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Australia

The Hon Catherine King MP
Minister for Infrastructure, Transport, Regional Development and Local Government

The Hon Chris Bowen MP
Minister for Climate Change and Energy

31/5/2023

RE: The Fuel Efficiency Standard — Consultation Paper: Tesla Submission

Dear Minister King and Minister Bowen,

Thank you for the opportunity to share input into this important consultation. A strong vehicle fuel efficiency standard (FES) is essential to tackle climate change. It will also save lives by reducing deadly vehicle pollution and save Australian motorists hundreds of dollars a year by replacing expensive imported fuel with renewable electricity.

Tesla's mission is to accelerate the world's transition to sustainable energy. Tesla is the leading retailer of zero emissions vehicles (ZEVs) in Australia, accounting for 2 in every 3 sold. Tesla employs over 800 people in Australia and purchases over $1.5 Billion annually of Australian minerals. 75% of the lithium and 40% of the nickel in Tesla's lithium-ion batteries around the world come from Australia. Australia is one of the countries most vulnerable to climate change[1], but it is also among the best endowed with critical minerals and renewable energy. As Minister Bowen has often observed, "the world's climate crisis is Australia's opportunity."

Tesla's main recommendations include:

1. Expand guiding principles to consider the health impacts of deadly vehicle pollution, which kills 11,105 Australians annually.
2. Ensure Australia's vehicle CO_2 target is ambitious, and evidence based:
    a. The annual emissions ceiling (CO_2 target) should match New Zealand's Clean Car Standards reduction rate and catch up to other major markets (e.g., USA) by 2030
    b. Periodic reviews should consider evidence from the Climate Change Authority on the level of decarbonisation required under the Paris Climate Accords.
3. Australia's penalty price should be competitive with other major markets including the European Union because carmakers will prioritise sending their most efficient vehicles to markets with the strongest standards and penalties.
4. Bonus and multiplier credits risk creating loopholes that fundamentally undermine the efficacy of a FES and should be avoided. If utilised, any bonus credits should be carefully calibrated, with caps and phase-outs built in from the outset.
5. To ensure transparency and public trust, it is critical that government collect and publish granular data on vehicle emissions, including a transparent account of actual emissions before any bonus credits are applied.

[1] HSBC *Fragile Planet* 2018

Section 4. Principles for Setting a Fuel Efficiency Standard

Consultation paper

Our guiding principles are that a FES must be:

- **Effective** in reducing transport emissions from light vehicles. The purpose of a FES is to reduce the average amount of CO_2 emitted by Australia's new light vehicle fleet over time, which is broadly consistent with the FESs in place in major advanced markets.
- **Equitable** so all Australians can access the vehicles they need for work and leisure. The cars that we drive are a critical part of how Australians live and work, and need to be practical. The Australian FES will need to be equitable and not unduly negatively impact any particular group of people or part of Australia.
- **Transparent** and well explained to avoid unintended consequences. The details of an Australian FES will need to be accessible, whilst available in sufficient granularity and predictability to allow industry to make good long-term investment decisions, and not unduly increase red tape.
- **Credible** and **robust** by drawing on expert analysis and experience. We want Australia's FES to be designed with the latest and best analysis available, drawing on the expertise of industry, the environmental community, academia and others.
- **Enable** vehicles with the best emissions and safety technology to be available to Australians. It is important that Australians have access to the best and latest vehicle technology, as good as or better than what is available internationally. We want to avoid increasing the average age of vehicles in the fleet so there are no inadvertent safety impacts.

GENERAL guiding principles

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

Tesla broadly supports these guiding principles.

Recommendation 1: Amend first principle to "**Effective** in reducing transport emissions from light vehicles in line with limiting global warming to 1.5 degrees per the Paris Climate Accord."

Recommendation 2: Add an additional principle "**Beneficial** to the health of Australians by reducing NO2 and other vehicle particulates that are known to be significant causes of premature death and serious illness."

Vehicle pollution kills 11,105 Australians each year. It is among the leading causes of premature deaths and of childhood hospitalisation in Australia. In February this year, a broad coalition of doctors and public health groups called on the Federal Government to "update vehicle and fuel standards to bring Australia into line with international markets by 2030.[2]" This group included the Cancer Council, the Lung Foundation, Asthma Australia, Climate and Health Alliance, and Doctors for the Environment, and leading respiratory physicians.

Lung cancer remains the leading cause of cancer related mortality in Australia, despite reductions in rates of smoking. An increase of just 5 parts per billion of NO2 is associated with a 4% increase in the risk of lung cancer[3] and a >54% increased risk of asthma in children.[4] Vehicle emissions kill more Australians than vehicle accidents, and these deaths are no less tragic and preventable. Australian governments at all levels have long placed a significant and deserved priority on reducing the vehicle accident road toll; the vehicle pollution road toll deserves no less focus.

[2] 'Health impacts Associated with Traffic Emissions in Australia: Expert Statement' Walters & Say et al. 2023.
[3] Hamra, Laden et al. 2015
[4] Knibbs, de Waterman et al. 2019

Section 4.1 Design assumptions

Consultation paper

In embarking upon a FES, we are conscious some assumptions will need to be built into the design. We have set out these assumptions in this section for transparency. An Australian FES will:

- **Apply only to vehicles entering the Australian market for the first time.** The Australian FES will only apply to new vehicles, whether imported or manufactured domestically. It will not apply to vehicles in the domestic used car market.
- **Apply on average to vehicles sold.** The Australian FES will protect the continued sale of vehicles Australians love, including utes and 4-wheel drives and will work to lower average emissions over time. A FES will provide good incentives for suppliers to provide more efficient internal combustion engine technology, including hybrids, and bring popular and more affordable LZEVs to Australia to reduce the average emissions of new vehicle sales. A FES will continue to allow the full range of vehicles to be sold on the Australian market.
- **Apply to light vehicles**. This consultation is only investigating a FES for light vehicles. The FES will not apply to heavy vehicles, vehicles for military, law enforcement and emergency services use, agricultural equipment or motorcycles.
- **Apply to vehicle suppliers, not motor vehicle dealers.** We want the FES to apply to the entity with the greatest control over the vehicles and vehicle technology which are supplied to, and sold in, the Australian market.
- **Be mandatory**. The Government does not intend to introduce a voluntary FES.
- **Be established in Commonwealth legislation**. To be effective, an Australian FES must have robust, enforceable, Commonwealth legislation that contains mechanisms to reduce the administrative burden as far as possible, and include mechanisms to minimise avoidance.
- **Consider vehicle affordability, lifetime cost and model availability.** We want to learn from best practise FESs in other major markets, and make sure that Australians can still get the cars they need.

GENERAL Design assumptions

- Are there any design assumptions that you think will put at risk the implementation of a good FES for Australia?
- Are the exclusions for military, law enforcement, emergency services, agricultural equipment and motorcycles the right ones?

These design assumptions are sound.

Recommendation 3: Maximise certainty by enshrining FES details in primary rather than secondary legislation to the greatest possible extent.

Fuel efficiency standards are a critical piece of Australia's decarbonisation and should, to the greatest extent possible, be the prerogative of the Parliament rather than just the Minister of the day.

Recommendation 4: Enshrine terms of reference for FES periodic reviews in primary legislation.

It is understandable and important that the standard be reviewed periodically, however this review should be constrained to clear terms of reference set out in the primary legislation.

Recommendation 5: require periodic reviews to consider advice by the Climate Change Authority regarding CO2 targets, and report to Parliament on the implications of the review on Australia's decarbonisation targets and obligations.

Periodic reviews should also be anchored in expert evidence regarding developments in climate science and the automotive market. For that reason Tesla recommends that the periodic

reviews require the Minister or reviewing body to consider evidence from the Climate Change Authority regarding developments in climate science and implications for the rate and level of decarbonisation required of the Australian light vehicle sector. Periodic reviews of the standards should also report to Parliament regarding the impact of any updates on Australia's Nationally Determined Contributions and other obligations under the Paris Climate Accords.

Vehicle affordability and lifetime cost.

Equity and affordability are important principles for consideration. As the principles have flagged, it is important to consider lifetime cost of vehicles rather than simply upfront vehicle purchase cost.

More efficient ICEVs and EVs are often cheaper to own than inefficient competitors with significantly lower upfront prices. Tesla's Model 3 Standard Range currently retails from $61,300 in Australia but is estimated to be 7c a day cheaper to own than a Mazda 3 G25 Evolve auto[5], which currently retails from $32,110.

In the past, critics of vehicle CO2 standards have claimed that strong standards will cause unacceptable increases in average upfront vehicle prices. The same was once said of mandatory seatbelts, airbags, and anti-lock braking systems. Like these technologies, modern and electric vehicles are significantly safer in terms of both vehicle accidents and public health.

The average Australian household is now spending $5,000[6] a year on petrol, so the payback period on more efficient technology is shorter than ever and it's critical to consider total cost of ownership rather than upfront price. Like solar panels, efficient vehicles often save consumers money overall. However, like solar panels, the ability of Australians to access new vehicle technology is a legitimate equity challenge, and Australians on low incomes or without access to home charging face additional barriers to access. The answer to this challenge is not to slow down emissions standards, but rather to accelerate standards while focussing government incentives and infrastructure spending on equity. Policies that support leasing of electric vehicles, such as the ACT's no interest loan scheme, and the Federal Government's Electric Car Discount go some way to this end. Charging infrastructure grants, particularly to support urban charging in areas with low home-ownership and/or off-street parking help level access to charging. Tesla encourages the Government to pursue through its National Electric Vehicle Strategy other policies to bridge the gap between upfront and total cost of ownership affordability.

[5] https://www.moneymag.com.au/electric-cars-running-costs

[6] Australian Automobile Association Transport Affordability Index estimates households paid a weekly average of $100.39 for fuel in Q2 2022.

Section 5. FES design features

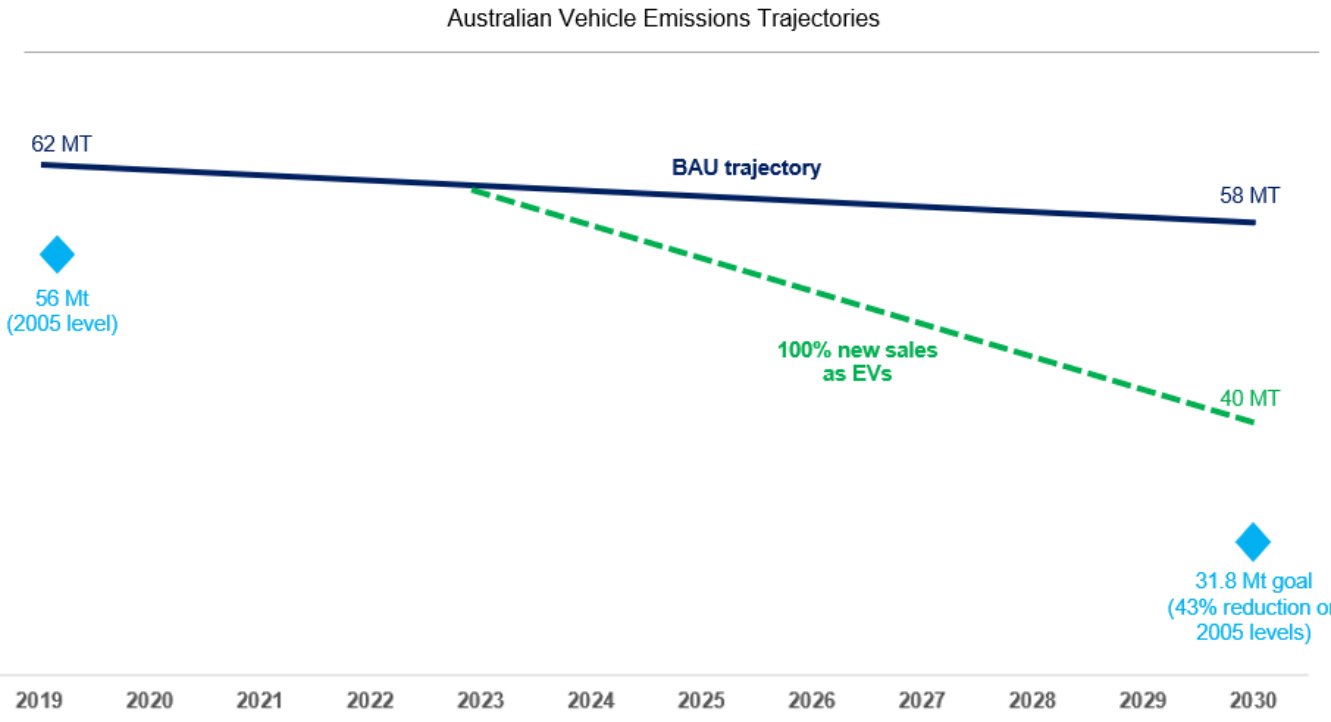
Consultation Questions

- What principles we should consider when setting a CO_2 target, and how far ahead should targets be set? More technically, what should the FES average annual emissions ceiling (CO_2 target) be?

The first principle to consider is responding to climate science and enabling achievement Australia's Nationally Determined Commitments on decarbonisation and the commitments of states and territories.

The primary principle should be to achieve decarbonisation required for the light vehicle sector to do its part in keeping climate change well below two degrees Celsius. The less heavy lifting foreign carmakers do on decarbonisation, the more Australian farmers, manufacturers, and households must do.

Governments and the automotive and petroleum industries have all been aware of dangerous climate change for over forty years, yet transport emissions have increased 57% since 1990[7]. Australia's Nationally Determined Contribution (NDC) of 43% emissions reduction by 2030 from 2005 levels is the minimum required to put Australia on a decarbonisation pathway that is in line with the Paris Agreement. Unfortunately, in the light vehicle sector it is now practically impossible to achieve 43% emissions reduction by 2030:



- In 2005, light vehicle emissions in Australia were 55.794 megatonnes (Mt).
- Light vehicle emissions peaked at 62 Mt in 2019 and are projected to be 58 Mt by 2030 on a business-as-usual trajectory.
- A 43% reduction on 2005 levels by 2030 would mean achieving 31.8 Mt per annum, or a 48% reduction on 2019 levels.
- At current pace of vehicle retirement, it will take approximately 19 years to replace the vehicles on Australian roads. That means even if 100% of new vehicles sold in Australia became zero emission vehicles overnight, only a third of the total vehicles in Australia would be zero emissions vehicles by 2030.
- This would only reduce vehicle emissions to approximately 40 Mt annually, still falling well short of a 43% reduction (a level of 31.8 Mt).

[7] https://climateanalytics.org/media/australiaclimatefactsheets2019-transportsector-climateanalytics.pdf

The light vehicle sector will certainly fall well short of contributing equally with other sectors to reducing emissions. This did not have to be the case. The Climate Commission recommended fuel efficiency standards in 2014, and previous governments considered legislation but failed to act. Had previous governments acted, Australia CO2 would be on a path to reduce CO_2 up to 65Mt by 2030, and Australian motorists would already be saving hundreds of dollars a year on petrol, according to 2016 Regulatory Impact Statement (RIS) estimates[8]. The RIS estimated that light commercial vehicle drivers would save $666 annually on petrol in 2025 under strong standards at a petrol price of just $1.30/L; at current prices which average $1.83[9] those savings would be closer to $938.

For decades, sections of the petroleum and vehicle industries have resisted real emissions reduction in the light vehicle sector. They have done so either by opposing fuel efficiency standards outright, or by attacking measures proposed by government and arguing instead for trajectories so weak as to actually allow increases in pollution.

As a direct result of these past failures by industry and government alike, the new vehicles on offer to Australians are among the most inefficient and polluting in the world. This is adding pressure to household budgets, with the average household spending over $5000 a year on petrol and diesel[10].

The second principle to consider is catching up to other markets.

Car manufacturers will prioritise markets with the strongest standards and the highest penalties when deciding where to send their most efficient vehicles. If Australia continues to lag other markets, those other markets will receive vehicles that are safer, cleaner, and cheaper to run than Australia.

Therefore, the annual emissions ceiling (CO_2 target) should match New Zealand's Clean Car Standards rate of reduction and catch up to other major markets like the USA before 2030.

Australia is starting behind comparable countries when it comes to decarbonising light vehicles. Some argue that it would be acceptable to adopt the rate of improvement in other markets, thereby remaining perpetually behind by several years. Australia deserves better than this defeatist approach.

Continuing to lag other countries is an unacceptable outcome when it is eminently possible for Australia to its peers. Starting from a similar average CO_2 profile to Australia, New Zealand have adopted Clean Car Standard targets that are in line with their climate commitments and will catch up to other major markets before the end of the decade.

[8] Improving the efficiency of new light vehicles Draft Regulation Impact Statement Ministerial Forum on Vehicle Emissions December 2016

[9] Weekly average week of 7 May 2023 https://www.ceicdata.com/en/australia/average-petrol-and-diesel-prices-weekly/weekly-average-petrol-retail-prices-national-

[10] Australian Automobile Association Transport Affordability Index ibid.

Consultation question

- Whether to incorporate flexibility mechanisms (credit exchange, banking or pooling arrangements) to minimise impacts on consumers which are common features of other FESs.

TECHNICAL Credit banking, transferring and pooling

- To what extent should the Australian FES allow credit banking, transferring and/or pooling?
- Should credits expire? In what timeframe?

Credit trading is essential for fuel efficiency standards to meet CO_2 targets in the most efficient manner. To enable an efficient market, transparency is essential: all participants need to have access to the same information about credit prices and volumes. This means there needs to be a public registry where credit accruals and transactions are reported.

Flexibility mechanisms such as banking should be designed to minimise delays to compliance. One of the impacts of well-designed standards is downward pressure on low emission vehicle prices because carmakers that generate regulatory credits can pass these on to consumers. If this regulatory credit revenue can't be recognised for several years or is uncertain, this downward pressure on prices is reduced and delayed.

Recommendation 6: allow banking of FES credits for three years, beyond which credits depreciate at a rate of 50% year on year.

Consultation question

- Should bonus credits for new/innovative technologies be included in the FES, and how should any potential risks be managed?

TECHNICAL Multipliers for LZEVs

- Should an Australian FES include multiplier credits for LZEVs?
- If so, what level should the multipliers be, should they apply equally to both classes of vehicle (if adopted) and for how long should they apply?
- Should the total benefit available from these credits be capped?
- If not, should the Government consider another approach to incentivising the supply and uptake of LZEVs?

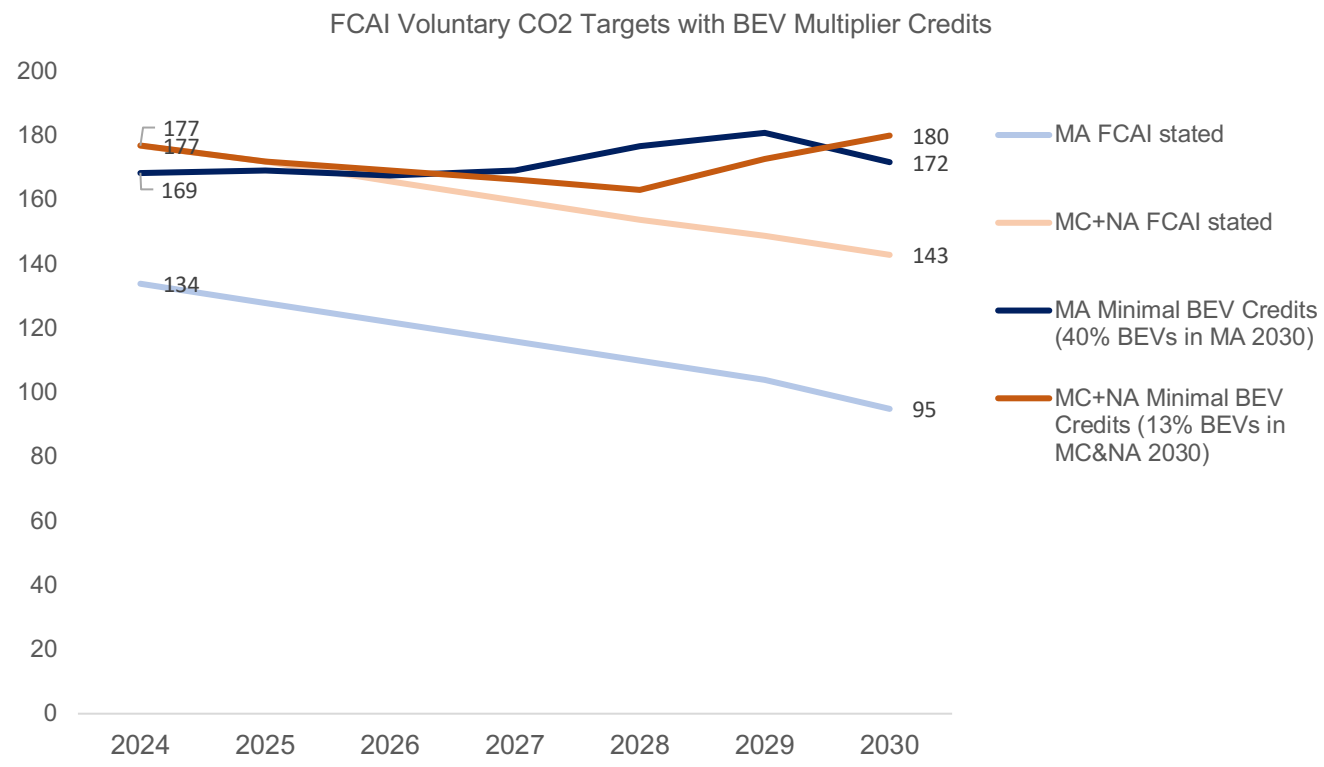
Recommendation 7: Bonus and multiplier credits risk creating loopholes that fundamentally undermine the efficacy of a FES and should be avoided.

Tesla recommends that bonus and multiplier credits are avoided. These credits weaken standards, hide actual pollution impact, and risk reducing public trust in vehicle standards.

Multiplier credits mean that certain types of vehicles are double, or triple counted when carmakers report the average emissions of their vehicles. Imagine that modern cricketers were allowed to count their half centuries twice and their centuries three times toward their average. Many would appear on paper to be better than Bradman. "This incentivises centuries" some batters might say, but the public would know that their numbers are a lie. A run is a run, and a car is one car, not three.

To examine the risks of multiplier credits, it is instructive to consider the voluntary CO2 standard implemented in 2020 by the Federal Chamber of Automotive Industries (FCAI) which applies a 3X multipliers to Zero Emissions Vehicles (ZEVs). Even a conservative estimate of ZEV uptake

leads to the FCAI's voluntary CO2 target becoming so diluted by ZEV multiplier credits that effective CO2 per kilometre actually increases in the latter half of the decade to 2030.



Note: MA is passenger cars category; MC is off-road SUVs; and NA is light commercial vehicles

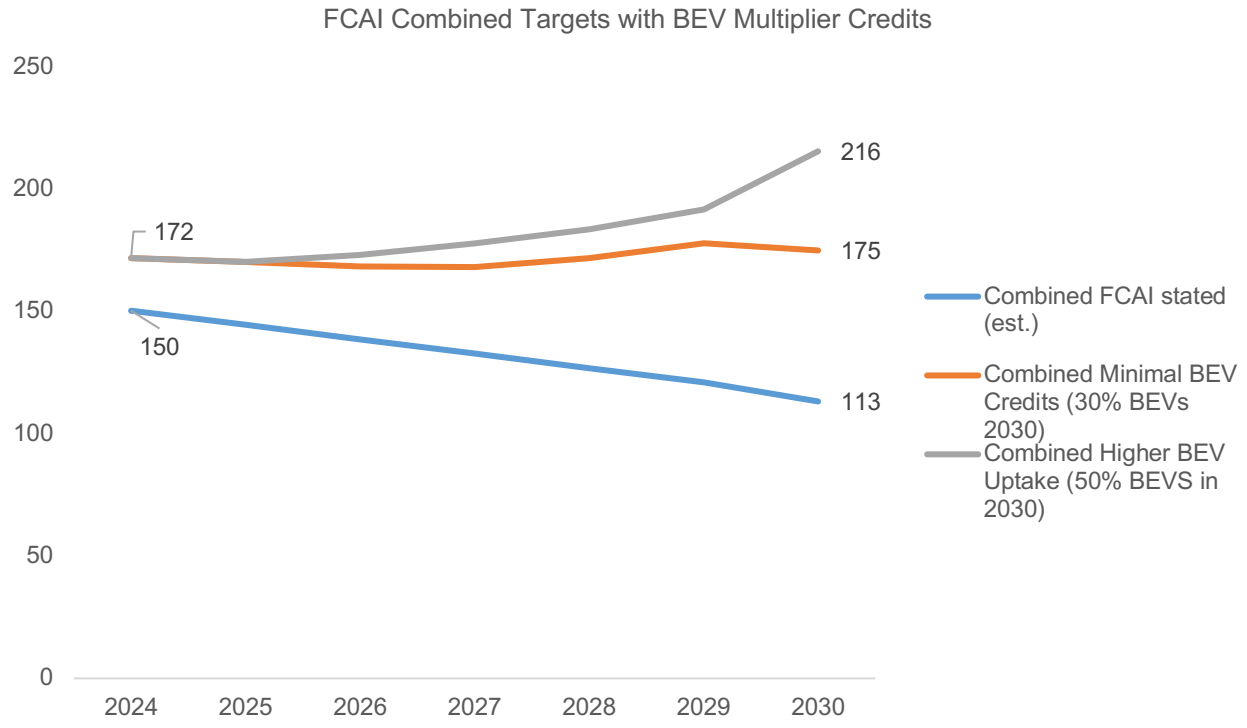
Consider a scenario where 30% of new cars in Australia are ZEVs in 2030. Many analysts would consider this a business-as-usual trajectory even in the absence of strong vehicle standards. This is supported by CSIRO and AEMO data. For example, taking CSIRO's vehicle uptake trajectories developed for AEMO in 2022[11] and using its BAU scenario, CSIRO forecast 326,000 new battery electric vehicles added to Australia's total light vehicle fleet in 2030. Assuming total annual vehicle sales remains relatively steady over the coming years (VFACTS estimates 2022 new car sales at 1,081,429[12]) this represents 30% of new car sales being Battery Electric Vehicles (BEVs) in 2030, noting these forecasts assume no FES (i.e., being based on existing climate and emissions reduction policies as legislated in 2022).

Under the FCAI standard, ZEVs receive a 3X multiplier so at 30% ZEV uptake, vehicle fleet emissions are averaged over 160% of number of actual vehicles. These ZEV multipliers make the MA category artificially appear 45% lower and MC & NA category appear 21% lower in 2030[t13].

Astonishingly, CO2 emissions per kilometre across the new vehicle fleet can actually increase to 2030 under the FCAI's voluntary standard when even a minimal level of ZEV uptake is factored in. Worse still, this calculation only factors in the ZEV multiplier. The FCAI standard also includes 2X multipliers for vehicles under 1/3 of the CO2 target (mostly PHEVs), and 1.5x multipliers for vehicles under 2/3 of the CO2 target (mostly hybrids). The FCAI also applies additional credits for off-cycle technologies which can account for an additional 7gCO2/km; and further credits for air conditioning systems with low global warming potential (GWP), worth 10g/km in MA category and 15g/km in MC & NA categories[14].

[11] https://publications.csiro.au/publications/publication/PIcsiro:EP2023-0235
[12] https://www.carexpert.com.au/car-news/vfacts-australias-new-car-sales-results-for-2022
[13] Assuming that MA category is 62% of all vehicle sales, and BEVs comprise 40%; and MC & NA categories amount to 38% of all sales and BEVs comprise 13%.
[14] FCAI CO2 Standard: Rules for Calculating Brand Targets and Assessing Brand Compliance, 12th March 2020

It's safe to assume that BEV uptake would be higher than 30% overall in 2030 if a robust FES was legislated. Most Australian states and territories have a target of at least 50% ZEV market penetration in 2030. At this level of uptake, ZEV multiplier credits would dilute the FCAI voluntary CO2 target to such an extent that average emissions could increase by 25% in 2030.



Despite this, the FCAI still claims its target is "ambitious."

In an alliance with the Australian Automobile Association (AAA) and the Australian Institute of Petroleum (AIP), the FCAI advocated for a FES like the FCAI voluntary standard to be adopted by government throughout the 2018-19 Ministerial Forum on Vehicle Emissions under the previous government.

At the time, the Department of Infrastructure estimated that the FCAI's suggestion could lead to as much as a 9% increase in CO2 emissions by 2030 against business as usual, and the AAA's proposal as much as a 6% increase. The later joint proposals by FCAI, AIP and AAA were somewhat improved, allowing emissions to be 2.3% worse than BAU if achieved with credits, in the Department's view[15]. With five years' hindsight, the department was correct that proposals by the AAA, FCAI, and AIP could lead to increases in emissions above BAU, but significantly underestimated to what extent.

Just 4% ZEV penetration among passenger vehicles, and 0% among Light Commercial Vehicles (LCVs) would be required in 2030 to meet targets proposed by AAA and FCAI in 2017, according to estimates cited by the department[16] and which aligned with modelling conducted for industry.

In 2023 over 15% of new passenger vehicles and 7% of all new light vehicles are now electric. The best-selling sedan in the country is Tesla's Model 3.[17]

[15] https://www.infrastructure.gov.au/sites/default/files/documents/foi--23-042.pdf
[16] ibid
[17] https://www.racv.com.au/royalauto/transport/cars/australian-new-car-sales-january-2023.html#:~:text=Tesla%20Model%203%20is%20Australia's%20top%2Dselling%20passenger%20car&text=The%20Californian%20brand%2C%20headed%20by,inconceivable%20just%20a%20year%20ago.

Many stakeholders will make claims to this consultation about what they consider to be "achievable" and "ambitious" over the coming years. Such claims merit carefully scrutiny.

The benefit of hindsight offers several lessons from Australia's last consideration of vehicle CO2 standards.

- Forecasting informing many stakeholders in 2016-18 significantly underestimated the pace of electrification, in some instances by as much as a decade or an order of magnitude.
- Proposals by the FCAI, AAA, and AIP if implemented to 2030 would have allowed significant increases in actual emissions.
- Multiplier credits, off-cycle credits, and refrigerant credits can lead to enormous gaps between the purported emissions of new vehicles and their actual emissions.
- Shifts in technology adoption that were anticipated to take 10 years can happen in 4 years, fundamentally undermining the efficacy of vehicle CO2 standards between scheduled reviews.

There are three key reasons that Australia should avoid multiplier credits in general.

Firstly, multiplier credits reduce transparency and integrity. Multipliers make standards significantly more complex which increases the administrative burden on government and industry alike.

More importantly, they make standards less transparent and trustworthy to the public. Recent debates and reviews on the integrity of Australian carbon offsets underscore importance of simplicity, transparency, and integrity when governments create markets for climate outcomes.

Multiplier credits mean that fuel efficiency standards do not achieve their headline emissions targets. When standards purport to achieve a fleet average of say 50g CO_2/km, the actual result could be twice as high[18]. As uptake of low and zero emission vehicles increases, so too does the gap between reported and actual emissions. A simple standard that does what it says on the tin is preferable to one that appears ambitious but is diluted by opaque and complex bonus credits.

Secondly, multiplier credits make the CO_2 abatement achieved difficult to predict.

Technology uptake is difficult to forecast; multiplier credits multiply the impact of this uncertainty. If ZEV uptake is lower than forecast, that delta would be amplified threefold, leaving significant extra CO_2 reduction to be achieved by other vehicles. If ZEV uptake is higher than expected, that over-performance tripled would quickly flood the credit market, reducing the value of regulatory credits that OEMs counted on to support the introduction of their low emission models. These outcomes would be in direct contradiction to the first guiding principle outlined in this consultation: effectiveness.

Thirdly, multiplier credits are unnecessary for most purposes. The strongest incentive for low emissions technology is a strong and internationally competitive penalty price. If OEMS generate AUD $200 of penalty credits for every gram of CO_2 under the limit curve in the EU, but only $50 in Australia, naturally they will continue to prioritise sending LZEVs to Europe.

There are limited cases where multiplier credits would be justified. One instance is for incentivising domestic content and manufacturing. This puts multiplier credits to an entirely different use: as a lever for incentivising local industrial development rather than as a flexibility

[18] Consider for example a scenario where BEVs comprise 35% of sales, PHEVs 15%, and hybrids 50%. If multiplier credits similar to FCAI's voluntary standard were applied, BEVs would receive a 3X multiplier, PHEVs a 2X multiplier and hybrids 1.5X multiplier. These combined multiplier credits would amount to 110% of the actual vehicles. If the fleet in question achieved "average" emissions of 50g CO2/km including multiplier credits, its actual emissions would be 105g.

mechanism for foreign carmakers. If used for this purpose, multiplier credits could provide a powerful incentive for ZEV manufacturing beyond what would otherwise occur. Such multipliers could provide an incentive for local manufacturing or remanufacturing, for example local drivetrain replacement and local cathode and cell manufacture.

Recommendation 8: If utilised, any FES bonus credits should be carefully designed to avoid reducing CO2 efficacy, with caps and phase-outs built in from the outset.

Caps and phase-outs are common in comparable standards. The USA's CAFE standards originally included a volume cap per manufacturer. EU vehicle CO_2 standards also cap multiplier credits and phase them out entirely from 2025. In China the New Energy Vehicle (NEV) scheme is reducing credits and has capped multipliers at 14% of total obligations.

Caps and phase out milestones for credits should be made clear at the outset, rather than left until periodic reviews. Carmakers usually advocate for clarity and long-term vision from government to minimise risk and inform long-term product planning cycles; this should be no different.

To this end Tesla disagrees with the FCAI's recommendation that multiplier credits be left in place throughout the operation of a standard. The FCAI suggests that if multiplier credits are applied as a proportion of the CO2 limit curve, that they will naturally phase out over time as the limit curve reduces. Because this is not true of Zero Emission Vehicles, the Chamber suggests that ZEV credits are phased out earlier and separately. This approach could lead to distortions whereby ZEV multipliers being phased out before multipliers for other higher emission technologies.

Recommendation 9: If multiplier credits are utilised, caps and withdrawals should be calculated across segments, rather than by individual manufacturers or importers.

Among approaches for capping credits, Tesla recommends favouring the simplest, and avoiding those that may favour laggards. The USA approach of creating caps per manufacturer resulted in market distortions that favoured smaller or slower moving OEMs and was eventually revised. The EU approach of an overall cap and timed phase out scheme in place is the best template. Some stakeholders will advocate phasing out multipliers based on market penetration rather than time; if so phase-out milestones should be based on market penetration by segment overall, rather than by individual brands, to avoid favouring laggards and creating perverse incentives for delay.

Recommendation 10: a FES should feature clear and granular reporting of actual CO2 emissions without any bonus credits applied.

Consultation question

- When and how the FES should commence?

TECHNICAL When should a FES start?

- When do you think a FES should start?
- How should the start date interact with the average annual emissions ceiling?
- Should the Government provide incentives for the supply of LZEVs ahead of a FES commencing? If so, how?

Recommendation 11: A FES should **commence July 1, 2024**, with the first 6 months a reporting-only period and penalties commencing from January 1, 2025.

The Federal Government already provides several significant incentives for LZEVs, as do all state and territory governments in Australia. The best additional incentive to provide ahead of vehicle standards commencing is the acceleration of funding to rollout a national charging network that incorporates fast charging on both highways and in urban areas that have low concentration of homeownership and/or off-street parking.

Consultation question

- What level of penalties for non-compliance, and enforcement mechanisms should be established under an Australian FES to be internationally competitive?

TECHNICAL Penalties for each gram per kilometre

- What should the penalties per gram be? Would penalties of AUD$100 per gram provide a good balance between objectives? What is the case for higher penalties?

Recommendation 12: Penalties must be competitive with those in other markets that have similar rates of improvement.

Penalty price is a key lever affecting the efficacy of a FES. When deciding where to send their low and zero emission vehicles, carmakers naturally prioritise markets where those vehicles will achieve the maximum financial benefit.

By selling a BEV in the EU, a carmaker can currently generate in the order of AUD $14,800[19] in compliance credits.

In New Zealand, a carmaker can currently generate in the order of AUD $7600 in compliance credits, increasing to $9000 in 2025.[20]

Compliance credits are often traded between carmakers at 40-60% of the penalty price. Weaker targets soften demand for compliance credits thereby reducing their market value; stronger targets increase credit demand and market value. New Zealand has taken a “start strong” approach with a steeper CO_2 limit trajectory in the early years which offsets its lower penalty price.

If Australia sets a target for 2025 of 110g CO_2/km for example, a minimum penalty price of around AUD $134 would be required to rival the economics for carmakers sending their electric vehicles to Europe (depending on the mass limit curve applied in Australia).

Importantly, penalty prices are only as effective as CO2 targets are strong, so the weaker Australia’s CO_2 targets the higher its penalty price must be to achieve the same outcome.

[19] Carmakers generate €95 of compliance credits per gCO2/km under the CO_2 target. The CO_2 target is currently 95g so a carmaker may generate ~€9025 (~$14,800 AUD) of credit, depending on the vehicle mass and category.
[20] In New Zealand, the penalty price is currently NZD $45 (AUD $42) for new vehicles, increasing to $67.60 (AUD $62) in 2025. Car importers generate compliance credits for every gCO_2e/km under the target, with an adjustment for the slope of the mass limit curve and the tare weight of the vehicle compared to the weighted average tare weight of that category. EVs tend to be heavier than average. In 2023 a Tesla Model 3 generates 172 credits equivalent to NZD $7,740 and a Model Y 184 credits equivalent to NZD $8,280. In 2025 the NZ target will be 112.6gCO_2e/km and the penalty NZD $67.5, so an average weight vehicle may generate NZD $7,600 in credit, and a Model 3 is expected to generate in the order of NZD $9,700 of compliance credit.

Consultation question

- What governance and other technical matters to ensure the FES is robust, has low administrative costs, and establishes appropriate information disclosure rules?

It is important that data about vehicle decarbonisation and the fuel efficiency standard are publicly available from trusted government sources. More detail on this is given in answer to later questions regarding data collection.

TECHNICAL Starting emissions level limit and approach

- What should Australia's CO_2 FES target be?
- How quickly should emissions reduce over what timeframe?
- Should the Australian FES start slow with a strong finish, start strong, or be a straight line or take a different approach?
- What should Australia's CO_2 FES target be?

Recommendation 13: Australia's FES target should match New Zealand's Clean Car Standard rate of reduction, and catch up to other major markets (e.g., USA) by 2030.

Tesla also supports the Electric Vehicle Council's proposed target range that is consistent with Australian Government's targets outlined in the National Electric Vehicle Strategy.

Target Year	EVC Proposed Target Range		
	MA Target Range (g CO_2 / km NEDC)	MC/NA Target Range (g CO_2 / km NEDC)	Fleet Average Range (g CO_2 / km NEDC)
2024	131	200	159
2025	107 – 117	170 – 180	132 – 142
2026	82 – 103	145 – 161	107 – 126
2027	71 – 85	120 – 140	91 – 107
2028	61 – 70	100 – 120	77 – 90
2029	51 – 57	84 – 100	64 – 74
2030	43 – 47	65 – 80	52 – 60
2031	34 – 37	57	43 – 45
2032	26	44	33

Note: the upper bound of the target range listed above represents a less stringent scenario where no concessions/bonus credits are included in the standard, whereas the lower bound of the target range represents a more stringent scenario where some concessions/bonus credits are included in the standard.

Tesla also supports the 'World Class' Scenario outlined by the International Council on Clean Transportation (ICCT) which would see a target of 50 gCO2/km by 2030 on the NEDC cycle across the fleet. This would put Australia on track to achieve 95% well-to-wheel CO_2 emissions reduction in 2050 compared to 2019, a position that brings Australia very close to achieving net zero by 2050 in the transport sector.

GENERAL Adjustments of limit level

- How many years ahead should the Government set emissions targets, and with what review mechanism to set limits for the following period?
- How should the Government address the risks of the standard being found to be too weak or too strong while it is operating?

Tesla supports the Electric Vehicle Council's proposal regarding the timing of target reviews.

As outlined earlier in this submission, Tesla recommends that the terms of reference for future reviews are articulated in primary legislation; and that the review is required to take a brief from the Climate Change Authority regarding developments in climate science and what CO_2 targets are required to ensure the Australian light vehicle sector does its fair share in meeting Australia's decarbonisation goals.

85% of the global car market is currently covered by FES and several of these standards are likely to be significantly stronger than Australia's, given Australia is starting much later. Therefore, the risk of Australia legislating a standard that is too strong is minimal.

TECHNICAL Attribute-based emissions limit curve

- Should an Australian FES adopt a mass-based or footprint-based limit curve?
- If Australia adopts a mass-based limit curve, should it be based on mass in running order, kerb mass, or another measure?
- 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?

Tesla supports a mass-based limit curve using Mass in Running Order, which has been used under the FCAI's voluntary standard and in New Zealand and the EU. Any approach to weight thresholds should consider that electric vehicles will continue to be significantly heavier than ICEV alternatives and EVs in the LCV category may weigh up to 3500kg.

TECHNICAL Multiple targets

- Should an Australian FES adopt two emissions targets for different classes of vehicles?
- 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?
- Is there anything else we should bear in mind as we consider this design feature?
- Are there other policy interventions that might encourage more efficient vehicle choices?

Tesla supports a split target with a lower CO2 target for passenger cars (MA category) than off-road SUVs (MC category) and light commercial vehicle (NA). While the latter category (MC & NA) will be slower in decarbonising, the aim should be to achieve rapid decarbonisation in later years.

The risk attending split targets is that consumers and manufacturers alike may shift toward MC & NA vehicles which have less stringent decarbonisation requirements.

Several measures are available to government to counteract this outcome.

Recommendation 14: Review and update the requirements of MC category of the Road Vehicle Certification Scheme (RVCS).

The MC category is intended to be for off-road vehicles, but many vehicles are currently categorised as MC that are unlikely often or ever to be used as off-road. Increasing approach angle and clearance requirements for the MC category could tighten CO2 outcomes for a FES.

Recommendation 15: Building a safeguard mechanism into standards whereby a reduction in the CO2 target for the MC & NA category is triggered if this category grows in market share.

The MC & NA categories currently account for ~38% of new light vehicle sales. A safeguard mechanism could for example reduce the CO2 target for this category, for instance reducing the target by 2% for every 1% of market share the category achieves beyond 40%.

TECHNICAL Off-cycle credits

- Should an Australian FES include off-cycle credits for specified technologies?
- If so, should the per-vehicle benefit be capped and how should an Australian FES ensure that off-cycle credits deliver real emissions reduction?
- Should the Government consider any other form of off-cycle credits for an Australian FES?

Recommendation 16: Do not include off-cycle credits in a FES.

Tesla does not support the inclusion of off-cycle credits in an Australian standard. Off-cycle credits dilute the efficacy of standards and are being phased out in other standards around the world for this reason. Off-cycle credits increase complexity, decrease transparency, and threaten CO2 outcomes. If off-cycle credits are included, the CO2 target should be adjusted downward accordingly.

TECHNICAL Air conditioning refrigerant gas credits

- Should an Australian FES include credits for using low global warming potential air conditioning refrigerants, and if so, for how long should this credit be available?
- Could the issue of high global warming potential refrigerants be better dealt with by another policy or legislative framework?
- If such a credit is permitted, should the emissions target be lowered to ensure consumers realise the fuel cost savings and LZEV availability benefits of a FES?

Recommendation 17: Accelerate the phase out of high global warming potential (GWP) refrigerants and do not include them in a FES.

High GWP refrigerants should simply be banned. Hydrofluorocarbons are already being phased out in Australia pursuant to *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* and these gases have no place in modern vehicles or vehicle standards.

TECHNICAL Information that suppliers will need to keep and supply.

- The Government is keen to ensure any regulatory administrative costs are kept to a minimum while ensuring that outcomes are robust. What should the department keep in mind in designing the system for suppliers to provide information and in relation to record keeping obligations?
- What should the reporting obligations be? What information should be published and how regularly?
- How long should suppliers keep required information?
- Is a penalty of 60 penalty units appropriate for this purpose?

Just as progress in electricity generation and national greenhouse accounts factors should be regularly published by government in an accountable fashion, so too should vehicle fleet statistics.

A strong example is New Zealand's Te Manatū Waka (Ministry of Transport) Ngā tatauranga ā-kahupapa (fleet statistics) reporting. This includes weekly low emissions vehicle reports and comprehensive statistics about new vehicle sales and the existing vehicle fleet. New Zealand has the benefit of a central national registration body that makes the task of aggregating vehicle statistics simpler. Like Australia, Canada has state and territory registration authorities with

various data collection practices but has aggregated these into a national reporting framework[21]. Australian registration data is amalgamated in the NEVDIS database, but this data would require significant updating and cleaning for reporting purposes. The best approach for the Australian federal government is likely to be requiring OEMs to report their delivery data in a monthly fashion directly to the department; all brands would be able to comply with this requirement as they already submit the required data to VFACTS.

Australia may take some time to build an easy public interface such as New Zealand's, but a minimum viable product to start reporting could simply be monthly publication of a simple machine-readable dataset in CSV or JSON format. The public could quickly build and iterate useful public interfaces on that data as OpenNEM[22] have done for the electricity sector.

The Australian Government's initial Data and Digital Government Strategy articulates the Government's aim of "making non-sensitive data open by default" and prioritising "integrity and transparency in service delivery which increases trust in the Australian Government." Both principles are important to apply to fuel efficiency standards.

The eight principles for open data by the Open Government Working Group[23] also provide a checklist that could inform the Australian Government's approach.

1. **Complete:** in this case that means including raw CO2 data before any additional credits are applied and publishing granular information on the impact of any multiplier or technology credits.
2. **Primary:** data as it is collected with the highest possible level of granularity. In this case that would include marque, model, variant, vehicle category, homologation segment, drivetrain type, fuel economy, and CO2/km.
3. **Timely:** made available as quickly as possible. In this case that would ideally mean data is collected monthly from OEMs and published within 1 week after being provided back to OEMs for checks.
4. **Accessible:** available to the widest range of users for the widest range of purposes.
5. **Machine processable:** reasonably structured to allow automated processing.
6. **Non-discriminatory:** data is available to anyone, with no requirement of registration.
7. **Non-proprietary:** available in a format over which no entity has exclusive control.
8. **License-free:** not subject to copyright, patent, or trademark regulation.

Recommendation 18: To ensure transparency and public trust, government should collect and publish granular data on vehicle emissions, including a transparent account of actual emissions before any bonus credits are applied.

Government action is critical because there is currently no public and reliable source of data on Australian vehicle emissions. Tesla currently publishes its sales data through VFACTS, a commercial service run by the FCAI. As a commercial data source, VFACTS is not obliged to provide the public with complete information on vehicle emissions. FCAI CO2 reporting bakes in the use of bonus credits, and releases CO2 data by segments (MA; MC & NA) without revealing the size of those segments, so the public cannot know the total average emissions of vehicles, nor compare emissions from 2020 onwards to previous years. This underscores the importance of government obtaining and publishing its own reliable source of public data.

[21] https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2010000101
[22] https://opennem.org.au/
[23] https://public.resource.org/8_principles.html

Other matters.

Recommendation 18: New Vehicle Efficiency Standards would be a clearer name than Fuel Efficiency Standards.

Fuel efficiency standards are known by different names throughout the world: CAFE Standards (USA), Vehicle CO2 Standards (EU), Clean Car Standards (NZ) among many more. Tesla's experience operating across these jurisdictions is that standards achieve better public understanding and acceptance when they are clearly named and explained.

In 2022 the Electric Vehicle Council commissioned significant rounds of public opinion research by Essential Media to understand what preconceptions Australians have about vehicle standards, and how best to explain such standards.

Two misconceptions were common among respondents in this research.

- **Existing and used cars will be affected.** Respondents often assumed incorrectly that "fuel efficiency standards" would apply to the existing fleet of cars, or to used vehicle sales. This created understandable concern among about current vehicles facing penalties or sanctions. When announcing this consultation, Minister King made a point of clarifying that standards would only affect new vehicles; To avoid these misconceptions, Tesla recommends including the words "New Vehicles" when naming the standards.

- **Electric vehicles don't use "fuel"** in the conventional sense of the word. This creates confusion about whether BEVs are included in standards.

When researchers described standards impartially to respondents and asked what names would most accurately represent them, popular responses included New Vehicle Emissions Standards, New Vehicle Efficiency Standards, and New Car Pollution Standards.

Including the term "New Vehicles" in the name would help avert likely misconceptions about the standard applying to existing or used vehicles. Using "vehicle" instead of "fuel" would help avert confusion about whether electric vehicles are covered by the standards.