



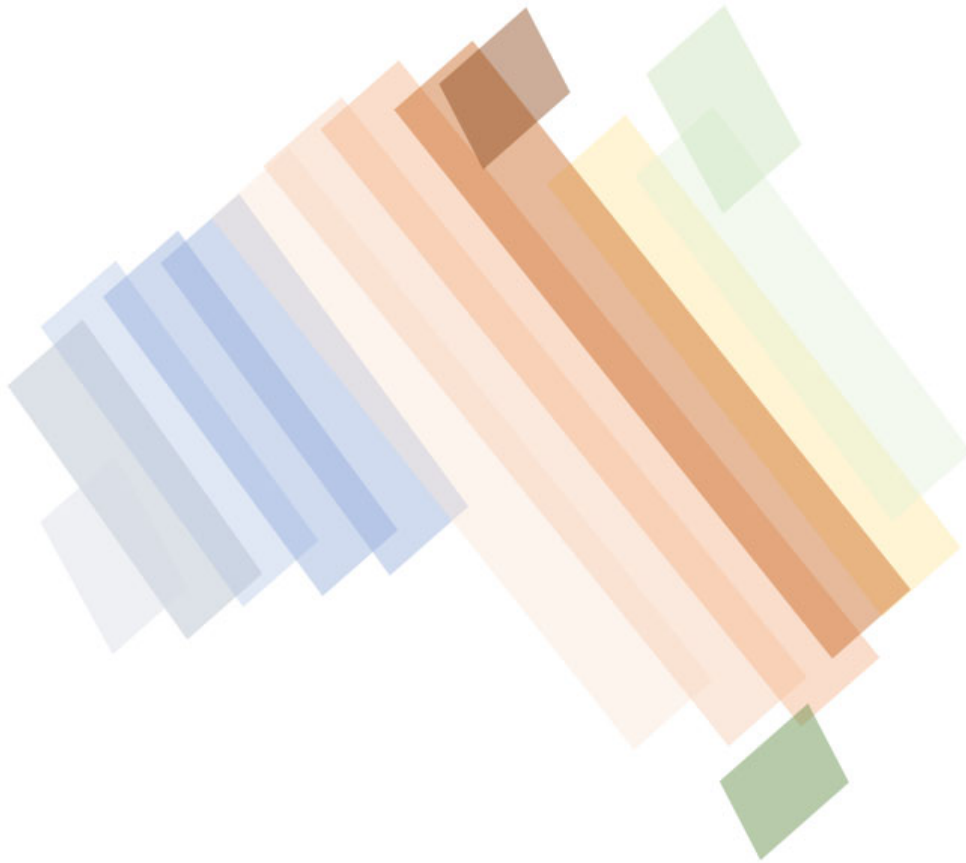
Australian Government

**Department of Infrastructure, Transport,
Regional Development, Communications and the Arts**

The Fuel Efficiency Standard – Cleaner, Cheaper to Run Cars for Australia

Consultation paper

19 April 2023



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Ministers' foreword

As the world moves to cleaner, greener cars, Australians are being left behind with fewer car choices and higher costs at the bowser.

Over 85% of cars sold worldwide are covered by a fuel efficiency standard.

Australia and Russia are among the only developed nations without fuel efficiency standards. This means there is no requirement for global vehicle manufacturers to send their best fuel saving technology to Australia, including high efficiency internal combustion engine technology, hybrids and EVs. This is why in the EU there are around 230 models of EV available, compared to only 60 in Australia.

What fuel efficiency standards do is simple; they require global vehicle manufacturers, or their local suppliers, to improve the average fuel efficiency of new cars over time. This means cleaner cars that are cheaper to run on Australian roads and an important step towards achieving net zero by 2050.

Fuel efficiency standards provide an incentive to vehicle suppliers to provide more fuel efficient vehicles, including EVs and hybrids, to the Australian market. This helps to increase the supply of efficient vehicles and also enables manufacturers to charge lower prices to Australian new car buyers.

With a fuel efficiency standard in place, Australians can expect to continue to access the same types of vehicles they do currently, from hatches to 4-wheel drives, utes to vans and everything in between. But they will also get the choice of more efficient petrol and diesel engines, more hybrids, plug-in hybrids and battery EV options available for sale.

Not only will a fuel efficiency standard deliver more advanced and affordable vehicles into Australia, it will also drive down our emissions.

On average, passenger cars in Australia emit 40% more carbon than the European Union, 20% more than the US and 15% more than New Zealand. We can do better than this.

This fuel efficiency standard consultation, combined with Australia's first National Electric Vehicle Strategy, is an opportunity to establish a policy and regulatory framework that benefits all Australians. These build on the initiatives to support and enable EV uptake that have been implemented by the Australian, state and territory governments, including significant investments in EV charging infrastructure, subsidies, rebates and EV uptake targets.

There is considerable complexity to designing a fuel efficiency standard and we are committed to getting it right. We have set out key design questions in this consultation paper and will work with stakeholders to design a strong standard that is right for Australia. We seek the views of all interested Australians, including vehicle industry, climate groups, think tanks, unions, representatives of vulnerable Australians and individuals.

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

Table of contents

Ministers' foreword	3
Acknowledgement of Country	6
1. Introduction	7
2. How to engage	9
2.1 How and when can I provide a response?	9
3. Why introduce a Fuel Efficiency Standard?	10
What is a Fuel Efficiency Standard?.....	10
4. Principles for Setting a Fuel Efficiency Standard	12
4.1 Design assumptions	12
5. FES design features	14
5.1 The average annual emissions ceiling.....	14
Emissions level limit and approach	17
Adjustments of average annual emissions ceiling.....	18
Attribute based emissions limits	18
Simple limit curve example	19
Advantages of a mass-based limit curve over vehicle footprint	19
Disadvantages of a mass-based limit curve over vehicle footprint.....	20
Case study – US and New Zealand limit curves	20
Dual vehicle classes/targets	20
5.2 Additional flexibility mechanisms to minimise impacts on consumers	21
5.3 Bonus credits for new/innovative technologies	22
Multipliers for LZEVs.....	23
Off-cycle credits.....	24
Low global warming potential air-conditioning refrigerant	25
5.4 When should a FES start?	25
5.5 Penalties for non-compliance and enforcement mechanisms	26
Penalties for each gram per kilometre	27
Small volume and niche manufacturers.....	28
5.6 Information disclosure.....	28
5.7 Governance arrangements and other matters.....	29
The regulator	29
The regulated entities	29
Other regulatory powers.....	29
Emissions Testing	30
Glossary	31
Attachment A: Consultation Questions	32
General questions.....	32
Technical questions	32
Attachment B: State and territory initiatives	34
Attachment C: The Australian Vehicle Market	35
Attachment D: International Examples	37
European Union (EU).....	37
United States (US).....	37
New Zealand.....	38
Attachment E: Australian industry voluntary FES	40
References	41

List of figures and tables

Figure 1 – FES development timeline	9
Chart 1 – International passenger car emissions trajectories	15
Chart 2 – International light commercial vehicle emission trajectories	16
Table 1 - Adjustment of emissions ceiling - summary	18
Chart 3 – Illustrative presentation of limit curves	19
Table 2 - Penalty frameworks in other jurisdictions	27
Summary table of key elements across jurisdictions	38

Acknowledgement of Country

We acknowledge the Traditional Custodians of Country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples today.

1. Introduction

More than 85% of all vehicles sold across the world are covered by some form of fuel efficiency standard (FES), including those sold in the European Union, United States, China, Japan, Brazil, India, Canada, South Korea and Mexico. While most Australians won't have heard of a fuel efficiency standard, it is a common tool being used around the world, including in almost every developed country apart from Russia and Australia, to ensure consumers get access to greater variety of more fuel efficient vehicles.

A FES in one form or another, requires vehicle manufacturers or their domestic suppliers (in this paper referred to collectively as suppliers) to reduce the average CO₂ equivalent¹ per kilometre emitted by new vehicles they sell over time. CO₂ is the key greenhouse gas (GHG) expelled from the exhaust systems of internal combustion engines. More fuel efficient vehicles are cheaper to run as they require less fuel to go the same distance. A FES gives suppliers incentives to sell more and more vehicles that have low or no emissions, and to use new technology to reduce emissions in other vehicles. Suppliers have flexibility to choose the mix of vehicle technologies to meet their fleet average target and customer needs, and it gives suppliers a clear pathway to plan their vehicle import mix for future years.

We know that low or no emitting technology is getting better all the time but until we have a FES, Australians will not be at the front of the queue for the latest low emissions vehicles. Suppliers have incentives to send the vehicles with the best technology to countries with a FES, leaving Australians, and particularly regional Australians, paying more for fuel and driving outdated technology.

The National Electric Vehicle Strategy consultation paper released in September last year started to sketch out a plan for how we increase access to low and zero emissions vehicles (LZEVs). That consultation process received over 500 submissions from more than 200 organisations and over 1,500 individuals. One of the key pieces of feedback we heard was that an Australian FES is critical to making sure that Australians are able to get access to the cleaner and cheaper vehicles we need, without undue barriers and costs. In conjunction with demand measures like the Electric Car Discount, a FES will also be key to ensuring there is greater choice in the LZEVs brought into the Australian market, and that those models are more affordable.

In this consultation paper we have set out what we think are the key elements for an Australian FES. But we need your help to design it properly. Some of the elements of a FES can be quite complex and technical, but others are more dependent on general community preferences. Once we have received your feedback, the Government will consider this, develop its proposed FES model, and then introduce legislation as soon as practical to put that model into effect.

As well as being cheaper to run, more fuel-efficient vehicles are also better for the climate, and for air pollution. Transport emissions in Australia represent close to one fifth of our country's emissions, and more than three fifths (62%) of transport emissions come from light vehicles. Research indicates that vehicle emissions in Australia may cause between 1,715 and 11,105 premature deaths in adults per year and thousands of hospitalisations, potentially many times the typical annual road toll (BITRE 2016, Schofield *et al* 2017, Walter and Say *n.d.*).

Increasing the uptake of LZEVs, such as electric vehicles (EVs), will not only reduce household and business transport costs, it's also the most effective and immediate opportunity to reduce emissions in the transport sector, and involves no change to how much people use their vehicles. However, widespread adoption of new LZEVs cannot be undertaken overnight. We are highly dependent on the types of cars, including the utes and 4-wheel drives that we drive in our day-to-day lives and, in many cases, to earn a living. Australia has unique transport challenges including being dependent on overseas

¹ CO₂ equivalent emissions cover not just carbon dioxide emissions, but also other greenhouse gases that contribute to Australia's emissions. In this paper we refer to these emissions as CO₂, for simplicity.

vehicle suppliers to provide the cars we need. We represent a small part of the global market, and are recipients of technology developed for other markets, be that the United States, the European Union, the United Kingdom, China or Japan. Australia has large distances to cover in remote areas, like other countries such as the U.S. and Canada. And suppliers require certainty about the kinds of vehicles they plan to import over the next 5-10 years.

Today, over 85% of car sales worldwide are subject to [fuel efficiency] standards.

International Energy Agency—Global EV Outlook 2021

The department will also undertake detailed analysis on the potential outcomes of a FES. This paper seeks input to feed into the analysis of how a FES would operate, including fuel cost savings, health benefits, emissions reduction, LZEV uptake levels, and any additional consumer costs.

A FES is just one part of increasing the availability and affordability of cleaner and cheaper cars. That's why we have introduced a range of measures to encourage uptake of LZEVs including tax concessions for eligible electric cars through the Electric Car Discount, funding for electric vehicle charging infrastructure through the Driving the Nation Fund, and a Real-World Testing Program to provide more accurate information on fuel consumption and emissions in real world driving conditions. The Government is also considering Euro 6d noxious emission standards for light vehicles and improved fuel quality standards to further reduce barriers in supplying the latest engine technology to Australia.

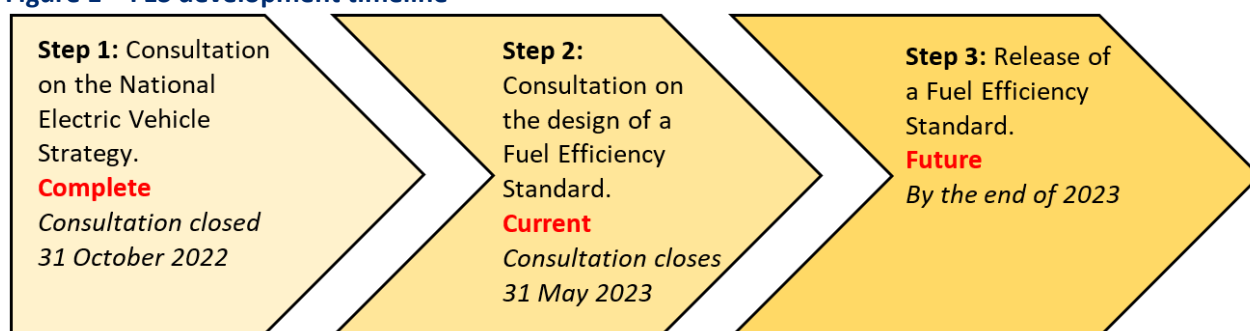
State and territory governments have also introduced a range of policies to support LZEV uptake. These policies support a FES and will see greater impact with a FES in place. We've included a summary of these policies at the end of this document. It is important to acknowledge the key role state and territory governments have played over the last few years in moving our country towards LZEVs. The Australian Government is committed to working constructively with states and territories to the benefit of the whole Australian community.

2. How to engage

The Department of Infrastructure, Transport, Regional Development, Communications and the Arts (the department) has released this consultation paper to obtain comments and suggestions from the community, vehicle suppliers, environmental groups, other government agencies, and anyone else that has an interest. This paper seeks to highlight international examples of where a FES has already been implemented, outlines the principles we think a FES should be developed against and seeks views on the different design parameters a FES will need to specify.

The Government is undertaking a three-step process for the introduction of a FES. Firstly, we asked whether a FES should be introduced through the National Electric Vehicle Strategy consultation process. That consultation found overwhelming support for the introduction of a FES, but some differing views on what an Australian FES should require. Where possible, this consultation paper has drawn on views expressed in the National Electric Vehicle Strategy consultation process.

Figure 1 – FES development timeline



The second step is consulting the community, vehicle suppliers, environmental groups, regional Australia and others on the design of an Australian FES. The responses we receive through this consultation paper will be critical in helping us design a FES that is right for Australia.

The design of a FES has many technical aspects, as well as being of broad interest to all of the community. Because of this we've included two types of questions in the paper:

- one set of questions focusses on the general policy. These questions appear in green boxes throughout this paper (and are marked as 'GENERAL'); and
- a second set of questions focusses on the technical aspects of a FES. These questions appear in blue boxes throughout this paper (and are marked as 'TECHNICAL')

In the next section, we have included some guiding principles to design a FES. In responding to questions, we'd like you to keep these principles in mind. Responses to all or any of these questions will be helpful to us as we work to design a FES suitable to Australian conditions. The department will also undertake bilateral and roundtable consultations with key stakeholders.

The third step will be for the Government to release details of its proposed FES and information about how it will be implemented. We anticipate this will occur later in 2023.

2.1 How and when can I provide a response?

Comments and responses to questions are requested by **31 May 2023**. Responses can be emailed to cleanercars@infrastructure.gov.au or lodged via www.cleanercars.gov.au. Submissions will be published on the department's website, unless you have specifically requested your submission be kept confidential in the relevant field.

3. Why introduce a Fuel Efficiency Standard?

A mandated CO₂ standard is the obvious missing link that can help supply moving forward and further strengthen market signals.

NRMA submission to the National Electric Vehicle Strategy (October 2022)

What is a Fuel Efficiency Standard?

A 'FES' or fuel efficiency standard, is an obligation on light vehicle suppliers to make sure the new vehicles they bring into the market, on average, meet a particular CO₂ per kilometre standard. This enables a full range of vehicles, including cars, SUVs, utes and 4-wheel drives to be sold.

Where a supplier beats the standard by selling more efficient vehicles and LZEVs, they are rewarded (usually through 'credits'). Where suppliers don't meet the standard, by selling proportionally more higher emissions vehicles, they are penalised (usually, they need to buy credits from other suppliers, or pay a fine).

A FES is a powerful tool because it applies a standard across the whole fleet a supplier sells. It means there are market-based incentives on suppliers to help lower vehicle emissions – and help their customers save on fuel costs.

In summary, a FES will incentivise the supply of cheaper LZEVs, and help Australians save money on fuel costs.

The GHG reduction from a transition to LZEVs will be critical to achieving Australia's national emissions reduction target of 43% on 2005 levels by 2030 and reaching net zero emissions by 2050. The transport sector's contribution to this transition is being held back by the absence of an internationally comparable FES. Overseas FES requirements are a strong driver for the supply of fuel-efficient vehicles, including EVs and hybrids.

Greater adoption of LZEVs will help reduce air pollution. Long-term exposure to air pollution from Internal Combustion Engines (ICE) vehicles has negative human health effects. Air pollution from vehicle emissions is estimated to have caused as many as 1,715 deaths in Australia in 2015, 42% more than the road toll that year (BITRE 2016, Schofield *et al* 2017).

At the moment, interest in purchasing an EV is high, with 54% of Australians surveyed reporting they would consider an EV for their next car purchase and 49% of respondents seeing themselves driving an EV in 2030 (EV Council 2021). This would help Australians reduce their carbon footprint and their fuel costs (with the national average weekly cost of fuel sitting at around \$100 per household). But because Australia does not have a mandatory FES, it is not an export market of choice for suppliers of LZEVs. As a result, LZEV uptake in Australia considerably lags other countries at approximately 2% of vehicle sales in 2021 and 3.8% in 2022. In the third quarter of 2022, EV sales in the US were 7%, the United Kingdom and European Union (EU) were at 23%. Globally, 13.3% of all vehicles sold in the December quarter were EVs (BEVs and PHEVs) and 9.4% were battery electric. Over 10.6 million EVs were sold around the world in 2022 (Bloomberg New Energy Finance (BNEF) 2023).

There are barriers to supplying the Australian market with LZEVs. We represent only 1% of the global car market and we are already in the minority right-hand drive market which can affect supply for vehicles with limited global reach.² This puts Australia lower down the priority list for vehicle suppliers when it comes to bringing in the newest technology (which they could otherwise sell into other markets). In addition, with so many other key vehicle markets already regulated by a FES, suppliers also have an

² Most vehicles in Australia are driven on the right-hand side of the vehicle, and the vehicle is driven on the left-hand side of the road. The United Kingdom and Japan are right-hand drive vehicle markets, but most of Europe and the United States are left-hand drive vehicle markets.

incentive to send their EVs to those markets, leaving Australians to wait long periods to buy whatever suppliers choose to send our way. Current estimates are that Australians can choose from 70 models of EV (battery EV and plug-in hybrid EV), whereas in Europe almost 230 models of EV (BEV and PHEV) were available by the end of 2022 (BNEF 2023).

In the case of EVs, consumers can only choose from vehicles that have been supplied to the market, and in the volumes the vehicles are made available. Due to the lack of incentives, many popular EV models are not available in Australia, have very long waiting lists, or small allocations sell out in a matter of minutes (Borys and Evans 2021, Wykeham and Gaffney 2022, Parkinson 2022). Similarly, the supply of hybrids is limited in Australia relative to countries with a FES in place, such as the EU (19 per cent hybrids in 2021) or Japan, where hybrids exceeded a third of sales in 2019 (EEA 2022, and BNEF 2020).

With a FES in place, suppliers will be required to supply more efficient ICE technologies including hybrids, and greater number of LZEVs to Australia to ensure they don't exceed the regulated fleet average emissions limit. That means better choice for consumers and a more competitive market, bringing more affordable LZEVs to Australia. These vehicles will flow through to the used vehicle market, making LZEVs more accessible to lower income households. LZEVs are also cheaper to run over the full life of the vehicle, contributing to an overall reduction in cost of living pressures for households. These benefits are greater for those driving longer distances.

The global development of LZEVs is also steadily producing more variety of models and increasing capacity in terms of off-road vehicles and increased towing weight. A FES provides flexibility for suppliers to continue to sell ICE vehicles while the equivalent LZEV technology is being developed. In the EU market with a stringent FES in place models such as the Toyota Hilux, Landcruiser and Ford Ranger continue to be sold, and in the US, also with a FES in place the Ford Ranger and Toyota 4Runner and Tacoma and Tundra full size utes are available today. Introducing a FES will increase the incentive for suppliers to bring EV equivalents to Australia, such as LDV's eT60 dual-cab ute, Ford's (announced) electrified Ranger and the Geely group Radar RD6 electric ute (Inwood and Zacharia 2022, Andrews 2023).

Vehicle suppliers generally have better information about the costs of improving vehicle efficiency. Vehicle suppliers know the relationship between fuel efficiency and vehicle costs for a range of technologies. However, consumers can only choose from the technology suppliers have opted to include in these vehicles. Estimating the benefits of improved fuel economy requires specific information (including predictions of future fuel prices) and calculations that most Australians don't have time for.

We need to be mindful that an Australian FES needs to be calibrated to our market. We've set out some of the key features at **Attachment C**. There are also plenty of international examples that we have been conscious of. A snapshot is set out at **Attachment D**. Finally, there is an Australian voluntary FES. We have set out the key features at **Attachment E**.

The Australian automotive industry is committed to making a robust contribution to national efforts to reduce the impact of climate change and improve air quality.

Federal Chamber of Automotive Industries – voluntary Fuel Efficiency Standard

4. Principles for Setting a Fuel Efficiency Standard

We have developed a series of principles to help design a FES. We have listed these below, and would appreciate feedback on these principles. The principles we arrive at will be used as part of the design process to help us decide trade-offs between different outcomes, and to help us implement a FES so that it remains true to the original objectives.

Our guiding principles are that a FES must be:

- **Effective** in reducing transport emissions from light vehicles.³ The purpose of a FES is to reduce the average amount of CO₂ 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?

4.1 Design assumptions

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 vehicles⁴, 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

³ For the purposes of this consultation, 'light vehicles' mean passenger (M category) or commercial (N category) vehicles under 3.5 tonnes gross vehicle mass. They include sedans, wagons, Sports Utility Vehicles, utes, 4-wheel drives, vans, but does not include motorcycles (L category vehicles). Consideration will be given to ensure a FES covers all appropriate vehicles and does not create an incentive to adopt alternative classifications for the purpose of avoiding being covered by a FES.

⁴ Registered for the first time in Australia, this includes used vehicles imported for immediate sale.

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?

5. FES design features

Roads Australia recommends that any fuel emission standard introduced by the Commonwealth should consider transport's changing share in national emissions reduction targets as well as the fuel emission standards of comparable nations, especially other right hand drive markets such as Japan, Britain and New Zealand.

Roads Australia submission to the National Electric Vehicle Strategy (October 2022)

Your views on a range of FES design features will help us to determine the best FES parameters for Australia and will feed into the model we develop. We are asking for your views on:

- What principles we should consider when setting a CO₂ target, and how far ahead targets should be set? More technically, what should the FES average annual emissions ceiling (CO₂ target) be?
- Whether to incorporate flexibility mechanisms (credit exchange, banking or pooling arrangements) to minimise impacts on consumers which are common features of other FESs.
- Should bonus credits for new/innovative technologies be included in the FES, and how should any potential risks be managed.
- When and how the FES should commence.
- What level of penalties for non-compliance, and enforcement mechanisms should be established under an Australian FES to be internationally competitive.
- Governance and other technical matters to ensure the FES is robust, has low administrative costs, and establishes appropriate information disclosure rules.

We think these are the key features that will need to be decided on for an Australian FES and are explored below. However, if you think there are others, please let us know.

GENERAL FES Design features

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

5.1 The average annual emissions ceiling

The average annual emission ceiling is the CO₂ target – measured in grams of carbon dioxide per kilometre that a vehicle would emit when running – that a supplier's fleet needs to, on average, be less than. For example, in the European Union, the CO₂ target for 2020-24 is 95 grams per kilometre for cars and 147 grams per kilometre for vans, subject to technology credits.⁵

The average annual emissions ceiling is the key factor in determining the reduction in GHG that a FES will achieve, but must be viewed in the context of the features of the FES model it sits in. The headline fleet average number can be more aggressive (lower) if there are other features that provide more flexibility (see below).

Australia is starting from behind. The Bureau of Infrastructure, Transport and Regional Economics (BITRE) estimates that new vehicles sold in Australia in 2021 have a CO₂ intensity of 173.6 g CO₂/km. This compares to 115 g CO₂/km in the 29 European countries reported by the National Transport Commission, or 169 g CO₂/km in the US (NTC 2022).

We will need to determine how we set our average annual emissions ceiling, how many years into the future ceilings are set, and how the ceiling is adjusted over time to ensure it remains ambitious, effective

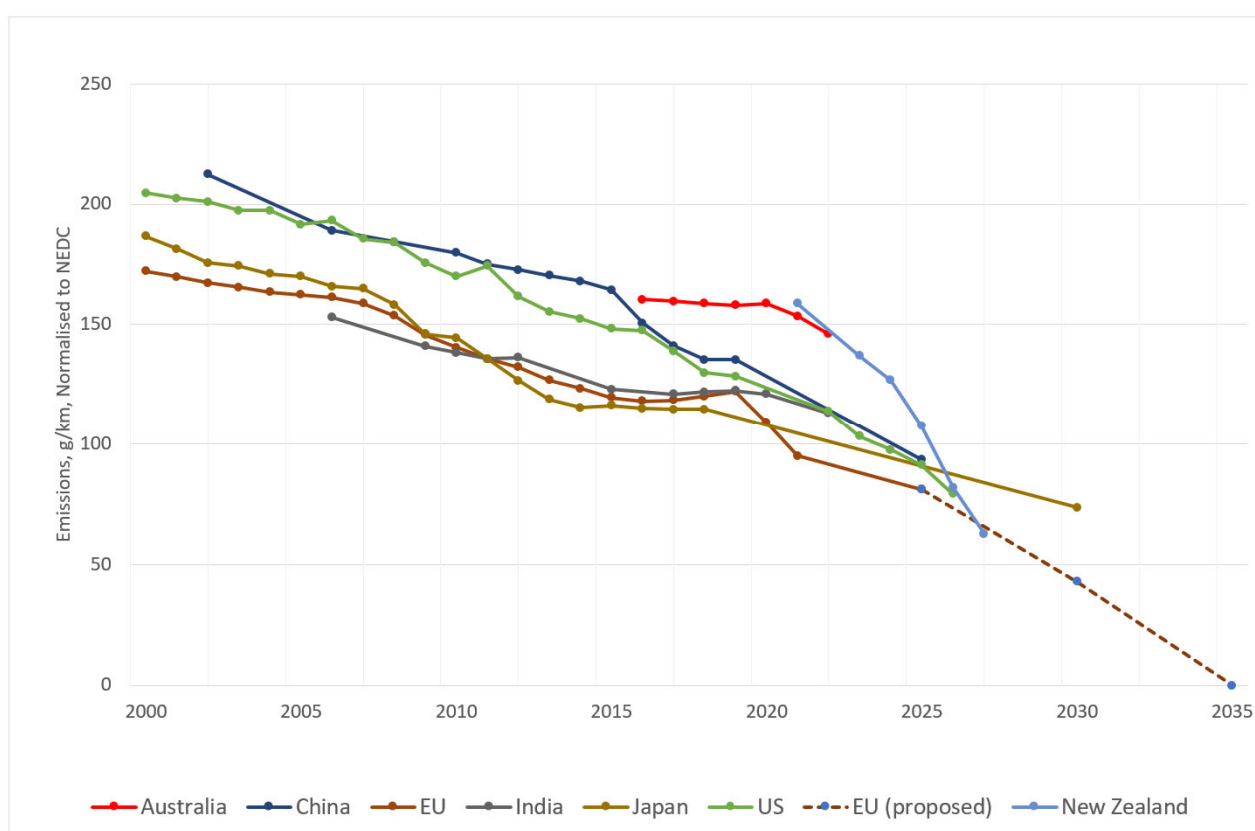
⁵ Based on NEDC emissions test procedure, from 2021 onwards the EU emission target adopts the newer WLTP emission test procedure.

and achievable. We also need to determine how a FES takes account of the range of vehicles sold by suppliers and popular with Australians, and the vehicles used by Australians in regional areas.

Immediately adopting an annual emissions ceiling from another market would likely disrupt the Australian vehicle market by not providing sufficient time for suppliers to establish a pipeline to Australia of vehicles fitted with more efficient ICE technologies and LZEVs.

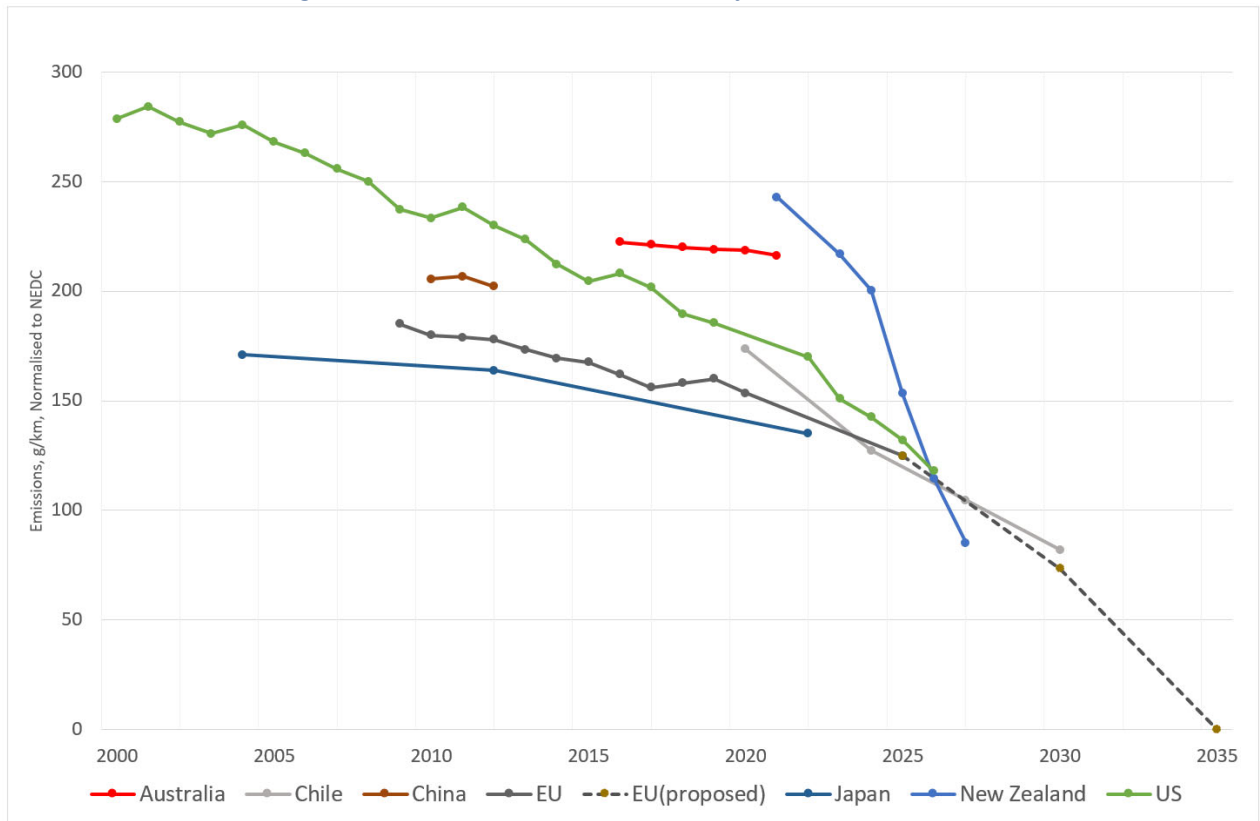
Comparable markets have set ambitious emissions reduction trajectories in their FESs. If an Australian FES does not match the proportional reduction in emissions levels of other markets, our GHG reduction and LZEV uptake will continue to fall further behind. Failure to set globally competitive FES emissions ceilings risks providing insufficient incentive to global vehicle manufacturers to supply in-demand LZEVs to Australia. The following two charts show the passenger and light commercial vehicle emission trajectories of a number of jurisdictions (adapted from Khan, Yang, Sen and Miller 2022).

Chart 1 – International passenger car emissions trajectories⁶



⁶ The charts presented here show emission trajectories for passenger cars in chart 1, and light commercial vehicles in chart 2. See below for more information about separate limit curves for passenger cars and light commercial vehicles.

Chart 2 – International light commercial vehicle emission trajectories



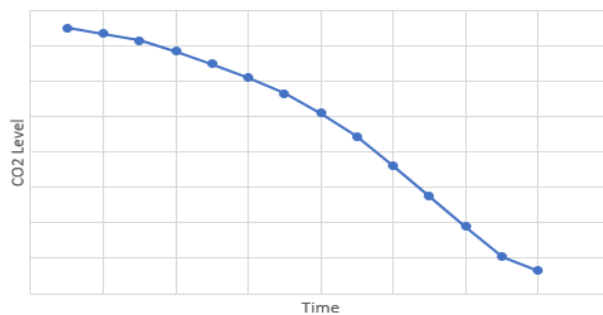
These charts demonstrate the gap that currently exists between where we are and other nations with similar characteristics. We are seeking to determine what level of reduction is feasible in Australia based on technology currently available and about to enter the market, its cost and how this is likely to evolve. Provided an Australian FES fleet average is comparable to major advanced markets like the US and Europe, we know the technology will be available to meet that target.

Emissions level limit and approach

We will need to identify what the average annual emissions ceiling should be (in g CO₂/km), including how much it should decline over the regulated period. In the charts above you can see that different countries have adopted different rates of CO₂ emissions reduction, which are not always smooth curves. Because Australia is starting late, our rate of improvement would need to be relatively aggressive to catch up to our international peers. However, we do have options:

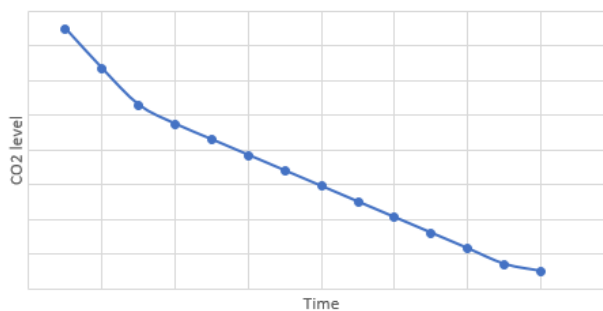
- **Cautious start - finish strong:** One option would be to set a relatively modest target in the early years, and then have the ambition level ramp up over time. This would give suppliers more time to adapt to the system, while achieving more modest emissions reductions early. While access to EVs might not increase initially, it would provide some time for suppliers to adapt the technology they import to Australia, and would allow more time for Australians to adapt to technologies normally supplied to advanced markets with FESs.

Cautious start - finish strong



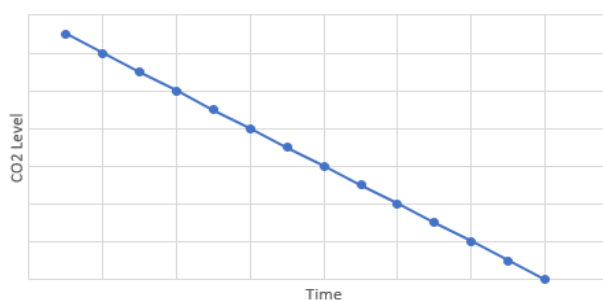
- **Start strong:** A second option would be to set relatively ambitious targets early on and then to continue strong emissions reductions in the early years. This would have the advantage of getting a lot of the hard work done early, and achieve emissions abatement objectives. This option would be more disruptive for suppliers however, and may require substantial expense without some other balancing factor (such as higher credits or broader exemptions).

Start Strong



- **Straight line:** A final option would be to determine the 'start' and the 'end' and plot the CO₂ figure between start and end on a straight line. This would mean that equal effort would be needed from commencement to where emissions are at 'net zero'.

Straight line



GENERAL Starting emissions level limit and approach

- What principles should we consider when setting the targets?

TECHNICAL Starting emissions level limit and approach

- What should Australia's CO₂ 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?

Adjustments of average annual emissions ceiling

We will need to determine how frequently and how many years into the future the CO₂ target should be adjusted. In determining how many years ahead the FES should set emissions target, we need to decide a trade-off between certainty and flexibility:

- A short timeframe gives the Government more flexibility to adapt to changing circumstances (including industry concerns or changes in supply), however, it can mean there is not much certainty for industry to make investment decisions to support new technology vehicles and for suppliers to make vehicle importation plans.
- A long timeframe, conversely, removes flexibility, but does provide greater levels of certainty for industry.

In considering the timeframes before the CO₂ limit is re-evaluated, different countries have arrived at different conclusions. The table below provides a snap shot.

Table 1 - Adjustment of emissions ceiling - summary

Standard	European Union	United States	New Zealand
Time frame used before re-evaluation of CO ₂ limit	10 years (note that the emissions trajectory to zero in 2035 is being finalised)	US EPA Standards ⁷ : 4 years (2023 to 2026), (US National Highway Traffic Safety Administration timing differs)	5 years (2023 to 2027 inclusive)

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?

Attribute based emissions limits

It is a standard feature of FESs in comparable markets to use attribute-based emissions limits, which are defined by a 'limit curve'. The purpose of this is to ensure the emissions limits reflect the fleet of vehicles people choose to buy and the FES does not penalise a manufacturer that sells a lot of larger or heavier

⁷ We note the publication on 12 April 2023 of the United States Environmental Protection Agency *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium Duty Vehicles Draft Regulatory Impact Analysis*, which proposes lower emissions ceilings, flatter limit curves, phasing out off-cycle credits and reduces air conditioning credits, among other measures. The discussion of the US EPA standards in this paper refers to the 2023-2026 standard.

vehicles, for example utes, large SUVs and 4-wheel drives. Attribute-based emissions limits mitigate market disruption and help to create a level playing field by adjusting suppliers' emissions targets to accord with the types of vehicles they sell.

Limit curves adjust individual supplier CO₂ targets based on the average mass or footprint (area between the wheels) of the vehicles they sell. In practice, this means a supplier which sells on average larger or heavier vehicles has a higher individual CO₂ target than one which sells predominantly smaller or lighter vehicles.

The EU, UK and NZ mandatory FESs and the FCAI voluntary FES all use a mass-based limit curve, while the US uses limit curves based on vehicle footprint.

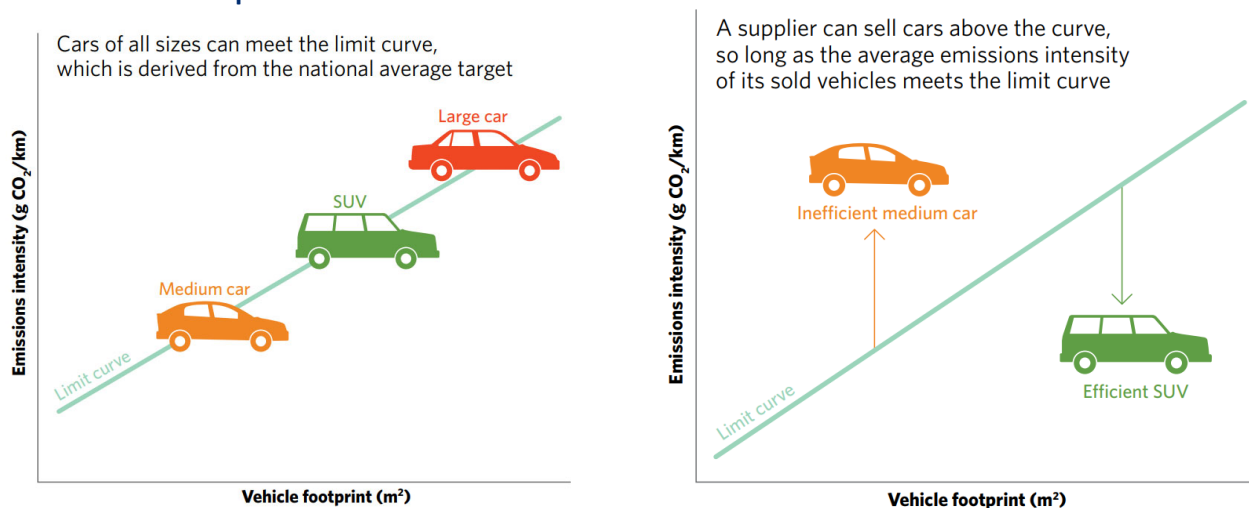
Limit curves are typically a straight line, which means light vehicles may have a very low effective CO₂ limit, while very heavy vehicles may have a very high CO₂ target. This risks creating a disincentive to the supply of small, light vehicles, and a greater incentive to provide very large, heavy vehicles or risk a disincentive to maximise the efficiency of very large heavy vehicles.

Simple limit curve example

The Climate Change Authority (CCA) provides an illustrative representation of limit curves (CCA 2014). The emissions limit curve is the oblique line in this chart which represents the mathematical relationship between the chosen attribute and emissions intensity of the vehicle. Emissions are reduced over time by lowering the limit curve.

While this example uses vehicle footprint as the attribute on which the curve is based, this is an example only and does not imply a policy preference of the Government for a footprint-based limit curve, nor does it imply a policy preference for a single limit curve rather than two limit curves (discussed in the following section).

Chart 3 – Illustrative presentation of limit curves



Advantages of a mass-based limit curve over vehicle footprint⁸

- Ensures the types of vehicles Australians love, including utes, SUVs and 4-wheel drives have the same incentives and opportunities to reduce emissions as small vehicles.
- A mass-based limit curve most closely reflects vehicle markets similar to Australia and the industry voluntary FES, providing a framework for compliance that is familiar to suppliers.

⁸ The benefits/drawbacks of vehicle footprint over a mass based limit curve are the inverse of these lists.

- A mass-based approach enables technologies that add weight to be considered by the FES, for example additional safety equipment.

Disadvantages of a mass-based limit curve over vehicle footprint

- Risks creating an incentive for the supply of, on average, larger and/or heavier vehicles to harness a higher CO₂ level. Larger and heavier vehicles increase emissions, congestion and road wear.
- A mass-based approach provides an incentive to make vehicles heavier, potentially reducing the emissions reduction that is achieved.
- Diminishes the benefit from selling a small zero emission vehicle relative to selling a larger zero emission vehicle. This is because a small zero emission vehicle would 'overachieve' on the effective FES target to a smaller degree than a heavier vehicle.

Case study – US and New Zealand limit curves

The US and New Zealand have adopted an approach to address the unintended incentive to supply larger or heavier vehicles under a FES with mass-based or footprint-based limit curves. Under this framework, very small or light vehicles have a very low effective CO₂ target and very large vehicles and heavy vehicles receive very high effective CO₂ targets. This risks providing a disincentive to the supply of small, efficient vehicles, and a greater incentive to the supply of very large vehicles with higher CO₂ intensity.

To address this, the New Zealand FES flattens the limit curve below 1,200 kg for all vehicles, and above 2,000 kg for passenger vehicles and above 2,200 kg for light commercial vehicles. The US takes a similar approach, although the US standards are based on vehicle footprint, rather than vehicle mass as used in New Zealand.

In practice, this means that in New Zealand, all vehicles with an unladen mass below 1,200 kg receive a benefit via a higher effective CO₂ target, and passenger vehicles over 2,000 kg and light commercial vehicles over 2,200 kg have a more stringent effective CO₂ target relative to their mass.

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?

Dual vehicle classes/targets

A common feature of a FES is to set different emission targets for passenger vehicle and light commercial vehicles (sometimes including large 4-wheel drives), noting that international markets differ in how these vehicle classes are defined. This recognises the different purposes for which vehicles are used and differing levels of deployment of LZEV technology for different vehicles.

We will need to decide whether we should set one overall CO₂ target for all vehicles or set different targets for passenger and light commercial vehicles. An option to define two targets in the Australian market could be to set targets for cars (MA class) and heavy SUVs and light commercial vehicles (MC + NA class).

We recognise that some stakeholders in the National Electric Vehicle Strategy consultation suggested the Government should adopt a single target for all vehicles to prevent erosion of the effectiveness of the standards by shifting vehicle sales into the higher category. We also note stakeholder suggestions that

the Government should carefully consider whether SUVs should be grouped with passenger or light commercial vehicles.

In other markets different targets have been set for passenger and light commercial vehicles (LCVs). This recognises that LZEV technology is currently more widely available in passenger vehicles. This gap will resolve as technology matures and a greater number of LZEVs become available in the LCV range. We need to design a FES that works in our current vehicle market, and is flexible enough to adjust as the range and features of available hybrids and LZEVs improve to meet the needs of a broader range of Australian motorists.

It is important that emissions intensity for passenger cars and light SUVs (MA category) and heavy SUVs and light commercial vehicles (MC+NA category) are assessed separately and collectively.

Australian Automotive Dealer Association submission to the National Electric Vehicle Strategy (October 2022)

Advantages of dual vehicle classes/targets

- Recognises different use cases for some LCVs and 4-wheel drives for which electrification technology is not currently in the market.
- Is consistent with international peers, including the US, EU, UK and New Zealand.

Disadvantages of dual vehicle classes/targets

- Risks eroding the emissions reductions provided by the FES by providing an incentive to further accelerate vehicle sales of large 4-wheel drive and LCVs.

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?

5.2 Additional flexibility mechanisms to minimise impacts on consumers

Climate impacts are linked to cumulative GHG concentrations rather than emissions in a particular year. This means suppliers can have some flexibility (within reason) around the timing of emissions reduction without jeopardising environmental, economic and social outcomes. Providing flexibility around when emissions reductions occur can help manage costs, particularly where vehicle models have multi-year lifecycles.

To achieve this, FESs in other markets often adopt flexibility mechanisms such as:

- Allowing suppliers to form a pool to meet the fuel efficiency targets collectively (adopted in the EU),
- Allowing suppliers to accrue credits if they do better than required by the standard (adopted in the US and NZ). Under this arrangement:
 - Individual suppliers which over achieve can sell credits to manufacturers which have not met their targets (adopted in the US),
 - Suppliers that over achieve can bank the surplus credit for future years (subject to an expiry period), and

- Suppliers that do not meet their target can carry a debit forward with a shorter expiry period than for surplus credit.

Australia's emissions ceiling should allow manufacturers some flexibility in how they meet their targets. This could be through allowing manufacturers who fail to meet their targets to purchase credits from manufacturers who overachieve, or through allowing overachieving manufacturers to accrue credits that they can use to meet targets in later years.

Grattan Institute submission to the National Electric Vehicle Strategy (October 2022)

In most markets, surplus credits and debits have a defined expiry date, typically set for a number of years after being generated. Typically, debits have a shorter expiry period than credits, reflecting the environmental benefit derived from overachievement, and environmental harm from underachieving against FES targets.

Under all these options, the Government does not set a price, caps or floors in the market. Suppliers are free to make commercial arrangements to form a pool or transfer surplus credits under commercial terms. Notwithstanding this, the credit price in a commercial market would have an effective cap because a supplier would not purchase credits for a price higher than the penalty price. This eventuality is considered highly unlikely. Cases of vehicle suppliers failing to comply with FESs are exceptionally rare, particularly in markets with open credit trading frameworks.

Advantages of additional flexibility mechanisms

- Credit pooling, banking and transferring provides an incentive for suppliers to supply more efficient vehicles sooner, with the opportunity to sell excess credits or bank them for use in later years when the standard is more stringent.
- Reduces compliance costs (and the likelihood of penalties being applied) by enabling a supplier that does not meet its target from its vehicle sales to purchase credits to comply with the target.

Disadvantages of additional flexibility mechanisms

- If the standard is too weak and a supplier accrues a large number of credits this may reduce the incentive to supply more efficient vehicles.
- If overcompliance is significant and widespread, the value of surplus credits could be very low, eroding the incentive to overachieve on the standard in a particular year.

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?

5.3 Bonus credits for new/innovative technologies

Some countries that have implemented a FES have included arrangements to enable suppliers to reduce their reported average emissions through the use of new and innovative technologies. The purpose of these measures is to encourage the development and supply of new and innovative technologies to reduce CO₂ emissions from vehicles or to acknowledge CO₂ benefits not recognised by the standardised laboratory emissions test.

Including these credits may broaden the effect of a FES beyond a performance based standard where every gram of CO₂ saved is treated equally. These measures need to be carefully evaluated as the emissions reduction can be difficult to quantify or the desired outcome may be addressed more effectively through separate policies outside the FES.

Bonus credits available in other FESs include:

- Multiplier credits for new/innovative powertrains (e.g. battery electric, plug-in hybrid and hydrogen fuel cell), commonly called ‘super credits.’
- Credits for technologies that improve fuel efficiency or reduce the global warming impact of the vehicle in real world conditions not captured in official lab tests, called ‘off-cycle credits.’
- Credits for low global warming potential air conditioning refrigerant.

Refrigerants can be powerful contributors to lifecycle emissions. However they are also separately addressed by the national phasedown of hydrofluorocarbon (HFC) gases; covering them in a vehicle standard may recognise nonadditional abatement. The relationship between these policies would need careful consideration.

The Australian Industry Group submission to the National Electric Vehicle Strategy (October 2022)

Multipliers for LZEVs

‘Super credits’ typically apply a multiplier to vehicles below certain emissions levels or with particular drivetrain technologies to increase the benefit to vehicle suppliers for selling vehicles with low or zero emissions. Super credits have been a feature of FESs in many markets.

Under the approach adopted in the EU from 2020 to 2022, vehicles with emissions of less than 50 g CO₂/km (effectively EVs, plug-in hybrid EVs [PHEVs] and hydrogen fuel cell EVs [HFCEVs]) are counted as more than one vehicle. In 2020, they count as two vehicles, in 2021, they counted as 1.67 vehicles and in 2022 they counted as 1.33 vehicles. In the US, EVs and HFCEVs counted as two vehicles in 2017, phasing down to 1.5 in 2021 with a complete phase out in 2024. PHEVs counted as 1.6 in 2017 phasing down to 1.3 in 2021 with a complete phase out in 2024 (Bui and Yang 2022).

As noted above, some major markets are moving away from multiplier type super credits or are adopting alternative arrangements. For example, from 2025, the EU will adopt a framework that provides suppliers with a more lenient overall CO₂ target if they meet a LZEV sales target (European Commission (n.d)). California has implemented a zero-emission vehicle mandate and the UK is considering such an approach (California Air Resources Board (n.d), and United Kingdom Department for Transport (2022).

To avoid any doubt, the Government seeks input on super credits in the context of evolving international standards, and is not proposing a zero-emission vehicle mandate at this stage.

While sales volumes of eligible vehicles are small, the impact of multipliers is low. However, there is a risk that excessive multipliers could materially erode the effectiveness of a FES. Therefore, it’s important to set a credit regime at a level, and for a duration, that does not significantly reduce the incentive to improve the efficiency of petrol and diesel vehicles, or to supply a wide range of LZEVs.

Advantages of multipliers for LZEVs

- Provides a stronger incentive to supply LZEVs to the market, beyond what is required by the FES emissions limits.
- Provides an incentive for vehicle suppliers to develop plug-in hybrid or battery EV drivetrains.

Disadvantages of multipliers for LZEVs

- Risks providing a credit for supplying a vehicle that would have been supplied without this incentive, i.e. providing a credit for business as usual activity.
- If a large volume of eligible vehicles are sold, super credits risk generating a large surplus credit, eroding the effectiveness of the FES.

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?

Off-cycle credits

Fuel efficiency standards in some major markets, include 'off-cycle credits' to provide credit for approved technologies which reduce the vehicle's overall CO₂ emissions in a way that is not measured in the regulated fuel consumption test. Examples of these technologies are high efficiency exterior lights, active aerodynamic improvements, engine stop start, active seat ventilation and solar reflective paint, among others.⁹

If credits were adopted for such improvements, it would be vital to develop an objective, repeatable methodology in Australian conditions to determine and validate the claimed CO₂ benefits of any technology seeking to claim off-cycle credits. The total benefit for each vehicle is typically capped, so an appropriate cap would also need to be specified to protect the overall emissions reduction integrity of the standard.

Advantages of off-cycle credits

- Provides an incentive to provide vehicle technologies that may lower emissions which would not otherwise be recognised under the FES.
- Unlike multiplier type credits, high-integrity off-cycle credits could deliver real emissions reduction beyond those measured in test conditions, and would be less likely to undermine the primary objective of a FES.

Disadvantages of off-cycle credits

- Likely complex to administer and risks creating uncertainty for consumers about the specific performance of vehicles.
- Off-cycle credits have been criticised for reducing the deployment of other efficiency technology, lacking a robust and transparent evidence base for the emissions reduction generated, and may provide the greatest benefit to premium or luxury vehicles (Lutsey and Isenstadt 2018).

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?

⁹ We note that credits for high efficiency air conditioning systems and off-cycle credits are considered separately in other markets with fuel efficiency standards in place, for example in the EU, and US EPA standards (*US EPA Revised 2023 and later model year light-duty vehicle greenhouse gas emissions standards*).

Low global warming potential air-conditioning refrigerant

Credit could also be provided for the adoption of low global warming potential air conditioning refrigerants. Use of low global warming potential refrigerants in Australian cars lags international competitors (DCCEEW 2022). A global phasedown of hydrofluorocarbon refrigerants is being implemented through the Montreal Protocol, adopted into Australian law in the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*. To support this initiative, a domestic phase down of bulk imports of hydrofluorocarbons started in 2018, with an 85% phase down mandated by 2036.

It is unclear whether including low global warming refrigerants in a FES would lead to abatement beyond that which is expected to be achieved through the Montreal Protocol and *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*. Any crediting for the replacement of high global warming potential refrigerants under a FES would need to deliver abatement beyond these measures.

Advantages of including credits for low global warming potential refrigerants

- Provides an incentive to incorporate low global warming potential refrigerant in Australian delivered vehicles, generating abatement which wouldn't otherwise be recognised by the FES framework.
- Could accelerate the transition to low global warming potential air conditioning refrigerants in light vehicles in Australia ahead of the transition occurring due to the hydrofluorocarbon phase-down.

Disadvantages of including credits for low global warming potential refrigerants

- May provide FES credit for ceasing to use a refrigerant which is already mandated to be phased out under the Montreal Protocol and *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989*, and could be managed by an alternative legislative framework.
- Risks enabling compliance with an Australian FES without providing consumers with fuel cost savings or increased EV availability.
- Risks providing credit for action which would occur as part of business as usual technology updates.

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?

5.4 When should a FES start?

The Government would like a FES to be operational as soon as possible to enable the benefits to be realised swiftly. The later a FES commences, the sharper the reduction would need to be to achieve emissions reductions and the more Australians will pay for fuel. With 85% of global vehicle sales being covered by a FES, including all major markets, suppliers are familiar with how to operate in a market regulated by a FES.

However, it is important that suppliers have enough time to consider how an Australian FES would impact their businesses, how it differs from their obligations internationally, and then have time to adjust their processes. Government best practice requires a period of time for business to implement new policies and for government to undertake any targeted education on how to comply with new legislation. A compliance system needs to be in place, along with a way of effectively regulating a new FES. Importantly, we need to ensure that any new costs to suppliers are not simply passed on to consumers, nullifying the objective of providing affordable LZEVs to the market.

Balanced against the need to provide supplier certainty, is the need to reduce light vehicle emissions as quickly as possible.

Passage of legislation through the Australian Parliament can also be a lengthy process. Delays in the passage of legislation implementing a FES could impact on commencement dates, as well as how aggressive emissions reductions can be implemented.

AIMVIA believes that the introduction of fuel efficiency standards is long overdue. While such a move may not be as immediately noticeable as the arrival of shiny new EVs on our roads, its arrival will have enormous benefits, both for the health of all Australian citizens, and for the environment.

Australian Imported Motor Vehicle Industry Association submission to the National Electric Vehicle Strategy (October 2022)

The department is seeking views on the following options:

1. Immediate commencement when relevant legislation enters into force.
2. Commencement from a defined period after passage to allow administrative arrangements to be put in place, along with a grace period. Any credits would accrue when the grace period concludes. This would mean that industry would have a moderate period to align their systems with the new framework.
3. A differentiated process, so that a FES would apply to passenger vehicles and light SUVs after passage, and to LCVs after that.
4. Opt-in. A supplier would have the opportunity to opt-in to a FES after passage but before it becomes enforceable. In opting in, a supplier would be exposed to penalties but would be able to accrue credits. Following a period, the FES would apply to all suppliers.

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?

5.5 Penalties for non-compliance and enforcement mechanisms

In other jurisdictions there are penalties that apply to suppliers for going above the relevant CO₂ limit. A FES does not impose fees on an individual vehicle's emission level. The purpose of a penalty regime is not to raise revenue, rather it is to ensure compliance with regulated obligations.

The penalties for exceeding the set limits should be substantially higher than the required compliance cost and should have a deterrent character.

International Council on Clean Transportation submission to the National Electric Vehicle Strategy (October 2022)

The introduction of penalties is important, because it provides strong financial incentives to suppliers to comply with the framework. Because Australia is a relatively small market for vehicles on a global scale, the introduction of penalties may not be effective at changing global supplier behaviour overall, but they can be effective at influencing the average level of fuel efficiency of vehicle models imported into Australia.

The best possible outcome is for no penalties to be applied, because all suppliers comply with, or exceed the target and Australians realise the full fuel saving and LZEV availability benefits of the FES.

There is an interaction between the penalties selected and the supply of credits. This is because where there are credits in the system, and a supplier exceeds its CO₂ average limit, it may opt to purchase

credits (or work harder to earn credits) rather than pay a penalty. In the design of a FES, while we acknowledge that there may be non-financial impacts from paying a penalty (such as brand damage), we assume that the biggest driver of behavioural change will be the risk of a financial penalty associated with a breach.

Internationally, jurisdictions have chosen different penalty levels. The table below provides a high-level summary of the situation:

Table 2 - Penalty frameworks in other jurisdictions

	New Zealand	United States	European Union
Penalty per vehicle in local currency	New vehicle suppliers: \$NZ45 per excess gram Used vehicle suppliers: \$NZ22.50 per excess gram Note: penalties increase in New Zealand starting in 2025	\$US15 for each 0.1 mile/gallon	€95 per g/km target exceedance
Penalty in Purchasing Power Parity ¹⁰	New vehicle suppliers: \$44 Used vehicle suppliers: \$22	\$22 for each 0.1 mile/gallon	\$197 per g/km target exceedance

Penalties for each gram per kilometre

International experience suggests that the penalties per gram should be set between AUD\$90 – AUD\$150 per gram per kilometre. Generally, the way that penalties operate in other jurisdictions is that suppliers have penalties applied by the number of vehicles they supply multiplied by the fleet CO₂ grams per kilometre of excess emissions, multiplied by the penalty value.

For example, for a supplier that sold 1,000 vehicles, with an average of 2 grams per kilometre of excess emissions, and if the penalty was AUD\$100 per gram, the total penalty would be AUD\$200,000.

There are trade-offs to consider in setting the level of penalty:

- Higher penalties would provide a greater incentive for compliance with the standard. It would also incentivise suppliers to pursue additional credits or to consider credit trading (and could impact the trading price of a credit – creating somewhat of a credit price ceiling). Higher penalties than comparable nations could however incentivise suppliers to downgrade their interest in the Australian market.
- Lower penalties, especially at the commencement of the scheme, could allow suppliers more time to adjust their business models. If a penalty level is too low, it risks becoming a cost of doing business and not provide sufficient incentive for compliance, leading to higher emissions and higher fuel costs for Australians.

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?

¹⁰ Purchasing Power Parity (or PPP) is a mechanism for comparing prices in different locations. We've used it in this paper to help readers compare the prices in different jurisdictions.

Small volume and niche manufacturers

Standards adopted in other markets often allow suppliers that sell a limited number of vehicles to be exempt from the standard or to comply with alternative arrangements. This is because these suppliers may only be able to offer a limited range of models and may have less capacity to develop new models to meet the standard.

The EU standard provides an exemption for manufacturers responsible for fewer than 1000 cars or fewer than 1000 vans per year (in a much larger market than Australia), and provides more limited flexibility for somewhat larger manufacturers.

TECHNICAL Small volume and niche manufacturers

- What, if any, concessional arrangements should be offered to low volume manufacturers and why? If so, how should a low volume manufacturer be defined?

5.6 Information disclosure

A FES requires an efficient data collection procedure between the Government entity (most commonly the regulator) and suppliers. Each year, suppliers would have to report to the Government the actual average emissions of the vehicles they sold over the last year. We think the data that would need to be provided would be, at the minimum:

- 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).

Regardless of the system, suppliers will need to keep these records. The legislation to put in place a FES will need to provide a penalty in the event that a supplier provides misleading or false information, or does not keep adequate records. As a starting proposition, the department proposes that failure to keep records under the FES would be an offence aligned with the obligation to provide and keep records under section 30 of the *Road Vehicle Standards Act 2018* (that is a civil penalty of 60 penalty units per record¹¹).

Publication of brand performance will also need to be considered, including information like sales breakdowns, use of off-cycle credits, super-credits (if adopted as part of an Australian FES), and credit banking or exchanges. Transparency will be key to promote public confidence that a FES is achieving its objectives. Collection and use of data, as well as regular reporting to both the regulator and to the general public will be an important component in the FES design.

In addition, greater transparency can give rise to better predictability for industry and greater investment certainty. If suppliers are able to track how they, and their competitors, are performing against targets, then they have a greater chance at banking any credits and passing those savings onto consumers, as well as planning their investments.

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?

¹¹ As at January 2023, the value of a [Commonwealth penalty unit is \\$275](#).

5.7 Governance arrangements and other matters

In addition to the technical aspects of the FES design process, the Government is also considering a range of governance and regulatory issues, such as who the regulated entities are, data collection and privacy, as well as reporting arrangements. These components will be considered and consulted on with the appropriate government agencies. However, we welcome comments on any of the regulatory elements of the FES, such as those below.

The regulator

To be effective, an Australian FES needs a regulator with the right regulatory posture. The approach of the regulator can influence compliance with a framework, and ultimately how effective the framework is. We propose that the department be the FES regulator. The department already has a range of regulatory functions across the transport sector, covering land transport, aviation and maritime. The department has a deep knowledge of the transport sector, including through the Bureau of Infrastructure and Transport Research Economic, and would employ this in regulating for a FES. Funding and cost recovery for the FES regulatory function would be decided as part of a future process.

The regulated entities

There is considerable complexity in the Australian and international vehicle market. In many cases manufacturers have formed, or been brought into, large conglomerates which cut across brands and market segments.

EU regulations place responsibility for compliance on the manufacturer, which is defined as the “... person or body responsible for the approval authority for... the EC type-approval procedure... and ensuring conformity of production”.

This would be equivalent to the organisation that obtains or holds an Australian whole vehicle type approval. However, in many cases, this may be a different entity to the entity managing the marketing, distribution and sale of vehicles in Australia. Some entities holding type approvals are the overseas based ‘parent’ entity that controls the supply of vehicles at a global level. In some cases, multiple subsidiaries of a global manufacturing group, may hold type approvals for different brands or models produced by a manufacturer or manufacturing group. Entities managing the sale of vehicles in Australia may be a subsidiary of a global manufacturing group, or an independent distributor that manages the sale of vehicles on behalf of one or more manufacturers.

As the proposed FES would apply across all vehicle sales and not to individual vehicle models, and type approval holders may not have a corporate presence in Australia, it may be appropriate to apply the standard to the entity that manages the distribution and sale of vehicles in Australia (that is the manufacturer’s Australian distributor, referred to as ‘suppliers’ in this paper). Consistent with the fuel consumption labelling standard (Australian Design Rule 81/02), the type approval holder would remain responsible for the certification of the vehicle’s efficiency levels.

As the local distributor has corporate presence in Australia, it would be easier for the regulator to hold these entities to account for any non-compliance with the standard. However, as the certification of the vehicle’s efficiency level would be the responsibility of the type approval holder, both the type approval holder and the local distributor would need to work together to ensure regulatory requirements were met. In addition, we will consider how to establish surety that the regulated entity will pay any penalties that may be levied.

Other regulatory powers

It has been established that generally regulators need a standard ‘tool kit’ to maintain an effective regulatory posture, covering investigatory powers, enforcement tools, and other matters. The *Regulatory*

Powers (Standard Provisions) Act 2014 has been established with this in mind.¹² Our starting proposition is that the standard provisions be available to the FES regulator.

Emissions Testing

Australia currently mandates the fuel consumption and emissions testing cycle called the New European Driving Cycle (NEDC) as part of Australia's current Euro 5 noxious emissions standards. The updated emissions test, called the Worldwide Harmonised Light Vehicle Test Procedure (WLTP) accompanies the improved Euro 6 noxious emissions standards. The WLTP test more accurately reflects the fuel consumption cars return on the road. If and when the Government adopts Euro 6 noxious emission standards this would also require the adoption of WLTP.

The greatest consistency over time may be achieved by using WLTP for the Australian FES. If this approach is taken, to avoid the need for costly and time-consuming re-testing of vehicles under the WLTP standard, a conversion factor could be developed to record NEDC test results as a WLTP results. This approach would reflect the approach taken in the New Zealand Clean Car Standard.

TECHNICAL Other regulatory mechanisms

- Should the regulator be the department? What other options are there?
- How should the regulated entity be defined in an Australian FES?
- What reasons are there to depart from the standard regulatory tool kit for an Australian FES?
- Should an Australian FES use WLTP test results in anticipation of the adoption of Euro 6 and if so, what conversion should be applied to existing NEDC test results, or how might such a factor be determined?

¹² See [Regulatory powers | Attorney-General's Department \(ag.gov.au\)](#) for more information.

Glossary

AAA – Australian Automobile Association, the national body representing Australia’s motoring clubs.

Attribute Based Standard – a standard that is based on an attribute of a vehicle such as mass, or footprint (i.e. length and width), which is further defined by the limit curve.

BEV – a battery electric vehicle that exclusively uses chemical energy stored in rechargeable battery packs to power at least one electric motor with no secondary source of propulsion.

CEFC – Clean Energy Finance Corporation, a Government owned company that invests commercially to increase the flow of funds into renewable energy, energy efficiency and low emissions technologies.

CER – The Clean Energy Regulator is a Government body responsible for accelerating carbon abatement for Australia through the administration of the National Greenhouse and Energy Reporting scheme, Renewable Energy Target and the Emissions Reduction Fund.

CO₂ – Carbon dioxide, the key greenhouse gas expelled from the exhaust systems of internal combustion engines.

Credits – a mechanism to track when a supplier beats its target, to enable banking and trading.

DCCEEW – Department of Climate Change, Energy, the Environment and Water.

The department – Department of Infrastructure, Transport, Regional Development, Communications and the Arts.

EV Council – The Electric Vehicle Council is the national body representing the electric vehicle industry in Australia.

FES – Fuel efficiency standard is a standard that regulates CO₂ emissions from vehicles, usually by applying an average CO₂ target to a suppliers’ fleet of new vehicles. A FES usually reduces over time.

FAI – Federal Chamber of Automotive Industries, the peak industry organisation for manufacturers and importers of passenger vehicles, light commercial vehicles and motorcycles in Australia.

GHGs – Greenhouse Gases are gases that contribute to global climate change. CO₂ is one of the key GHGs emitted by vehicles.

Hybrid – A vehicle powered by an internal combustion engine and an electric motor using chemical energy stored in rechargeable battery packs, which is not able to plug into an external source of power.

FCEV – Hydrogen fuel cell electric vehicle is electric vehicle that uses electricity from a fuel cell powered by compressed hydrogen, rather than electricity from batteries.

ICE – Internal Combustion Engine vehicle is one with an internal combustion engine and no other source of propulsion. These are the cars that most Australians have historically driven that use petrol or diesel. ICE cars can have high GHG emissions.

Limit Curve – How much CO₂ a supplier’s fleet of cars is able to emit on average, over time. A limit curve is often drawn on a graph against vehicle mass or footprint.

LCV – Light Commercial Vehicle, for example a large van or ute.

LZEV – Low and Zero Emission Vehicles, for example an EV or hybrid.

Net zero – The United Nations defines net zero as cutting GHG emissions to as close to zero as possible, and where the any remaining emissions are re-absorbed from the atmosphere, for example by forests or seas.

PHEV – Plug-in Hybrid Electric Vehicle with a battery that can be recharged by plugging it into an external source of electric power, as well as by its on-board engine and generator

Supplier – An entity that holds an approval under the *Road Vehicle Standards Act 2018* to provide vehicles to the Australian market (for example a company that imports cars into Australia).

Attachment A: Consultation Questions

General questions

- Are these the right guiding principles? Are there other principles that you think we should keep in mind?
- 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?
- Are there any particular FES features that you think we need to take particular care with?
- What principles should we consider when setting the targets?
- 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?

Technical questions

- What should Australia's CO₂ 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?
- 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?
- 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?
- To what extent should the Australian FES allow credit banking, transferring and/or pooling?
- Should credits expire? In what timeframe?
- 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?
- 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?
- 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?
- 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?
- 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?
- What, if any, concessional arrangements should be offered to low volume manufacturers and why? If so, how should a low volume manufacturer be defined?
- 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?
- Should the regulator be the department? What other options are there?
- How should the regulated entity be defined in an Australian FES?
- What reasons are there to depart from the standard regulatory tool kit for an Australian FES?
- Should an Australian FES use WLTP test results in anticipation of the adoption of Euro 6 and if so, what conversion should be applied to existing NEDC test results, or how might such a factor be determined?

Attachment B: State and territory initiatives

States and territories have already introduced a range of initiatives to support EV uptake

NT

Northern Territory launched its Electric Vehicle Strategy in July 2021. The strategy aligns with the NT energy target of 50% renewable by 2030 and Climate Change Response Plan Net Zero by 2050.

The NT Government is supporting residential, business, destination and fast charging through grant schemes and strategic planning.

QLD

The Queensland Zero Emission Vehicle Strategy 2022–2023 is accelerating Queensland towards a cleaner, greener transport future while making sure the state's energy network supports the transition.

Queensland's Electric Super Highway fast charging network will provide comprehensive coverage of regional and rural Queensland across more than 54 locations, once complete.

NSW

New South Wales launched its \$633 million Electric Vehicle Strategy in June 2021 to support and accelerate the uptake of light electric vehicles. The state is taking action on electric heavy vehicles and supporting local manufacturing of EVs.

The NSW Government is providing \$105 million in fleet incentives to help local councils and businesses buy new electric vehicles.

WA

Western Australia launched its Electric Vehicle Strategy in November 2020, as part of the WA Climate Policy.

The WA Government is investing \$22.9 million to install almost 100 charging stations at 49 locations to allow travel around WA in an EV.

ACT

The Australian Capital Territory launched its Zero Emissions Vehicles Strategy 2022–30 in July 2022, setting out the actions necessary to meet ambitious emissions reduction targets.

The ACT is aiming to achieve 80–90% of new light vehicle sales in the ACT being zero emissions vehicles in 2030.

SA

South Australia is focused on driving the transformation to EVs, to realise its ambition of at least 50% reduction in greenhouse gas emission by 2030 and net zero emissions by 2050.

The SA Government is providing a grant to the Royal Automobile Association to build, own and operate a statewide EV charging network.

VIC

In May 2021 the Victorian Government released its \$100 million Zero Emissions Vehicle Roadmap.

This includes a target for 50% of light vehicles to be ZEV by 2030, Australia's first ZEV subsidy of \$3,000, \$19 million for EV charging, and a target for all new public transport buses to be ZEV from 2025, supported by a \$20 million trial.

TAS

The Tasmanian Government's Climate Action 21: Tasmania's Climate Action Plan 2017–2021 included a range of measures to support the transition to electric vehicles, by focusing on addressing the barriers to electric vehicle uptake.

The Tasmanian Government has set a target to transition its fleet to 100% electric by 2030.



Attachment C: The Australian Vehicle Market

There are various features of the Australian vehicle market that we share with other jurisdictions. However, these do apply in unique ways to Australia as a result of our geographic location, the locations of our major population centres, the configuration of our road network and cultural and historical factors.

About the Australian car market:

The AAA believes that a CO₂ standard designed for the Australian market, along with improved fuel quality standards to facilitate the introduction of the current international noxious emission regulation (Euro 6), would provide an incentive for vehicle manufacturers to offer zero and low emission vehicles as well as internal combustion engines with the latest engine technologies that are more fuel efficient and produce less tailpipe emissions.

Australian Automobile Association submission to the National Electric Vehicle Strategy (October 2022)

- Australia's light vehicles are imported, rather than locally built.
- In 2020-21, the percentage of vehicle types sold were:
 - 50.7% are Sports Utility Vehicles
 - 24.2% are Utes (i.e. Pickup/Cab chassis)
 - 20.7% are non-SUV passenger vehicles (such as sedans)
 - 4.4% are heavy vehicles
- The average vehicle age is 10.7 years for passenger vehicles and 11.1 years for light commercial vehicles, and the average annual attrition rate is 4-5%.
- Estimates indicate that domestic second-hand vehicle sales account for roughly around 70% of total vehicles sales across Australia each year, suggesting that most Australian's vehicle purchases will be a second-hand vehicle.
- Whilst building a new EV may produce more GHG emissions than an internal combustion engine vehicle, this is more than offset after about one year if the vehicle is charged entirely from renewably-sourced electricity (e.g. home solar) and two years if charged from the grid (using the existing mix of electricity generation sources).

Total Vehicles

Increase in registered vehicles

There were 20.7 million registered motor vehicles as at 31 January 2022.



This represents a 2 per cent increase from 31 January 2021.

Vehicle Type

Fleet composition

Passenger vehicles make up the largest proportion of the vehicle fleet at 72.9%.



Light commercial vehicles comprise the second largest vehicle type on register with 18.4% of the fleet.

Electric Vehicles

Increase in EV uptake

There was a 118 per cent increase in battery electric passenger vehicles between 31 January 2021 and 31 January 2022.



Tesla is the most popular electric vehicle with approximately 22,260 vehicles on register as 31 January 2022.

Vehicle Makes

Most popular brands

Toyota was once again the largest passenger vehicle make, with 3.0 million registrations.



MG experienced the largest growth in registrations, doubling the number on register between January 2021 and 2022

Attachment D: International Examples

Australia is late to move to introduce a fuel efficiency standard compared to other countries, and our average emissions for new light vehicles are higher than our international peers. While we have some similarities to markets such as the US, the UK and New Zealand, our market is unique and the mix of vehicle types demanded by Australian consumers differs from more densely populated countries with right hand drive vehicles (such as Japan, India and the UK).

In this paper, we have used the European Union, the United States and New Zealand, as examples. We need to keep in mind that these jurisdictions have similarities, but also many differences to Australia. Nonetheless, the department has been in regular contact with officials from these jurisdictions to better understand how these schemes have worked, as well as any lessons learned.

European Union (EU)

The EU has had mandated fuel efficiency standards for light vehicles since 2012. The EU standards have separate targets for passenger and light commercial vehicles. Requirements for individual suppliers are set by a limit curve, which adjusts requirements by the mass of the vehicles sold by the supplier.

Suppliers can form a pool with other suppliers to comply with the standard as a group. The EU standard phased out multiplier credits to encourage the supply of vehicles producing less than 50 g CO₂/km, and from 2025 will replace this arrangement with a system that incorporates LZEV sales targets which, if met, allow a supplier's overall emissions limit to be slightly relaxed. The EU standard provides 'off-cycle' credits for approved eco-innovations that reduce fuel use in real world conditions that are not captured in an official laboratory test, for example high efficiency vehicle lighting.

The current EU standard for 2020 to 2024 is intended to achieve a fleetwide average of at least 95 g/km for new passenger vehicles and 147 g/km for light commercial vehicles. Suppliers will be required to achieve a further 15% reduction on 2020 levels by 2025. In 2030, the level of reduction required (on 2020 levels) will increase to 37.5% for passenger vehicles and 31% for light commercial vehicles. A review is currently underway to consider increasing the level of reduction required in 2030 to 50%, and a 100% reduction by 2035.

United States (US)

The US adopted its first fuel efficiency standards in the 1970s. Like the EU, the US also has separate standards for passenger and light commercial vehicles, but includes many larger passenger vehicles in its light commercial vehicle standards. Since 2010, the US fuel efficiency standards have adopted a 'limit curve' that adjusts requirements for individual suppliers by the 'footprint' (area between the wheels) of vehicles sold. These limit curves become increasingly stringent with each subsequent model year.

The US fuel efficiency standards offer a range of flexibilities to help suppliers comply with the standard and encourage the supply of new vehicle technologies, including credits for LZEVs, approved technologies, and air conditioning refrigerants with a lower global warming potential. Suppliers that surpass the standard in particular model year can accrue credits that may be used to offset a shortfall in the previous three years or the subsequent five years. Excess credits can also be bought from or sold to other suppliers to offset a shortfall.

The current US fuel efficiency standards, which were adopted in December 2021, aim to achieve a 28% improvement on 2022 levels by 2026.

New Zealand

New Zealand legislated a mandatory fuel efficiency standard in 2022. New Zealand also adopts separate standards for passenger and light commercial vehicles along similar lines to the US approach. However, like the EU standard, New Zealand has adopted limit curves which adjust requirements for suppliers (for both new and second-hand imports) by the mass of the vehicles supplied. These limit curves will become progressively more stringent from 2023 to 2027.

Like the US standard, the New Zealand standard allows credits to be accrued for surpassing the standard, carried forward, carried back or traded with other manufacturers. However, the New Zealand standard does not offer any technology (off-cycle) based credits.

New Zealand's fuel efficiency standard is aiming to achieve a 62-65% reduction (on 2021 levels) in CO₂ emissions from new passenger and light commercial vehicle by 2027. While this is faster rate of reduction than the EU and US standards, they are starting from a higher baseline. The faster rate of improvement is intended to also reduce the difference in the average fuel efficiency of vehicles sold in New Zealand relative to other advanced economies with fuel efficiency standards.

Summary table of key elements across jurisdictions

Standard	European Union	United States	New Zealand
Baseline: 2020/2021 emissions intensity (Australia: 173.6 g CO ₂ /km overall)	95g/km (2021, passenger vehicles) 153.5g/km (2020, light commercial vehicles)	114g/km (2022, passenger vehicles) 170g/km (2022, light commercial vehicles)	159g/km (2021, passenger vehicles) 243g/km (2021, light commercial vehicles)
Average annual rate of reduction expected, and targets ¹³	Currently subject to review Passenger vehicles: - 8.4% per annum to 81g/km in 2025 and 43g/km in 2030 Light commercial vehicles: - 7.9% per annum, to - 125g/km in 2025 - 73.5g/km in 2030	2022-26 - 8.8% per annum, to 79g/km in 2026 (passenger vehicles), 118g/km (light commercial vehicles)	2023-27 - 14-16% per annum - 63g/km in 2027 (passenger vehicles) - 85g/km in 2027 for commercial vehicles
Application of standard	Two mass-based limit curves (one for passenger and one for light commercial vehicles) Limit curve target changes every five years	Two footprint-based limit curves (one for passenger and one for light commercial vehicles) Limit curves targets become more stringent annually	Two mass-based limit curves (one for passenger and one for light commercial vehicles) Limit curve targets become more stringent annually

¹³ Targets are normalised to NEDC. Target data supplied by the ICCT.

Standard	European Union	United States	New Zealand
Multiplier credits (super credits)	No.	Yes. Multiplier of 1.5 for battery EVs and fuel cell EVs, 1.3 for plug in hybrids. Benefit capped at 6.2g CO ₂ /km over the 2 years from 2023-2024. ¹⁴ Alternative rules apply for full size pickup trucks.	No
Off cycle credits	Yes. Benefit capped to 7g CO ₂ /km.	Yes. Benefit capped to 9.3g CO ₂ /km for 2023 to 2026, capped to 6.2g CO ₂ /km from 2027.	No
Credits/Flexibilities	Allows suppliers to comply as a group Credits for approved eco-innovations and vehicles emitting less than 50g CO ₂ /km	Allows credits to be accrued for surpassing standard. Credits can be carried forward, carried back or traded. Credits for a range of approved technologies.	Allows credits to be accrued for surpassing standard. Credits can be carried forward, carried back or traded.

¹⁴ From Bui, A and Yang, Z, *U.S. light-duty vehicle greenhouse gas standards for model years 2023–2026 and corporate average fuel economy standards for model years 2024–2026*, International Council for Clean Transportation, <https://theicct.org/wp-content/uploads/2022/07/update-us-ghg-cafe-standards-1-jul22.pdf>, page 6.

Attachment E: Australian industry voluntary FES

The FCAI Voluntary CO2 standard was developed after extensively researching international vehicle efficiency standards and the availability of vehicle technologies able to improve vehicle efficiency. It incorporates the design features that should be considered for mandatory vehicle efficiency standards.

Federal Chamber of Automotive Industries—submission to the National Electric Vehicle Strategy (November 2022)

Currently, Australia has an industry voluntary FES, monitored and reported on by the Federal Chamber of Automotive Industries (FCAI). This applies to over 40 vehicle suppliers and data is collected by sales recorded in the FCAI’s monthly Vehicle Facts (VFACTS) report, the recognised industry data source for new vehicle sales by brand and model. Though a step in the right direction, this FES is entirely voluntary, based on self-declared data, and there are no direct consequences for suppliers who don’t meet the targets.¹⁵ As a result, it does not provide a sufficiently strong financial incentive for global car suppliers to provide a globally competitive supply of EVs to the Australian market. The targets are much less stringent than FES fleet averages in major advanced markets, even allowing for adjustment for differences in fleet characteristics. This partly reflects tightening of FES arrangements in major markets, such as the US and EU.

The FCAI voluntary FES covers new light vehicles supplied to the Australian market by FCAI members and sets average emissions limits for vehicles in two categories – passenger cars and light SUVs, and heavy SUVs and light commercial vehicles. Consistent with international FESs, the FCAI voluntary standard is an attribute-based standard, which sets emissions targets using a sales-weighted, mass-based approach. This means suppliers who sell predominantly larger, heavier vehicles have a higher CO₂ target than one which sells smaller cars. The industry voluntary standard also offers a range of technology or multiplier credits.

The mix of vehicles sold by suppliers vary, with some supplying mostly sedans and smaller SUVs, while others rely more heavily on sales of larger vehicles, like utes, for regional and commercial consumers. We recognise Australians want to be able to purchase the vehicle that best suits their lifestyle, road environment and work purposes. This principle is protected by the fundamental design of a FES, which applies to the *average* emissions of the fleet of vehicles sold by a supplier, and not to any particular vehicle.

Without more ambitious and stringent fuel efficiency standards, vehicle manufacturers have no incentive to prioritise the export of the most modern and affordable vehicles to the Australian market. If the status quo persists, Australia will continue to experience constraints in the supply of zero emission vehicles – reducing their accessibility and affordability, and manufacturers will continue to dispose of their highest polluting vehicles in our market.

ACT Government submission to the National Electric Vehicle Strategy (October 2022)

¹⁵ The FCAI voluntary fuel efficiency standard is available online here: [Fuel Quality & Emissions | Federal Chamber of Automotive Industries \(fcai.com.au\)](#)

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