



SolarCitizens

A community voice for cleaner energy and transport

Submission to: Fuel Efficiency Standard—Cleaner and Cheaper-to-run Cars for Australia

Addressed to: Director, Fuel Efficiency Standards—Surface Transport Emissions and Policy Division
Department Infrastructure, Transport, Regional Development, Communications and the Arts

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Please note: this submission can be made public.

About Solar Citizens

Solar Citizens is an independent community-initiated campaign working to move Australia towards a future powered entirely by renewable energy and electric transport.

Since launching in 2010, we have worked with more than 100 community groups around the country and built a supporter base of more than 186,000 people.

Together we stand up for the millions of Australians who stand to benefit from electrifying our economy and rolling out clean technology and fight for outcomes that pave the way for a fast and fair transition to 100% renewable energy and transport.

[SolarCitizens.org.au](https://solarcitizens.org.au)

FOREWORD

Dear Minister King and Minister Bowen,

We thank you for the opportunity to provide feedback and recommendations for Australia's first mandatory Fuel Efficiency Standard. We strongly believe that this policy is the main lever to our country tackling our quickly rising transport emissions and helping more Australians access the cost-saving benefits of electric vehicles (EVs).

The perspectives of and considerations for everyday Australian consumers have been almost entirely left out of the Consultation Paper. Australia is currently in the midst of a cost-of-living crisis, where rents are skyrocketing, homeowners face mortgage cliffs, and at the same time, petrol prices are at some of the highest we have seen in years. As we detail in this submission, we believe it is of utmost importance that any Fuel Efficiency Standard modelled takes into account the difference in cost savings.

We have modelled the potential cost-of-living savings for Australia and various other regions, and have determined that under the right Fuel Efficiency Standard, Australians can save at least \$11 billion in fuel costs over five years. As requested by the Department, **Appendix 1** contains the methodology we used to calculate each Fuel Efficiency Standard scenario we modelled.

From our research, we have found that regional and rural Australians stand to gain the most from our shift towards electrified transport, due to the longer distances travelled, the higher prices paid for fuel, and the older average age of their vehicles.

As further requested by the Department, we have included some of the key findings of regional community engagement work we have undertaken since February 2023 as part of our Electric Ute Roadshow (**Appendix 2**). We have had the privilege of driving the first commercially available electric ute around the regions of Victoria, New South Wales and Queensland and talking with hundreds of people throughout the country, hearing their needs in the shift to EVs and educating them on Fuel Efficiency Standards.

Appendix 3 contains evidence of community support from our two-year campaign for a strong Fuel Efficiency Standard.

Heidi Lee Douglas

National Director

Solar Citizens

KEY TERMS

Fuel Efficiency Standard (FES): the entire scheme, which includes the below things, as well as any credits, penalties, etc. Therefore, we only have one FES at any time.

Scheme/Scenario: a variant of a Fuel Efficiency Standard, including credits, penalties, etc.

Grams per kilometre CO₂ limit (CO₂ limit): the yearly targets that are set within a Fuel Efficiency Standard, measured in grams of CO₂ per kilometre. Language is important – “targets” seem less concerning than a broken or exceeded “limit”.

Otherwise known as target; emissions ceiling; yearly emissions target.

CO₂ limit curve: many yearly CO₂ limits connected together. We recommend that this “curve” takes a straight-line approach.

Switching on: the time that Australia’s Fuel Efficiency Standard scheme comes into effect – we suggest the 1st of July 2024.

Peer nations: other countries that already have a Fuel Efficiency Standard, such as European Union countries, the United States, the United Kingdom, Japan, China, and New Zealand.

SUBMISSION QUESTIONS

Guiding principles

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

Generally, the guiding principles are on the right track. However, we believe there are certain elements that could be stressed further or added.

Ambition:

We believe that an Australian Fuel Efficiency Standard needs to be ambitious because we're starting from further behind – both in terms of starting date (for example, the European Union started their FES over a decade ago) and emissions intensity of our vehicle fleet, which was 45% greater than Europe in 2021.¹ In order to catch up with the rest of the world, our Standard will need to match the grams per kilometre CO₂ limit (CO₂ limit) of a nation with high ambition, if not beat that limit.

Any CO₂ limit and curve should match the ambition of our international obligations under the Paris Agreement. The yearly limits should therefore be science-aligned to a 1.5°C warming scenario. Any Standard must reach 0 grams of CO₂ per kilometre after ten years if we are to meet our net-zero emissions by 2050 targets. Starting at a slower pace, or allowing using super credits which can be used as loopholes and slow progress, only means that the Standard will be tougher to meet in later years.

Integrity:

Broadly, the proposed “transparent” and “credible and robust” principles are adequate in their scope. However, in order to make the Standard “accessible, whilst available in sufficient granularity and predictability”, having clear data transparency is of utmost importance. Data on new vehicle sales (with significant granularity) and emissions should be published in the public domain, and be linked to overall CO₂ reductions.

Equity:

The government must go further to protect the interests of the Australian public, who are ultimately the end users of the vehicles that fall under a Fuel Efficiency Standard. Currently, Australians are feeling the stress of the cost-of-living crisis, which is manifesting in high petrol bills, rent hikes and mortgage cliffs.

In deciding on the CO₂ limit curve for an Australian Fuel Efficiency Standard, the Federal Government should prioritise the best economic and emissions outcomes for everyday Australians, who would most benefit from the greater reductions in petrol costs and climate and health impacts of stronger Standards. For any Fuel Efficiency Standard being modelled by the Department, the impact of less ambitious scenarios on fuel cost savings for the Australian

¹ [Light vehicle emissions intensity in Australia](#), National Transport Commission 2022

public should be clear (see Box 1). Further, delaying the benefits of low and zero-emissions vehicles (LZEVs) to consumers will mean they are paying more for fuel and maintenance in the short term.

BOX 1: Modelling the impacts of three different Fuel Efficiency Standard scenarios

We modelled the cost savings for three Fuel Efficiency Standards in our [Recharging Australia](#) report: the Central Scenario Standard, New Zealand’s Clean Car Standard, and the United State’s Federal Vehicle Standards. All Standards reach 0g CO₂/km (or a 100% efficiency improvement) after ten years, in line with the International Energy Agency’s (IEA) recommendation to cease selling petrol and diesel vehicles by 2035².

Central Scenario Standard

Our Central Scenario Standard is based on analysis that has modelled a linear trajectory, starting at 95 grams of CO₂ per kilometre (the level of the European Union’s 2022 Standard), or a 35% efficiency improvement on the national emissions average for light vehicles, and reducing to 0 grams of CO₂ per kilometre after ten years. Following this trajectory, Australians are set to save at least \$11.2 billion over five years and \$52 billion over ten years in fuel costs (see Appendix 1 for methodology).

Starting Australia’s Fuel Efficiency Standard at the same level as the European Union ensures that we have the best savings in fuel costs available for Australians as soon as possible, to ease the burden on the spiralling cost of living.

New Zealand Clean Car Standard

New Zealand’s Clean Car Standard came into effect in December 2022 and, combined with the existing Clean Car Discount subsidy scheme, has already exceeded expectations of reducing the emissions intensity of the country’s fleet. Table 1 shows the trajectory of the first five years of New Zealand’s Standard and the expected efficiency improvements in the country’s vehicle fleet. The scheme is simple yet effective, strong enough to catch up to the European Union before 2030 while adhering to our "Integrity" principle as it does not have loopholes or concessions.

Table 1: New Zealand’s annual CO₂ targets for its Clean Car Standard for light vehicles. Compared to the European Union Standard, the Clean Car Standard starts off more gradually, accelerates after one year, and then becomes more gradual again after year five.

Year	2021 (measured emissions)	2022	2023 (standard begins)	2024	2025	2026	2027
Grams of CO ₂ per kilometre	169	-	145	133.9	112.6	84.5	63.3
Efficiency Improvement of New Zealand Fleet	0%		14.2%	20.8%	33.4%	50%	62.5%

² Petrol and diesel car phase out, International Energy Agency, 2022.

Solar Citizens’ analysis shows that if the Clean Car Standard was applied to Australia, we would expect to see \$7.3 billion in fuel cost savings over five years, \$3.9 billion less than if we adopt the European Union’s starting limit. The number of EVs in the national fleet would also reduce by 21.7%, to 715,372 EVs over five years.

United States Federal Vehicle Standards

Although the United States standard starts at a limit of lower grams of CO₂ per kilometre, by year two, New Zealand’s Clean Car Standard achieves a lower CO₂ limit and remains more stringent for the remainder of the years. For this reason, if the United States Standard was applied to Australia, we would expect to see \$7.1 billion in fuel cost savings over five years, \$4.1 billion less than if we adopt the European Union’s starting limit. The number of EVs in the national fleet would also reduce by 30%, to 648,554 EVs over five years.

The difference in fuel cost savings between the United States Standard and New Zealand’s Clean Car Standard may seem nominal, however, the savings over ten years become more pronounced (Table 2). At the ten-year mark (where we have given all three Standards a linear trajectory to 0 grams of CO₂ per kilometre) although the New Zealand Standard is \$8.4 billion less in savings than the Central Scenario Standard (our Central scenario), it delivers nearly \$3 billion more than the United States Standard. (For methodology, see Appendix 1)

Table 2: Cumulative Fuel Cost Savings over one, five and ten years with three different Fuel Efficiency Standards: Solar Citizens, New Zealand, and United States.

	Year 1	Year 5	Year 10
Solar Citizens	\$ 590 million	\$ 11.22 billion	\$ 52.02 billion
New Zealand	\$ 145 million	\$ 7.33 billion	\$ 43.65 billion
United States	\$ 305 million	\$ 7.16 billion	\$ 40.81 billion

We agree with the government that our Fuel Efficiency Standard should “not unduly negatively impact any particular group of people or part of Australia”. We want to stress that regional Australia is set to reap the largest benefits of a Fuel Efficiency Standard due to a number of factors: residents living in regional locations typically drive longer distances, pay higher fuel prices, and own more vehicles and larger vehicles than the national average. This means that their fuel costs are currently much higher than in metropolitan areas, and therefore the gains to be made from switching to LZEVs are correspondingly larger. It is also worth noting that incomes are typically lower in regional areas,³ which means cost of living pressures like spikes in fuel prices can be felt more acutely.

³ 2021 Census, Australian Bureau of Statistics



Over the last three months, we have engaged rural Australians throughout Victoria, New South Wales and Queensland in our Electric Ute Roadshow campaign, and these cost of living pressures—and the potential fuel cost savings a strong FES would bring—have been a common theme throughout (see Appendix 2).

It is critical that complementing an Australian Fuel Efficiency Standard should be additional policies to ensure the availability and affordability of LZEVs for people on low incomes. There are currently no EV models under \$40,000 on the Australian market – a barrier for many consumers. Priority should be given to cars that fall under this price point.

Around half of all Australians buy second-hand vehicles, with more than 75% of young people under the age of 35 buying second-hand.⁴ Because EVs require less maintenance, fleet companies are likely to hold onto them for longer periods of time than petrol and diesel vehicles, leaving many Australians with expensive-to-run vehicles for longer, while affluent people will reap the cost-saving benefits, further entrenching inequity. For this reason, in parallel to the FES increasing the availability of new EVs, policy support for the second-hand import market should be provided, particularly in the first five years of the FES.

Clean Energy

We would advise the government to set up an Australian Fuel Efficiency Standard with the future in mind, in particular our commitments to the Paris Agreement.

Clean, renewable energy should be strongly considered alongside a Fuel Efficiency Standard. We believe the Government should set a target of 100% renewable energy generation by 2030, ensuring clean electric transport for all. The energy charging up EVs needs to be clean if we are to reduce our emissions and solve the climate crisis. A shift to EVs requires a swift transition to renewable energy so that EVs can be powered with clean energy.

⁴ <https://www.budgetdirect.com.au/car-insurance/research/australian-car-sales-statistics.html>

Design assumptions

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

Depending on the baseline chosen for the “model availability” assumption, this could lead to problematic outcomes. A baseline of what exists in vehicle markets already covered by a FES overseas (ie. what we’re aiming for) should be used, as opposed to a baseline of what currently exists in Australia (where we’re starting from).

The point that "FES will continue to allow the full range of vehicles to be sold" could be problematic, depending on what is meant by “the full range”. In the early years of the FES, we do not anticipate any currently-available vehicles to become unavailable; that is, people will still be able to buy full-internal combustion engine vehicles (ICEVs) of all shapes and sizes, in addition to a wider range of LZEVs. However as the Fuel Efficiency Standard tightens and approaches 0 g CO₂/km, ICEVs will become less and less available, until eventually being eliminated entirely. However, a “full range” of LZEV options will still be available (e.g. sedans, hatches, utes, SUVs, etc.).

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

The exclusions listed are the right ones. It should be noted that heavy vehicles, agricultural equipment & motorcycles should get their own Standards as part of future government policy.

Starting emissions level limit and approach

What principles should we consider when setting the targets?

Trajectory to 0g over 10 years

The Standard should have a trajectory to reach 0g CO₂/km (or a 100% efficiency improvement) after ten years, in line with the IEA’s recommendation to cease selling petrol and diesel vehicles no later than 2035. As the average lifespan of a car in Australia is 20 years and 5% of vehicles in Australia’s fleet are replaced each year,⁵ we cannot be selling petrol or diesel vehicles after 2035.

Matching the limit, not the rate

When we talk about being aligned with or matching the Standards of our peer nations, we need to match the emissions ceiling, not the rate of change. If we only look at the rate of change, we will continue to be at the back of the pack when it comes to prioritising LZEVs for the Australian market from the global pool of vehicles available.

Catches up to New Zealand by 2028

⁵ New Car Sales Data, Federal Chamber of Automotive Industries, 2022

From when the Fuel Efficiency Standard is introduced up until 2028, Australia should aim to roughly catch up to our partner nations.

New Zealand provides an example we should follow. As a country, they are a similarly small, right-hand drive market, isolated from the world, with a significant rural population. If we caught up to their 2028 g CO₂/km limit, this would put us in good stead to compete for the rest of the world's pool of right-hand drive LZEVs.

Standardise to WLTP

As all other countries are using the World Harmonised Light Vehicle Testing Program (WLTP) measurement system, all g CO₂/km numbers that we refer to are assumed to be measured in this system rather than the New European Driving Cycle (NEDC).

Limits, not targets

Using the language of “targets” is dangerous, as it seems aspirational. Changing this language to “limits” (e.g. “the manufacturer has exceeded the CO₂ limit for 2024”) carries more weight.

What should Australia's CO₂ FES target be?

There should be three main data points for Australia's Fuel Efficiency Standard:

1. Starting emissions intensity
2. Catching up to New Zealand by 2028, and
3. 0g CO₂/km before 2035

Point 1: Emissions from new Australian passenger cars and light SUVs in 2021 averaged 146.5 grams of carbon dioxide per kilometre (g CO₂/km)⁶. We do not have updated figures, and strongly recommend that the government starts independently collecting the required data to update these figures (see “Information that suppliers will need to keep and supply” section). We also note that these figures exclude heavy SUVs; the government must include these vehicles in the data collected and must set a target that includes both heavy and light SUVs in order to avoid category-jumping behaviour which would distort the market and reduce the effectiveness of the FES.

Point 2: From Point 1 (146.5g CO₂/km), Australia should aim to first meet New Zealand's limit by 2028. New Zealand has only set CO₂ limits to 2027 at this point (63.3g CO₂/km for passenger cars and 87.2g CO₂/km for light commercial vehicles = an average of 75.25g CO₂/km for all vehicle classes), which means that to determine an Australian limit for 2028 the trajectory should be taken towards Point 3. Regardless, this number will be below New Zealand's 2027 limits.

⁶ National Transport Commission

Point 3: once Australia has caught up with New Zealand, we should aim to reduce to 0g CO₂/km well before 2035, preferably within 10 years (no later than 30th June 2034). This is a long enough time frame to give the industry certainty and plan for the future. Given the long turnover time for the light vehicle fleet (approximately 20 years) and the challenges of decarbonising other parts of the transport sector like aviation and shipping, we should decarbonise what we can sooner so that other sectors don't have to make up the shortfall in the long term.

These three points should be used to create a linear approach. Therefore, not all points will be intersected neatly (Figure 1).

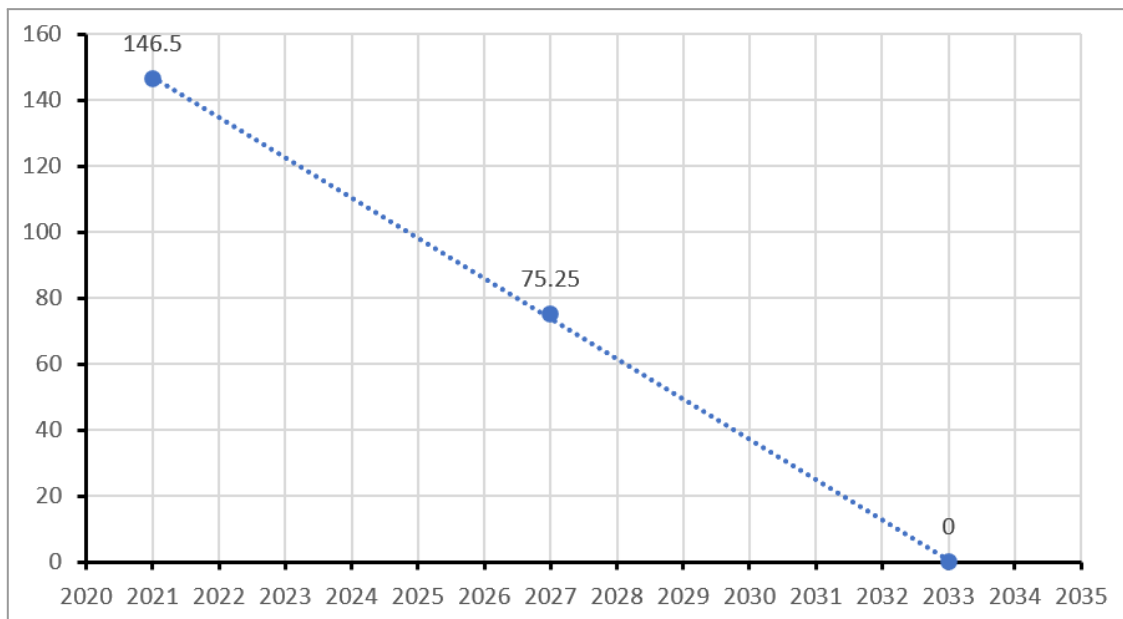


Figure 1: Three suggested points for Australia's Fuel Efficiency Standard

- How quickly should emissions reduce over what timeframe?
- When do you think a FES should start?
- How should the start date interact with the average annual emissions ceiling?

The Standard should be switched on and come into full effect on the 1st of July, 2024. The government started proposing a Fuel Efficiency Standard in their discussion paper for the National Electric Vehicle Strategy back in October 2022 – already providing a signal for car manufacturers that a scheme is coming. By the time that 1st of July, 2024 comes around, it will be nearly two years from this point.

The Standard should get Australia on a trajectory to reach 0g CO₂/km no later than 2035, with a preference for 10 years from switching on the FES on July 1st, 2024. This aligns with the IEAs recommendation to cease selling petrol and diesel vehicles by 2035.

The 1st of July 2024 is 15 years after the European Union (EU) (2009)⁷, 14 years after the US (2010)⁸, and 2 years after New Zealand (2022)⁹. Over 85% of the global car market is covered by a Fuel Efficiency Standard. Car manufacturers knew this was coming and know how to cooperate with these schemes. This shouldn't be anything new, Australia is simply proposing to start keeping up with the rest of the world.

It should be noted that we do not expect the Government to announce the date for 0g CO₂/km publicly, as this may result in bad press. However, it should be kept in mind that any reductions not taken in the early years mean that the later years of the Standard will require more harsh reductions.

Should the Australian FES start slow with a strong finish, start strong, or be a straight line or take a different approach?

One Curve Approach

We strongly recommend that the FES should only have **one CO₂ limit curve** for all light vehicle classes (cars, light and heavy SUVs, and light commercial vehicles). This CO₂ limit curve should aim for a **linear** approach. This gives car manufacturers time to adjust and gives them flexibility for how they meet the CO₂ limit in any given year (for example, if they provide lots of diesel light commercial vehicles, this could be offset by providing more LZEV passenger vehicles and SUVs). This “one Standard” approach should be simpler for the Government to administer.

This CO₂ limit curve should not include multiplier credits (super credits), off-cycle credits, or air conditioning refrigerant gas credits as explained below.

Multiple targets

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

Multiple Curves Approach

We strongly recommend that the FES should only have **one CO₂ limit curve** for all light vehicle classes (cars, light and heavy SUVs, and light commercial vehicles).

However, if it is decided that vehicle classes should have different CO₂ limit curves applied to them, then the breakdown should be:

1. a CO₂ limit curve for cars, and light and heavy SUVs, and
2. a CO₂ limit curve for Light Commercial Vehicles, like utes and delivery vans.

⁷ https://theicct.org/sites/default/files/publications/ICCTupdate_EU-95gram_jan2014.pdf

⁸

<https://www.c2es.org/content/regulating-transportation-sector-carbon-emissions/#:~:text=The%20final%20rule%20requires%20automakers,percent%20in%20model%20year%202026.>

⁹ <https://www.nzta.govt.nz/vehicles/clean-car-programme/clean-car-standard/>

We have split the CO₂ limit curves in this way because although there is limited availability of LZEV light commercial vehicles, there are many options both in Australia and internationally for LZEV cars, LZEV light SUVs and LZEV heavy SUVs.

It is also important to group all types of SUVs with light passenger vehicles because these vehicles are performing the same passenger duties and are therefore directly interchangeable in the market. If all SUVs were in different CO₂ limit curves, it would provide strong incentives for manufacturers to push consumers away from smaller and less polluting hatches, sedans and station wagons, towards larger and more polluting SUVs.

This was the clear effect of the USA's Corporate Average Fuel Economy (CAFE) standards introduced in the 1970s, which included "light trucks" under a looser standard than passenger vehicles, and allowed SUVs to be classified as "light trucks". This encouraged manufacturers to category-jump and to encourage larger and more polluting vehicles in that market¹⁰. Australia must not make the same mistake, as this would reduce the effectiveness of the FES, and have a range of other negative effects (such as increased traffic mortality and increased road maintenance costs).

Both CO₂ limit curves should:

- be the same **linear** shape, to prevent perverse effects like category jumping, and
- reach 0g CO₂/km at the same time, preferably over 10 years but no later than 2035.

Neither of these CO₂ limit curves should include multiplier credits (super credits), off-cycle credits, or air conditioning refrigerant gas credits as explained below.

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?

If there are multiple CO₂ limit curves for different classes of vehicles (which, reiterating, there should not be), by keeping the curves the same shape then any incentive to shift classes is more likely to be avoided.

¹⁰ Sallee, J.M. (2011, September). "The Taxation of Fuel Economy." *Tax Policy and the Economy*, 25(1). Retrieved from <https://www.journals.uchicago.edu/doi/full/10.1086/658379>

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?

CO₂ limits should be set 5 years in advance. This gives the industry certainty and sets out what is expected of them in the Australian market. The yearly CO₂ limits should be reviewed every 2 years, and the 5-year outlook updated.

The CO₂ limits must not be raised to a higher g CO₂/km limit at any time (weakened) – this gives the industry further certainty. Like Australia’s Safeguard Mechanism, ambition must only be able to be ratcheted up, meaning that the emissions ceiling can only be lowered at review periods.

At each review period, the Department should consider where other countries’ CO₂ limits are at and adjust the 5-year outlook accordingly, ensuring that our Standard remains competitive with other countries so we get our fair share of LZEVs.

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

Governments tend to be conservative when predicting the pace of technological change. We are more likely to have set a too-weak CO₂ limit than one that is too strong – especially considering the context of other nations’ Standards, which are constantly being reviewed and strengthened, as the United States did earlier this year.¹¹

As previously mentioned, there should be a ratchet mechanism set, which means we could only increase the strength (lower the limit), not make it weaker (raise the limit). This is consistent with other significant climate legislation already in place in Australia like the Safeguard Mechanism.

Are there other policy interventions that might encourage more efficient vehicle choices?

We note that tax incentives such as the instant asset write-off have previously incentivised larger, more polluting vehicles. We note the recent budget has changed these incentives for the better, and encourage the government to consider the distorting effects of similar incentives going forward.

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<https://www.epa.gov/newsreleases/biden-harris-administration-proposes-strongest-ever-pollution-standards-cars-and>

We note with concern the increased presence on Australian streets of increasingly large “pickup truck” style utes from America. These vehicles are significantly taller, wider, longer and heavier than previous generations of utes seen in Australia, and this does not typically reflect a greater practical capacity to carry loads – in fact, rear trays have shrunk¹² as more of the vehicle’s space is taken up by car-style cabins (and general bloat).

The large blind spots of these vehicles contribute to an increased likelihood of colliding with pedestrians, cyclists and other motorists; when a collision does occur, the high, flat fronts of the vehicles (as well as the increased mass) make collisions more likely to be deadly.

These were not an issue with previous models of utes that Australians have loved for generations, so it is not an inherent problem with utes or light commercial vehicles – just these new designs, which prioritise tough looks over practicality or safety.

There is an urgent need for the Commonwealth to review vehicle safety standards to ensure that only safe vehicles are allowed on our roads. Since the most dangerous pickup trucks also tend to be the most polluting, policies designed to improve safety would likely have the co-benefit of reducing emissions.

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?

Credits should be able to be banked for up to 3 years, transferred to different categories of CO₂ limit curves, and be able to be pooled between car manufacturers.

The more credits (or other concessions such as super credits, off-cycle credits, air conditioning credits, and lower penalty prices) that are built into the scheme, the more stringent yearly CO₂ limits are required (and vice versa). For example: If we take a “slower start” approach, then credits would need to be capped, and expire sooner too to prevent banking too many credits in the early years.

If it is noticed that car manufacturers are intentionally not beating the CO₂ limits (because they can easily meet them with the use of credits) then decreasing the use and value of credits at review periods is recommended.

Credits should initially expire after three years, beyond which credits depreciate at a rate of 50% year on year. The expiry timeframe should shorten in the later years of the scheme when we need to disincentivise the sale of petrol vehicles. Penalties should have a shorter expiry than the credits, to incentivise acting early.

¹² Chase, W., Whalen, J. & Muller, J. “Pickup trucks have gotten bigger, higher-tech - and more dangerous.” *Axios*. Retrieved from <https://www.axios.com/ford-pickup-trucks-history>

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?

Recommended principle:

An Australian FES should not include multiplier credits for LZEVs. Super credits are simply dodgy emissions accounting that makes no real-world emissions reduction.

As the Government notes, super credits were implemented in other countries for “innovative technologies” – hybrids, plug-in hybrids and to an extent EVs and fuel cell EVs are no longer “innovative technologies” so shouldn’t have multipliers applied to vehicle classes as such. “Super credits have been a feature of FESs in many markets” because they started decades before Australia when these technologies were indeed “innovative”. This is no longer the case – they are the new status quo.

Additionally, most super credits will be phased out by 2024 in the US – this is the same time we will likely be starting our own scheme. New Zealand’s scheme does not include super credits, because they made a decision to centre their FES around simplicity and transparency.

Concessions:

If super credits are included in an Australian FES (which again, they should not be) then we would recommend that they should:

- Only be for:
 - Truly “innovative technologies” as proposed by the Consultation Paper, such as BEVs under the \$40,000 AUD mark (only 8 of these exist in Europe), and BEV utes which are still in their infancy globally (only 8 on the market and around 18 others planned)¹³, or
 - Vehicles with a significant portion of their componentry made within Australia, to stimulate local manufacturing on the EV value chain.
- Be capped at a certain number of vehicles per year.
- Should apply at a multiplier rate of less than 1.5 per vehicle, which decreases the multiplier rate each year (e.g. 1.4, 1.3, 1.2)
- Be phased out entirely after 3 years.
- Have transparency regarding the true portion of emissions abatement that super credits is making up for each car manufacturer,

¹³ [Ute Beauty! The Case for Lower and Zero Emissions Utes in Australia](#), Climate Council 2023

- Be reported on publicly (see “Information that suppliers will need to keep and supply” section below)

Other ways to address uptake and supply

- If not, should the Government consider another approach to incentivising the supply and uptake of LZEVs?
- Should the Government provide incentives for the supply of LZEVs ahead of a FES commencing? If so, how?

Uptake (demand) is not the issue – various reports indicate that up to 54% of people want an EV as their next vehicle¹⁴, which is only likely to increase as EVs become more prolific and seen as a viable and cost-effective option. Considering Australia has over 18 million vehicles in its fleet, this accounts for 9.9 million vehicles. Until we have secured a supply that matches this, supply is the main issue to solve.

However, we would like to reiterate the points we made in our submission to the National Electric Vehicle Strategy to address the supply and uptake of LZEVs:

Means-based/targeted subsidies:

LZEV demand has already been met for high-income segments and we need to ensure that we’re not creating a system of energy/transport wealth and energy/transport poverty. We should target subsidies and incentives in a means-based (income-dependent) manner, encouraging lower-income households to switch to clean transport sooner rather than later.

Subsidies for second-hand EVs for low-income households:

As many Australians do not buy new cars, providing subsidies for second-hand EVs will be important. However, these subsidies should only be available to vehicles after at least 1 year after the purchase date, to avoid “scalping” – the onselling of vehicles at a higher than purchase cost.

Subsidies and programs for e-bikes:

- Offer a 30% rebate (up to \$1500) for the purchase of an e-bike (including e-cargo bikes) for personal use, applied at the point of purchase to enable e-bikes to be accessible to more people.
- Increase uptake of e-bikes via an e-bike library scheme. If successful, the program could be broadened to include a no-interest loan scheme.
- Introduce free or cheap access to an e-bike community library to social housing estates.
- Partner with councils to increase charging infrastructure and operate e-bike borrowing programs.

¹⁴ [Australians ready to embrace electric cars and want their polities to back the switch: poll](#), Electric Vehicle Council 2021

- Provide incentives to businesses to encourage the installation of end-of-trip facilities and charging for e-bikes and e-scooters.

The government should take a broader view and seek to increase affordability and accessibility to **low-emissions mobility** as a whole, with EVs providing part of the solution but not all of it. This can be achieved by:

- significantly increasing the availability of safe walking and cycling infrastructure, in particular, to connect with jobs, shops, amenities and public transport services, and
- frequent public transport services using existing infrastructure (including extra trains at off-peak times, and extra buses on existing roads).

Building and widening urban freeways encourages more driving, causes congestion and carbon emissions, and is an expensive option for households while petrol prices continue to rise. In contrast, building more walking, cycling and public transport infrastructure gives people a low-cost, low-carbon and healthy alternative to driving, while also reducing congestion.

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?

No, we should not have off-cycle credits available for the specified technologies.

However, if it is decided that we should have off-cycle credits, then we recommend:

- The data should be based on an Australian driving context,
- the baseline should be set at a stretch for car manufacturers, and
- The credits should be phased out after 3 years, reducing in rate each year until that point.
- The per-vehicle benefit should be heavily capped

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?

No, we should not have credits for using low global warming potential air conditioning refrigerants.

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?

The penalties per gram price should be as high as in other markets like the EU, and the financial penalty should exceed the cost to the manufacturer of not complying. This should close the gap between us and other countries, and disincentivise car manufacturers sending LZEVs elsewhere.

The penalty price is an incentive in itself. A high penalty price means that LZEVs generate more valuable credits for manufacturers.

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 the required information?
- Should the regulator be the department? What other options are there?

Data collection should be reliable, transparent, granular and free.

Reliable

Data should be reported weekly by manufacturers, as is done in New Zealand. It's easier on car manufacturers if we standardise with what's being done in other nations.

Data should be reported to the Department or a government agency such as the National Transport Commission. Under no circumstances should the data be managed by the Federal Chamber for Automotive Industries or VFacts as this slows the process down and reduces the integrity and transparency of the data.

Granular

As raised in the Consultation Paper, the number of vehicles sold; the CO₂ emissions per km for each vehicle; and the specifications of each vehicle (dependent on whether a mass or footprint approach is taken) are the minimum of what data should be collected.

In addition, if there are inclusions of any super credits (which we believe there should not be), then these should have to be reported on – how many were used and what the impact on the car manufacturer's emissions average for the year was.

Manufacturers will be collating this information for their internal records regardless of any reporting obligations the government considers.

Transparent

All of this data should be publicly accessible, at least in summary form, and published on a monthly basis. This additional reputational risk from public perception creates another disincentive for manufacturers to breach the emissions limit or to use too many credits.

Free

With manufacturers having to comply with many different systems internationally, making the system easy to automate should be a priority, to reduce the administrative burden and decrease the risk of human error.

APPENDIX 1: Methodology for calculating fuel cost savings

Our research present in our [Recharging the Regions report series](#) draws on the Australian Bureau of Statistics (ABS) and Census 2021 data to calculate the likely fuel cost savings and growth in electric vehicle (EV) sales in various SA4 regions throughout the country. SA4 is identified as the most representative data set to illustrate the transport benefits in regions due to the wide availability of SA4-coded data.

This research used three scenarios, **Flat**, **Central** and **Supercharge**, to analyse the impacts. In the Flat scenario, a flat 95 g CO₂/km Fuel Efficiency Standard (or 35% efficiency improvement) across 10 years was modelled as a baseline, the Central scenario models 95 g CO₂/km and reduces to 0 g CO₂/km over 10 years, while the Supercharge scenario reaches 0 g CO₂/km in five years (Figure 2).

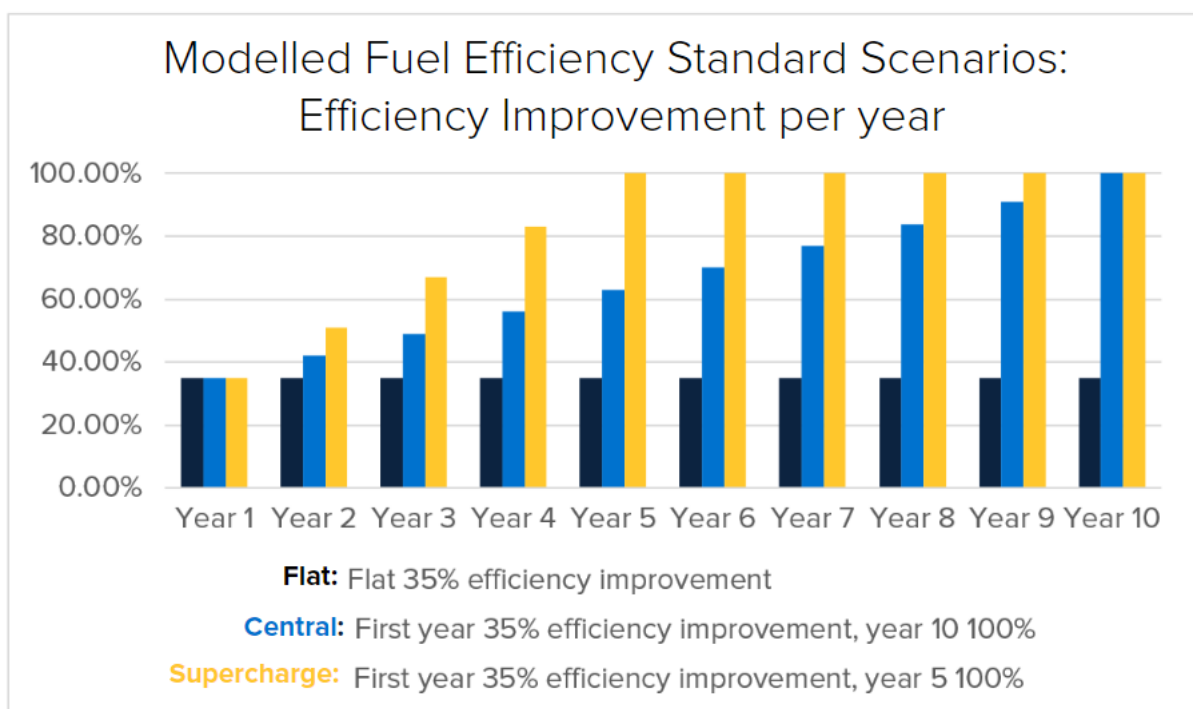


Figure 2: Modelled Fuel Efficiency Standard Scenarios

Solar Citizens' analysis has shown that by introducing a Fuel Efficiency Standard equivalent to the EU's 2022 CO₂ emissions limit – our **Central** scenario – would save motorists in Australia \$11.2 billion in fuel costs over five years. Even higher savings of \$14.3 billion could be realised by following the more ambitious **Supercharge** scenario.

We ran this model for various SA4 regions we engaged regional Australians (see Appendix 2), and the results have been summarised below using our Central model (Table 3).

Table 3: Central Scenario, modelled fuel cost savings and EVs in fleet over 5 and 10 years

Region Name	Statistical Area	Fuel Cost Savings (in millions (m) and billions (b))		Electric Vehicles in Fleet
		5 years	10 years	5 years
Australia	AUS	\$11.2b	\$52b	913,359
Regional Australia	1RNSW, 2RVIC, 3RQLD, 4RSAU, 5RWAU, 6 7, 8ACTE	\$4b	\$18b	
Regional Victoria	2RVIC	\$724m	\$3b	59,483
Ballarat	SA4-201	\$80m	\$369m	6600
Shepparton	SA4-216	\$64m	\$298m	5332
Bendigo	SA4-202	\$77m	\$354m	6298
Hume	SA4-204	\$89m	\$412m	7174
Illawarra	SA4-107	\$136m	\$630m	10,923
Hunter Valley	SA4-106	\$122m	\$566m	9805
Newcastle	SA4-111	\$178m	\$827m	14,607
Central Coast	SA4-102	\$157m	\$726m	12,615
Port Macquarie	SA4-108	\$101m	\$470m	8155
New England	SA4-110	\$71m	\$329.6m	5705
Coffs Coast	SA4-104	\$62m	\$286m	4951
Northern Rivers	SA4-112	\$109m	\$506m	8848

Fuel costs savings make the following assumptions:

- that 5% of fleet is turned over per annum and is evenly distributed
- that light passenger vehicle emissions are 146.5g CO₂/km
- that a new Fuel Efficiency Standard will start in Year 1 at 95g CO₂/km
- that 95g CO₂/km represents a fuel efficiency improvement of 35% in Year 1
- that fuel prices, fleet size and annual fleet turnover are constant over 10 years

- that fuel use per vehicle in the data regions is equivalent to the national average
- that fuel prices as reported in the Australian Institute of Petroleum weekly summary of prices for the “Metropolitan Average” and “Regional Average” in the week of 23 October 2022 remain constant
- that Ballarat fuel expenditure is proportionate to the national average
- average cost of fuel calculated using 79.94% petrol / 20.06% diesel equivalent p/L – based on percentage of petrol/diesel passenger vehicles in the Australian fleet

Electric vehicle growth calculations make the following assumptions:

- that changes to fleet composition will be geographically evenly distributed
- that 50% of emissions reductions required to achieve 95g CO₂/km standard are from the sale of electric vehicles

Data Sources

- Australia’s commuting distance: cities and regions, Bureau of Infrastructure and Transport Research Economics, 2011
- Australia’s light vehicle fleet, Bureau of Infrastructure and Transport Research Economics, 2018
- Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2021, National Transport Commission, 2021
- Census 2016, Australian Bureau of Statistics, 2016
- Census 2021, Australian Bureau of Statistics, 2021
- CO₂ emission performance standards for cars and vans, European Commission (sighted October 2022)
https://climate.ec.europa.eu/eu-action/transport-emissions/road-transport-reducing-co2-emissions-vehicles/co2-emission-performance-standards-cars-and-vans_en
- Data by Region, Australian Bureau of Statistics (sighted October 2022)
- Fuel Efficiency Standards, Department of Infrastructure, Transport, Regional Development, Communications and the Arts, (sighted October 2022)
<https://www.infrastructure.gov.au/infrastructure-transport-vehicles/vehicles/fuel-efficiency-standards>
- Fuelling Efficiency, The Australia Institute, 2022

- Health Impacts of Transport Study, Bureau of Infrastructure and Transport Research Economics, 2011
- Quarterly Australian Petroleum Market report – June 2022, ACCC, 2022
- SA4 and Australia regions, ABS Maps, Australian Bureau of Statistics
- Survey of Motor Vehicle Use, Australian Bureau of Statistics, 2020
- Vehicle emission standards, Department of Infrastructure, Transport, Regional Development, Communications and the Arts, (sighted October 2022)
<https://www.infrastructure.gov.au/infrastructure-transport-vehicles/vehicles/vehicle-safety-environment/emission-standards>
- Weekly Diesel Prices Report, 23 October 2022, Australian Institute of Petroleum
- Weekly Petrol Prices Report, 23 October 2022, Australian Institute of Petroleum

APPENDIX 2: Views from Regional Australia

In 2023, Solar Citizens is running the Electric Ute Roadshow as a core part of our campaign for a strong Fuel Efficiency Standard. The Roadshow seeks to bridge a key gap in EV advocacy by taking Australia’s first commercially available electric ute (an LDV eT60) to regional Australian communities, running community events, and engaging directly with local councils, MPs and community groups.

So far, the Roadshow has included 20 community events engaging hundreds of people throughout Victoria, New South Wales and the Australian Capital Territory, with a leg in Queensland planned in June 2023 (Figure 3). Many of these events have been collaborations with local agriculture, renewable energy and sustainability groups, which helped us reach locals from a range of backgrounds.



Figure 3: Map of locations where Electric Ute Roadshow events were run

The community events provide an opportunity to talk with regional Australians about the shift to electric vehicles, explaining the policies like a Fuel Efficiency Standard that will be crucial to getting the kinds of vehicles they prefer and want to see into Australia before making the switch (including EVs that are more affordable, have longer ranges, and meet practical needs such as towing capacity). It’s also been a crucial opportunity to hear from regional communities about the barriers they face towards EV uptake which governments might be able to address.

We have also commissioned research into the fuel cost savings a strong Fuel Efficiency Standard would bring – \$11.2 billion over 5 years. Strikingly, we found that regional Australia stands to benefit even more than city areas per capita from the switch to ZLEVs—\$4 billion

over 5 years—as regional drivers travel further, pay more at the bowser, and tend to drive older, less efficient vehicles.



“With the cost of diesel these days at well over \$2, the cost of charging this, the cost of running this, is just so much cheaper. So for our tradies, and the ute-drivers of Australia, I say go electric”

**Brett Edgington,
Secretary, Ballarat Trades Hall**

In addition to high-level reports showing the nationwide savings, we have used this research to produce localised reports on the savings a strong FES would bring to each region we visit. This cost-of-living framing has resonated strongly with the communities we have visited: many are feeling the pressure of high fuel prices (alongside other pressures such as housing) and welcome the idea that they could slash their fuel bills by going electric – particularly those who have rooftop solar panels and could use these to cheaply charge their vehicles.



“We’ve had our car for about 16 months, my husband and I, and a couple of months ago he said we’ve saved approximately \$4000, due to services and fuel - we have not serviced the car yet!”

Zena from Yackandandah

The attendees at our community events have had a wide range of background knowledge, from those completely new who want to ask questions about the basics, to enthusiastic EV owners who can speak confidently about their experiences driving, charging and living with EVs.

The EV owners were able to back up our research on cost savings with their own experiences – all of them spoke about their massively reduced fuel bills, as well as the significant savings they had made on vehicle servicing costs.



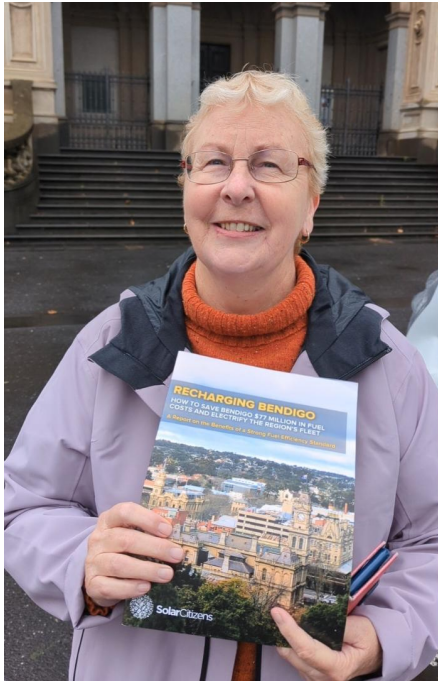
“We’re running a fleet of Teslas now, we’re up to four – soon to be five. We have massive savings; we’re charging them using solar, and the running costs and servicing costs are amazing – and the staff love them!”

**James Foster, CEO ENV Solutions,
NSW Northern Rivers**

For some attendees—and many people we came across when charging, or when driving the ute around town—the mere existence of an electric ute came as a significant surprise. Therefore, a large part of the Roadshow was educating people about the vehicles that exist in Australia and the better ones already available around the world if we can adopt a Fuel Efficiency Standard that is strong enough to bring them here.

We regularly asked attendees who did not yet own an EV what was holding them back, especially what barriers they faced. Some of the most common responses were:

- The upfront purchase price/lack of affordable models
- Concerns about vehicle driving range
- Concerns about towing/hauling capacity
- Concerns about off-road abilities, including 4x4 and ground clearance
- Lack of availability (in general, and of particular model types)
- Lack of, and reliability of, charging infrastructure



“Our plan is to transition 100 light vehicles over to EVs by 2030, but the thing that holds us back at the moment is the supply... I’m sure that federal policy could change that supply, and make it much easier for councils to do that.”

**Andrea Metcalfe,
Mayor of Greater Bendigo**

In many cases these concerns overlapped with each other – for example, a broad “range anxiety” that was a function of both vehicle range and distance between chargers; and concerns about towing capacity manifested not only in the raw ability to tow but also how towing heavy loads would affect range.

We noted the positive effect a strong Fuel Efficiency Standard would have on the availability and price of EVs in Australia, citing sub-\$40,000 EVs available in Europe, and more-capable electric utes available in America and NZ, where they have effective Fuel Efficiency Standards. It should be noted that attendees responded extremely positively to this message. The significant price difference of our LDV eT60 between the Australian and New Zealand markets (approximately \$20,000 AUD), due in large part to them having an FES and us not having one, drove this point home for a lot of people.

APPENDIX 3: Support for a strong Fuel Efficiency Standard

Solar Citizens has been actively campaigning for a strong, mandatory Fuel Efficiency Standard since 2021. In that time, we have collected over 5000 signatories to our petition (Box 2) from across the country, which are summarised in Figures 4 and Figures 5.

Box 2: Fuel Efficiency Standards Petition Text

Dear Federal and State Energy and Transport Ministers,

Petrol prices and transport emissions are skyrocketing, but Australians are being left behind on electric vehicles, which cut pollution and are cheaper to run and maintain.

We're calling on you to support the following policies to help get more Australians in the driver's seat of an electric vehicle:

1. Implementing strong, mandatory Fuel Efficiency Standards to bring Australia up to speed with the rest of the world.
2. Setting a target for 100% of new car sales to be electric by 2030.
3. Provide additional funding for upfront EV incentives and charging infrastructure.

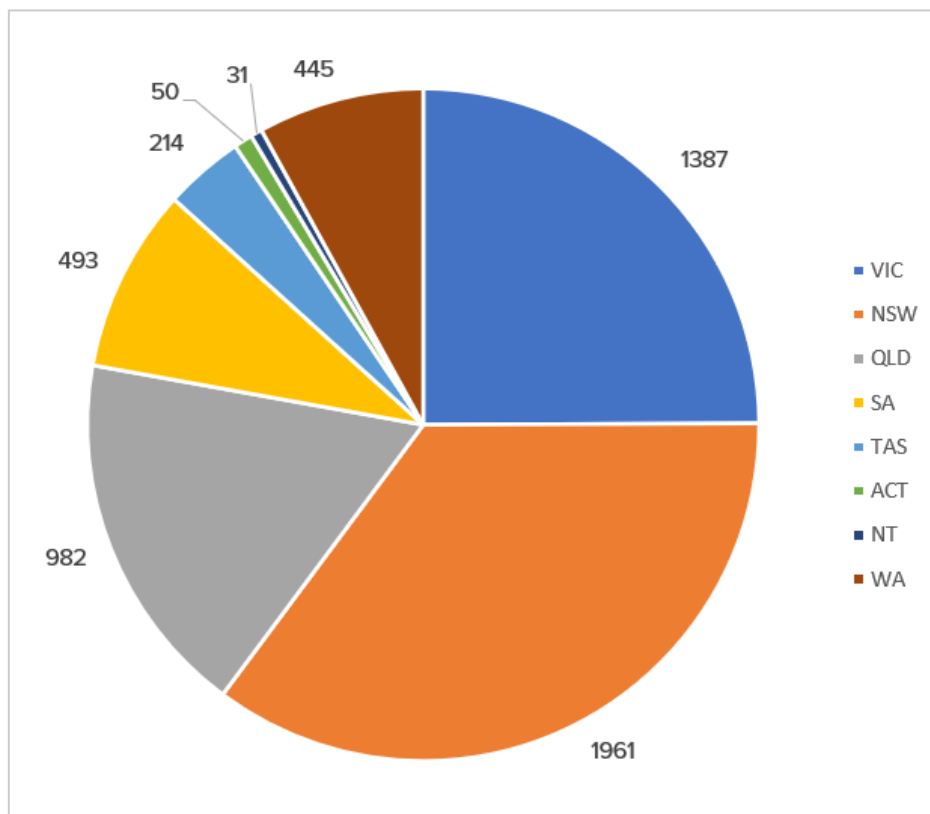


Figure 4: Signatures to our Fuel Efficiency Standards petition by state.

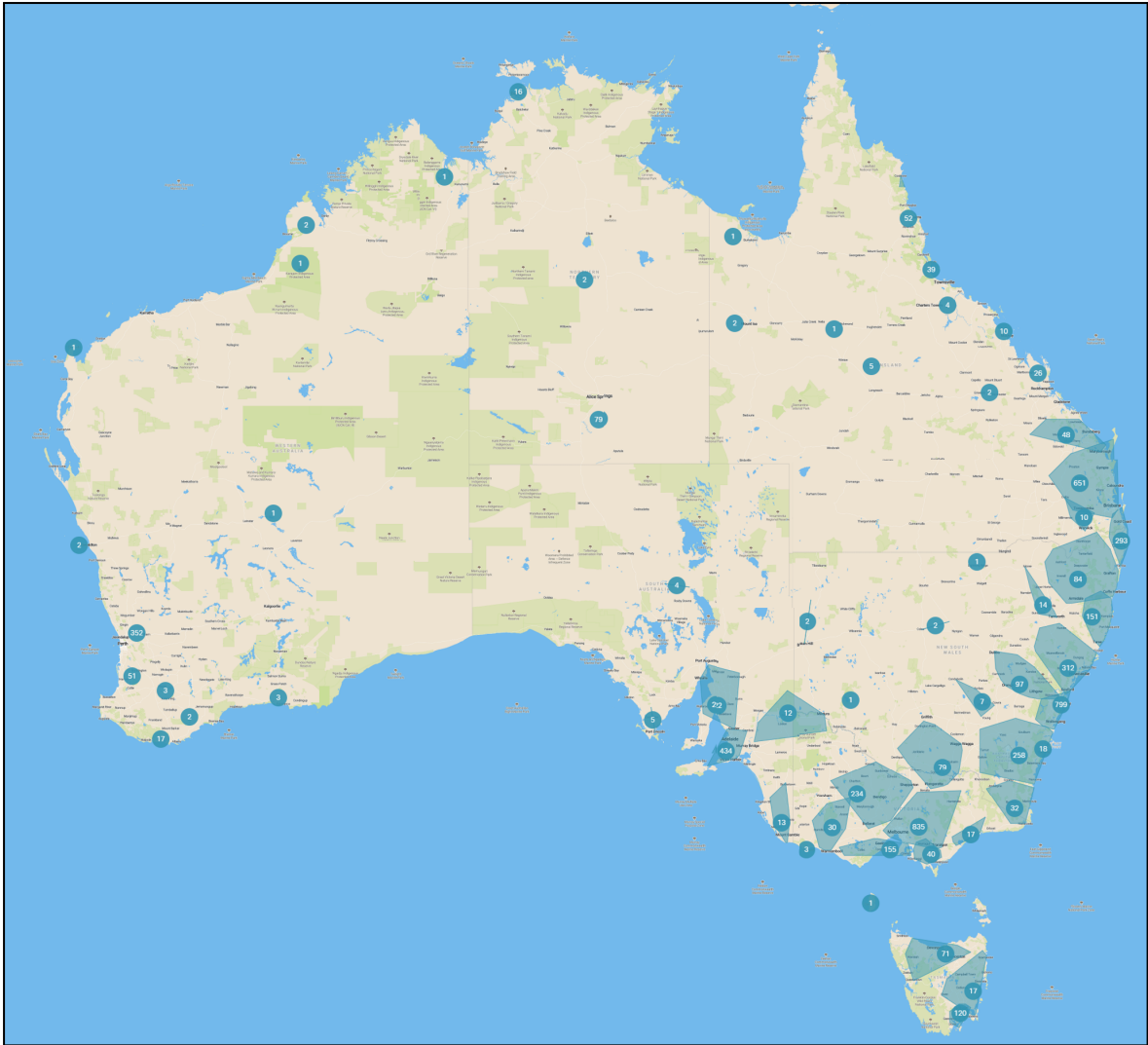


Figure 5: Map of distribution of our Fuel Efficiency Standards petition signatories.