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Transport and Public Works Committee  
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To Transport and Public Works Committee:

### **Inquiry into Transport Technology**

#### **1 Introduction**

1.1 The Motor Trades Association Queensland (MTA Queensland or the Association) responds to the Queensland Parliamentary Transport and Public Works Committee *Inquiry into transport technology*. The MTA Queensland's comments are submitted on behalf of its constituent divisions and are confined to issues which relate to the interests of Queensland's automotive value chain which inter alia includes: franchised new car dealers, independent mechanical and motor body repairers, recyclers and other discrete automotive technology and service providers.

1.2 The terms of reference for the inquiry to consider in detail, refer to the challenges and opportunities which technology will bring to the transport sector in coming years including:

- (a) *identifying trends and changes in fuel type usage in the sectors of personal transport, freight transport and public transport such as the increasing uptake of hybrid and electric vehicles*
- (b) *examining the readiness of the transport network for increasing electrification of vehicles in come years*
- (c) *identifying other emerging technological factors which will impact on transport networks into the future, such as driver aid technology and 'driverless car' technologies*
- (d) *examining how technology is affecting employment arrangements in the transport industry, particularly in the food delivery area.*

#### **2. Overview**

2.1 Over the longer term, the electric powered autonomously operating vehicle revolution represents a unique opportunity for Australia to secure a next generation of economic advancement and deliver a broad range of benefits from restructuring and reforming logistics, technological and environmental infrastructures. There will be significant disruptions that will need to be managed by all governments by developing enabling statutory frameworks to facilitate and regulate the implementation and operation of electric powered and autonomously operated vehicles.

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2.2 Australia so far has experienced the initial phase of the most significant and transformative transportation change and energy application in its history. To date, electric vehicle technology has been confined mainly to the introduction of hybrid electric vehicles with dual, electric and conventional propulsion.

2.3 The major phase of the transport revolution will be driven by the broad uptake of 'plug in electric vehicles' (PIEV). These vehicles have the potential to restructure Australia's economy and reform the basis of national logistics and reconfigure the economic geography of metropolitan and regional centres. In addition, there is likely to be a profound impact on the business models of the private sector in response to the disruptions by PIEV uptake and the decline of conventionally powered motor vehicles and commercial transportation.

2.4 Australia's economic geography shall play a significant role in the pattern and rate at which electric vehicle technology will be integrated in the nation's private and commercial transportation systems. It is likely that metropolitan centres will have a more rapid uptake of PIEV technology and the adoption of autonomous vehicles.

2.5 Initially metropolitan and urban centres will be favoured, because the cost of dismantling conventionally powered vehicle infrastructure e.g. internal combustion engine (ICE) serving facilities and fuel retail stations and replacing these with PIEV facilities - that is auto electrical repair shops and recharging stations - can be more effectively recovered from larger population centres. Australia's vast distances and decentralised demography means that conventional vehicles are likely to continue to play a major transportation role in rural and regional economies for a considerable time after PIEV displace ICE vehicles in metropolitan centres.

2.6 Australia's urban and regional geography involves extended transport logistics and the new generation of batteries for electric vehicles enabling on average 500 kilometres of travel between recharging is an important consideration for stakeholders. Currently this is in the process of being upgraded to 1,000 km between recharging and will eliminate the concerns the motoring public has about the suitability of electric vehicles for Australia's long distances. This innovation can be expected to remove a major obstacle to the uptake of electric vehicles.

2.7 The challenge for governments will be to develop and manage frameworks that both enable the adoption of the most advanced formats of vehicle technology while at the same time ensuring these statutory structures have the competence to support ICE vehicles in those regions where the economic, commercial and social cost of the transition do not justify a change from conventionally powered transportation in the near to medium terms.

2.8 To date, the take-up of electric vehicles in Australia has been limited to approximately 4,000 units representing 0.1 per cent of total vehicle ownership which comprises fleet owners 64 per cent; private owners' 34 percent; and 2 per cent government operated vehicles. The demand for electric vehicles by Australia's consumers will accelerate as the price of PIEVs become competitive with that of ICE vehicles. Bloomberg Energy Finance estimates that electric and conventional vehicles will achieve price parity by 2025.

2.9 It is estimated that by 2025 there will be a dramatic increase in electric vehicles on the nation's roads and this is expected to exceed four million by 2030. Worldwide, the number of electric vehicles sold has been growing at rate of 40 per cent annually in recent years (2011 – 2017).

2.10 The automotive value chain is on the cusp of a major transformation driven by innovation and the availability of new technologies capable of vastly improving the transportation services needed by the nation's growing demographic and socio-economic trends. To some extent this era is being unveiled now with the statutory preparations being undertaken for the broader transition to electric and autonomous vehicles e.g. smart infrastructure, road user pricing and traffic motoring network. This is a mere glimpse of the benefits available. Ultimately, all stakeholders need to embrace the revolution that is the transformation to electric and autonomous vehicles and comprehend how transport services will be delivered in the future.

### 3 Statistical Overview

3.1 The Australian Bureau of Statistics Motor Vehicle Census Australia 31 January 2018 provides a snapshot of the type of fuel usage of motor vehicles on register.

**Table 5 MOTOR VEHICLES ON REGISTER, Type of fuel– Census years**

	Leaded no.	Unleaded no.	Total no.	Diesel no.	Other no.	All fuel types no.
<b>QUEENSLAND</b>						
2012	106,029	2,630,557	2,736,586	697,605	58,120	3,492,311
2016	80,870	2,746,219	2,827,089	971,446	55,670	3,854,205
2017	78,136	2,777,211	2,855,347	1,038,606	54,216	3,948,169

Of interest is the popularity of diesel fueled vehicles since 2012 increasing by 49 per cent compared with 4.3 per cent for petrol powered vehicles.

3.2 Although not identified in the above table, the Australian Bureau of Statistics (ABS) analysis of the data indicated the demand for LPG powered vehicles and LPG fuel had declined sharply in recent years. This is supported by Australian Institute of Petroleum data (At a Glance Fact Sheet) and Federal Chamber of Automotive Industries (FCAI) analysis that LPG vehicle sales (passenger and light commercial) in Australia declined from 8,000 in 2010 to be less than 2 per cent of the market in 2017. In line with shrinking sales, AutoGas has declined by 68 per cent since 2010. The pump price remains comparatively low, but an LPG vehicle will consume 25 per cent more fuel than an equivalent petrol engine. Historically, most AutoGas demand was from taxi fleets, which are now shifting to hybrid electric vehicles.

3.3 The average age of the States total motor vehicle fleet is 9.9 years. The average age of the various segments is:

Passenger fleet	9.6 years
Camper Vans	14.2 years
Light Commercial Vehicles	10.4 years
Light rigid trucks	14.3 years
Heavy rigid trucks	16.7 years
Articulated trucks	11.4 years
Non-freight carrying vehicles	11.8 years
Buses	11.7 years
Motor cycles	10.1 years

3.4 Queensland’s automotive fuel product sales for the period 2010-11 to 20-16-17 (The Department of Energy and Environment’s publication, Australian Petroleum, May 2018):

	Q’LD Automotive Gasoline ML				
	Premium (95-97 Ron)	Premium (98+Ron)	Regular (-95 Ron)	Ethanol Blended fuel	Total
2010-11	483.8	440.1	2506.7	829.8	4260.4
2011-12	504.9	490.7	2663.7	440.0	4099.3
2012-13	487.0	525.8	2736.5	346.3	4095.6
2013-14	481.5	526.5	2734.3	330.9	4073.2
2014-15	459.8	593.0	2664.6	361.8	4079.2
2015-16	462.2	652.4	2626.9	441.2	4182.7
2016-17	454.6	657.9	2,529.9	565.1	4206.5

Australian Petroleum, Issue 262, May 2018

Queensland’s fuel consumption represents 21.4 per cent of nation’s usage (Magner, L.: Fuel Retailing in Australia, IbisWorld, December 2017).

3.5 Below are the MTA Queensland’s viewpoints in relation to the terms of reference:

**4. Viewpoints**

*(a) identifying trends and changes in fuel type usage in the sectors of personal transport, freight transport and public transport such as the increasing uptake of hybrid and electric vehicles*

4.1 Projected trends in fuel demand for the next decade indicates that the fuel retailing industry will undergo massive structural changes in sync with the technological advancement in the automotive sector led by the conversion from ICE to hybrid and PIEV. Nationally, the volume of fuel sold by the industry is expected to increase at an annualised 0.7 per cent through 2017-18 (Ibid). Driving these changes will be fuel-saving alternatives and the transition from ICE to the hybrid and the PIEV.

4.2 Statistical theory correlates fuel retailing trends to reflect vehicle numbers. More motor vehicles on Australia’s roads generally increases demand for fuel. Over the past five years motor vehicle numbers have grown each year (Federated Chamber of Automotive Industries FCAI VFACTS). FCAI analysis of new motor vehicle sales for Queensland reported a 5.8 per cent decline and a 7.8 per cent fall for Australia’s motor industry. This suggests that consumers may be hitting the pause button on the purchase of new cars in light of increasing promotions of PIEV: economic reasons such as restrained wage growth, higher household debt, metro-geographic changes such as increased apartment living which may curb growth in car ownership, kilometres driven and fuel demand.

4.3 Consumer choice in the mid-longer terms is likely to be restricted to PIEV or a second-hand hybrid vehicle. Original Equipment Manufacturers (OEMs) are forecasting the phasing out the production of combustion engines and this is being institutionalised by statutory bans in many jurisdictions: for example, Volvo has indicated from 2019 it will build only hybrid and electric vehicles; General Motors has announced that it has 20 new electric models under design; Jaguar and Land Rover has announced all new model lines from 2020 will be electric; and Volkswagen, the world's biggest car maker, is targeting three million electric vehicle annual sales budgets by 2025. This means diminishing retail sales of all fossil fuel powered types.

4.4 Currently, the market lacks comprehensive brand and model choice and competitive price ranges compared with ICE vehicles. It seems there are 16 electric vehicle models on sale in Australia – 13 of which are over \$60,000. This will inevitably change. Bloomberg Energy Finance estimates that electric and conventional vehicles will achieve price parity by 2025.

4.5 The trend to electric and automatic vehicles will have several impacts; one of which is vehicle ownership costs as indicated in a recent KPMG report for the Infrastructure Victoria. Analysis shows automated vehicle vehicles will be the lowest cost fuel source option for the average Victorian who uses their vehicle to drive 15,000km a year.

4.6 Using a fleet-style automated vehicle service would be about 40% cheaper than owning a fossil fuel powered vehicle, even after allowing for a higher technology cost of around \$7000 to \$13,000 per vehicle.

*(b) examining the readiness of the transport network for increasing electrification of vehicles in come years*

4.7 Since 2016, the MTA Queensland has been an active participant in Commonwealth Government agency consultations evaluating the demands of the transition from ICE vehicles to PIEV and responses to various Regulatory Impact Statements. Government has undertaken a significant body of work on the future policies and regulations to support the implementation of electric and autonomous transport vehicles and the architecture of the transport network. Although this is being done, it is the view of the Association that much more needs to be done by all governments and stakeholders to:

- be prepared for the technological change as a consequence of the framework needs of automated and connected motor vehicles so that the transport network efficiently connects people to employment, services and social and recreational opportunities and industry to markets; and
- to address the pressure on road networks as the population increases; there is growing concern that congestion in our cities could result in excessive economic and social costs;

4.8 The Australia's Infrastructure Plan 2016 informs that 'technology is transforming the way infrastructure is delivered and operated and offers opportunities for expanding the productivity-enhancing potential of our infrastructure. It can better regulate demand for an asset, reducing costs for users and operators alike, and improving the efficiency of network operation. Similarly, emerging technologies allow existing infrastructure to be upgraded and repurposed, providing customer-focused solutions to better meet the demands of a changing world.' For the transport network and the national economy there is likely to be extensive structural change. These include:

- Fiscal impacts resulting from the decline in revenues from fuel taxes and petroleum excise duty in direct proportion to the uptake of electric vehicles requiring offsets with new fiscal structures such as user pay charges on road use which may involve cost-reflective transport pricing models across all vehicles
- road market reform, which the federal government has committed to undertake — along with ensuring equity in regional and rural areas
- fast chargers installed in convenient safe locations where there are existing amenities such as shops, restaurants, hotels, motels and parking and service stations. It is acknowledged that Queensland's Government in collaboration with local councils and other partners has rolled out the electric super highway from Cairns to the Gold Coast to encourage the uptake of electric vehicles. Advice to hand is that the Brisbane based technology company Tritium has perfected high voltage car chargers that can recharge a vehicle in 10-15 minutes
- the transition to PIEV has the capability to accelerate interconnected private and public transport systems so that the public may transit efficiently and comfortably.
- investing in intelligent transport systems such as sensors on roadways and better management of the road network and the vehicles using these systems

*(c) identifying other emerging technological factors which will impact on transport networks into the future, such as driver aid technology and 'driverless car' technologies*

4.9 Autonomous vehicles/electric cars have the potential to make a significant contribution to resolving the challenges facing Australia's communities and conurbations including: changes in national and community economic spatiality. This includes the challenge of where people live and desire to live, population distribution, urban sprawl and community logistics; congestion; the future economic geography of the nation as it transitions from a mining to a more broadly-based economy; and the location of social infrastructure and community amenities.

4.10 A challenge for governments, community organisations and industries over the longer term is likely to be the implementation of programmes to assist older generations to digest new technological challenges and adjust to the benefits conferred by emerging transport choices which include accessing or owning autonomous vehicles. For the nation's seniors, driver aid technology and 'driverless car' technologies have the potential to liberate – reduce reliance on families and carers for outings or appointments. Again, similar to electronic devices it will be the take up of autonomous vehicles by the younger cohorts that will influence older generations to utilise the emerging choices and transport modes to their advantage.

4.11 The desirability of social equity that can be achieved by the introduction of autonomous vehicle technology should be considered. Economies of scale and business models are likely to favour the urban uptake of this technology and if the social utility of the introduction of autonomous vehicles is to be equitable, support programmes for rural and regional areas need to be considered.

4.12 Experts predict that by 2030 there will be some five million electric cars on the nation's roads and a significant proportion of these are likely to be 'driverless'. Indeed, 'in 10 or more years, smart cars and infrastructure will be commonplace' (The Future of Compulsory Third Party in Queensland, prepared for the Motor Accident Insurance Commission, PwC Chair of Digital Economy at QUT, p. 14). These vehicles will introduce exponentially profound economic and societal changes that can contribute to improved road safety, mobility and productivity outcomes.

4.13 Autonomous motor vehicles have a high potential utility index and while it is recognised autonomous vehicles are not a complete solution to resolving national and sub-national spatial problems, with comprehensive planning over the longer term they have the potential to make a significant contribution. We note that in an IDTechEX summary report, there are predictions of continued growth for industrial and commercial vehicles powering 'past 65% of the market - more than double that of cars' (Harrop, P Dr, Electric Vehicles change the world 2017-20137, Summary Report, IDTechEX <http://www.idtechex.com>).

4.14 We observe that globally there is a rising demand for the equipping of motor vehicles with the Internet as original equipment owing to increasing application of: infotainment, navigation and telematics systems. These are a factor for the growth of the 'Internet of Things' in the automotive industry. According to Coherent Market Insights, it is projected globally, that by 2020 around 250 million cars would be Internet-connected.

*(d) examining how technology is affecting employment arrangements in the transport industry, particularly in the food delivery area.*

4.15 The MTA Queensland has long recognised the disruptive effect of structural and technological changes taking place in the automotive value chain. The change from fossil fuels as the main energy source for transportation and the progressive displacement of the internal combustion engine means that Australia's society and the economy will undergo fundamental transformations. For this purpose, the Association scheduled two *Carmageddon* Symposiums and other fora to provide the leadership and advance understanding of present and future disrupters in the motor trades and to address the knowledge gap on the digital economy and the emerging technologies in this sector.

4.16 Although not within the MTA Queensland's purview, it is our observation that tech company's delivery APPs through food service providers are changing the way the public interacts with the fast food service industry. It seems changing lifestyle trends have driven the popularity of food delivery services over the past five years such as Uber Eats, Deliveroo, Menulog and Foodora. Reports to hand refer to the food delivery service Foodora advising that it will leave the Australian market on 20 August in the midst of ongoing lawsuits and contractual related issues.

4.17 It would appear that governments need to address the desirability for a statutory framework for 'short distance' transportation logistics. This not only refers to the food delivery industry. It is becoming a far wider issue due to the changes in general retailing with deliveries becoming common for groceries, pharmaceuticals and other retailing models such as white goods which are all likely to experience transportation disputes that will need statutory framework for an effective resolution.

4.18 We would be please to provide further comment on any matters in our submission that may require further clarification or amplification.

## 5 Background

5.1 The MTA Queensland is the peak organisation in the State representing the specific interests of businesses in the retail, repair and service sector of Queensland's automotive industry located in the State. There are some 15,500 automotive value chain businesses employing approximately 88,500 persons generating in excess of \$20 billion annually. It is an industrial association of employers incorporated pursuant to the *Fair Work Act 2009*. The Association represents and promotes issues of relevance to the automotive industries to all levels of Government and within Queensland's economic structure.

5.2 The Association is the leading automotive training provider in Queensland offering nationally recognised training, covering technical, retail and the aftermarket phases of the motor trades industry through the MTA Institute - a registered training organisation. It is the largest automotive apprentice trainer in Queensland employing trainers geographically dispersed from Cairns to the Gold Coast and Toowoomba and Emerald. The MTA Institute last financial year accredited courses to in excess of 1,600 apprentices and trainees.

Thank you for your deliberation.

Yours sincerely



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MTA Queensland