Fuel Efficiency Standard Submission by John Godfrey

Background

This is a personal submission, not on behalf of any organisation.

I am a retired chemical engineer. I spent 37 years working for a major oil company, specialising in oil refining. During my career I was at one time the company's senior Fuels Product Quality Advisor for the Asia Pacific region. I also worked extensively on refinery and energy optimisation.

I will in this submission refer to the New Zealand experience. I married a Kiwi there. I lived In NZ for over 4 years, most recently for the year of 2021.

Since retiring we have bought an electric car (Polestar 2) as our only car. We charge that almost exclusively at our Victorian home which has solar panels and a home battery.

Consultation Questions

General questions

- Are these the right guiding principles? Are there other principles that you think we should keep in mind?
  Yes. The principles appear to be adequate.
  One perspective that is missing is the impact on fuel excise. Increasing fuel efficiency (which is a great thing) will reduce federal excise revenue substantially. I can understand this being kept separate – but early and wide public consultation on replacing fuel excise will be a good thing. (My 2 cents is that this should be an excise levied on some combination of vehicle mass and annual distance travelled. An interesting option in this space is that of a tyre levy, which is effectively just that.)
- Are there any design assumptions that you think will put at risk the implementation of a good FES for Australia?
  No
- Are the exclusions for military, law enforcement, emergency services, agricultural equipment and motorcycles the right ones?
  For now, yes. I believe motorcycles should eventually be included. Partly because there is an increasing usage overlap between motorcycles and e-bikes and e-scooters (and equivalent). Setting a national standard here may open up opportunities on appropriate consultation across Australia as to how to manage this – right now the State based approach is proving quite fragmented. This is not as an urgent, and is less urgent than a heavy vehicle target, but a timeline should be proposed.
- Are there any particular FES features that you think we need to take particular care with?
  Based on my experience, Australia has tended to overly tailor standards (like fuel quality or electrical standards) when closer adherence to international standards would be cheaper and more effective.
- What principles should we consider when setting the targets?
  That climate change is an urgent pressing threat and we need to move quickly. Profit focused multi-national companies will only move as fast as regulation demands.
- How many years ahead should the Government set emissions targets, and with what review mechanism to set limits for the following period?
  Follow the New Zealand timetable and review periods.
- How should the Government address the risks of the standard being found to be too weak or too strong while it is operating?
  By reviewing the standards within a short time – say by 2027.

Technical questions

- What should Australia's CO_2 FES targets be?
  We should adopt the New Zealand standards. International car manufacturers view us as nearly identical markets anyway. My personal experience is that Aussie & Kiwi personal car use aspirations are largely equivalent. Like New Zealand we have no local car manufacture anymore, and we're starting behind the curve on emissions standards.
- How quickly should emissions reduce over what timeframe?
  We should adopt the New Zealand standards for now.

- Should the Australian FES start slow with a strong finish, start strong, or be a straight line or take a different approach?
  We should adopt the New Zealand standards for now. Like them, we're starting behind the curve.
- Should an Australian FES adopt a mass-based or footprint-based limit curve?
  We should adopt the New Zealand standards – no point confusing things for international manufacturers.
- If Australia adopts a mass-based limit curve, should it be based on mass in running order, kerb mass, or another measure?
  We should adopt the New Zealand standards – no point confusing things for international manufacturers.
- 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?
  We should adopt the New Zealand standards – no point confusing things for international manufacturers. Yes, vehicles under 1,200 kg are rare, but perhaps there will be a new niche for inner city vehicles that don't need a lot of range. (These could possibly cross over with motorbikes / ebikes. It's possible that Europe or China could well provide critical mass markets for this class of vehicles.)
- Should an Australian FES adopt two emissions targets for different classes of vehicles?
  We should adopt the New Zealand standards – no point confusing things for international manufacturers.
- 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?
  Yes, by adopting the New Zealand standard. "… all vehicles with an unladen mass below 1,200 kg receive a benefit via a higher effective CO_2 target, and passenger vehicles over 2,000 kg and light commercial vehicles over 2,200 kg have a more stringent effective CO_2 target relative to their mass.
- 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?
  Registration and compulsory insurance fees for vehicles should reflect the much higher safety (and road wear) costs of heavier vehicles – especially for 'monster' SUVs.
- To what extent should the Australian FES allow credit banking, transferring and/or pooling?
  We should adopt the New Zealand standards – that way we can learn together.
- Should credits expire? In what timeframe?
  We should adopt the New Zealand standards – that way we can learn together.
- Should an Australian FES include off-cycle credits for specified technologies?
  No. NZ does not. Why make things more complex at this early stage?
- If so, should the per-vehicle benefit be capped and how should an Australian FES ensure that off-cycle credits deliver real emissions reduction?
  NA. We shouldn't do this.
- Should the Government consider any other form of off-cycle credits for an Australian FES?
  No.

- 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?
  No, just use the Australian Design Rules or the Road Vehicle Standards (RVS) legislation to require low GWP refrigerants.
- Could the issue of high global warming potential refrigerants be better dealt with by another policy or legislative framework?
  Yes, Australian Design Rules or the Road Vehicle Standards (RVS) legislation.
- 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.
- When do you think a FES should start?
  Ideally matched to the NZ timeline, with the same end target but perhaps a delayed start date to reflect our delayed implementation.
- How should the start date interact with the average annual emissions ceiling?
  Pro-rata.
- Should the Government provide incentives for the supply of EVs ahead of a FES commencing? If so, how?
  I support EV incentives but see no need to complicate matters by tying the two programs together.
- 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?
  I presume the penalty is sufficient. If there is evidence that manufacturers are deliberately paying penalties to profit then the penalties will need to be increased and / or the manufacturer's license to import should be suspended.
- What if any concessional arrangements should be offered to low volume manufacturers and why? If so, how should a low volume manufacturer be defined?
  Low volume manufacturers may be exempt. The New Zealand legislation does allow for low volume manufacturers. From https://www.nzta.govt.nz/resources/rules/vehicle-standards-compliance-2002/#schedule1
  Low volume vehicle means a vehicle of a class specified in *Table A: Vehicle classes*, other than Class MD3, MD4, ME, NB, NC, TC or TD, that is:
  - (a) manufactured, assembled or scratch-built in quantities of 200 or less at any one location in any one year, by a manufacturer whose total production of vehicles does not exceed 200 units over the same period, and where the construction of the vehicle directly or indirectly affects compliance of the vehicle with any of the vehicle standards prescribed by New Zealand law; or
  - (b) modified uniquely, or in quantities of 200 or less at any one location in any one year, in such a way as to affect compliance of the vehicle, its structure, systems, components or equipment, with a legal requirement relating to safety performance applicable at the time of the modification.
- 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?
  By making it as close as possible to the NZ regulations the system will be low cost.

- What should the reporting obligations be? What information should be published and how regularly?
  The data reported should include:
    - Number of vehicles sold by model
    - the CO2 emissions per km for each vehicle type-approval
    - the specifications of each vehicle

  I believe that annual reporting is too low a frequency for reporting for a change that is looking to move things as rapidly as needed. I would suggest that the data be provided quarterly not more than 45 days after quarter end. That way regulators, and the public, can see what impact the regulatory changes are having quickly enough to respond effectively.
- How long should suppliers keep required information?
  5 years
- Is a penalty of 60 penalty units appropriate for this purpose?
  Yes, to start with.
- Should the regulator be the department? What other options are there?
  I have no opinion on this.
- How should the regulated entity be defined in an Australian FES?
  I have no opinion on this – I'm not a lawyer.
- What reasons are there to depart from the standard regulatory tool kit for an Australian FES?
  I have no opinion on this.
- 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 Australia should use the WLTP test results.
  There is no easy way to determine a conversion factor. To quote the NZ EECA information page (https://www.eeca.govt.nz/assets/EECA-Resources/Product-regulations/Fuel-economy-testing-standard-is-changing-Info-Sheet-v2.pdf):
  Can I compare NEDC to WLTP figures?
  No. The testing regimes are significantly different and figures cannot be compared.

  However, if a conversion factor really is needed, then the EU did come up with a process that involves using a CO_2MPAS tool. It is described well here:
  https://theicct.org/sites/default/files/publications/On-the-way-to-real-world-WLTP_May2020.pdf
  The article provides a lot of data, but it would seem on average that the WLTP CO_2 levels are on average about 21% higher than NEDC CO_2 levels.
  A "keep it simple stupid" approach could be that if manufacturer only has NEDC values for a vehicle, that they be penalised by 40%. The regulator should reserve the right to require a WLTP test if there is suspicion (eg from ADAC EcoTest data) that the actual ratio is worse than 40%. This will drive manufacturers to provide WLTP or CO_2MPAS derived data if it's available.

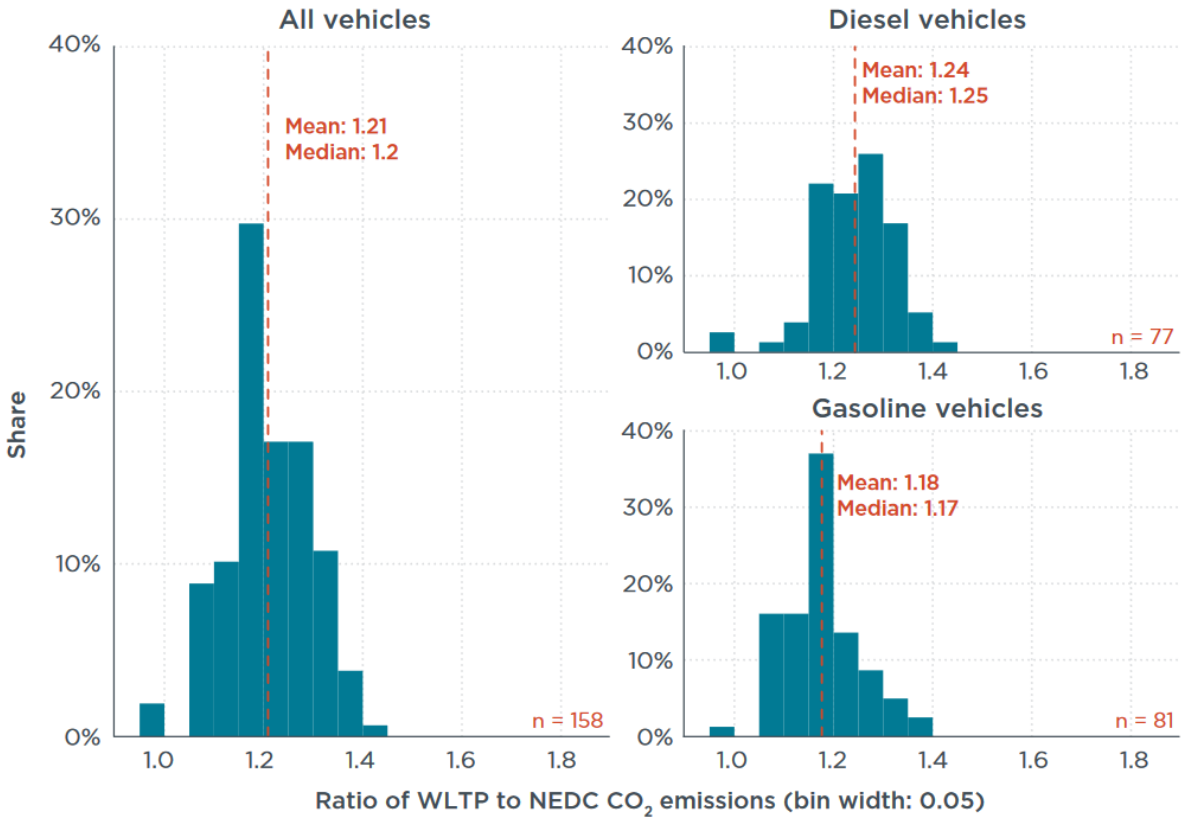

Figure 8. Distribution of the $WLTP_{declared}$-$NEDC_{declared}$ CO_2 ratio for gasoline and diesel cars tested by the ADAC.