



RACQ SUBMISSION

CLEANER, CHEAPER TO RUN CARS: THE AUSTRALIAN NEW VEHICLE EFFICIENCY STANDARD— CONSULTATION IMPACT ANALYSIS

4 March 2024



THE RACQ POSITION ON THE NEW VEHICLE EFFICIENCY STANDARD

The Royal Automobile Club of Queensland (RACQ) supports the Federal Government's proposed New Vehicle Efficiency Standard (NVES) subject to some modifications. Specifically, RACQ supports Option B, however Light Commercial Vehicles (LCV) should receive more flexibility and the Federal Government should commit to supporting innovation in the LCV segment and biofuels industry development.

The NVES will overall, be good for Australia and good for Queensland. It will help enable more cleaner cars, safer cars and cars that are cheaper to run coming to Australia. In a current state where land transport represents 10% of national emissions, we need a well-designed system that encourages supply of both affordable electric vehicles (EVs) and lower emission internal combustion engine (ICE) vehicles to the Australian market, providing for a lower total cost of ownership to motorists.

When RACQ lodged our submission to the first consultation last year, we stated our key principles were:

1. The NVES 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. The NVES 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. The NVES 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.

These principles still hold true today and we will continue to assess policy settings for any standard through these lenses. Importantly, RACQ needs the NVES to work for Queenslanders, particularly regional Queenslanders who have a relatively heavy reliance on the types of vehicles that will take longer to viably electrify at scale. Australia cannot afford to have an ill-advised design impact on our state's critical role in the national economy, nor can we have it unnecessarily diminish Queenslanders' confidence and trust in the transition we need to have to reach net zero. The treatment of 4WDs and utes must be carefully considered.

The proposed NVES standard sets ambitious targets for the reduction in CO₂ emissions per kilometre with a gradual but significant decline in the target level in the coming years to align with the U.S., as the comparable country standard. RACQ believes the key aim of the NVES should be to reduce vehicle emissions through increasing supply of affordable lower emission vehicles to the new and subsequent second-hand car markets while meeting consumer demand for safe, affordable and attractive vehicles. The challenge to the proposed NVES is whether there will be both sufficient supply **and** consumer adoption (i.e. will the policy help meet consumer needs).

The existing supply issue, in the absence of a NVES, is that global fuel efficient and electric vehicle capacity is not being allocated to the Australian market. EV production is expected to grow to 14 million in 2023 and total light vehicle production is expected to be 86 million. Australia saw 1.2 million vehicles sold in 2023, which is about 1.4% of the global market. If that was translated to EV sales, then 2023 EV sales in Australia should be 195,000 and not 87,000. The fact that Australians are only driving half the number of EVs than we should is concerning to RACQ because we see low emission vehicles as playing a critical role in our net zero journey, cost of living pressures and also improving road safety in Australia. The implementation of the NVES would address this supply problem.

However, the NVES policy should be viewed within the context of the suite of policy actions required to transform and decarbonise road transport. Globally, we see countries implement a combination of the following policies:

1. An NVES to guide OEMs to transition to the supply of lower emission vehicles to market,
2. Incentives to buy new electric vehicles to ensure affordability and consumer demand,
3. Government funding support for fast charging infrastructure, and
4. Industry support strategies to assist OEMs to scale up manufacturing of lower emission vehicles, notably with support for electric vehicles and battery production.

RACQ also urges the Federal Government to encourage innovation (with electric-biofuel vehicles in the LCV segment where electric vehicles are less suited) and provide targeted support for biofuels industry development.

Passenger Vehicle Standard

For Option B to be achievable for Passenger Vehicles there would need to be both an increase in supply of lower emission vehicles and consumer acceptance. Modelling from The Centre for International Economics (CIE), and commissioned by the AAA, estimates the Government's preferred NVES would require 45 per cent of new passenger vehicles in 2029 to be EVs. RACQ believes the evidence supports Option B being realistic and achievable, with an increase in supply of affordable low emission vehicles and consumer acceptance.

To achieve affordability there would need to be continued EV technology improvements and battery cost reductions. Most industry predictions agree that light passenger EVs globally will meet broad market purchase parity with ICE vehicles within the next decade without subsidies, and RACQ believes this can be treated with confidence. Vehicle cost and ownership research conducted by RACQ is already showing that light passenger EVs in the Australian market are becoming increasingly more affordable in terms of both upfront purchase and total cost of ownership¹. This includes some EVs reaching price parity well within a 5-year vehicle ownership period, and in some cases reaching parity in terms of up-front purchase price (with Government EV subsidies and tax benefits).

For new vehicles purchased in 2023, and where they are purchased with a conventional finance model of a vehicle loan from a bank, many new EVs are competitive with their ICE equivalent and often cheaper when purchased on a novated lease. In the small car category, RACQ's vehicle cost report found the GWM Ora (Standard Range) and the MG ZS Excite (Standard Range) in the small SUV category, and the BYD Atto 3 (Standard Range) in the medium SUV category were all cost competitive with their ICE equivalent using a conventional finance model. The range of EVs also continues to substantially increase this year, offering choice by cost, type and efficiency.

The table below is extracted from the RACQ Private Vehicle Expenses 2023 report². It shows three battery electric vehicles (BEV) being more affordable today than their ICE or Hybrid equivalent when purchased using a novated lease.

Novated lease expenses for selected models 2023

Vehicle	Post-tax monthly cost	Post-tax annual cost
BYD Atto 3 Standard Range Wagon - BEV	\$807.12	\$9,685.44
Toyota Corolla Cross GXL 2.0 Hybrid CVT FWD Wagon	\$971.37	\$11,656.43
Kia Niro S Pure Electric Wagon – BEV	\$1,002.36	\$12,028.27
Kia Niro S 1.6 Hybrid 6spd DCT Wagon	\$1,085.99	\$13,031.88
Tesla Model 3 RWD Standard Range Sedan - BEV	\$879.82	\$10,557.78
Honda Accord Vti-LX 1.5T CVT Sedan	\$1,299.53	\$15,594.32

The key cost component for EVs is the battery and the price of batteries is now predicted to decrease again following a spike in costs related to COVID supply constraints³. Battery pack prices, according to Goldman Sachs, are now expected to fall by an average of 11% per year from 2023 to 2030.

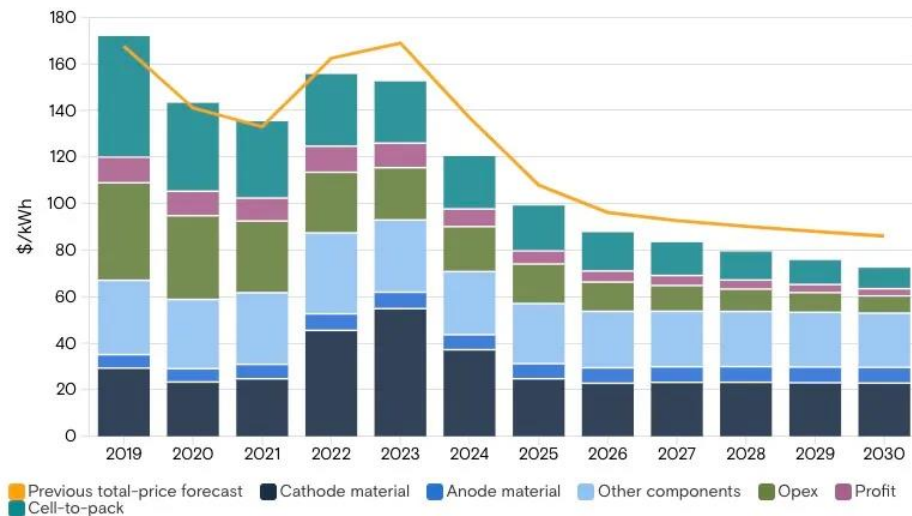
¹ [EVs now more affordable than some petrol cars | RACQ](#)

² <https://www.racq.com.au/-/media/project/racqgroup/racq/pdf/articles/news/2023/9/2023-running-costs-racq-final.pdf>

³ [Electric vehicle battery prices are falling faster than expected \(goldmansachs.com\)](#) , [World's largest EV battery maker set to cut costs in half by mid 2024 \(thedriven.io\)](#)

Battery prices are forecast to fall 40% by 2025 (from 2022)

Global average battery pack prices



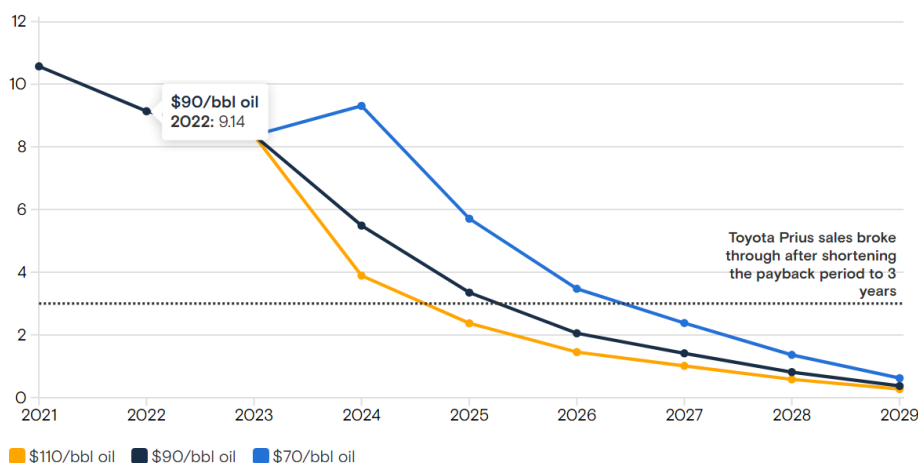
Source: Company data, Wood Mackenzie, SNE Research, BNEF, Goldman Sachs Research
Data from 2023 are forecasts

Goldman Sachs

According to Goldman Sachs, this means cost parity between EVs and ICE vehicles, without subsidies, will be achieved globally within this decade.

Lower battery prices could mean EV cost parity with ICE vehicles by mid-decade

EV cost premium payback period versus ICE in years



Source: Company data, Goldman Sachs Research
Data from 2023 are estimates

Goldman Sachs

In the light passenger segment, the openness of the Australian market means there are few impediments to entry of new OEMs. This means in Australia we have a competitive new vehicle market with consumers willing to adapt to new technologies and consider new brands and models. The openness of market acceptance of affordable and relatively good quality new entrants has long been a characteristic of the Australian market. Traditionally this was seen with the entry of Japanese (1960s-1970s), then Korean (1980s-1990s) and now Chinese OEMs.

Chinese vehicle sales in Australia have been increasing and in 2023 exceeded vehicles sales from South Korea, with China now in third position behind Japan and Thailand⁴. Chinese OEMs are among the market

⁴ [China topples Korea in 2023 Australian market production race: Hyundai and Kia overwhelmed by MG and GWM plus a little help from the Tesla Model 3 - Car News | CarsGuide](#)

leaders in EV and battery technology globally⁵⁶. The openness of the Australian vehicle market and lack of preferential policies means Australia is well placed to take advantage of the capacity of Chinese battery and vehicle manufacturing to deliver affordable EVs and lower emission vehicles. We are already observing this in the new EV passenger vehicle markets, with new entrants like BYD and MG offering quality, more affordable EVs, that are comparable in overall operating costs to their ICE equivalents. Elsewhere, Europe, U.S. and Japan governments need to ensure the protection and prioritisation of their local car manufacturing during the transition to low emission vehicles and this can result in policies and consumer preferences that limit the supply of Chinese vehicles.

It is also important to recognise that for the average household, the second-hand market is more important for vehicle purchase affordability. In 2023, private motorists bought four times as many second-hand vehicles than new vehicles. The key to affordability is ensuring a timely increase in supply of EVs and low emission/high efficiency vehicles to the second-hand market, while not inflating the price of new vehicles. Increasing supply of EVs and low emission/high efficiency vehicles into the new vehicle market and a rapid turnover to the second-hand market will be key to increase purchase affordability.

For many years, the pricing of vehicles in Australia has been competitive and market driven and RACQ does not expect this dynamic to change following the introduction of the NVES. The NVES will deliver more electric and fuel-efficient vehicles to the Australian market, bringing subsequent fuel cost savings. The NVES is likely to see increased supply and competition through the introduction of new OEMs and new models into Australia. This will create downward pressure on prices of EVs and other fuel-efficient vehicles. A NVES will penalise inefficient vehicles by making them less competitive and unlikely to sell due to having higher upfront and operating costs compared to their electric and fuel efficient competition. We expect OEMs to replace and update of their inefficient vehicle models in response. This competitive pressure is of course the intent of the NVES.

Recent sales data suggests Australian consumers are responding positively to the current increased supply of EVs and government incentives. Consumer acceptance of hybrid vehicles in Australia is already well established. When considering passenger vehicles only, battery electric Vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) accounted for 5% of new vehicle sales in 2022 and 11% in 2023⁷. Through the NVES, it is reasonable to expect a strong uptake of EVs in the light passenger segment through to 2029 to reach 45 per cent of light passenger vehicle sales⁸.

Light Commercial Vehicle Standard

The proposed NVES rightly treats light commercial vehicles differently to passenger vehicles. RACQ strongly supports this distinction as any targets universally applied across the whole market would significantly impact on many Queenslanders who require utes and 4WDs for work or to live in their community in the case of regional and remote Queensland. The LCV market is more complex with limited EV product in the key mid-size utility/pick-up truck segment (the 'ute'). In 2023, utes accounted for 28% of new light vehicle sales (and vans 2%), whereas 70% of new vehicle sales were passenger vehicles (of various body types)⁷.

A relatively small number of vehicle models dominate the ute market, featuring a number of global OEMs whose manufacturing plants are in Thailand. The majority of utes manufactured in Thailand are sold across countries in the tropics and Australia, most of which have no fuel efficiency standards.

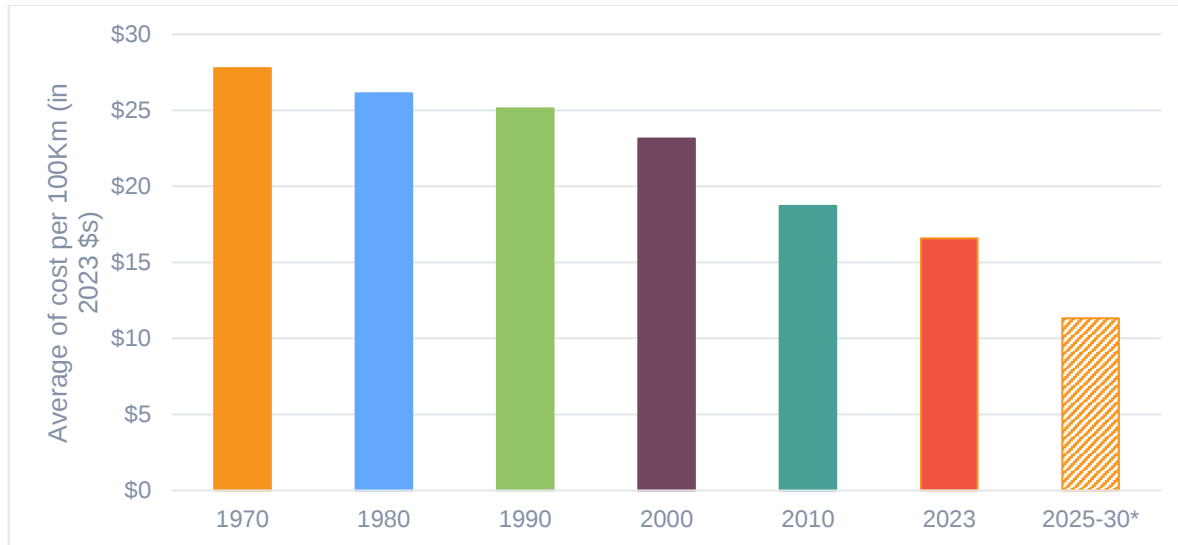
⁵ [The-Global-Automaker-Rating-2022_final.pdf \(theicct.org\)](#)

⁶ [World's largest EV battery maker set to cut costs in half by mid 2024 \(thedriven.io\)](#) [Electric vehicle battery prices are falling faster than expected \(goldmansachs.com\)](#) , [Investigating the U.S. battery supply chain and its impact on electric vehicle costs through 2032 and International Council on Clean Transportation \(theicct.org\)](#)

⁷ RACQ calculations using data from the AAA's EV Index - <https://data.aaa.asn.au/ev-index/>.

⁸ The Option B light vehicle target could also be addressed through a varying combination of pathways of BEV, PHEV and hybrid vehicle sales.

Driving costs for utes in the over the last five decades (RACQ 2024)



Since the introduction of utes in Australia, they have become more efficient and cheaper to run. The chart above displays the average cost (in 2023 dollars) to drive the most popular utes 100km⁹ in each of the past five decades. The cost of current best sellers is set out for 2023 and the projected cost¹⁰ for 2025 to 2030 reflects electrified utes entering the U.S. market. The 2025-2030 shows the benefit of having a robust standard.

Since the 1970s (and likely earlier) advancements in vehicle technology have consistently delivered improvements in fuel efficiency and therefore fuel cost savings. These savings were originally delivered in an international environment where fuel efficiency standards were not widely applied or were relatively lenient. There is little to no evidence that increasing fuel efficiency has impacted on sales or market availability. The average purchase price for utes from 1973 was about \$40,400 in 2023 dollars (or \$3,600 in 1973 dollars) compared to about \$56,700 in 2023. The past five decades have seen increases in vehicle size and substantial improvements in vehicle safety and driver comfort. The real average purchase price of Australia's most popular utes (indexed to 2023 dollars) increased by about 29% between the 1970s to the 1990s. This is a period that did not experience significant fuel efficiency innovations. Since the 1990s, we have seen the most innovation, however the increase in purchase price slowed to 9%.

RACQ's analysis of new electrified and highly efficient utes coming to market in the U.S. highlights the need for a robust fuel efficiency standard. As all our major trading partners, and similarly advanced countries, have robust and ambitious fuel efficiency standards, Australia requires a comparable system to ensure the latest technology is prioritised for our market. Without the NVES, Australia risks further entrenching its position as a 'dumping ground' for old inefficient technology with reduced safety features. RACQ continues to be concerned about Queensland and Australia's troubling road toll. We need the safest cars on the market coming to Australia as a key initiative to address the recent upward trend in fatalities and serious injuries. These vehicles will increasingly be electric, not internal combustible engines. However, the electric and low-emission utes available today in the global market are unlikely to meet the full needs of regional and remote Australia. If this vehicle class is not treated differently and more innovatively under the proposed standard, it will increase the risk of driving up costs of new utes rather than drive down emissions.

Modelling from the CIE, commissioned by the AAA, suggests that the Federal Government's preferred NVES would require 50 per cent of new vehicles in the LCV segment to be electric vehicles in 2029. To achieve this shift and maintain utility of current LCVs, we will need to see a significant shift in ute model technologies, which would mean a quantum shift in innovation and electrification.

⁹ This analysis was completed by RACQ using various sources, including the Green Vehicle Guide. It assumes fuel is consumed at the average fuel the combined cycle, a mix of urban and extra-urban driving. The fuel costs used where the average Regular ULP and Diesel prices for Queensland in December quarter of 2023.

¹⁰ * The projected costs are based on models currently available in the U.S. market.

The issue with the LCV is not whether electric vehicles can reduce emissions or increase vehicle efficiency and operating costs (they can), but whether electric utes can meet the needs of consumers in performing the tasks required. The evidence from the U.S. is that electric pickups, which have been in the market for 18 months, have limited range capacity, particularly when towing¹¹.

The purely electric utes that are currently available in the global market and that are likely to become available in the near future will not sufficiently meet the needs of many of Australia's regional and remote drivers. While electric drivetrains deliver better performance than ICE drivetrains in terms of emissions reduction, torque, efficiency and lower maintenance costs, current battery energy density is not sufficient for longer range trips and towing tasks. Furthermore, electrical and charging infrastructure in regional and remote locations is inadequate and lacking resilience to manage a high uptake of electric utes.

In the Light Commercial Vehicle Technology Continuum diagram below, we have set out the varying ute technologies in the global market today. The technologies increasingly lower emissions as you move towards the right of the continuum.

RACQ Light Commercial Vehicle Technology Continuum



The utes, whether partly electric or not, that can meet towing and longer range trips essentially all use some level of fuel. Fuel, due to its much higher energy density than batteries, will continue to be required for a number of ute tasks, such as towing and longer trips where charging infrastructure is limited. Several vehicles being brought to market use electric motors with fuel generators (i.e. Nissan X trail E-Power and the high capacity towing Ram Ramcharger). The use of fuel generally negatively impacts on both efficiency and emissions. The key to resolving these issues is to use biofuel instead of fossil fuel and to maximise the use of the electric battery and drivetrain.

The Federal Government's transport emission reduction strategy is missing a key pillar of innovation and industry development, notably in encouraging innovation in the LCV segment and in biofuel policy development. In our submission to the first consultation (May 2023), RACQ argued that supporting innovation is the most appropriate pathway to emission reduction in the LCV segment. While the current emission reduction strategy includes the NVES, incentives to purchase/own vehicles (state subsidies and Federal Government Fringe Benefit Tax exemptions), and funding for charging infrastructure, it needs a fourth strategy pillar – Industry and Innovation. RACQ believes this fourth pillar should focus on innovative vehicle technology in the LCV market.

Specifically, RACQ sees the combined use of electrification and Australian-grown and processed biofuels

¹¹ [How Well Can an Electric Pickup Truck Tow? - Consumer Reports](#) and [We Towed With Our Ford F-150 Lightning So You Won't Have To \(motortrend.com\)](#)

(most likely ethanol) as the best solution for decarbonising the LCV segment. This pairing, if designed well to our conditions, has great potential in meeting the needs of regional and remote Queenslanders who rely heavily on this type of vehicle for economic and recreational activity.

Supporting and encouraging OEMs in the ASEAN region to develop an electric ute with an additional biofuel/ethanol-powered range extender generator could address the key range and towing shortfall with electric utes. Such a vehicle would ideally be designed to have a moderate to large battery and a small biofuel/ethanol generator that provides additional electricity for towing or for longer and multi-day trips. A vehicle with this composition would provide the decarbonisation and cost saving benefits required to meet the NVES, while better serving the needs of regional and remote Queenslanders.

Therefore, new low-emission technology innovations and new models within the LCV segment need to be a key focus of Federal Government policy thinking on the NVES and broader land transport emission reduction strategy. Given the need for the LCV segment to transition to a more innovative electric approach (ideally incorporating biofuels), the RACQ believes the Option B emission values should be adjusted to provide time for the transition. Given the tasks performed by 4WD vehicles (e.g. towing and off-roading) also being challenging to EV battery range, the RACQ believes the MC class (4WDs) should largely be included in the LCV category.

RACQ RESPONSE TO THE SPECIFIC QUESTIONS IN THE CONSULTATION PAPER

Question 4. Please rank the proposed options in order of preference. (optional)

RACQ's preferred option is:

Option B, with an adjustment to the Light Commercial Vehicle headline emissions values and the MC¹² vehicle class largely being included in the LCV class. Further, Federal Government commitments to vehicle innovation and biofuel industry development are also required.

RACQ supports Option B and the proposed CO₂ standard for Passenger Vehicles (categories MA¹² and MB¹²).

Option A and Option C are RACQ's least preferred options.

Option A presents a weak standard and an emission reduction trajectory that could likely be achieved with no policy intervention or business as usual.

Option C presents an overly aggressive emission reduction trajectory that is likely to lead to undue costs to the Australian economy.

Option B, with the modifications detailed here within, will deliver necessary emission reductions, deliver cost savings, but will not disadvantage those in regional and remote Australia or those who require the utility of utes as a tool of trade.

Question 5. Briefly, what are your reasons for your choice? (optional)

Light Commercial Vehicle Standard

RACQ believes that the heavier vehicles in MC class are better suited to the Light Commercial Vehicle (LCV) Standard. MC class vehicles weighing 1,750kg or greater should be included in the LCV Standard. MC class vehicle weighing 1,749kg or less should remain in the Passenger Vehicle Standard. The inclusion of these

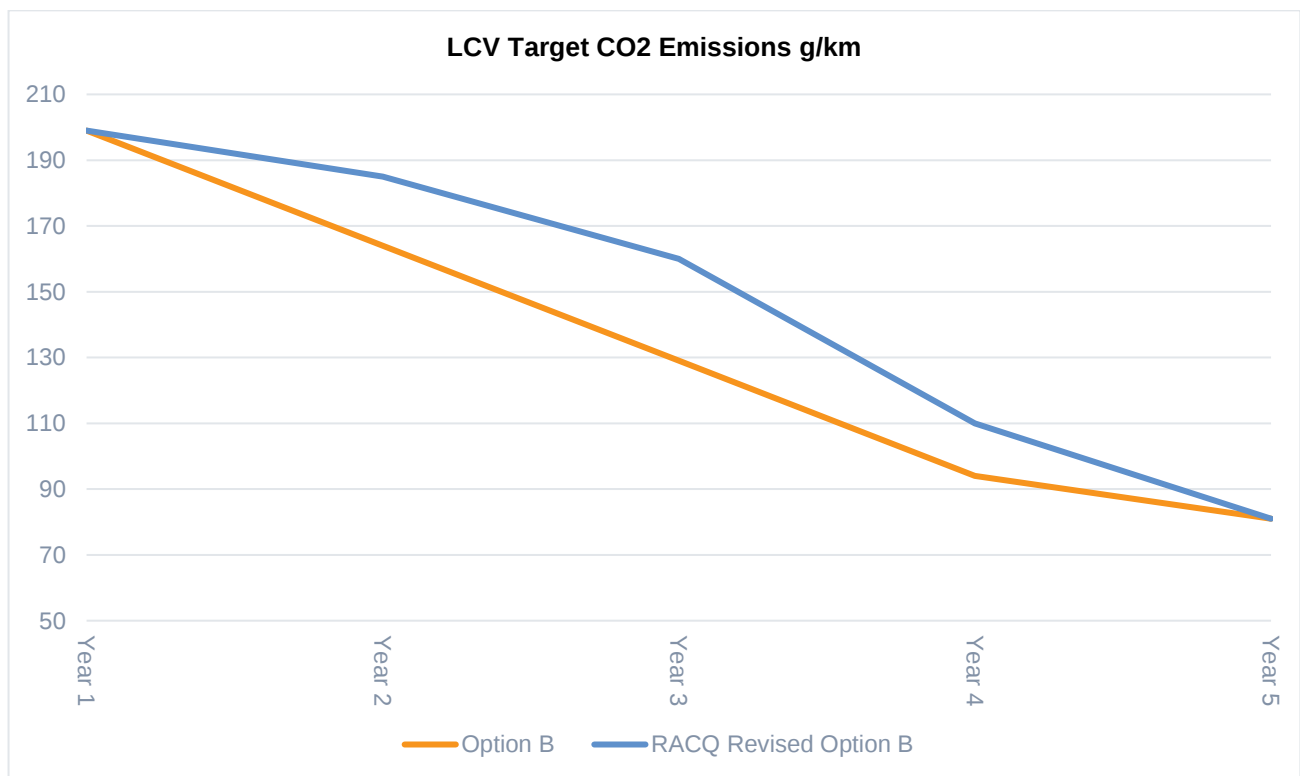
¹² MA, MB, and MC are vehicle classes as defined by Australian Design Rules. Class MA and MB are for passenger cars designed for on-road use and carrying up to 9 persons including the driver. The distinction between MA and MB is related to the position of the engine, with MA being the most common configuration with the engine at the front of the vehicle in front of the passenger compartment. Class MC is for passenger vehicle with special features for off-road use and designed to carry up to 9 persons including the driver.

vehicles will also help meet the adjusted emissions trajectory for this class.

RACQ supports Option B's Year 5 goal for LCVs, however the proposed trajectory is too steep and should be relaxed. Without this relaxation it would cause undue costs on regional and remote Queensland. RACQ supports meeting whatever the prevailing U.S. standard is (presently 81 CO₂ g/km) in Year 5 (2029 in the consultation paper), but suggests the intermediate standards (Year 2, Year 3 & Year 4) should be relaxed to allow more time for new low-emission technology innovations and new models within the LCV segment to be introduced into Australia. RACQ's preferred trajectory is detailed below.

INDICATIVE PROPOSED ADJUSTMENTS TO THE OPTION B LCV STANDARD

	Option B for LCV as proposed in the consultation document	RACQ's preferred emission standard trajectory for LCV
Year 1	199	199
Year 2	164	~185
Year 3	129	~160
Year 4	94	~110
Year 5	81	81



Passenger Vehicle Standard

RACQ supports the standards for Passenger Vehicles as this standard is robust, achievable and will deliver emissions and cost savings to consumers of new vehicles.

RACQ's main focus has been on used vehicles because the majority of Australians and RACQ members source their vehicles from this market. Our analysis shows that in the absence of a NVES, more efficient vehicles are under-supplied in the used vehicle market and subsequently a price premium is paid for these vehicles. We believe this standard will drive increased supply of fuel-efficient vehicles into the used vehicle market and help address the current price premium paid on fuel efficiency.

RACQ also notes that an increasing number of new EVs and lower emission vehicles have become cost competitive with their ICE equivalent, noting this is partly due the Australian and State government policies. The Federal Government's Fringe Benefit Tax exemption for BEVs purchased using a novated lease and state subsidies, like those offered by the Queensland Government, are important features of the overall policy framework to make EVs and lower-emission vehicles more accessible and affordable.

When considering passenger vehicles only, BEVs and PHEVs accounted for 5% of new vehicle sales in 2022 and 11% in 2023¹³. On a conservative growth estimate, it is plausible for new BEVs and PHEVs to account for 50% of new sales by 2030.

Question 6. Do you support the Government's preferred option (Option B)? (optional)

As outlined above, RACQ supports the Government's preferred option (Option B) under the conditions that the headline standards for Light Commercial Vehicles are made more lenient in Year 2, Year 3 and Year 4 while still bringing Year 5 into line with the U.S. standard. This will deliver a more manageable transition that has the greatest chance of engendering trust and credibility among regional and remote Queenslanders. Further, we'd like to see the Federal Government provide innovation and industry funding for electric-biofuel ute development and biofuel production.

Question 7. Do you have any feedback on the analysis approach and key assumptions used? (optional)

In the interests of transparency, RACQ would like further information about the modelling, especially the underlying assumptions that informed the consultation paper. For example, the document provides an indication of the expected market share for EVs in the base case but does not indicate how this share will change in the different policy scenarios. In addition, the policy scenarios are likely to result in some change to the market share of different vehicle types (i.e., passenger cars and light commercial vehicles) and including this information would increase understanding of the implications of each option.

Question 8. Briefly, describe how the NVES might impact your organisation. (optional)

RACQ's vehicle fleet can be split into a "yellow" fleet and a "white" fleet. RACQ's yellow fleet predominantly comprises our roadside assistance vehicles. These are utility vehicles with a specialty tray/canopy added to carry tools and spare parts (most importantly car batteries) required to provide assistance services to our members. As the LCV standard is currently designed, RACQ would only be able to meet the standard and maintain current service levels in urban areas. For RACQ operations in regional and remote locations (and for similar fleets) RACQ is seeking support to develop a solution combining electrification and low emission biofuels as outlined above.

RACQ's white fleet comprises largely of passenger vehicles used in our other lines of business (such as banking) as well as our significant community initiatives such as RACQ Foundation and our road safety educators. We do not see the NVES having any negative impact on the operability or utility of our white fleet. It should help RACQ meet its net zero commitments.

Question 9. Who should the regulated entity be? See section 7.2 (optional)

RACQ supports the Government's proposal to that the regulator will be a body operating within the department. RACQ also supports aligning the NVES with the Road Vehicle Standards Rules 2019 and the Road Vehicle Standards Act (RVSA) 2018. RACQ supports the use of the Register of Approved Vehicles (RAV) to administer the NVES as well as the RVSA.

¹³ RACQ calculations using data from the AAA's EV Index - <https://data.aaa.asn.au/ev-index/>.

AUTHORISATION STATEMENT

This submission was prepared by RACQ (The Royal Automobile Club of Queensland Limited, ABN 72 009 660 575) and is authorised by Managing Director and Group Chief Executive Officer David Carter.