THE *NEW VEHICLE* FUEL EFFICIENCY STANDARDS – CLEANER, CHEAPER & *SAFER* TO RUN CARS FOR AUSTRALIA – CONSULTATION PAPER

RACQ SUBMISSION

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INTRODUCTION

The Royal Automobile Club of Queensland (RACQ) is Queensland's largest member-owned mutual, and we exist solely for the benefit of our nearly 1.8 million members. Throughout our 118-year history, we have actively engaged with Government in the interests of our members, sharing our expertise and recommendations on a wide range of policy areas including road safety, transport and infrastructure, natural hazard resilience, and disaster response. Our membership makes up a significant portion of Queensland's population, and we have a presence in more than 60 percent of Queensland homes.

RACQ is well qualified to comment on all matters of road safety and mobility, and we bring a unique insight into how the laws, regulations and policies that are in place could be improved for the benefit of road users, industries, and the broader community. Accordingly, we make this submission to The *New Vehicle* Fuel Efficiency Standard – Cleaner, Cheaper *and Safer* to Run Cars for Australia – Consultation Paper, providing comments and recommendations we believe will assist in developing the standard.

Queensland is the most decentralised mainland state with large populations residing in dispersed towns and cities and in many remote communities. Queensland is also Australia's favourite long-distance road and adventure tourism state. RACQ advocates for practical and affordable ways to address decarbonisation while maximising benefit to our members and their diverse needs. Together, we must get the transition right, in a fair and balanced way, or risk disenfranchising significant cohorts of the population, be they income-based, industry-influenced, age, socio-economic or geographic.

RACQ does not support, and sees little benefit in, setting a specific longer-term emission standard target or a policy banning the sale of new ICE vehicles at some future date. Such specific targets and future bans are politically divisive while having limited practical benefits. It is important for the community to be informed that the FES will only apply to new vehicles. Essential to this is to recognise the differing global market production and supply capacity between new passenger and light commercial vehicles – meaning a need for two new vehicle FES streams: one for Passenger Vehicles (including small, medium and large SUVs); and the second for Light Commercial Vehicles (LCVs) including heavy 4WDs. The key is to replace the market demand for petrol and diesel vehicles based on the available supply of better vehicles that are safer, lower cost and fit for purpose.

A robust fuel efficiency standard should be the cornerstone of any vehicle decarbonisation framework. The standard should set an ambitious target for the reduction in CO_2 emissions per kilometre, with a gradual but significant decline in the target level in the coming years to ultimately align with comparable countries' standards. A well-designed standard that boosts new efficient and safer vehicle supply will ultimately deliver a lower total cost of ownership for motorists.

RACQ believes the key aim of the FES is to reduce vehicle emissions through increasing supply and affordability and therefore meeting demand for electric vehicles (EVs) and other zero and low emission vehicles (ZLEVs). For RACQ members, the FES should ensure that they have greater choice of affordable lower emission *and* lower cost-to-operate vehicles. Bringing down the cost of transport is important to a dispersed and large state such as Queensland. The FES needs to factor in the diverse needs of Australians, including those living in regional and remote areas and provide a pathway to ensure the benefits of low and zero emission technologies such as electrification are provided to all Australians.

Furthermore, a sensibly designed FES should be seen as a vehicle and road safety initiative as well as a net zero reform. Stronger emission regulations will incentivise the Original Equipment Manufacturers (OEMs) – the vehicle manufacturers – to import new technology with improved safety features into Australia. OEMs are unlikely to introduce new safety technology in future ICE vehicles for safety conscious developed nations that have all largely committed to EV adoption. By continuing to import ICEs the Australian fleet will increasingly lack the advanced safety features present in the EV models. A sufficiently ambitious FES will ensure new cars imported to Australia are safer, cleaner, and cheaper to run.

RACQ's key principles on the development of the FES are:

1. FES should recognise the different transport and mobility needs of differing states and regions; it must work for the bush and for the inner city.
2. FES must be properly tuned to Australia's new and second-hand vehicle needs. In some vehicle segments moving too slow will see us limit supply of efficient vehicles and lead Australia to be a

dumping ground for inefficient, less safe, higher-cost vehicles; moving too fast in some segments will unnecessarily result in higher vehicle costs where no higher efficiency options exist.

3. FES should be technology agnostic, recognising that while there will be a range of technology solutions, electrification will be the main driver of emissions reduction and affordability.

The FES policy needs to be seen within the context of the suite of policy actions required to transform and decarbonise road transport. Globally, the strategy to decarbonised road transport is largely the combination of the following:

1. Ambitious tightening of FES for new vehicles to guide OEMs to transition to EV and ZLEV production;
2. Purchase incentives on new EVs to ensure affordability and consumer demand;
3. Industry support strategies to support OEMs scaling up manufacturing of EVs and battery production to meet demand and policy requirements; and
4. Government funding for fast charging infrastructure.

In Australia, the introduction of the FES would complement Federal and State government purchase/lease incentives and charging infrastructure support and will encourage the uptake of EVs and ZLEVs through improving affordability and availability of low emission transport.

The FES and other EV policies need to achieve two essential outcomes:

1. Increase supply of more affordable, new EVs and ZLEVs to the Australian market; and
2. Ensure timely turnover of new EVs and ZLEVs into the second-hand market.

There is sufficient global EV supply capacity for Australia. The issue is that EV capacity is not being allocated to the Australian market. The International Energy Agency[1] estimated 10 million plug-in EVs and Plug-in Hybrid EVs (PHEVs) were manufactured in 2022 out of 66 million vehicles worldwide. EV production is expected to grow to 14 million in 2023. Just over one million vehicles were sold in Australia in 2022, making Australia 1.5% of the global market. If this translated to EV sales, then EV sales in Australia should be 150,000 and not the 39,347 EVs and PHEVs that were actually sold.

As more than three times as many consumers buy second hand vehicles than new, the key to affordability is ensuring timely increased supply of EVs and ZLEVs to the second-hand market, while not inflating the price of new vehicles. The benefit of these policies will be realised when EVs and ZLEVs become the more affordable option for buying and owning second-hand vehicles.

RACQ'S RECOMMENDATIONS for an Australian FES are:

1. Set the specific FES targets in five-year blocks starting as soon as possible, and a standard tightening review starting in year three to determine market and technology responses;
2. Align Federal Government FES targets with Queensland and other State Government EV targets, such as 50% of new passenger sales being zero emission by 2030[2]
3. Set a non-legislated pathway intention for the FES to achieve parity with major developed nation trading partners (US, EU and Japan) within the 2030s;
4. Review existing Fringe Benefits Tax (FBT) incentives within the first five years of the strategy, however, immediately restrict the full Fringe Benefits Tax (FBT) exemption and vehicle depreciation to 3-years (to encourage lease turnover and increased supply to second-hand market);
5. Provide for two vehicle streams: 1 for Passenger Vehicles (including small, medium and large SUVs - the MA category as defined by the Australian Design Rules); and 2 for Light Commercial Vehicles (LCVs) including heavy 4WDs (the NA and MC categories);

[1] https://www.iea.org/reports/global-ev-outlook-2023
[2] QLD https://www.qld.gov.au/transport/projects/electricvehicles/zero-emission-strategy ; NSW https://www.nsw.gov.au/driving-boating-and-transport/nsw-governments-electric-vehicle-strategy ; Victoria https://www.energy.vic.gov.au/renewable-energy/zero-emission-vehicles

6. Provide an initial five-year super credit (1.25) for small vehicles with a fuel efficiency of 6 litres per 100km or less (with a 5-star ANCAP rating);
7. Provide incentive super credits that encourage innovation, particularly in the harder to electrify Light Commercial Vehicle (LCV) segment; and
8. Develop industry policy strategies on innovation in the LCV segment, with a focus on opportunities to couple Australian R&D on electric LCV conversions with Australia's LCV manufacturing regional neighbours.

RACQ POSITION ON FUEL EFFICIENCY STANDARD REQUIREMENTS

The FES should be designed as a series of five-year blocks. The first targets should be set at the end of the initial five-year block, which should start as soon as possible. A mandatory review should be set for year three of the first block (and subsequent blocks), at which time the standards could be recalibrated for the second (and following) five-year block.

RACQ recommends the FES should aim to align with the Queensland[3] and other state government targets of 50% of new passenger vehicle sales being zero emission vehicles by 2030.

In setting the FES, the Government must balance the need to meet Australia's transport task, while encouraging and facilitating a just transition through electrification. In providing for a just transition, the CO_2 standard should vary between vehicle segments. We recommend that two standards be implemented: 1 for passenger vehicles (including small, medium and large SUVs - the MA and MB categories as defined by the Australian Design Rules); and 2 for Light Commercial Vehicles (including heavy 4WDs - the NA and MC categories). The difference recognises that availability of low emission options for LCV/heavy 4WDs will be slower to arrive in Australia, compared to passenger vehicles.

In the short to medium-term, the main issue for the uptake of EVs and ZLEVs will be supply. The FES will be most useful in the next five to 10 years to ensure OEMs prioritise Australian consumers with adequate supplies of EVs and ZLEVs. In the medium-term (10+ years) the global vehicle industry's full transition to EVs will ensure adequate supply. In the medium and longer-term (10-15 years+) consumer preferences and the superiority of electric vehicle technology is expected to become the determining factor in high levels of EV uptake and the FES will gradually become less of a driver in achieving zero emissions in road transport.

PASSENGER VEHICLE STANDARD

The initial five-year block should start no later than 2025. This would see Australian emissions from passenger vehicles follow the current trajectory until 2025 (or thereabouts). The standard should strengthen over the duration of the initial five-year block. RACQ would expect the recalibrated standard for the second five-year block, for passenger vehicles, to reach a standard comparable (contingent on the specifics of the Australian emission measurement methodology) with the US/EU standard. This should occur within the 2030s.

RACQ expects the standard will have the greatest effect on availability and choice of vehicles in the next five years. We also believe that market demand and consumer preference will increasingly drive uptake of EVs in the later years, supporting the FES policy settings.

An estimation of the reasonably plausible standard curves has been added to the chart below. To achieve the maximum benefit RACQ suggests the FES for passenger vehicles should fall within the shaded area. The standard for the first five-year block (and subsequent blocks) should set a specific target, not a range of values.

[3] For Queensland transport emission reductions and the need for consistency in policies it is also worth noting the commitment to 'a climate positive' Olympic and Paralympic Games.

Figure 1

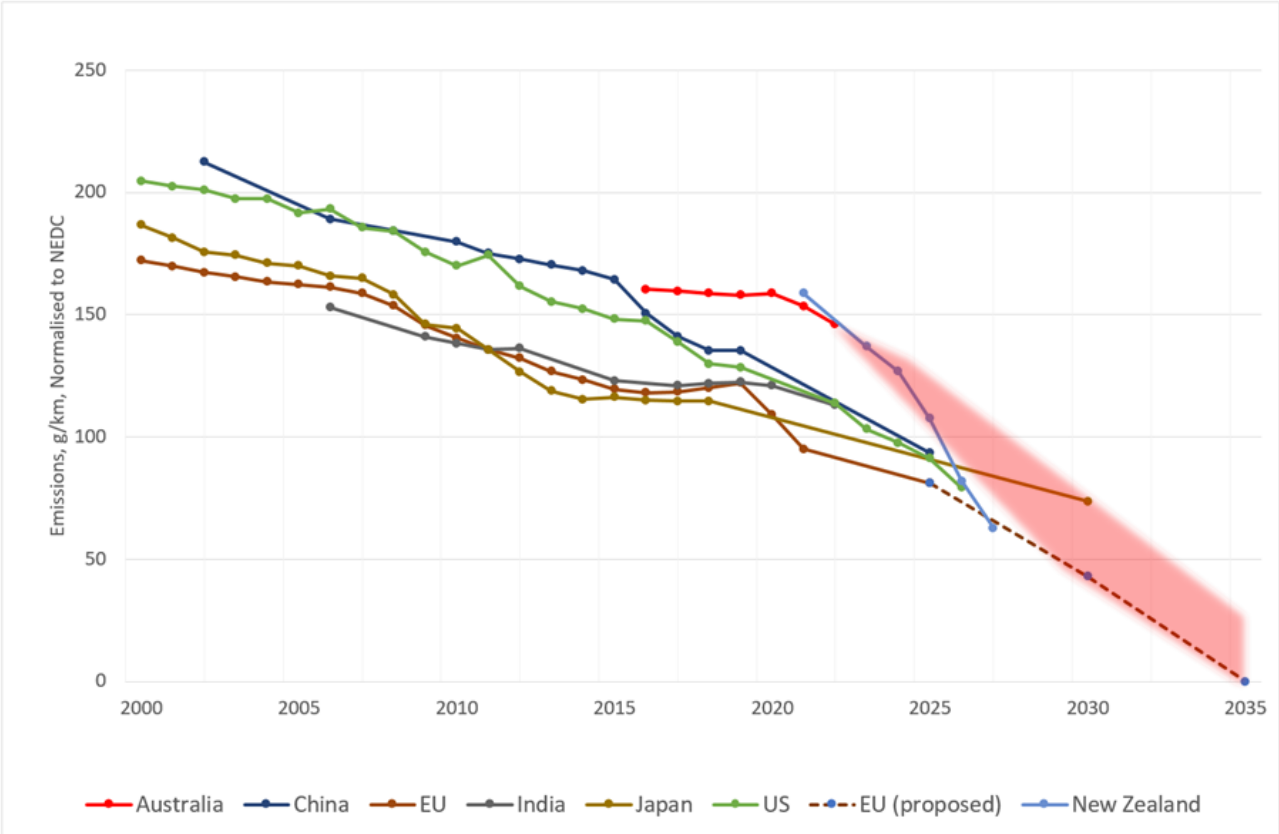

Figure 1: Proposed indicative fuel efficiency targets for passenger vehicles
Source: RACQ projected FES targets, overlayed on Australian Government, "The Fuel Efficiency Standard – Cleaner, Cheaper to Run Cars for Australia", Chart 1: International passenger car emission trajectories

LIGHT COMMERCIAL VEHICLE (LCV) AND 4WD STANDARD

RACQ's research indicates the present lack of purpose-built EVs in the LCV segment will limit the effectiveness of the FES to 2030, justifying a separate FES stream for LCV. The proposed line of LCV (the red shaded area in Figure 2 below) plots a similar trajectory to passenger vehicles, but with higher values recognising the greater size of these vehicles and limited availability of ZLEV LCVs out the end of the first five -year block.

This trajectory would see the LCV standard follow the current trajectory until 2025, before trending more strongly down from 2025 to 2035, as Australia is able to increase supply of light commercial/4WD EVs and ZLEVs.

For the LCV stream to deliver higher-emission reductions there will need to be policy actions outside of the FES, notably in industry development and engagement which is addressed later in the submission.

Figure 2

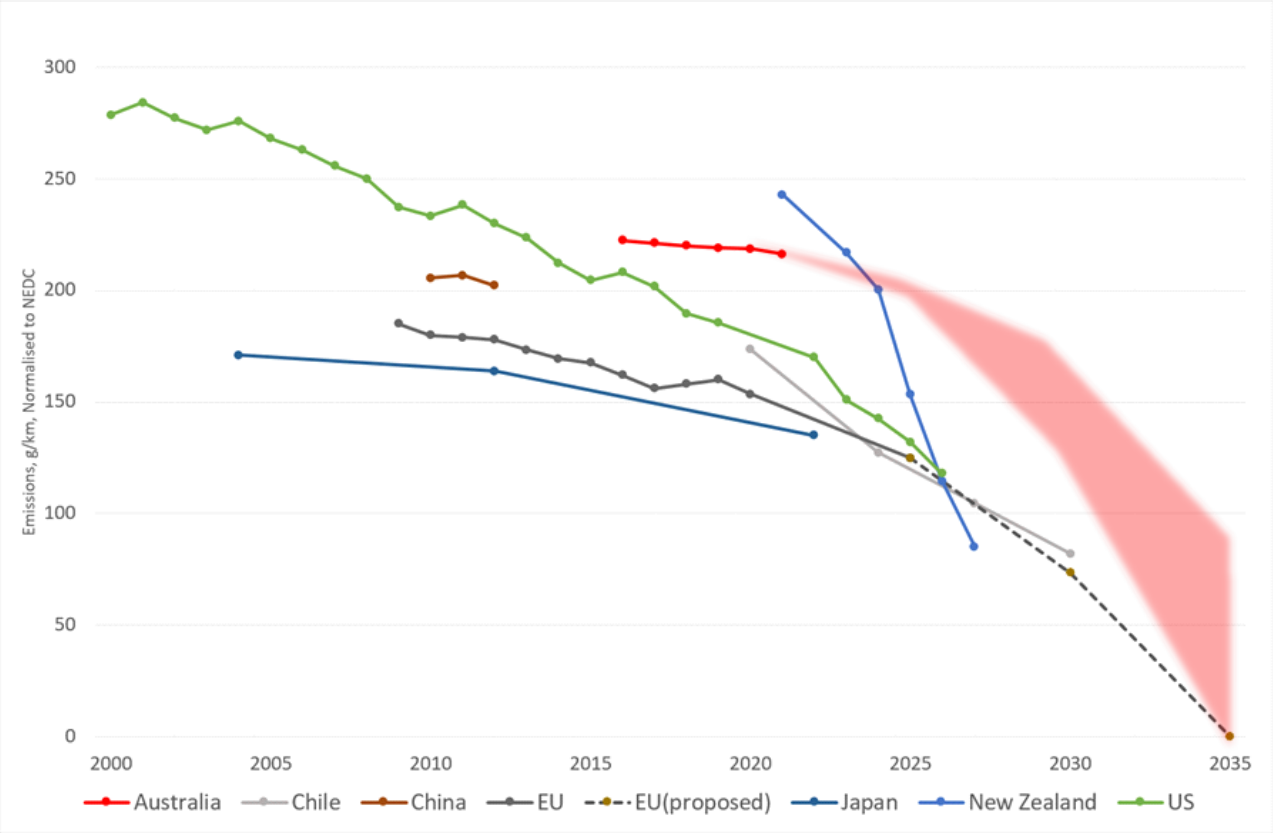

Figure 2: Proposed indicative fuel efficiency targets for light commercial vehicles.

Source: RACQ projected FES targets, overlayed on Australian Government, "The Fuel Efficiency Standard – Cleaner, Cheaper to Run Cars for Australia", Chart 2: International light commercial vehicle emission trajectories

TARGET TIMELINES

A target for the first five-year block should be mandated in the FES, and a non-legislated pathway intention should be included in each subsequent block. A review date should be set for year three of the first (and subsequent blocks), with the ongoing set of targets and intentions confirmed at that time.

No timeline for the end of the sale of ICE vehicles or for a long-term zero grams target should be set as they are likely to cause unnecessary community concern and anxiety and serve little practical use.

MEASURING EMISSIONS

The methodology used to measure CO_2 emissions/fuel efficiency will affect the target and standard. Current international standards commonly use the New European Driving Cycle (NEDC - ADR-81/02). This method is no longer best practice and does not provide results consistent with real world measurements. This is because OEMs have been able to "game" the NEDC, e.g., the VW diesel-gate scandal. The Worldwide Harmonised Light-Duty Test Procedure (WLTP) is considered to be best practice and should be used as testing becomes available. The CO_2 emission targets may need to be revised considering this change in measurement methodology.

Both the NECD and the WLTP require real world verification and validation. The AAA's Real World Emissions Testing program should be used to validate and verify the laboratory tests.

CREDITS, BONUS CREDITS AND SUPER CREDITS

A system of credits, bonus credits and super credits should be implemented in the first five-year block to reward innovation and recognise off-cycle emission reduction technologies, and to recognise lack of market availability of EVs and ZLEVs in some segments.

For example, a short to medium range electric LCV with an e85 range extender would be eligible for credits. Other innovative applications to decarbonise difficult use cases should be considered.

Like the US fuel efficiency standards, credits should be given for fuel saving technologies that are not captured in the ADR-81/02 (and NEDC), e.g., high-efficiency air conditioners. The fuel-efficiency lab tests (ADR 81/02 and NEDC) do not require air conditioner use, and therefore high efficiency air conditioners are not captured in the fuel use measure but will provide real-world benefit in Australia.

Other off-cycle fuel saving technologies should also be considered. These off-cycle credits should be scaled down as monitoring methodologies better capture the effects of these technologies in the measured drive cycle.

LIGHT PASSENGER CAR CREDITS

Small-engine petrol cars (Light Passenger Cars) should be eligible for credits, bonus credits and super credits in the first five-year block.

Light passenger cars are a mature market in Australia. Most manufacturers produce several vehicle variants for the Australian market. Examples include the Toyota Yaris, the Mazda 2 and Kia Picanto (presented in Figure 3). This segment sits just below the small car segment in Australia.

Globally, with the exception of China (with home market vehicles only), there are no affordable light (as distinct from small) EVs in market. OEMs have focused EV manufacturing supply to the vehicle segments with higher price margins (to maximise investment returns), which has resulted in limited availability of light passenger cars in the Australian second-hand market.

With an average combined cycle fuel efficiency of less than six litres/100km (NEDC) or 136 grams CO_2/km, increased use of light passenger cars provides a low-cost pathway for reduced emissions. In 2020, the average fuel efficiency for passenger vehicles was 11.5 L/100km. (Note: the average efficiency of 11.5 L/100km was the measured real world fuel use, not the NEDC reported results. For ICE passenger cars there is typically a 10% to 20% difference between NECD and real-world results.)

These vehicles are most suited for urban driving tasks. The 2020 ABS Survey of Motor Vehicle Use shows urban driving accounted for 81% of passenger vehicle VKT (Vehicle Kilometres Travelled) in Queensland in 2020. That year, Queensland passenger vehicles travelled a total of 32,561 million kms, of which 26,370 million kms was in urban areas. Nationally, passenger vehicle VKT were 162,983 million kms and urban VKT 125,100 million kms, or 76.7%.

Light and small cars are more popular in the second-hand market compared to the new market, and limited supply in the second-hand market leads to price premiums. Anecdotal evidence suggested they are popular with inexperienced driver and older driver cohorts – cohorts that generally have lower incomes and value the ease of driving a smaller footprint vehicle.

To promote this cost-effective pathway to reduce CO_2 emissions, RACQ suggests the light car segment, with a combined NEDC fuel efficiency of six litres/100km with a ANCAP rating of 5 stars, should receive an extra 0.25 super credit in the FES within the first five-year block.

This benefit should not include small engine diesel vehicles due to their higher noxious emissions, notwithstanding their favourable fuel efficiency and CO_2 results.

Figure 3

Model Release Year	Make and Model	Engine Size (Litres / cylinders)	Trans-mission	New cost approx	ANCAP Rating	Fuel Type	CO_2 Emissions Combined	Fuel Consumption Combined
2016	Toyota Yaris	1.5/4cyl	Manual	$28K	5 Star	Petrol 91RON	134	5.8
2014	Mazda 2 Neo	1.5/4cyl	Manual	$26K	5 star	Petrol 91RON	126	5.4
2020	Kia Picanto	1.2/4cyl	Manual	$21K	4 star	Petrol 91RON	117	5.0

Figure 3: Light Passenger Vehicle Costs and Emissions
Source: Australian Government "Green Vehicle Guide, and OEM/vehicle dealer websites.

WHY THE FES WILL SUCCEED MORE READILY WITH THE PASSENGER VEHICLE STREAM

(Compared to the Light Commercial Stream)

The passenger EV market is maturing rapidly as Tesla and other, mainly Chinese, EV manufacturers scale up their production of multiple EV passenger models built on EV dedicated platforms. Dedicated EV platforms are the key to delivering increasing affordability. Other OEMs are also scaling EV production of passenger EVs.

The 2023 first quarter car sales figures revealed full battery EV sales had overtaken those of petrol-driven cars in the medium-sized car category for the first time on record.[4] The AAA EV Index also showed for the first time, quarterly Battery Electric Vehicles (BEV) sales exceeded the sale of conventional petrol hybrids nationally – 17,396 compared with 16,101.

The majority of top selling passenger EVs in Australia are now purpose-built dedicated platform EVs (shown in Figure 4 **in bold**):

Figure 4

Make and Model	Sales in CY 2022
Tesla Model 3	**10,877**
Tesla Model Y	**8,717**
BYD Atto 3	**2,113**
Polestar 2	1,524
MG ZS EV	1,119
Hyundai Kona Electric	1,096
Volvo XC40	983
Hyundai IONIQ 5	**756**
Mercedes-Benz EQA	**624**
BMW iX3	593
Kia EV6	**564**

Figure 4: Vehicle Sales by Make and Model for CY 2022
Source: Federal Chamber of Automotive Industries, VFACTS 2022 Annual Sales Data.

The examples in Figure 5 below are popular purpose-built dedicated platform EVs (highlighted in **bold**), compared to similar specification comparative ICE and hybrid vehicles (i.e., similar performance, TRIM, ADAS, wheelbases, interior space[5]). The purpose built EVs (the Tesla Model 3 and BYD Atto 3) are lower in

[4] AAA EV Index https://data.aaa.asn.au/ev-index/
[5] Though brand value differential isn't factored in (which would possibly justify higher value for Tesla and Toyota, and lower for the BYD as a new vehicle brand).

price difference and the BYD was lower priced compared to two of the equivalent petrol or hybrid vehicles (the RAV 4 Hybrid and ICE).

Also included is a comparison with an older design EV, one built on a petrol vehicle platform, the Kia Niro (in **bold**). This is again compared to the ICEs of similar specifications and size. This shows a sizable price difference between older non-purpose designed EVs and petrol models. Prices are manufacturers' recommended retail prices before on road costs.

Figure 5

Make, Model and Other Details	Manufacturer's Recommended Retail Price	ANCAP star rating
Medium Sedans		
Tesla Model 3 RWD Sedan Standard Range (EV)	**$61,300**	**5**
Mazda 6 G25 Atenza 2.5T 6sp Auto Sedan (ICE)	$50,840	5
Honda Accord VTi LX 1.5T CVT Sedan (ICE)	$57,900	-
Honda Accord VTi LX Hybrid 2.0 Auto Sedan (Hybrid)	$61,900	-
Toyota Camry SL Hybrid 2.5 CVT Sedan Hybrid (Hybrid)*	*$46,990*	*5*
Mediums SUVs		
BYD Atto 3 Hatch Long Range (EV)	**$51,011**	**5**
Toyota RAV 4 Edge Hybrid 2.5 CVT AWD (Hybrid)	$55,150	5
Toyota RAV 4 Edge 2.5 CVT AWD (ICE)	$53,020	5
Mazda CX5 G20 Touring 2.5 6sp Auto AWD (ICE)	$44,000	5
2023 Honda CR V VTi L 1.5T Petrol CVT AWD Wagon (ICE)	$46,200	5
Small SUV and Passenger		
Kia Niro S Pure Electric Hatch (EV)	**$65,300**	**5**
Kia Niro S Hybrid 1.6L 6spd DCT FWD Hatch (ICE)	$44,380	5
Toyota Corolla SX 2L CVT FWD Hatch (ICE)	$31,280	5
Mazda 3 G20 Touring 2L 6spd Auto FWD Hatch (ICE)	$32,210	5

* Note: The Camry comparison for Tesla Model 3 is of a lower spec

Figure 5: EV vs ICE vehicle MRRP and Acceleration comparisons, matched by size and specification
Source: RACQ Vehicle Operating Cost Survey and OEM websites.

It is worth noting that these are the price differentials in 2023 before increased competition, further improved EV/battery technology and the start of manufacturing scale. This means that as market competition increases, dedicated platform EVs manufactured at scale are likely to improve and further reduce prices (i.e., higher battery density range can be maintained with smaller volumetric battery packs at a lower cost). It is likely that we will see price equivalency between comparative new model EVs and ICE vehicles within the next one to five years, particularly noting that VW and Volvo are indicating they will be at equivalency by 2024/2025. A key caveat is that these comparisons are within particular vehicle segments and generally at higher trim and specifications. Increased supply and competition across different segments and trim/specifications will need to be achieved before there is broad affordability in the new sales market.

SECOND HAND MARKET SUPPLY

The policy settings for supporting uptake of EVs and ZLEVs need to address vehicle availability and affordability in the second-hand vehicle market. It is here where most Australians buy their cars, especially younger drivers and those on lower incomes.

The only sizable pathway into the Australian second-hand market is through the new car market. Government support of purchasing a new EV or ZLEV should therefore be designed to encourage a fast turnover of

vehicles into the second-hand market. This could be achieved by limiting the Federal Government's full Fringe Benefit Tax benefits to the first three years of ownership (and declining thereafter).

Boosting the supply of EVs and ZLEVs in the second-hand market will lead to cheaper and more efficient vehicles. RACQ research suggests the limited supply of more energy or fuel-efficient vehicles in the second-hand market leads to a price premium on these vehicles. Increasing the supply of these vehicles will both reduce the price premium on the more energy or fuel-efficient vehicles and the price of all vehicles.

In addition to increasing supply and purchases of second-hand EVs and ZLEVs, this policy will reduce the cost of second-hand ICEs. Currently, a price premium can be observed on the more fuel-efficient second-hand ICE vehicles, suggesting there is unmet market demand for fuel-efficient and low carbon vehicles. Bolstering supply of the most fuel-efficient and lowest-carbon vehicles will reduce this price premium and aid affordability of EVs, ZLEVs, and more fuel-efficient ICEs.

FULL SUITE OF EV POLICIES

Industry support strategies to enable supply of electric Light Commercial Vehicles.

To ensure EV supply, some countries are aligning EV subsidies with local EV manufacturing requirements, government support for research and development, and industrial transformation. Australia does not have a mass passenger vehicle industry, so we are essentially reliant on 100% imported vehicles. As such, we are unlikely to receive priority supply of EVs in segments where manufacturing scale is still being developed. Notably, this is the case with LCV and 4WD vehicles. As a result, FES alone is not, in the short term (out to 2030), going to enable or ensure supply of the LCV segment to meet the necessary fuel efficiency target.

To deliver on the LCV reduction target will require a different approach to industry policy that is also encapsulating our major vehicle supply partners, notably Thailand and into the future China. The majority of Australia's light commercial vehicle supply (e.g., Toyota Hilux, Ford Ranger) is imported from Thailand. Thailand is the manufacturing and assembly location for a number of global OEMs. However, Thailand is not the centre of new vehicle research and development.

The key issue for the FES is that there is a seven-year new vehicle design process, factory builds/retooling, production scaling to mass consumer supply. As the design phase is still occurring in the popular mid-size utility segment that dominates the Australian LCV segment, there is unlikely to be production and mass consumer supply before 2030, unless it is coming from different automakers and different countries.

There is however an opportunity using Australian R&D in the LCV segment to electrify existing vehicle designs and platforms including the Hilux, Ranger etc (Tembo[6], Roev[7]). While driving range could not be classed as 'long' – modified electrified LCVs are able to achieve a range of 300km to 400km. With the addition of ethanol or biofuel range extenders these vehicles could have practical ranges of 600km plus with capacity for 'Vehicle to Load' providing electricity supply in climate and other disasters. This electricity resilient vehicle product would be ideally suited to Thailand mid-size LCV segment export markets, which include ASEAN/Australia, Oceania, Africa and the Middle East.

The approach to this strategy would be to work with Thailand manufacturers and their OEM partners to develop prototyping and demonstration and production capacity in Australia. The next step would then be to scale production through manufacture of 'rollers'[8] in Thailand for export to Australia for post OEM fitting of battery, electric motors and associated systems, including where ethanol range extenders are required. This would provide an opportunity for Australian-made batteries take-up. The subsequent opportunity for Thailand, in partnership with ongoing Australian R&D in LCVs and batteries would be full Thailand production of OEM electric mid-size LCVs.

[6] https://vivopower.com/
[7] https://www.roev.com/
[8] 'Rollers' being new vehicle that roll off the production line rather than drive as they are not factory fitted with engines and associated systems such as exhaust. They are subsequently fitted by after manufacturing suppliers with battery and motors.

RESPONSES TO QUESTIONS IN THE CONSULTATION PAPER

GENERAL QUESTIONS

1. **Are these the right guiding principles? Are there other principles that you think we should keep in mind?**

The principles of *effective, equitable, transparent, credible, robust and enable* capture most of the key intentions of the FES. RACQ would suggest that *affordable* and *safe* be added to the headline principles, but we acknowledge these are covered in the explanatory text in the other principles.

2. **Are there any design assumptions that you think will put at risk the implementation of a good FES for Australia?**

As per the AAA submission.

3. **Are the exclusions for military, law enforcement, emergency services, agricultural equipment and motorcycles the right ones?**

As per the AAA submission. Further RACQ would urge the Federal Government to facilitate advanced biofuel/electric options to decarbonise specialist and hard-to-electrify vehicle applications.

4. **Are there any particular FES features that you think we need to take particular care with?**

As per the AAA submission.

5. **What principles should we consider when setting the targets?**

As per the AAA submission.

6. **How many years ahead should the Government set emissions targets, and with what review mechanism to set limits for the following period?**

RACQ would suggest that an emissions target should be set in a series of five-year blocks, with a mandated review required in the third year of the block.

7. **How should the Government address the risks of the standard being found to be too weak or too strong while it is operating?**

As per the AAA submission.

TECHNICAL QUESTIONS

1. **What should Australia's CO_2 FES targets be?**

RACQ would suggest targets be set cognisant of Queensland, NSW and Victorian Government EV sales targets for 2030.

2. **How quickly should emissions reduce over what timeframe?**
3. **Should the Australian FES start slow with a strong finish, start strong, or be a straight line or take a different approach?**

In response to Technical Questions 2 and 3, RACQ would urge a FES for passenger vehicles to begin with an initial one to two-year slow start, then ramping up within the first five-year block (with a target being set for the end of the first five-year block). The FES for LCVs should start slower, reflecting limited supply.

RACQ would not suggest the targets be set past 2030, rather they should be reviewed in the third-year post implementation and reset at that time.

4. **Should an Australian FES adopt a mass-based or footprint-based limit curve?**

As per the AAA submission.

5. **If Australia adopts a mass-based limit curve, should it be based on mass in running order, kerb mass, or another measure?**

As per the AAA submission.

6. **Should Australia consider a variant of the New Zealand approach to address incentives for very light and very heavy vehicles? If so, noting that new vehicles that weigh under 1,200 kg are rare, where should the weight thresholds be set?**

As per the AAA submission.

7. **Should an Australian FES adopt two emissions targets for different classes of vehicles?**

As per the AAA submission, noting the terminology used in our submission is: ADR category MA – passenger vehicles (including small, medium and large SUVs), and categories NA & MC – Light commercial and heavy 4WD vehicles.

8. **Is there a way to manage the risk that adopting two targets erodes the effectiveness of an Australian FES by creating an incentive to shift vehicle sales to the higher emission LCV category?**

RACQ acknowledges the risk that a separate standard for LCVs could erode the effectiveness of the FES.

To mitigate this, RACQ urges the Government to develop policies to support the innovation in the LCV segment notably around electrification of existing LCV designs and integration of ethanol range extenders.

9. **Is there anything else we should bear in mind as we consider this design feature?**
10. **Are there other policy interventions that might encourage more efficient vehicle choices?**

In response to Technical Questions 9 and 10, RACQ would urge the Government to consider policy support for zero carbon, advanced biofuels, renewable and synthetic liquid fuels to complement electrification in hard-to-electrify applications. The FES should be designed to capture ICE engines designed to run exclusively on low-carbon liquid fuels (such as E85, E98 and other high percentage biofuel blends).

RACQ further supports AAA response to Q.10

Technical Questions 11 to 31 – RACQ will not be providing a response for these questions and would refer the Government to the AAA's submission.