverless Cars, February 2015

[14] http://www.smmt.co.uk/wp-content/uploads/sites/2/CRT036586F-Connected-and-Autonomous-Vehicles-%E2%80%93-The-UK-Economic-Opportu...1.pdf

Consequently, the Government announced in February 2015 that it would publish a Code of Practice in Spring 2015 for those testing driverless cars on UK roads. As it identified, a Code of Practice would be "quicker to establish, more flexible and less onerous for those wishing to engage in testing that the regulatory approach being followed in other countries, notably in the US. This will help to maintain the UK's position at the forefront of developments in this important technology, while maintaining safety."[15]

Australia has continued to play a role in the development of Intelligent Transport Systems. A joint program by the NSW State Government, the Federal Government's Heavy Vehicle and Productivity Program and National ICT Australia (NICTA) has been established to assess and evaluate the safety benefits of ITS systems for heavy transport. The Project consists of a 42 km connected freight corridor test facility in the Illawarra Region of NSW south of Sydney. It is one of the first large scale test facility dedicated to Heavy Vehicles in the world.[16]

The South Australian state government has also flagged it intends to pursue this emerging technology, starting with a legislative review in support of driverless vehicles.[17] This has been supported by the federal Treasurer, the Hon. Joe Hockey MP.[18]

Australian companies have also been actively engaged in the development of C-ITS, both in Australia and globally. South Australian-based company, Cohda Wireless, is a world-leading innovator in the development of C-ITS. Its vehicle-to-infrastructure software applications are used in more than 60 per cent of C-ITS trials being undertaken, globally. Cohda Wireless was founded in 2004 by research scientists from the University of South Australia's Institute for Telecommunications Research. Cohda has successfully prototyped Cooperative-ITS systems, and is now designing and selling world-leading products. Cohda Wireless has secured revenues in the emerging Cooperative-ITS market through the sales of five generations of its on-board and road-side equipment.

Cohda to power 2017 Cadillac CTS 'smarts'
GM CEO Mary Barra announced at the 2014 Global ITS conference in Detroit that the 2017 Cadillac CTS would be the first GM car with vehicle-to-vehicle technology on board. Cohda's software will be powering the operation of the vehicle-to-vehicle and vehicle-to-infrastructure capabilities.[19]

[15] The Pathway to Driverless Cars, February 2015: 9

[16] See http://www.its-australia.com.au/wp-content/uploads/S13-John-Wall-The-development-of-the-CITI-project.pdf

[17] http://www.theaustralian.com.au/national-affairs/state-politics/driverless-cars-carbon-neutral-city-on-weatherills-agenda/story-e6frgczx-1227215196870

[18] http://www.adelaidenow.com.au/news/south-australia/driverless-cars-a-step-closer-to-reality-in-sa-as-joe-hockey-approves-state-transport-plan/story-fni6uo1m-1227348696252

[19] Cohda Wireless press release, 17 September 2014, Cohda applauds news of GM's first 'connected car', www.cohdawireless.com.au , [accessed 7 July 2015]

Victorian-based Intelematics is a pioneer in the provision of connected mobility services. Established in 1999, Intelematics is a wholly owned subsidiary of RACV and is responsible for introducing Australia's first vehicle-integrated telematics programs and first digital traffic broadcast. It currently provides operating telematics programs for Toyota, Lexus, Holden and Mitsubishi, and its services include crash detection, emergency assistance, remote diagnostics, vehicle tracking, remote unlocking and fleet management services.

These companies are examples of the type of innovative technology businesses that can continue to thrive in an Australian automotive industry. More can be done in Australia to support the evolution of this important new part of the automotive industry. Like the UK has already announced, and South Australia is looking at, Australia more generally can play a strategic role in the development of new ITS technologies and applications. Importantly, this does not rest solely in the traditional domain of industry policy, but across the different areas and levels of government.

Getting C-ITS right

The Standing Council on Transport and Infrastructure (SCOTI) has identified the need for a comprehensive policy framework around C-ITS, with the Transport and Infrastructure Senior Officials' Committee (TISOC) and Austroads leading the policy framework implementation. SCOTI further identified that as a small player, it is essential that Australian actions in this area be consistent with global developments.[20]

The Austroads *Cooperative ITS Strategic Plan,* released in 2012, gives shape and direction to the advent of C-ITS equipped motor vehicles in Australia.[21] The strategic plan identified a series of tasks across a number of areas:

- Policy requirements
- International and national engagement
- Technical requirements
- Platform deployment requirements
- Trials and demonstrations, and
- Marketing and communications

Importantly, it identified that because C-ITS requires a range of technologies and reaches across portfolios, any C-ITS deployment has to link back to other government information and communications technologies, road safety and road operation strategies, policy frameworks and so on. Specifically, these include:

- National Digital Economy strategy
- National Broadband Network strategy
- Policy Framework for Intelligent Transport Systems in Australia
- National Intelligent Transport Systems in Australia
- National Road Safety Strategy
- Council of Australian Governments (COAG) Urban Congestion Review

[20] Standing Council on Transport and Infrastructure, Policy Framework for Intelligent Transport Systems in Australia, p.9

[21] Austroads Research Report, Cooperative ITS Strategic Plan, AP-R413-12

- Australian Strategic Transportation Agenda for Research and Technology (ASTART)

What is required for vehicles to operate in an Australian C-ITS environment?

In essence, two requirements need to be met for vehicles to operate in an Australian C-ITS environment:

- A standardised interface harmonised with the European standards as Australian vehicle safety and environmental regulatory standards are harmonised with the European standards.
- A regulatory model that ensures vehicles fitted with C-ITS being delivered to Australia meet the European standards and will operate within the specified spectrum.

Setting a timetable for ITS

An important first step to facilitate the introduction of C-ITS is to set a timetable to allocate the required frequency band, and have the correct regulatory framework in place across federal and state governments. On 22 June 2015, the FCAI wrote to the Australian Communications and Media Authority (ACMA) advising that the FCAI's view is that Australia should adopt the 5.9 GHz spectrum and align with the European channel allocations for C-ITS. To facilitate the introduction of vehicles fitted with C-ITS, the spectrum allocation is required by 1 January 2017.

Spectrum allocation

While there is currently no internationally accepted standard for C-ITS, 12 manufacturers have signed an agreement to begin including 5.9 GHz Digital Short Range Communication (DSRC) cooperative ITS devices from the 2015 model year for the European market. The US National Highway Traffic Safety Administration is fast-tracking recommendations for the US domestic market.[22][23] Japan is exploring an altogether different approach. In each of these three significant markets (and dominant sources for motor vehicles sold into the Australian market), there are differences in the allocation of radiofrequency bands. In its 2014 submission to the Motor Vehicle Standards Act review, Austroads noted:

> *The implications of this are that vehicles transmitting on different frequencies will not be able to communicate with each other, making their C-ITS safety systems ineffectual. Also, some vehicles may include radio communications equipment that is not licensed for use in Australia, and could cause interference to other existing licensed users. Further, it is likely that some emerging safety applications will require satellite positioning and mapping services that are not currently supported in Australia.*[24]

Crucial to the roll-out of a national ITS strategy is agreement on the spectrum allocation. The FCAI supports the adoption of the 5.9 GHz spectrum to align with European channel allocations. This is because Australia has UN-ECE based vehicles, with safety and advanced driver assistance systems

[22] Australian Cooperative ITS Platform, paper presented to the 26th ARRB Conference – Research driving efficiency, Sydney NSW 2014

[23] US DOT Fact Sheet, July 2015, Planning for the Future of Transportation: Connected Vehicles and ITS, www.its.dot.gov/its_program/its_factsheets.htm [accessed 8 July 2015]

[24] https://www.infrastructure.gov.au/vehicles/mv_standards_act/files/Sub136_Austroads.pdf

(ADAS) integrated. This spectrum allocation is required by 1 January 2017 to facilitate the introduction of vehicles fitted with C-ITS.

In concert with this, the FCAI believes that an appropriate regulatory model needs to be developed in order to consider:

- What licensing is required for 'safety critical' applications?
- Are there a minimum set of standards that need to be mandated?
- What is an appropriate regulatory model to ensure vehicles delivered to the Australian market to meet these standards?
- Any regulatory model for C-ITS should be within the existing vehicle regulatory framework (as covered by the Motor Vehicle Standards Act)

As these technologies are integrated into the motor vehicle at its manufacture at the factory, it will be difficult if not impossible to retrofit a fully integrated C-ITS system into a vehicle once is in the marketplace. It will be possible to retrofit a system that transmits/receives a safety system from another vehicle and provide an audio or visual signal to the driver. However, this system will not be able to be integrated into the vehicle and allow automated operation of the vehicle's braking or steering to avoid a crash.

It is therefore important that an appropriate regulatory model is in place prior to vehicles with these technologies and applications enter the market. This also has implications for personal imports, as currently being proposed under the Motor Vehicle Standards Act review. Motor vehicles in other markets will be specified to the regulatory environment in their designated market; introducing that vehicle into Australia increases the likelihood the vehicle will not comply with the Australian regulations governing these technologies. For example, vehicles intended for the Japanese domestic market will be equipped with C-ITS technologies that operate in the 5.8GHz and 700 MHz spectrum allocations. In Australia, such vehicles would be at risk of adversely affecting mobile telephone bandwidth (700 MHz band) and other applications, such as toll road collection (that operate in the 5.8 GHz band).

TRANSMISSIONS AND PROPULSION – NEW VEHICLE EMISSIONS

Key points:

- Engines and transmissions are becoming more efficient and are delivering ongoing improvements to motorists and the environment.
- The automotive industry in Australia has reduced average CO2 emissions by more than 25.6 per cent since 2000, at an average annual reduction of 2.4 per cent.
- To deliver CO2 reductions greater than this requires an integrated approach that provides support for alternative fuel types and engine technologies, effective price signals to support vehicles with lower CO2 emissions, and infrastructure enhancements that help address problems of urban congestion.

Changes in engine technology and improvements in transmissions have continued to deliver substantial environmental and health benefits to Australia. For example, a 2013 study by the CSIRO for the Victorian EPA found that by 2030 total motor vehicle exhaust emissions will have significantly reduced and that improved technology is entering the vehicle fleet at a faster rate than growth of vehicle use.[25]

With continual significant investment in product development, the automotive industry in Australia has reduced average CO2 emissions by more than 25.6 per cent since 2000, at an average annual reduction of 2.4 per cent. This means that the new light vehicle fleet is now at least 25 per cent more fuel efficient than it was in 2000. When comparing on a like-for-like basis (i.e. using results of drive cycle tests across the same market segments) the annual reduction in Australia is comparable to the annual improvements in the EU and also the OECD average. The FCAI expects that annual improvement in CO2 emissions will continue at a similar rate, i.e. 2.4 per cent, and by 2020 the national average CO2 emissions (NACE) of new light vehicles delivered to the market in Australia will reduce by a further 13 per cent. By 2030 a 50 per cent improvement compared to 2002 levels will have been achieved.

The Australian automotive industry will continue to deploy new technologies and applications to deliver better fuel economy and lower CO2 emissions. This will come from a variety of sources, including power train electrification (hybrids and electric vehicles) and further development of fuel cell vehicles. Improvements to the internal combustion engine will also continue to occur, with international commentators expecting petrol and diesel engine vehicles making up around 75 per cent of global vehicle sales in 2025.[26] Indeed, better engine performance from the internal combustion engine is also crucial to improving the fuel efficiency of hybrid vehicles.

While the Australian automotive industry is committed to making a strong contribution to national efforts to reduce the impact of global climate change, it must also be recognised that the operation of light vehicles also needs to be considered. For example, due to increasing congestion in our major cities, owners of passenger cars, SUVs and light commercial vehicles are experiencing increasing travel times and consequently are using more fuel, and emitting more CO_2 emissions year-on-year. In 2014 there were 17.6 million motor vehicles registered in Australia, of which 16.1 million were light vehicles[27]. In 2014, 1.08 million new passenger cars, SUVs and light commercial vehicles were sold. This was slightly down on the 2013 total of 1.1 million[28]. As at 31 January 2014 there were approximately 16.1 million light vehicles registered in Australia.[29] Therefore, annual sales of new light vehicles are equivalent to 1/16th or 6.75 per cent of the light vehicle in-service fleet.

The Australian Government's, *Australia's emissions projections 2014-2015*[30], states that transport emissions were 17 per cent of the National Greenhouse Gas Inventory in 2013-14 and that private road transport accounted for 46 per cent of transport emissions in 2013-14. Private road transport then accounted for 7.8 per cent of the National Greenhouse Gas (GHG) Inventory in 2013-14 and sales of new passenger cars, SUVs and light commercial vehicles can influence only around 1/16th of

[25] EPA Victoria, Future air quality in Victoria-Final Report, Publication 1535 July 2013

[26] http://www.businessinsider.com.au/is-goldman-sachs-right-that-7-megatrends-will-dominate-the-global-auto-industrys-future-2015-5

[27] Australian Bureau of Statistics, 9309.0 – Motor Vehicle Census, Australia, 31 Jan 2014.

[28] Vfacts National Report, New Vehicle Sales, December 2014.

[29] Australian Bureau of Statistics, 9309.0 Motor Vehicle Census, Australia, 31 Jan 2014.

[30] Commonwealth of Australian (Department of Environment) 2015, Australia's emissions projections 2014-15, p. 19.

the private road transport annual GHG emissions. This equates to less than 0.5 per cent (i.e. 1/16th of 7.8 per cent) of the National Greenhouse Gas Inventory.

In 2014 the Bureau of Infrastructure, Transport and Regional Economics (BITRE) released a study on the fuel consumption trends of new passenger vehicles sold from 1979 to 2013.[31] The BITRE found that before 2005, the improvements in vehicle technology that produced improved fuel consumption were somewhat offset by a change in the market to increases in power, weight and four wheel drive vehicles. Since 2005, partly due to higher fuel prices, the BITRE found there have been increased sales of smaller and more fuel efficient vehicles.

The BITRE also reviewed the performance of the entire light vehicle fleet and found that since 1980:

…the fuel intensity of entire light vehicle fleet has decreased a total of about 12.8 per cent

Despite the yearly improvements in fuel consumption of new light vehicles (i.e. reduction in CO_2 emissions) and also the improvement in the overall light vehicle fleet, the transport GHG emissions have steadily increased since 1990 and are projected to continue to increase simply because of the increased size of the in-service vehicle fleet.[32]

Over the period from 2000 to 2013 there has been almost a doubling of diesel fuel used and it now comprises 55 per cent of fuel used compared with 45 per cent for petrol. This is significantly larger than the 6 per cent increase in petrol use or increase in numbers of vehicles (34 per cent for light vehicle and 31 per cent for heavy vehicles) over this same period.[33]

According to the Australian Bureau of Statistics (ABS),[34] while the number of diesel engine vehicles has increased since 2009, diesel powered vehicles still only comprise 18.5 per cent of the registered vehicle fleet. This is a small increase of approximately 13 per cent for all vehicles and of approximately 14 per cent for heavy vehicles from 2009. Therefore, on-road use cannot account for the doubling of diesel use in Australia between 2000 and 2013.

Consumer purchasing choice, vehicle use, road infrastructure and fuel quality will continue to be major influences on the rate of growth of private transport related GHG emissions. Therefore, to achieve a reduction in CO_2 emissions from private road transport an Integrated Approach is needed.

The FCAI believes that this Integrated Approach should include:

- Vehicle Technology – Improved performance of new light vehicles (passenger cars, SUVs and light commercial vehicles) to reduce average CO_2 emissions.
- Alternative Fuels and Energy Platforms – Support for alternative fuels and energy platforms and the infrastructure to deliver them.
- Driver Behaviour – Educate drivers on techniques to reduce fuel consumption and CO_2 emissions, which can also improve road safety (see the golden rules of eco-driving at www.ecodrive.org).

[31] Australian Government, Bureau of Infrastructure and Regional Economics (BITRE), 2014, New passenger vehicle fuel consumption trends, 1979 to 2013, Information Sheet 66, BITE, Canberra.

[32] Commonwealth of Australian (Department of Environment) 2015, Australia's emissions projections 2014-15, pp. 19-20.

[33] Review of the Fuel Quality Standards Act 2000, Issues Paper, p. 8 Table 2: Australia: Population, vehicle and fuel statistics in 2000 and 2013.

[34] Australian Bureau of Statistics, 9309.0 Motor Vehicle Census, Australia, 31 Jan 2014.

- Infrastructure Measures – Improve traffic flow and avoid wasteful congestion. Emerging C-ITS technology has the potential to deliver significant reductions in traffic congestion.
    - In 2008 Austroads estimated the use of C-ITS systems to improve traffic management systems and reduce congestion could reduce GHG emissions by 5.5 million tonnes in 2020, which is approximately 5 per cent of the estimated annual transport related GHG emissions.[35]
- Price signals – Influence consumer choice to produce driving behaviour and purchase decisions for lower CO_2 emissions.
    - BITRE found that when petrol prices are relatively high buyers shifted to more fuel efficient vehicles.[36]
- Average fleet age – Incentives to increase the uptake of newer light vehicles and reduce the average age of the in-service fleet.
    - Increased concessions for importation of used (and near-new) parallel imports are likely to substitute sales of new vehicles in the short term and will therefore not result in a longer term reduction of average fleet age or vehicle emissions.

Focusing on a single area, (e.g. vehicle technology) could increase overall cost to the community without delivering the expected benefits in the real world.

RETAIL AND SERVICING

Key points:

- The Australian retail automotive industry is a significant industry in its own right. Its reach extends to almost every town and city across the country.
- Individual dealerships remain crucial to the communities they are in, with many contributing through support for community initiatives and events.
- The industry is resilient and has evolved and responded to economic, financial and policy changes, however policy disruptions, such as that proposed by the Motor Vehicle Standards Act review represent a real threat to the sustainability of the industry.

This Inquiry has been tasked with assessing the motor vehicle industry in its entirety. This naturally includes the retail motor trades as well as the ongoing servicing provision that dealerships provide. Central to any consideration of the retail motor trades has to be the competitiveness in the market place.

Australia has one of the most competitive new car markets in the world, with 67 brands, 350 models and 1.1 million new car sales annually. It is a $74 billion retail industry, with more than 4,700

[35] Austroads, 2008, Intelligent Vehicles and Infrastructure: The Case for Securing 5.9 GHz

[36] Australian Government, Bureau of Infrastructure and Regional Economics (BITRE), 2014, New passenger vehicle fuel consumption trends, 1979 to 2013, Information Sheet 66, (p. 7) BITRE, Canberra.

businesses. The industry contributes $6.4 billion in taxes and other charges to Government revenue each year.[37]

The competitiveness in the Australian new car market has delivered better safety and environmental outcomes for consumers. This highly competitive market has delivered value to consumers through more affordable vehicles and also a higher level of specification in those vehicles. Research conducted by the FCAI and member brands demonstrates that when conducting a like- for-like comparison, the vast majority of the new car market is more competitively priced in Australia than in comparable overseas right hand drive markets.

Competitiveness of Global Markets[38]

	Australia	Canada	UK	USA
No. brands in market	67	49	53	51
Sales	1,112,032	1,620,221	2,249,483	13,040,632
Market size per brand	16,597	33,066	42,443	255,699

The above Table demonstrates the competitiveness of the Australian market through a comparison with Canada, the United Kingdom and the United States. Australia has more brands offered for sale than these other three markets. There are double the number of vehicles sold per brand in Canada, almost three times as many in the United Kingdom and more than 15 times the number of vehicles sold per brand in the United States than in Australia.

This has come about in large part because of structural changes in the Australian economy and a corresponding decrease in the import tariff, some of which has come about through the introduction of free trade agreements that will progressively see vehicle imports attract a nil duty. It also reflects the intense global competition that takes place amongst car brands, a point supported by the Productivity Commission, which concluded in relation to the global automotive industry that:

> *Competition within the global automotive industry is intense…*
> *As a result of this competition, especially amongst the lower-priced, high-volume vehicle models, there is limited ability for producers to raise their prices …*
>
> *The limited scope for producers to raise their selling prices within particular vehicle market segments has resulted in cost pressures throughout the automotive supply chain.* [39]

Specifically in relation to Australia, the Productivity Commission has concluded:

> *The Australian market for new motor vehicles is small in global terms. At the same time, due to a high level of import penetration (with few barriers to those imports), the Australian automotive market is highly fragmented, and appears to have become more so over the past decade…*[40]

[37] Whytcross, D. Motor Vehicle Dealers in Australia. IBISWorld Industry Report G3911, 2014. IBISWorld.

[38] Australian Government, Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education, March 2013 Automotive Update.

[39] http://www.pc.gov.au/__data/assets/pdf_file/0020/135218/automotive.pdf, p48-49

[40] http://www.pc.gov.au/__data/assets/pdf_file/0020/135218/automotive.pdf, p63-64

Australian consumers benefit from this highly competitive new vehicle market. They have greater choice, and competition encourages lower prices, improved vehicle quality and additional features for a new vehicle in a particular market segment. According to the Productivity Commission:

> *The highly competitive Australian automotive market limits the scope for all sellers of cars in Australia to increase the selling price of their vehicles.*[41]

This is delivering more affordable motor vehicles to Australian consumers. The March 2015 CommSec Car Affordability Index found that car affordability is the best it has been in the 40 years since the Index began.[42]

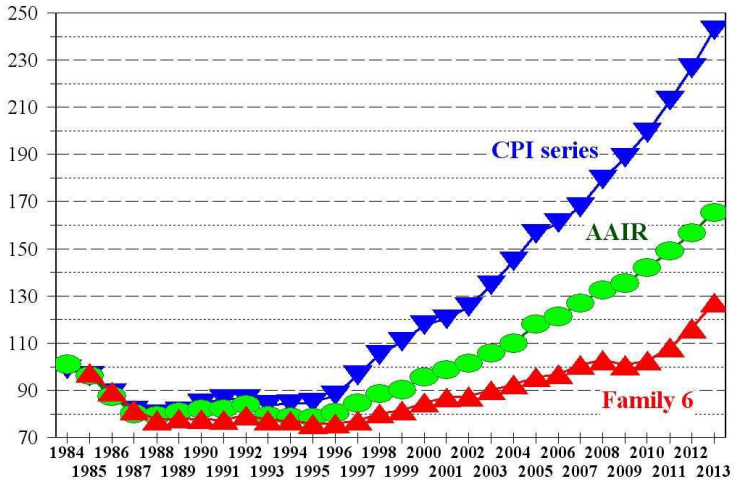
The fact that cars are more affordable is supported by data presented by Australian Automotive Intelligence (AAI). In their 2014 Yearbook[43], AAI outlines three key periods when comparing the CPI motor vehicle indexes and average weekly wage earnings:

- Up to 1988 when car price increases markedly exceeded increases in earnings.
- Then to the mid-1990s when movements in car prices and earnings were roughly equal.
- From the mid-1990s when earnings moved well ahead of falling or stable car prices.

The three phases detailed above are broadly the same for the three measures—the major differences are the degrees of recovery in affordability since the mid-1990s:

- The CPI motor vehicle index shows the most improvement in affordability, but this is mainly because it discounts prices for specification improvements and therefore does not simply reflect the changes in actual car prices.
- The Family 6 series shows the least improvement because the prices of these cars have risen more rapidly than for cars generally, although better specifications offset some of the rise.

Car Affordability Indexes



[41] http://www.pc.gov.au/__data/assets/pdf_file/0020/135218/automotive.pdf, p67

[42] https://www.commsec.com.au/content/dam/EN/ResearchNews/ECO_Insights_1603b.pdf

[43] Australian Automotive Intelligence, Yearbook 2014

While competition in the marketplace is delivering more affordable motor vehicles than ever before, it has also sharpened the level of competition amongst dealers. Deloitte's 2015 Motor Industry Services report identified that while average dealer profitability remained stable at 1.9 per cent, around 25 per cent of dealers failed to make a profit in 2014.

Parallel imports add pressure on all dealerships

This becomes a material factor in the context of the current Motor Vehicle Standards Act review, in which the Government is giving active consideration to a parallel import regime for new motor vehicles. The main argument in support of permitting parallel imports is to arbitrage away international price discrimination. Given that the Australian market is already experiencing a very high level of inter-brand competition, to adequately consider this issue in 2014 the FCAI commissioned economic analysis by Pegasus Economics to look at the complications and some of the unintended consequences that can arise in a situation where parallel imports are allowed. A copy of that analysis is attached to this submission.

Central to any consideration of this matter must be the investment made by an established brand in the product development, intellectual capital, its dealer network and associated supply infrastructure in the product it has developed for a specific market. This includes servicing, supply of parts and training. Parallel imports undermine this investment by encouraging a 'free rider' to import a good without the authorisation or consent of the trade mark owner (in this case, the automotive brands in question).

Parallel imports increase consumer risk

The rights of consumers of all goods, including motor vehicles, is protected by the Australian Consumer Law (ACL). The ACL is the principal consumer protection law in Australia and under the ACL, consumers have the same protections and expectations about business conduct wherever they are in Australia. Similarly, businesses have the same obligations and responsibilities wherever they operate in Australia.

Consumers purchasing a motor vehicle outside of Australia, such as through dealers in other countries and via the internet, carry a large risk. As the experience in New Zealand has shown,

consumers who purchase a motor vehicle outside of the established brand and authorised dealer network can find themselves exposed if something goes wrong.

Buyer risk is minimal when purchasing a new car from a franchised dealership. The vehicle brand and dealer carry all of the risk due to their obligations under the Australian Consumer Law. This includes warranty, service and parts, and recalls.

In Australia, in the event of a recall, brands are able to notify the known owners of cars or motorcycles bought through the brand and its authorised dealers in this country. The brand does not know and is simply not able to notify owners of a recall where a motor vehicle sits outside the established brand infrastructure, such as a personal import.

The existing service and dealer network in Australia provide assurances to consumers that their car is serviced properly. The cost of servicing and obtaining parts for motor vehicles that are not supported by established brands, and the limited availability of trained technicians to service offshore models that are not currently imported into Australia by the authorised distributor of the brand in this market, must be carefully considered.

The ACCC website page, buying parallel imports contains guidance to consumers when considering purchasing a parallel import. Importantly, the ACCC highlights that:

- It may be more difficult to obtain a remedy if something goes wrong with a parallel import.
- The seller of the parallel import cannot refuse to help the purchaser of the parallel imported good.
- Although the product may carry a particular or popular brand name, if it is sold to you as a parallel import, the local manufacturer is not required to help you if the product develops a problem.

Our member brands have substantial investments made over many years in Australia. These are serious investments made in dealerships, workshops, technology and training to support and service their products.

Buyers of parallel imports may end up with a vehicle that does not meet their needs or operate as required in the Australian driving conditions. The car owner is then likely to blame the brand rather than accept that they purchased a car that was not engineered for Australian conditions.

CONCLUSION

If Australia is to maintain the technical and design advantage it currently enjoys across automotive product development, then as a country we must have consistent, long-term internationally competitive policy assistance. This applies to the existing Automotive Transformation Scheme (ATS) as it does to other policy and program areas. The FCAI believes that in the short-term, the ATS eligibility criteria should be amended to encourage further investment in R&D to continue to secure complex design and engineering work for international customers. Beyond the expiry of the ATS at its scheduled close in 2021, the FCAI would support a new automotive R&D co-investment policy to maintain and grow the established automotive R&D infrastructure and skills base currently in Australia.

Done properly, Australia can continue to have an advanced automotive industry once domestic manufacturing ceases. Both Ford and Holden have made commitments to keep their substantial product development capabilities in Australia to work on global projects. Combined, these cover engineering, design, retail and aftermarket. With the right support from Government, Australia can continue to ensure we retain this nationally significant industry for future economic benefit.

As motor vehicles become more sophisticated, an opportunity exists to grow a new area of the automotive industry. With the right policy settings, Australia can continue to be at the forefront of international automotive trends and developments in technology. These settings extend beyond manufacturing and into communications policy, environmental policy and road regulations. Setting a timetable for the implementation of Cooperative-ITS is important in ensuring that Australia keeps up to speed with international developments.

More generally, the Australian retail automotive industry is a significant industry in its own right. Its reach extends to almost every town and city across the country. Individual dealerships remain crucial to the communities they are in, with many contributing back through support for community initiatives and events. While this industry is large, it is also vulnerable, with around 25 per cent of dealerships not making a profit in 2014. Policy disruptions, such as that being considered by the Motor Vehicle Standards Act review's proposed position on personal imports of new motor vehicles remain a very real threat to the viability of individual dealerships, with impacts felt in the communities where they exist.

The FCAI trusts that the information contained in this submission assists the Committee's inquiry and the Chamber would be happy to participate further with the Inquiry.