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Future Fuels Strategy
Department of Industry, Science, Energy and Resources
GPO 2013
Canberra ACT 2601
Response: <https://consult.industry.gov.au/climate-change/future-fuels-strategy>
To: Future Fuels Strategy Team

Future Fuels Strategy Discussion Paper

1. Introduction

1.1 The Motor Trades Association Queensland (MTA – Queensland or the Association) is pleased to respond to your request for feedback on the priorities and actions outlined in the *Future Fuels Strategy* Discussion Paper (the Paper) by submitting the following views and issues for consideration.

1.2 MTA Queensland welcomes the Strategy and appreciates the opportunity to submit a contribution in relation to the proposed principles and priority areas ‘to create an environment that enables consumer choice, stimulates industry development and reduces emissions in the road transport sector.’

2 The Strategy

2.1 Principles

The Australian Government’s Strategy will be guided by three principles:

- 1. Addressing barriers to the roll out of new vehicle technologies will increase consumer choice.*
- 2. Government investment in early-stage technologies can stimulate the market and private sector investment.*
- 3. Access to information can help people make informed choices.*

2.2 Priority Areas

- 1. Electric vehicle charging and hydrogen refuelling infrastructure where it is needed*
- 2. Early focus on commercial fleets*
- 3. Improving information for motorists and fleets*
- 4. Integrating battery electric vehicles into the electricity grid*
- 5. Supporting Australian innovation and manufacturing*

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2.3 The Association recognises the Future Fuels Strategy (the Strategy) is to be guided by the three principles that sets the Australian Government's framework for the 'practical actions that will enable the private sector to commercially deploy the low emissions road transport technologies at scale.' The Strategy, however, does not meet the urgent need for national policy to keep pace with the changing business and community attitudes to decarbonisation and the global energy transition.

3. Preamble

3.1 Change and evolution are the inherent characteristics of the automotive industry. A strategic responsibility of the MTA Queensland is to inform members and stakeholders on current and future technological and mobility transformations that will impact the automotive value chain and the economy. Since March 2017, the MTA Queensland has undertaken a series of *Caramageddon* symposia for this purpose. The intention is for a fourth in the *Caramageddon* series, focusing on all aspects of innovation linked to the automotive and mobility industries. A feature will be the exposition of hydrogen and electric vehicles including the latest from leading manufacturers and last mile mobility concepts.

3.2 The Association has partnered with the Queensland's Department of Transport on the Cooperative and Automated Vehicle Initiative (CAVI). The goal of CAVI is to test cooperative and automated vehicle technologies that make roads safer by contributing towards zero road deaths and serious injuries on the state's roads. It lays the technical foundations for the next generation of smart transport infrastructure and has four components: Cooperative Intelligent Transport Systems Pilot—the largest on-road testing trial in Australia of cooperative vehicles and infrastructure; Cooperative and Highly Automated Driving Pilot; Vulnerable road user pilot; and Change management.

3.3 The MTA Queensland's workshop and Innovation Hub was pivotal in the assembling ACE EV Group's first commercial ACE Cargo Vans which are currently being assembled at the Adelaide Tonsley Innovation Precinct.

3.4 The Strategy is most welcome to provide the leadership and understanding of the government's operational frameworks for the technologies of future. Changing community environmental expectations, Australia's international emissions targets and the next generation of smart transport and mobility need to be managed by all jurisdictions to facilitate an effective pathway for the uptake and operation of non-fossil fuel powered vehicles.

3.5 Australia has been behind other advanced economies in facilitating the transition to new vehicle technologies, incorporating electric and autonomous transport vehicles. Britain for example, has banned the sale of new fossil fueled vehicles after 2030, Japan by 2035, and France and Germany by 2040. Each of these nations have legislated or aim for net zero emissions by 2050. Original Equipment Manufacturers have responded to the emissions targets such as Ford Motors' European division by phasing out vehicles powered by fossil fuels. By 2026, the company will offer only electric and plug-in hybrid models, and by 2030 all passenger vehicles will run solely on batteries. General Motors indicated it would stop selling petrol powered vehicles by 2035; Volvo would be all-electric by 2030 and the Volkswagen Group unveiled the intention to have at least 80 per cent of its models built on the new electric vehicle (EV) architecture by 2030.

3.6 In contrast, the Strategy has not established a framework that encourages the transition, as it is focused on enabling 'consumer choice'; stimulating industry development and reducing emissions in the transport sector. Consumers will be able to choose from a mix of technologies, including traditional fuel, hybrid, hydrogen fuel cell, electric and biofuelled vehicles. A clear framework needs to be developed to increase uptake as Manufacturers phase out vehicles powered by fossil fuels, there is a supply risk that electric vehicles will be prioritised to countries that have legislated for lower emissions. The Paper states 'introducing policy to phase out or ban internal combustion engine vehicles would limit consumer choice, preventing Australians from driving the vehicles they prefer.' In a nation with a vast geographical expanse, the Strategy's approach may resonate with some parts of industry, business and consumers, but there are

changing attitudes to energy requirements and decarbonisation which need to be recognised with an agreed uniform policy position.

3.7 By comparison, State and Territory jurisdictions and business have taken a more direct approach. The Queensland Government's Climate Transition Strategy seeks to power Queensland with 50% renewable energy by 2030; to achieve zero net emissions by 2050; and to reduce carbon pollution by setting an emissions reductions target of at least 30 per cent below 2005 levels by 2030. Each of these elements of the state's Strategy relies on the use of energy fuels for the automotive sector.

3.8 The policy/goals differences between the Australian Government, State and Territory jurisdictions and business on decarbonisation and energy transition is contrary to the medium/long-term evolution of the automotive industry at time when technological advancements have redefined the way vehicles are manufactured, operated and maintained. There is a risk as a slow or time critical adopter driven by emissions standard changes or implementation that we will pay higher transition costs later.

3.9 Some jurisdictions have plans for new levies on low-emission vehicles to compensate for their avoidance of fuel excise tax, which may further undermine the uptake of electric vehicles (EV) by consumers. MTA Queensland considers that it is imperative that Australia's jurisdictions work together through the National Cabinet to provide a harmonised statutory framework for electric and autonomous vehicles to achieve:

- fiscal reform to replace petroleum excise duties; state EV charges and third-party insurance premiums
- prioritising EVs for fleet replacements
- harmonisation of charges and regulatory requirements
- harmonisation of road rules
- harmonisation of specifications for recharging plugs in the same way that fuel nozzles are standards.

4. Response to Questions

4.1 Electric vehicle charging and hydrogen refuelling infrastructure

What is the highest priority charging and refuelling blackspots that should be considered under the ARENA administered Future Fuels Fund?

Australia's National Hydrogen Strategy sets a vision for a clean, innovative, safe and competitive hydrogen industry that benefits all Australians. As a key use for hydrogen is to power vehicles, the State needs to develop capacity to refuel Hydrogen cells here to support the growth of Australia's hydrogen industry.

4.1.1 The State's western highways used for: commercial and social activities e.g., transporting of product to markets; goods to customers; industry (agriculture, resources, tourism); and for business and social equity purposes should be assessed for priority charging and refuelling blackspots. The highways include: strategic centres along the Warrego Highway from Dalby through to Birdsville; strategic centres along the Landsborough Highway from Morven to Cloncurry; strategic centres along the Flinders Highway from Charters Towers to Mount Isa; strategic centres along the Cunningham Highway from Warwick to Goondiwindi; strategic centres along the Gregory Highway from Clermont to Charters Towers.

4.1.2 The Association draws attention to the challenge social equity will present in the provision of automotive energy supply to regional and remote communities. Australia's economic geography means that charging stations will have business models based on breakeven points and economies of scale. Sub-optimal remote and regional locations will present supply and servicing challenges and will

require careful consideration to prevent under utilisation due to cost of the energy. Rural and regional people experience higher fuel prices than those in urban areas but should not be prevented from choosing non-ICE vehicles. Three new communities (eventually cities) are being developed: Greater Flagstone and Yarrabilba, in greater Logan; and Ripley Valley near Ipswich which will be home to an estimated 250,000 residents. These communities should be included for vehicle recharging and hydrogen refuelling sites. Additionally, residents in multi-level apartment buildings (strata) will need access to in building or local charging stations.

What technical issues remain for rolling out recharging and refuelling in both metropolitan and regional blackspots?

4.1.3 Charging infrastructure has been rolled out and deployed in almost 2,500 centres across Australia. Charging sites require a lot of power and space. Ongoing technical issues arise from electricity supply and different Distribution Service Network Providers (DSNP). In Queensland there are three Providers: Energex Limited which operates in south-east Queensland; Ergon Energy which operates in rural and regional Queensland and Essential Energy (a New South Wales distributor) which has a supply network that extends into Queensland near Goondiwindi. Each has different processes and requirements for connecting ultrafast EV charges to their networks.

4.1.4 Hydrogen refuelling infrastructure is minimal. Nationally, there is one operational permanent hydrogen refuelling point and that is at Hyundai's Sydney headquarters and for its exclusive use. Toyota's research division has a portable hydrogen refuelling unit. International experience indicates that a network of consumer refuelling stations has proven to be exceptionally challenging, complex and expensive to build and support. According to the CSIRO 'a major barrier to (hydrogen) becoming a fuel source for cars and trucks is how to refuel, and the lack of refuelling infrastructure.' The Queensland Government is now into its second round of its Hydrogen Industry Development Fund to drive investment accelerate development of projects in the State.

What are the biggest commercial barriers to installing new charging or refuelling infrastructure?

4.1.5 The Evie Networks Lessons Learnt Report (December 2019) details the lessons learnt from the development and construction of at least 42 ultrafast EV charging sites along Australian highways including Queensland and to be completed May 2022. The Report identifies:

'Business case evaluation – future-proofing requires a significant upfront capital investment in the grid connection, even though it may take years for site utilisation to achieve the forecast levels (based on growing uptake of EVs). Furthermore, the estimated connection costs and forecast site demand growth are both subject to very large uncertainties thus the inherent risks in evaluating the business case are fundamentally high (p.6).'

... capital requirements of new high-powered grid connections are significant. Evie Networks typically allows \$200,000-\$250,000 for each new charging site grid connection as a low-voltage customer, which is approximately one quarter of the total cost of building a site. However, in practice we have encountered massive variance of up to ±100% in our grid connections (some have been double the budget allowance, and some free of charge).

Some Distributed Network Supply Providers (DNSPs) fund the new connection completely, intending to recoup the costs through tariffs over time, whereas other DNSPs require the customer to pay the full connection capex cost upfront. A further complication is that some DNSPs provide capex rebates based on forecast cost recovery through network tariffs over time, using their own complex in-house formulas. We find that valid estimates of connection capital cost often come very late in the overall process of completing the "4 Ps", creating significant risk of derailment as we try to reconcile

against the requirements in Property, Planning and Procurement. At least one site has failed in acquisition, forcing a total restart, due to a prohibitive connection cost that was obtained too late to manage (P.7).

In the December 2020 Report, Evie Networks included:

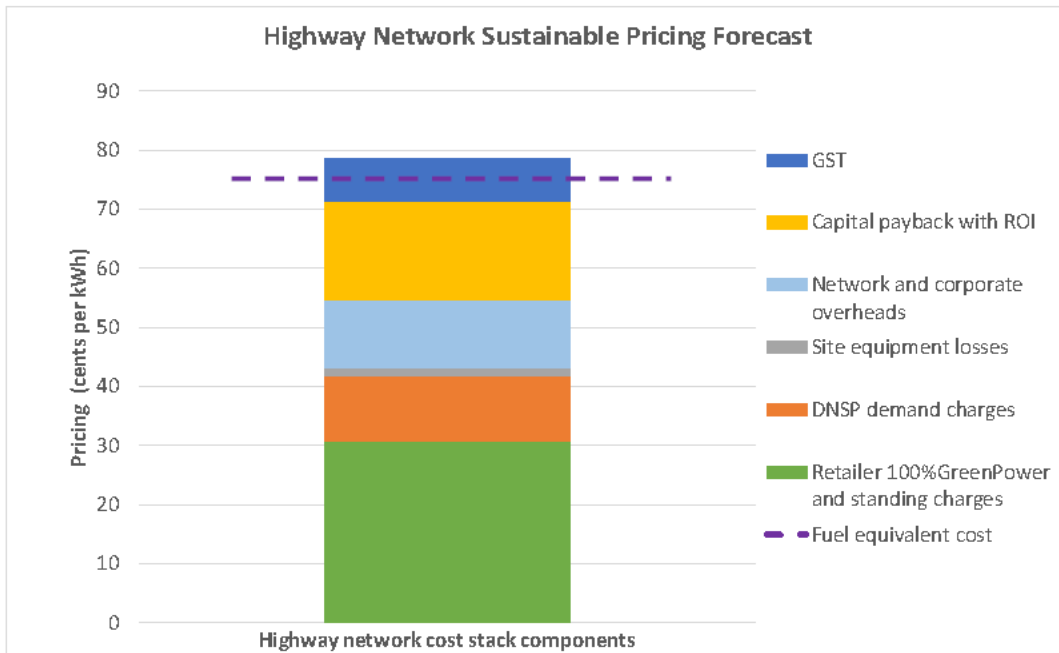


Figure 8: Total cost stack forecast for Evie ultrafast highway charging network

The report stated that: ‘The application of these legacy large customer tariffs (with high demand and standing charges) are clearly prohibitive to the long term business case for ultrafast charging, so these tariffs warrant further scrutiny to assess their true suitability (cost reflectivity) for high power, new technology customers of this type (p.8)

4.1.6 Connection to ethernet or 4G connectivity for management and billing purposes may be a barrier in some regional areas. It is noted Tritium has enabled its ‘Plug and Charge’ technology worldwide on also its RT50 50kW chargers, allowing electric vehicle drivers to drive up, plug in and pay automatically without the need for special cards.

What barriers are there to co-locating charging with existing infrastructure (for example carparks or service stations) compared to standalone charging stations?

4.1.7 The co-location of charging stations at service station’s forecourts as a part of fuel wholesalers and large independent retail chains’ business model is unlikely in the near future. As consumers/industry shift to alternative fuels (electricity/hydrogen) for mobility and transportation purposes the wholesalers and independent retail chains will meet market demand and adjust their business models to include or invest in charging/refuelling stations. Anecdotally, some adjustment is underway now, with new service stations either opening or others being refurbished with the focus on consumer expectations around convenience and personalisation separate from fuel retailing. Escalating the pace of change will require government investment or incentives to business to help meet the upfront costs.

4.1.8 Over the long term, service stations may evolve into community hubs e.g.: with a fuel pump or two, charging and refuelling stations, a safe-mini playground for children, outdoor gym, convenience goods in a mini-supermarket with a delicatessen counter, cafeteria/restaurant, and maybe a franchise operation such as a Post Office and a meeting room. The focus will be a consumer centric model

as opposed to a vehicle centric model. Demographic movements away from inner-city areas to outer suburbs and rural and regional areas would augment the community hub concept. However, this market evaluation may take some time and may be a barrier to commercialising new fuels.

4.1.9 In the longer term, consumer expectation will be for public vehicle charging/refuelling stations, as a convenience, to be available at car parks. A barrier, however, is the consumer cannot leave the vehicle beyond the charge/refuelling time as it would make the station unavailable for other users. Car parks with a valet or an attendant to move the vehicle to a parking bay would be required.

4.1.10 Investments in public charging/refuelling stations by car park businesses would have to be long-term projects to obtain a commercial return. The return on capital would be slow as most customers would have charged their vehicles at home.

What information do businesses need to ensure an integrated charging network can be delivered across Australia?

4.1.11 Government information and messaging on emerging technologies and decarbonisation is fragmented and lacks co-ordination. The appointment of a Champion for alternative fueled vehicle industry and transformational technologies within government, and as a conduit for industry to engage on government policies, regulations, initiatives, programs, incentives to stakeholders, business and the public is needed.

4.1.12 Government must lead and provide industry/business with the suite and knowledge of policies/decisions (environment, taxation, incentives, programs, compliance etc.) to engender confidence to invest in the evolving innovations and technologies.

4.2 Early focus on commercial fleets

What are the main barriers to adding new vehicle technology into light and heavy-duty vehicle fleets?

4.2.1 The National Transport Commission is finalising its response to the Heavy Vehicle National Law consultation regulation impact statement. Submitters to that consultation identified flexibility in the vehicle standards regulations relating to the Australian Design Rules as a one such barrier e.g.: to align heavy vehicle width with international standards for the uptake of alternatively powered imported heavy vehicles particularly from Europe and the United States. European truck manufacturers have pledged to stop using diesel-powered trucks by 2040.

4.2.2 Hydrogen fuel cell power is more economically viable for heavy duty fleets operating long distance haulage, but the downside is its availability and cost, and the availability and safety of refuelling stations. Battery powered electric is limited to light vehicle fleets and shorter distances; its drawback for heavy duty fleets is the output relative to weight which restricts payload.

How could the Future Fuels Fund help address these barriers?

4.2.3 Investment in hydrogen fuel cell technology for mobility and transportation would have long term economic benefits particularly for its quick refuelling and long-range capabilities. Such investments would supplement the Queensland Government's Hydrogen Industry Development Fund which has a focus on hydrogen technologies related to mobility or transport sector projects.

In what ways (other than direct funding) could the Government assist businesses to increase uptake of new vehicle technologies in their fleets?

4.2.4 Possible ways for the Government to assist businesses to increase uptake of new vehicle technologies in their fleets include:

- (a) The abolition of the application of the luxury car tax on non-fossil fueled vehicles
- (b) A scheme similar to the Instant Asset Cash Write of program to apply over the entire budget cycle to assist business with fleet purchases or installation of charging infrastructure
- (c) Fiscal reform to replace petroleum excise duties; state road-user charges on EVs; and third-party insurance premiums
- (d) Significant incentives or exemptions on taxes associated with the purchase of the vehicle and FBT contributions

4.3 Improving information for motorists and fleets

What is the most important information to provide to motorists and fleets about new vehicle technologies and future fuels?

4.3.1 The Association notes the Green Vehicle Guide website will be redeveloped and expanded to include information about new light vehicle technology available to buy in Australia.

4.3.2 Information should be available to offset concerns about EV ownership. A recent Australian Automotive Dealers' Association (AADA) online survey of 500 new-car buyers and intending buyers by Zing! insights revealed significant concerns about purchasing an EV in the future. Almost seventy per cent cited the lack of charging stations and infrastructure; fifty-five per cent identified driving range; and forty-nine per cent indicated the cost the cars concerned. With more than fifty per cent of respondents either 'very likely' or 'quite likely' to consider buying an electric vehicle in the future.

4.3.3 A Deloitte 2021 Global Automotive Consumer Study found that 'People still want to see, touch, and smell, and drive a vehicle before they buy it.' That study indicated Australia's consumer concerns regarding all-battery-powered electric vehicles included: driving range 19%; lack of infrastructure 22%; cost/price premium 28%; time required to charge 12%; safety concerns 14%; lack of choice 4% and other 1%.

4.3.4 The provision of accurate information to abate concerns and encourage EV uptake is necessary. Ideally, it should promote the long-term environmental benefits from the uptake of cleaner fuel technologies by motorists and fleets for the economy and society.

What are the highest priority knowledge sharing areas for the economy and society to be targeted in future fleet trials?

4.3.5 Industry, business, households and individuals will want to know the cost of switching to non-fossil powered vehicles; the performance of the technologies that power the vehicles; their contribution to decarbonisation; and safety.

What additional guidance do businesses need on technical or taxation matters in relation to new vehicle purchases?

4.3.6 Business needs a settled taxation and incentive framework to provide confidence to invest in new fleets. We point again to the example of the successful Instant Asset Write of Scheme.

4.4 Integrating battery electric vehicles into the grid

What are the highest priority issues to consider when integrating large numbers of battery electric vehicles into the electricity grid?

4.4.1 The Paper points to the requirement for appropriate planning for large scale uptake of battery electric vehicles to prevent 'network congestion' in peak periods and increase costs to consumers.

4.4.2 There is time to prepare plans for the future uptake to prevent 'network congestion'. VFacts and 'CarAdvice' statistical data reveals there are 5,199 electric vehicles in Australia or 0.56 per cent of the new car market. Queensland, at December 2020, had 3,400 EVs on the road which equates to one in EV for every 1,526 people – the highest in the nation.

4.4.3 Forward planning should be a priority for EV power supply (such as battery) in the event of natural disasters - cyclone, storm, fire, flood etc. particularly for emergency vehicles.

What further action is needed to ensure consumers and the electricity grid can benefit from bidirectional charging technology?

4.4.4 It is noted that the Australian Government, with state and territory governments, tasked the Energy Security Board to develop a design for a two-sided electricity market that could enable distributed energy resources, including battery electric vehicles, to contribute to system security and reliability, while improving network efficiency.

4.4.5 An educational program should be available for consumers with solar about options to charge the EV vehicles at home.

What are the opportunities for tariff innovation or reform to support the rollout of public charging infrastructure?

4.4.6 See response to 4.1.5.

How could motorists be incentivised to charge their battery electric vehicles outside periods of high electricity demand to help keep prices low?

4.4.7 Queensland Motorists with a home solar system, arguably, are 'incentivised' to consider an EV due to high Feed-in-Tariffs. Queensland has more than 500,000 roof top solar systems installed across the state, and currently leads the nation solar penetration. The implementation of a road users charge similar to Victoria would dilute the benefit of the incentive. Under Victoria's model, charges will apply to light vehicles not predominantly powered by a fuel source subject to Commonwealth Government fuel excise, such as petrol, diesel or LPG. A 2.5 cent/km charge would apply to electric and other zero emission vehicles and hydrogen vehicles, and a 2.0 cent/km charge would apply to plug-in hybrid electric vehicles. Consideration could be given to a program similar to Small-scale Renewable Energy Scheme that applies to households and small businesses across Australia that install a small-scale renewable energy system (solar, wind or hydro) or eligible hot water system. A similar program could be applied to encourage motorists to install EV home chargers.

4.4.8 As people are using the cars during the day one solution is to encourage manufacturers to develop swappable batteries, so one can be charged during day while the other powers the car - an incentive is required as Australia's use of rooftop solar is unique and presents an opportunity to develop specific technology.

5. Supporting Australian innovation and manufacturing

What are Australia's market niches in future fuels to maximise high-value domestic and export outcomes?

5.1 Amidst the many projects either in the feasibility or development phase such as the Townsville Lithium-ion battery plant and the Gladstone hydrogen plant there are others undergoing research that may form a niche market. For example, the Brisbane based PPK group and its partner Deakin University are awaiting verification on its lithium sulphur (Li-s) battery project. The hope is that the Li-s battery will be superior to lithium-ion batteries in every way an electric vehicle battery is measured – energy, density, recharge time, mileage. The unverified research is that the Li-s will be at least three time superior. If verified it will be ‘world changing’ <https://www.ppkgroup.com.au/site/news-media/brisbane-company-poised-to-unveil--world-changing---technology-breakthrough>.

6. The MTA Queensland background

6.1 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.

6.2 There are some 15,000 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.

6.3 Australia’s first automotive hub, the MTA/Q, has been established in specifically designated accommodation at the corporate office. The hub is an eco-system that supports innovation for the automotive industry.

6.4 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 private automotive apprentice trainer in Queensland employing with trainers geographically dispersed across the State. The MTA Institute last financial year provided accredited courses to in excess of 1,600 apprentices and trainees.

Thank you for your consideration

Yours sincerely



Rod Camm
MTA Queensland Group Chief Executive Officer