General introductory comments	Lighter Footprints (https://lighterfootprints.org/) is a community-based group that aims to influence Australian local, state, and national decision makers to take the action necessary to halt global warming as a matter of urgency. For over a decade, we have educated, advocated, and brought people together in the Boroondara LGA and surrounding suburbs to inform the community and promote a clean energy future. We have more than 3,450 people on our mailing list. We welcome the opportunity to comment on the FES consultation paper (The Fuel Efficiency Standard – Cleaner, Cheaper to Run Cars for Australia, Department of Infrastructure, Transport, Regional Development and Communications , April 2023) further to our feedback[1] on the National EV strategy (NEVS DCCEEW, September 2022) in context of electrification and decarbonisation of our economy and society. Road transport and the electricity grid are major greenhouse gas emitters but have the most well-defined technical and economic transition pathways to decarbonisation and are synergistic. But whereas states and industry have been instrumental in driving the electricity grid transition and some LZEV demand acceleration, Federal Government needs to play a key role in the lifting of LZEV supply and overcoming the inertia and vested interests of the transport industry. The pace of Legislation changes and implementation is important, recognising the vested interest of ICE manufacturers with deliberately limited EV plans and the tendency of the oil and gas industry to delay transition away from fossil fuels. As we are the laggards in adopting an FES, and given our highly polluting fleet, the rapid replication of a recent, aggressive FES (e.g. NZ) will achieve maximum benefit with minimal implementation delay. Australia will always be a follower/adopter of global vehicle standards, so replicating the best from the leaders will be the best option. FES has typically considered CO_2 emissions as the primary focus but other emissions also need to be included, as CO_2e (CO_2 equivalence global warming potential – GWP, to include particulate, NO_x, SO_x etc). FES needs to be applied to all new vehicles, with light vehicles (GVM of 3.5t and lower – MA, NA, MC) ASAP and trucks, buses, and heavier vehicles to follow (recognising that implementing a heavy vehicle FES will be more complex and impacts local manufacturers). Demarcation between light vehicles and heavier vehicles must be unambiguous and the timeline for application of FES to heavy vehicles must be published well in advance. Shorter haul commercial and heavy vehicle emissions (last mile) must be addressed urgently as well, but should not be allowed delay the light vehicle FES implementation. Peak transport groups are already calling for this[2]. We suggest that an additional NEVS focusing on heavier vehicles be undertaken again in association with a specific targeted FES in parallel with light vehicles – heavier vehicle NEVS consultation in late 2023 with associated FES in 2024 leading to the banning of new ICE heavier vehicles (>3.5t GVM) by 2045.

[1] https://consult.dcceew.gov.au/national-electric-vehicle-strategy/submission/view/286

[2] https://www.abc.net.au/radio/programs/pm/trucking-industry-calls-for-zero-emission-strategy-/102305510 https://www.gizmodo.com.au/2023/05/adiona-trucks-australia/

	FES should be the mechanism of the initial transition, ahead of bringing in a complete ban on new emitting vehicle sales (ICE) by 2035, through the stepped reduction in FES emissions to 0g/CO_2e/km by 2035. This reflects that electricity and transport sectors are the heavy lifters to achieving net zero by 2050, and these more rapid to decarbonise sectors will compensate for slow-to- decarbonise sectors and state based 2035 targets. FES should also incentivise smaller and lighter vehicles which have lower road, congestion, and parking impact. Extra incentives for small LZEV (light zero emissions vehicles) such as Japanese Kei format should be considered (perhaps as an adjunct or later phase of FES). To think automotive industry corporate behaviour will over time determinedly drive down emissions is naïve. As the automotive industry will not push for change, governments must regulate for change, governments must regulate vehicle suppliers to drive down emissions. More detail on emission compliance regime will be required. The automotive industry has been less than transparent on fuel consumption and fuel efficiency in the past – the financial stakes are higher with a FES, so stringent, transparent, independent, ongoing audits of emissions measurement and reporting is mandatory. There is limited local light vehicle industry, hence auto-industry complicating/delaying tactics mostly serves the interests of multi-national corporations rather than Australian economy and society. Real-world measurements/audits not just initial compliance must be included. Considerable effort will be required to close most loopholes initially but to also have a transparent mechanism to close any future loopholes as they are identified. Ability for suppliers to adjust specifications to make certain models exempt from FES must be strongly curtailed. Recognising that during the energy transition, some ICE manufacturers may fail, a supplier that may withdraw from the Australian market or faces bankruptcy must not be able to dump high emitting vehicles into the Australian market knowing they might be immune to penalties after their exit. We are proposing that the Government and associated regulatory bodies take an aggressive approach to FES implementation. Australia is coming from a trailing position and the 15 year turnover of private vehicles means that every new ICE vehicle will still be contributing to GHG emissions in 2035 – rapid transition to LZEVs reduces this and increases the size of the second-hand LZEV market which is essential to make them available to the lower socio-economic sector. 15 year turnover means 6% of the Australian fleet per annum - If FES drives over 95% of new cars sales to LZEV by 2035, then 95% of the total fleet would be LZEV by 2044 – a major step forward. Although FES has largely been communicated as supporting the rapid transition to LZEVs, other benefits such as lower fuel and operating costs, improved fuel security, and health benefits must also be communicated to the public. With over 11,000 Australian transport pollution related deaths per year[3], this is an order of magnitude higher than transport accident death but receives almost zero publicity. We recognise that automotive industry groups have comprehensive lobby capabilities, loud voices and significant vested interests. We suggest that Government provide equal access to non-commercial entities and organisations such as community and environment groups in implementation discussions. FES is critical to Australia's decarbonisation transition and the vested interests of incumbent businesses cannot be allowed to derail an ambitious, effective, transparent, and robust implementation. We would welcome the opportunity to engage in further discussions with the department.

[3] https://www.unimelb.edu.au/__data/assets/pdf_file/0006/4498161/Expert-Position-Statement_Vehicle-emissions_FINAL.pdf

General questions	Lighter Footprints response
General guiding principles	
4. Are these the right guiding principles? Are there other principles that you think we should keep in mind?	Listed principals are appropriate. Suggest the inclusion of: - Under the "effective" heading, recommend GHG (greenhouse gasses) or CO_2e, rather than CO_2 (reducing CO_2 should not be to the detriment of other greenhouse gas emissions). FES must also transparently demonstrate that it is effective in reducing emissions consistent with its ambitious targets that support the Paris agreement trajectory. - Under "transparency" heading, include measurement, reporting, auditing, and enforcing of compliance and any associated penalties. Publishing names of chronic non-compliance should be available to the regulator. - Under "robust" heading, include increasing stringency until full net (absolute?) zero of transport sector is achieved. Additional key words that should be considered are: - "Ambitious" – Recognition that FES has a significant role to play in GHG reductions and Australia is already well behind its peers, so targets should drive the industry and community hard. - "Integrity". FES must be allowed to achieve its goals without loopholes or abuse. FES and its goals must be defended as a critical and effective component of decarbonising the Australian economy.
General design assumptions	
4.1 Are there any design assumptions that you think will put at risk the implementation of a good FES for Australia?	*There is no valid reason for Australia to differ from successfully implemented standards in similar economies*. - Designs supporting aggressive reductions in vehicle emissions have been proven, are operational, and are currently supporting necessary annual reductions in emissions across Europe, the US, New Zealand, and other countries. This is being accomplished without economic detriment to these countries. Australian implementation of aggressive FES equivalent to those across Europe and the US is not design constrained. It is purely a leadership decision based on Australian values. - A roadmap for FES coverage of all road vehicles is required with light vehicles (MA, NA, MC) as the immediate scope but flagging to the industry that heavy vehicle inclusion will come soon after. This visibility will reduce a tendency otherwise to increase weight to fall into heavier vehicle category. Time is of the essence (every month of delay potentially. means 80,000 new vehicles that should have been covered by FES). - Close off loopholes that allow suppliers to exempt certain models from FES inclusion must be addressed, with capability for future amendment as any further loopholes identified. Likewise, if FES is applicable to vehicles "sold", alternative ownership/importing models must be catered for to avoid loopholes. - Need to ensure that "grey imports" cannot bypass FES (e.g., importing 1–2-year-old cars from Japan or importing new pickups from the USA and performing right-hand drive conversion which make them eligible to be 2nd hand here). - Although the standard is all about emissions, its design should also recognise other issues that Australia faces such as road (and parking) congestion. Indirectly, FES should also support smaller vehicles and adoption of alternative transport options (e.g. walking, cycling, public transport) – or at least discourage larger vehicles, higher ownership and higher usage.
4.1 Are the exclusions for military, law enforcement, emergency	Licensed motorcycles should be considered for inclusion in the initial FES (if this does not delay implementation) or at minimum an addendum in near future. However, motorcycles should be a distinct class and not be allowed to impact light vehicle FES averages.

services, agricultural equipment and motorcycles the right ones?	Other classes should eventually not be excluded and flagged at this stage with a roadmap for future inclusion in FES or associated scheme. It is recognised that inclusion of these vehicles may be complication, so inclusion in initial FES would delay the overall introduction. Only specifically excluded vehicles/uses, such as military and law enforcement, should be exempt under special circumstances.
General FES design features	
5. Are there any particular FES features that you think we need to take particular care with?	- *Should be gCO2e/km based not fuel economy based (l/100km).* - Direct replication of NZ FES details appears most effective and timely. - *Non-compliance needs to be a significant threat to suppliers* – escalation of penalties for multiple breeches, transparency to industry (local and global) and public on non-compliance details and penalties.
Starting emissions level limit and approach	
5.1 What principles should we consider when setting the targets?	A strong start associated with an early start date (Dec 2023 legislation for Jul 2024 implementation such that systems are in place and proven to allow quarterly and calendar year reporting from January 2025) is preferred to address Australia's laggard position on EV adoption. Transparent, early notification of intent to the automotive industry will allow suppliers to revise their supply chains to meet FES schedule. Australian FES should fully align with NZ FES by January 2026. A strong start that continues rather than tapering off is also consistent with bettering the lacklustre 43% emissions reduction target (noting that 43% reduction by 2030 is well short of the necessary reductions to meet 1.5^{o}C warming and the science indicates should 43% national be revised ASAP to align with Paris agreement and net zero 2050). *FES should be the mechanism of the initial transition, ahead of bringing in a complete ban on sales of new emitting vehicles (ICE) by 2035,* through the stepped reduction in FES emissions to 0g/CO_2e/km by 2035. *FES for all vehicles (light, heavy, motorcycles, other categories) should reach 0g/CO_2e/km by 2040.* Any delays in FES introduction for different vehicle classes will mean that their target trajectories must be even more aggressive in order to arrive at zero in 2035 from a later commencement date.
5.1 How many years ahead should the Government set emissions targets, and with what review mechanism to set limits for the following period?	We propose a 12-year schedule of targets consistent the NZ FES through 2027 to 0gCO_2e/km by 2035 with reviews every 2 years to determine effectiveness and continued alignment with world's best practice. Reviews should confirm that Australia's FES continues to be aligned with leading countries bans on ICE vehicles. Given the long turnover period for some vehicles, 20 years ensures that replacement of cars purchased prior to FES introduction will still be covered but provides industry certainty.
5.1 How should the Government address the risks of the standard being found to be too weak or too strong while it is operating?	If targets are too weak (transport emissions not reducing rapidly enough), then 2 yearly reviews providing the ability to make subsequent targets more stringent. If targets are too strong (public uproar that certain vehicle models become unaffordable or unavailable), then 2 yearly reviews could adapt targets but this should only be done in extreme cases and coupled with other sector GHG reduction improvements to offset.

5.1 What should Australia's CO_2 FES targets be?	Alignment with NZ targets makes most sense, being a stringent and recently set standard for a right-hand drive market, also a global follower in the automotive market. Hence, with first legislation passed in December 2023 directing first FES emissions levels in place July 2024 (January 2025 commencement of quarterly and annual reporting) at 145gCO_2e/km for passenger vehicles and 218.3gCO_2e/km for light commercial vehicles (2023 New Zealand FES.) Then January 2026, Australia's FES would converge with the NZ allowables with passenger vehicles at 84.5gCO_2e/km, commercial vehicles at 116.3gCO_2e/km). From January 2027 Australia would move to 63.3gCO_2e/km for passenger vehicles and 87.2gCO2e for light commercial vehicles (aligning with NZ) and 0 CO_2e/km by 2035 – an 8 gCO_2e/km per year decrease in level. *FES for heavier vehicles should commence in 2025 at 50gCO_2e/km-ton, decreasing by 2.5 gCO_2e/km-ton per year until reaching 0 gCO_2e/km-ton by 2040, effectively banning ICE heavy vehicles.*
5.1 How quickly should emissions reduce over what timeframe?	In recognition of supply chain constraints, provide a 12-month grace period following legislation passing in December 2023. So, first reductions become effective from July 2024 (January 2025 as start of reporting, audit). This is a reasonable implementation schedule understanding the technology is already implemented elsewhere and Australia will be providing early, transparent information on Australia's emission reduction plans to the automotive industry. Reductions as per the schedule above until Australia is aligned with the NZ FES is achievable as technology exists and is readily available. Following alignment in January 2026 and 2027, the reduction plan should be reviewed every 2 years. and effectively ban ICE light vehicles by 2035.
5.1 Should the Australian FES start slow with a strong finish, start strong, or be a straight line or take a different approach?	Strong start associated with an early start date (Dec 2023 legislation for July 2024 start) is preferred. If targets are advised to industry in advance of legislation (i.e., mid 2023 advice), then suppliers can start revising their supply chain prior to legislation. Australia is already lagging global LZEV adoption so an aggressive start is essential.
Attribute based emissions limit curve	
5.1 Should an Australian FES adopt a mass-based or footprint-based limit curve?	Mass based (GVM) is preferred which typically drives smaller footprint. Adjacent to FES, Australia should also look to incentivise reduced footprint to reduce road and parking congestion. Japan's Kei scheme (https://en.wikipedia.org/wiki/Kei_car) might be considered (although due to slow electrification of the Japanese market, few LZEV Kei vehicles exist yet) but such considerations must not delay initial FES introduction. *Smaller, lighter vehicles must be incentivised, larger, heavier vehicles should be dis-incentivised.*
5.1 If Australia adopts a mass-based limit curve, should it be based on mass in running order, kerb mass, or another measure?	GVM.

5.1 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?	Yes, as above, encouraging "Kei" style vehicles might increase the quantity of sub-1200kg vehicles in the market. Incentives for heavier vehicles should be avoided.
Multiple targets	
5.1 Should an Australian FES adopt two emissions targets for different classes of vehicles?	FES could start with dual targets in alignment with the NZ FES, especially if even faster, more stringent targets could be applied to MA class. However, single FES class is preferred so an aggressive timeline to consolidate to a single class (e.g., within 4 years) is necessary. *'Last mile' commercial traffic (light vans and trucks) is a large and increasing polluter and a prime candidate for LZEV, so should be addressed aggressively as soon as possible after the initial lighter vehicle FES.*
5.1 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?	As above, creating a higher emissions class is not consistent with the aims of FES
5.1 Is there anything else we should bear in mind as we consider this design feature?	Policy needs to take account of the propensity for ABN holders to purchase heavier (and less fuel efficient) vehicles, which enjoy tax depreciation on purchase price (sometimes accelerated depreciation), fuel tax deduction at marginal rates, and tax-deductible fuel use for recreational use.
5.1 Are there other policy interventions that might encourage more efficient vehicle choices?	- *Elimination of purchase tax incentives, and diesel rebates and marginal tax rate deductions for fuel, trade and corporate 'tool-of-trade' vehicles*. Elimination of accelerated tax deprecation for this category is essential. - Consideration of Japanese "Kei" program to slow the trend for unnecessarily large vehicles (purchase tax, insurance, registration incentives) – would require national harmonisation of some state taxes/levies and perhaps review of Australian Design Rules. - Coordinated EV charging strategy with focus on public charging and apartments and on-street charging where appropriate. - FES should also explicitly and publicly flag the effective future ban on ICE vehicles aligned with leading economies (e.g., EU). - To further encourage users to transition from ICE to LZEV, a "cash for clunkers" scheme to remove old, heavy emitters from the road, tied to LZEV incentive should be considered (outside the direct scope of FES).
Credit banking, transferring and pooling	

5.2 To what extent should the Australian FES allow credit banking, transferring and/or pooling?	Credit pooling should be allowed but the process should be fully transparent such that the industry and public are aware of who is creating credits vs who is buying/consuming and who is being penalised.
5.2 Should credits expire? In what timeframe?	Credits should only be valid for 2 years such that future non-compliance is discouraged. Any carry forward of debits needs to be approved by the regulator based on firm supplier commitment of future over-achievement. Debits should only be allowed to carry forward for 12 months without penalties being applied. Debit clearance by over-achieving in subsequent years should be more attractive than purchasing excess credits from other suppliers.
Multipliers for LZEVs	
5.3 Should an Australian FES include multiplier credits for LZEVs?	We suggest that multipliers are unnecessary and prone to abuse so should not be considered. If multipliers are considered, they must come with a rapid phase out date (Note: the US multiplier scheme will be phased out by the time the Australian FES is in place).
5.3 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?	If multipliers are introduced and if dual classes are considered, then increased incentive for LZEV commercial vehicles (i.e., higher credits) should be considered as the supply of such vehicles needs to be greatly accelerated.
5.3 Should the total benefit available from these credits be capped?	Yes, and phased out rapidly.
5.3 If not, should the Government consider another approach to incentivising the supply and uptake of LZEVs?	- Removal of luxury car tax on all LZEVs (or at least raising the threshold to over $100,000). - Facilitate uniformity of state initiatives (registration discounts, stamp duty discounts). - As per NEVS, facilitate national public charging infrastructure rollout and consolidation/collaboration of apps and charging mechanisms to simplify customer operations. - Accelerate standardisation and approval process for bi-directional charging capabilities. - Removal of FBT for LZEV or at minimum for those where company-based charging is provided. - Most incentives could be phased out when LZEVs represent 50% of new vehicle sales or 20% of total fleet. - Strategic planning of a diversity of LZEV charging infrastructure spanning houses, apartments, workplaces, destination, and en-route. - Immediate focus on NEVS and FES for other vehicle classes to provide industry clarity across all road transport.
Off-cycle credits	
5.3 Should an Australian FES include off-cycle credits for specified technologies?	No. These might be used by ICE suppliers to double dip. Such technologies impact should be measured purely by reduction in gCO_2/km.

5.3 If so, should the per-vehicle benefit be capped and how should an Australian FES ensure that off-cycle credits deliver real emissions reduction?	Off-cycle credits should not be part of FES.
5.3 Should the Government consider any other form of off-cycle credits for an Australian FES?	No.
Air conditioning refrigerant gas credits	
5.3 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?	This would be a complication that would unnecessarily delay FES introduction. Consideration (penalties) for usage of global warming refrigerants to be considered in next 2-year review. Use of low GWP refrigerants should not compensate for a vehicle's high emissions.
5.3 Could the issue of high global warming potential refrigerants be better dealt with by another policy or legislative framework?	The expected proliferation of heat pumps across hot-water, residential and commercial air-conditioning and vehicles should be considered holistically – many refrigerants are major GHGs, thousands of times more potent than CO_2. Australian standards that consider refrigerant effectiveness, economics and GHG risk need to be assessed in the near term under separate legislation but not within FES in this first round. Penalties for use of GWP refrigerants will be considered in follow-on reviews. Note: Refrigerants across the whole economy are managed Federally under separate legislation[4].
5.3 If such a credit is permitted, should the emissions target be lowered to ensure consumers realise the fuel cost savings and EV availability benefits of a FES?	No credits should be considered under FES.
When should a FES start	
5.4 When do you think a FES should start?	FES for light vehicles should be legislated in December 2023 with measures taking effect in July 2024. The 2023 legislation should also flag an imminent roadmap for FES for heavier and specialised vehicles recognising that design and implementation would be complex. However, to prevent a rush of purchases and pre-registration of heavier vehicles (as happened in NZ) just prior to the commencement of the FES for heavier vehicles, pre-registration should be temporarily paused, and ideally disincentives considered if manufacturers exceed say last 3 years of annual average sales of Utes and 4WD's.

[4] https://www.dcceew.gov.au/environment/protection/ozone/legislation

5.4 How should the start date interact with the average annual emissions ceiling?	Targets should be released to industry in advance of legislation (i.e., late 2023) so they can start revising their supply chains. A firm target aligning with EU and NZ by January 2026 with passenger vehicles at 84.5gCO_2e/km, commercial vehicles at 116.3gCO_2e/km) should be adopted.
5.4 Should the Government provide incentives for the supply of EVs ahead of a FES commencing? If so, how?	Not if additional incentives would delay the introduction and effects of the FES for light vehicles. Incentives for fleet electrification (suburban buses and short-haul commercial vehicles) should be considered in parallel with FES for these categories. That said, national harmonisation of fuel excise equivalent tax for LZEV is required – it has been suggested that a tyre-based levy might be more representative of road impact than either fuel excise or per km EV levy. However, driving LZEV adoption faster would suggest that any EV usage levy of any kind, should be delayed until LZEV penetration reaches (say) 30% of new sales.
Penalties for each gram be kilometre	
5.5 What should the penalties per gram be? Would penalties of A$100 per gram provide a good balance between objectives? What is the case for higher penalties?	EU approach and metrics (i.e. AUD200/gCO_2e/km/vehicle) should be followed (NZ model is not strict enough). Penalties must be structured such that suppliers are encouraged to send LZEVs to Australia – if Australia's FES penalties are lower than other countries, there is less incentive to send significant LZEVs here. Financial penalties for a supplier should exceed costs of not complying. Recognising that some ICE supplier businesses may fail during transition and may withdraw from the Australian market, measures must be in place to ensure that accrued penalties cannot be avoided and that anticipated exit encourage suppliers to dump vehicles that would accrue penalties after their exit.
Small volume and niche manufacturers	
5.5 What if any concessional arrangements should be offered to low volume manufacturers and why? If so, how should a low volume manufacturer be defined?	*FES must ensure that any concessions made available are not exposed to loopholes.*
Information that suppliers need to keep and supply	
5.6 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	Key priorities: - *Simplicity and alignment with processes of other major jurisdictions (*e.g., NZ, EU) such that suppliers cannot claim major process and systems changes to implement FES requirements. - Transparency of both department and industry measurement, reporting, enforcement. - FCAI or other systems from industry participants should not be used or considered transparent and accurate. - Chronic offenders must be publicly named at least annually. - Regulator administrative costs must be transparent and published regularly.

to provide information and in relation to record keeping obligations?	
5.6 What should the reporting obligations be? What information should be published and how regularly?	- Transparency of both department and industry measurement, reporting, enforcement. - Sales quantities and emissions (CO_2 and others) for each model type and class sold. Rolled-up, non-transparent averages should not be allowed. - Forecast sales and emissions by model quarter by quarter for next 2 years.
5.6 How long should suppliers keep required information?	Data retention after collection and validation is not onerous so supplier retention for extended period should not be an issue (or a privacy concern) but the regulator should have the ability to independently retain all supplier's data.
5.6 Is a penalty of 60 penalty units appropriate for this purpose?	We have no view on this.
Other regulatory mechanisms	
5.7 Should the regulator be the department? What other options are there?	Yes, but recognition that decarbonisation of light road transport is interrelated with many other departments (energy, infrastructure, environment, industry etc) so cannot operate in isolation. Decarbonisation, environment, and transparency must be major considerations in departmental decisions.
5.7 How should the regulated entity be defined in an Australian FES?	No view on this apart from ensuring independence and transparency with authority to audit and penalise.
5.7 What reasons are there to depart from the standard regulatory tool kit for an Australian FES?	We have no view on this.
5.7 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?	Yes, Euro 6 should be adopted as soon as possible.