

**Mazda Motors of New Zealand Limited (MMNZ)**



# **Submission on Moving the Light Vehicle Fleet to Low Emissions**

**September 2019**

## Summary of MMNZ's Submission

- Mazda Corporation (MC) and Mazda Motors of New Zealand (MMNZ) are supportive of the government's intention to reduce greenhouse gas emissions.
- Mazda Corporation's R&D into substantially reducing emissions is already in full-swing; with the Sustainable Zoom-Zoom (2007) and Sustainable Zoom-Zoom 2030 vision (2017) initiatives underway, which will reduce average greenhouse gas emissions by 50% in 2030 and 90% in 2050 (versus 2010 levels).
- Locally, MMNZ supports the Clean Car Discount policy in having the largest impact in reducing "local" CO<sub>2</sub> emissions, but opposes the Clean Car Standard proposal.
  - MMNZ believes that the (demand-based) Clean Car Discount is the most appropriate and effective method for managing the NZ fleet mix towards cleaner, lower-emitting cars. The primary reason is that this method is transparent, involves and educates the consumer, and allows the fleet mix to best meet the usage needs of the NZ market. This method can also be self-funding and enable any revenues to be re-directed towards carbon offset and fleet regeneration schemes.
  - On the contrary, MMNZ believes that the (supply-based) Clean Car Standard will be much less effective in achieving the desired goal of reducing greenhouse gas emissions. New Zealand's vehicle usage is markedly different to that of Europe and Japan (as referenced in the LEV Consultation Document), so trying to arbitrarily control the importation of vehicle type will likely result in a carpark that is not fit-for-purpose and see consumers find loopholes to explore (with an older, higher-emitting carpark probable). The (significant) expense burden of non-compliance will also be placed on Vehicle Distributors/Manufacturers like Mazda; which will be counterintuitive, as this will curtail the already substantial R&D investment we are making towards improving future technologies.
- As global warming is a "global" issue, Mazda believes in reducing CO<sub>2</sub> emissions over a vehicle's entire life cycle from a "well-to-wheel" perspective (this includes the CO<sub>2</sub> emissions from manufacturing batteries for EVs); an approach that also takes the source of energy generation into account. Put another way, many countries still rely on burning fossil fuels in generating electricity, so Mazda's initiatives in improving efficiencies in the Internal Combustion Engine (ICE) play a crucial role in reducing total greenhouse gas emissions.
  - Mazda also believes in a multi-solution approach to tackling global warming and greenhouse gas emissions. This approach combines the following elements:
    - Continued efficiency improvements in the ICE engine, from a "well-to-wheel" approach.
    - Deployment of electrification technologies (Battery EV and Hybrid EV).
    - Development of a micro algae-based biofuel that reduce tailpipe emissions but also "eats" atmospheric CO<sub>2</sub> in the farming process (without impacting food production).
- MMNZ is also supportive of other local initiatives to reduce the emissions profile of the entire light fleet (which is now greater than 4 million vehicles).
- MMNZ welcomes further discussion (working group) with the Ministry of Transport (and other stakeholders) in helping shape and progress effective policies to reduce greenhouse gas emissions from the light transport sector.

## Mazda's Sustainable Zoom-Zoom 2030 Vision

- In September 2017 the President of Mazda Motor Corporation, Masamichi Kogai, outlined Mazda's Sustainable Zoom-Zoom 2030 Vision. [<ARTICLE HERE>](#)
- Versus Mazda's global CO<sub>2</sub> emissions profile in 2010, this vision seeks to substantially reduce Mazda's global average emissions by 50% by 2030 and 90% by 2050.
- The cornerstone of this vision is a multi-solution strategy, which provides a "horses for courses" approach in reducing global CO<sub>2</sub>.
  - By 2030\*, it is forecast that 90% of new cars sales globally will still have ICE engines, with 10% as Fuel Cell or Full Battery EVs). Of the 90% with ICE engines, 52% will adopt electrification technologies (e.g. HEV/PHEV). *\*Source: IEA/ETP – Energy Technology Perspective 2015.*
    - Mazda will also continue to develop electrification technologies - Battery EV (BEV), Plug-In EV (PHEV) and Hybrid EV (HEV) - with a view by 2030 in having 95% of vehicles as PHEV/HEV and 5% as BEV.
    - In 2017 Mazda, Toyota and Denso formed a strategic alliance (EV Common Architecture Spirit) to jointly develop electric vehicle technologies. Subsequently this alliance has expanded to also include Suzuki, Subaru, Daihatsu and Hino.
  - Concurrently, Mazda remains focused on improving the efficiency of ICE engines; with the 2019 SKYACTIV-X engine set to further improve efficiencies by 20-30% over comparable spark-ignition gasoline engines. And this focus on ICE improvement will continue beyond the SKYACTIV-X engine launch with successive engine improvements.
  - Mazda Corporation is also currently working with MBIE and Z Energy in New Zealand to pursue biofuel initiatives in reducing CO<sub>2</sub>. This stems from a wider initiative, where Mazda Corporation and Euglena Industries (Japan) have co-developed an algae-based biofuel that not only reduces tailpipe emissions, but also lowers atmospheric CO<sub>2</sub> as it is farmed (without impacting the food chain). [<ARTICLE HERE>](#)
- The key point is that Mazda is committed to reducing greenhouse gas emissions and has actively been working on a multi-solution approach for over a decade. Mazda is prioritising substantial resources (financial, R&D, time) to ensure this will be effected by 2030. The wheels are strongly in motion.
- In New Zealand, in spite of the market's demand-shift towards (larger) SUV and Light Commercial vehicles, the average emissions profile of New Mazda vehicles in New Zealand has reduced significantly from 2010 to 2018:
  - Total (Passenger/SUV/Light Commercial): -17% (204.4g/km -> 170.1g/km).
  - Passenger/SUV: -21% (195.6g/km -> 153.8g/km).

## Clean Car Discount Policy

- In principle MMNZ supports the Clean Car Discount, as it is a demand-based scheme. Some of its benefits include:
  - The consumer has all the facts (with pricing; discounts & fees) to base their purchase decision. This policy is transparent and is simple to understand.
  - The policy will also act as an education source, where consumers can ultimately become better-informed about greenhouse gas emissions in all areas of their daily lives.
  - The Feebate scheme incentivises consumers to ‘choose’ the lowest-emitting vehicle that meets their usage and safety needs. This is a salient point, as usage in New Zealand is vastly different to Europe and Japan (two markets as cited in the LEV Consultation Document).
    - Construction, manufacturing and primary industries play large roles in New Zealand’s economy. Light commercial vehicles play a crucial role in these industries (e.g. utility vehicles for farming). Importantly, these vehicles provide towing capability that BEV/HEV vehicles cannot provide.
    - Urban and extra-urban public transport infrastructure is still well-behind Europe and Japan, meaning that our population relies on vehicles for transportation needs.
    - Consumer demand will influence the mix of vehicle imports, which in turn will be relevant to our country’s usage needs (including vehicle safety).
  - The Feebate scheme is self-funding and could even provide an additional source of revenue that could be directed into carbon-offset schemes (like tree planting) or vehicle scrappage/re-generation schemes.
- MMNZ’s response to questions within the LEV Consultation Document:
  - Given the very high cost of manufacturing EVs, MMNZ believes that the discount eligibility should be adjusted to \$100,000.
  - MMNZ believes the 105g CO<sub>2</sub> target by 2025 is too aggressive in terms of both CO<sub>2</sub> and timeframe. With Light Commercials accounting for circa 30% of new vehicle sales, it is unrealistic to effect major change until later in the 2020 decade. Given the longer technology & product lifecycles for Commercial vehicles, MMNZ believes that an initial 150g CO<sub>2</sub> target is more realistic by 2025, with 2030 set as the target date for the 105g CO<sub>2</sub> target.
    - Mazda Corporation has targeted 2030 for the Sustainable Zoom-Zoom 2030 vision as technology development and product lifecycles take time and significant cost.
    - The process of designing, testing, homologating and manufacturing vehicles is complex. Most carline lifecycles are between 6-10 years and even then, engine technology lifecycles can be longer. As such, effecting the changes and levels proposed, before 2030, is unrealistic.
  - MMNZ agrees with the concept of fees and discounts (Appendix 4) in influencing demand for low-emission vehicles. We believe that incentives are a powerful tool in shaping consumer decisions. If the incentives are greater (and longer in duration) then the uptake of low-emission vehicles will be faster.
  - MMNZ supports the zero band. In many ways, the zero band should be wider, if the fees and discounts are greater at either end.

- For vehicles less than 3 years old and previously registered, MMNZ believes these should be treated outright as Used Vehicles. It is disingenuous to compare previously registered vehicles on the same page as NZ New Vehicles, as we have already witnessed significant warranty and safety issues (by Used Importers) with near-new imports. We strongly oppose policies that are likely to contribute to other problems (that compromise quality and safety); as previously seen with 'grey' imports. Also, by having this clear demarcation of 'New' versus 'Used', the biggest incentives will be on offer for those vehicles with the latest technology (which will contribute most to reducing emissions).
  - MMNZ supports the Feebate being administered at the first point of vehicle registration, as this will tie-in well with above-the-line consumer-targeted communications. If the consumer understands the fee or rebate, then the final purchase price will be adjusted accordingly. Furthermore, MMNZ believes that CIN should reference the Feebate (much like the Fuel Economy rating) so that consumers understand the impact at the point of purchase.
  - In general, MMNZ supports the penalties as outlined in the LEV Consultation Document.

## Clean Car Standard Policy

- MMNZ opposes the current Clean Car Standard in its current form.
- We feel that this Policy is unworkable and is open to loophole exploitation. Broad assumptions have been made in (1) applying targets from overseas markets (that bear little relevance to NZ) and (2) the ability of NZ importers to source compliant vehicles within the timeframes proposed. The proposed penalties are also excessive and, in Mazda's case, would significantly stall our R&D investment/timings for improving engine technologies.
- Supply-based schemes are often confusing to the consumer; especially with the weight-band scheme.
  - For example, under the current proposal, consumers are unlikely to understand why a higher-emitting vehicle (in a heavier weight band) could be imported at the expense of a lower-emitting vehicle (in a lighter weight band).
  - There are also likely to be unintended consequences of a supply-based scheme; with loopholes exploited and/or consumers holding-on to current vehicles longer; thus resulting in an older, higher-emitting carpark.
- NZ does not have the same vehicle requirements as Europe, so comparisons with Europe are spurious. As examples; (1) NZ does not have the public transport infrastructure to support a (higher-proportion) fleet of smaller-sized vehicles, (2) NZ has a higher reliance on primary industries, where light-commercial vehicles are most suitable (i.e. with towing capability), (3) the Europe targets exclude (higher-emitting) Light Commercial vehicles (which make-up circa 30% of NZ New vehicle sales) and (4) Europe offers heavy subsidies for cleaner vehicles as well as scrappage schemes in some countries.
- The Standard needs to be consistent/equitable across both New and Used Imports. Lower-volume importers need the same standard as higher-volume importers.
- The measurement standards need to be equitable; currently there are inconsistencies between WLTP, NEDC, JC08 and American Federal Test Procedure measures. There are even variances within each standard (such as different WLTP tests). Conversions between each standard also differ based on vehicle weight. If the measurement standards (and conversions) aren't equitable, then the enforcement standard will be unfair.
- The proposed financial penalties bear no relevance to the cost of carbon (ETS), which is circa. \$25 per tonne.
  - Currently, the (significant) expense burden of non-compliance is placed on Vehicle Distributors/Manufacturers like Mazda; which will be counterintuitive, as this will curtail/prolong the already substantial R&D investment and timelines that we are making towards improving future technologies.
  - The different proposed penalties for New Vehicles and Used Imports are inequitable, given all vehicles entering the NZ fleet should incur the same penalties.
- The proposed CO<sub>2</sub> targets are unrealistic and unachievable (i.e. too low too soon). The likely impact is that vehicle supply will be severely impacted and is likely to result in consumers holding-on to older vehicles.
- The automotive industry has proven that it is already self-managing this issue, by developing new technologies to improve fuel efficiency and lower emissions. Mazda's Sustainable Zoom-Zoom 2030 plan includes plans to include electrification on all carlines by 2030 as well as improve the efficiency of ICE engines (including electrification technologies) in the meantime.

- MMNZ's response to questions within the LEV Consultation Document:
  - MMNZ does not believe the Clean Car Standard is appropriate for New Zealand. This is a supply-based policy which will be invariably difficult for NZ distributors to manage and influence; given NZ's New Vehicle volume is tiny on a global scale (circa. 0.19% 2018).
    - Most NZ distributors will require the support of Australian sister-distributors to influence Head Offices for local-market homologation.
    - 2025 is too short for any distributor to effect any meaningful change. A key point is that with NZ's high base of light commercials, which have a longer product cycle (with less technology changes), distributors will have little (or no) chance to effect change to meet the standard. Even passenger vehicles, with shorter product cycles, are still governed/impacted by engine technology cycles which cover multiple carlines and tend to be longer than the carline cycles.
    - Even if we are able to influence the product imported to New Zealand (this is unlikely for all vehicle types), a probable (and unintended) consequence will be an older carpark (with higher emissions), as (1) pricing of new cars increases and (2) consumers decide to hold-on to existing (fit-for-purpose) vehicles longer.
      - The supply profile of vehicles will change (and in some cases reduce as distributors decide to avoid vehicles which may trigger penalties), market pricing will increase, and consumers will not clearly understand why the landscape has changed. With the pricing increase, the proportion of Used Import and Used car sales will increase; resulting in the average age of the NZ carpark increasing, and in turn average CO<sub>2</sub> values. We believe that the policy's effect will be worse than what is intended.
      - A demand-based scheme (like the Clean Car discount) will enable the market to alter the mix of vehicles through purchase patterns; influenced by fees and discounts. This is a transparent policy and is supported by MMNZ. It will also serve to educate consumers in much the same manner as the Energy Star Rating schemes in place already.
  - Europe has been a key benchmark for this policy. Europe has better public transport infrastructure (so smaller cars are more appropriate), while NZ's core reliance on primary industry means light commercial vehicles are more prevalent. Europe's targets exclude light commercials. As such, the emissions targets are not realistic to the NZ infrastructure, population and usage. Europe's vehicle profiles are quite different, and NZ's average CO<sub>2</sub> profile should be expected to be higher than Europe:
    - (1) larger vehicles for people-moving are needed, due to poorer public transport networks, and
    - (2) a larger proportion of farming and primary industries necessitates a higher mix of commercial vehicles.

- While we believe it will be reasonably straightforward to calculate and corroborate CO<sub>2</sub> data locally, we have substantial concerns regarding the different calculations (and conversion rates) for NEDC/WLTP/JC08/American Federal Test Procedure figures across markets. Obtaining a consistent starting point for models is an issue. We also have concerns for vehicles that can run on biofuel, as while homologation will be based on non-biodiesel calculations; where in practice the CO<sub>2</sub> outputs will be much lower than catalogue values.
  - Comparison of data between the tests (and even within the same test, e.g. WLTP) can be problematic. If penalties and non-compliance are strict, as proposed, the base standard/s need to be robust.
  - At present, comparisons and data interpretation are questionable. It also has to be consistent across New and Used Import vehicles.



## Alternative Options

MMNZ believes the following alternatives and options for lowering greenhouse gas emissions should be considered.

- Carparc.
  - Initiatives should be sought to reduce the age of the NZ fleet, which is nearing an average age of 15 years. Any schemes that encourage consumers to upgrade to newer and safer vehicles should be pursued.
  - It will also have the largest impact on reducing CO<sub>2</sub>, as annual New Vehicle sales account for less than 4% of the total carparc.
- Fuel Tax.
  - In relation to the carparc point above, a (petrol/diesel) fuel tax is the most equitable method for raising revenue to directly subsidise carbon offset initiatives (like forest planting) and carparc regeneration (scrappage) schemes.
  - It's equitable as it solely relates to the usage of CO<sub>2</sub>-emitting vehicles/engines (including boats, tractors, generators).
  - From a political perspective, it can be successfully "sold" as directly funding the carbon-offset and carparc regeneration schemes.
- Fringe Benefit Tax (FBT).
  - Lower FBT levels could be considered for vehicles that emit lower (or no) tailpipe emissions. As the New industry has a high fleet/business base (versus private), this would incent business fleets to increase their uptake of environmentally-friendly vehicles.
  - In addition, ensure that the treatment of FBT for (higher emitting) Light Commercial vehicles is the same as for Passenger vehicles, to discourage the purchase of Light Commercial vehicles based on an advantage through different FBT calculations.
- Biofuel.
  - Mazda believes that a multi-solution approach to reducing greenhouse gas emissions is the best approach; this comprises of a mix of ICE, electric and other fuel types. A multi-solution approach ensures that consumers have choice that best meets their needs. Under the current Clean Car Standards policy, there is no consideration for biofuel, which would reduce CO<sub>2</sub>.
  - Mazda Corporation is currently working with MBIE and Z Energy locally, to pursue biodiesel. Mazda Corporation and Euglena Industries (Japan) have co-developed an algae-based biodiesel that not only reduces tailpipe emissions, but reduces atmospheric CO<sub>2</sub> as it is farmed. Because it's an algae and farmed in water, it also does not produce CO<sub>2</sub> when farmed (unlike some land-based biofuels). [<ARTICLE HERE>](#)
  - Any future CO<sub>2</sub> target needs to account for the reduced real-world CO<sub>2</sub> of using biofuel, as the LEV Consultation Document is based on petrol/diesel CO<sub>2</sub> values.
- Any policy should not discriminate between Used Imports or NZ New. Nor should it provide exemptions for people who import lower numbers. Loopholes will be exploited (especially with Used Imports where "individuals" currently import vehicles, yet in reality 3-4 agents manage these imports). If we are serious about reducing emissions, we need to utilise tools to reduce the age of New Zealand's carparc/fleet.

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