



MITSUBISHI MOTORS AUSTRALIA LIMITED

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MINISTERIAL FORUM ON VEHICLE EMISSIONS
Vehicle Emissions Discussion Paper

Submission Cover Sheet

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Comment to Vehicle Emissions Discussion Paper

Background

Mitsubishi Motors Australia Ltd (MMAL) welcomes the opportunity to respond to the Federal Government's "Vehicle Emissions" Discussion Paper. MMAL is a wholly owned subsidiary of Mitsubishi Motors Corporation (MMC), Japan. MMAL is the importer and distributor of motor vehicles built by Mitsubishi Motors group companies in Japan and Thailand.

MMAL is a member of the Federal Chamber of Automotive Industries (FCAI), the peak industry body representing vehicle manufacturers and importers of passenger cars and light commercial vehicles, and motorcycles in Australia. MMAL's parent company, MMC is a member of the Japanese Auto Manufacturers Association (JAMA), the equivalent representative body in Japan.

Australia is one of the most open and competitive automotive markets in the world with more than 60 brands and 350 models from 20 source countries.

Whilst new vehicle sales exceeded 1.1 million units in 2015 and are expected to remain similar in 2016, these volumes represent less than 1.5% of the global market. Less than 10% of new vehicles sold in Australia are manufactured locally with the remainder being fully imported. This proportion will decrease further during 2016 and 2017 when the remaining local manufacturing will cease. MMAL sales volume in 2015 was approximately 6.3% of the total Australian market.

At the request of the Australian Government in October 2015, the Ministerial Forum on Vehicle Emissions was formed and, subject to the Terms of Reference for this forum, on 11th February 2016 published its "[Vehicle Emissions Discussion Paper](#)". In response to a call for public comment on this paper, the FCAI has prepared a submission which MMAL fully supports and endorses.

This MMAL submission represents our additional and supplementary comment to the FCAI submission.



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Key Points

- Automotive development and sales cycles do not operate in the short term and this should be considered in any vehicle emissions policy and strategy.
- Vehicle emissions, vehicle efficiency and fuel quality standards are inextricably linked and cannot be considered in isolation.
- Government should invest in improved infrastructure and Intelligent Transport Systems to improve traffic flow and reduce traffic congestion.
- Government should invest in driver training and information initiatives to promote the wide spread adoption of economical driving practices.
- Government should actively promote strategies for increasing the uptake of Electric Vehicles in the Australian market taking note of those strategies which have been successfully adopted overseas.

Mitsubishi Motors Australia Ltd's Recommendations

Recommendations which were included in MMAL's submission to the Vehicle Fuel Efficiency Reviews in 2008 and 2011 remain equally valid today as they were at that time

MMAL adds the following complementary and supplementary recommendations to the current review.

Recommendations – Vehicle Efficiency, Vehicle Emissions and Fuel Quality standards

- Government should consider vehicle efficiency (CO₂) standards or targets concurrently with vehicle emission (pollutant) standards (i.e. ADR 79/0x or Euro 5/6) and fuel quality standards as they are all interrelated and co-dependent. Mandating any one element in isolation may result in inefficient or ineffective achievement of vehicle emissions objectives
- Government should provide adequate lead time taking into account product design and development cycles when considering vehicle efficiency (CO₂) standards and vehicle emission standards
- Government should maintain a ULP 91RON, 150ppm fuel quality standard as a legacy fuel whilst market demand remains for this fuel.
- Government should mandate a PULP 95RON, 10ppm sulphur fuel quality standard so that market fuel for Euro6 compliant vehicles matches the fuel required for the certification, durability and on-board diagnostics requirements of these vehicles.
- Government should take measures which will minimise mis-fuelling by consumers with ULP using either price parity (PULP price matching ULP) or some other robust means.
- Government should accept MMAL's offer to participate in details discussions relating to the design and implementation of a vehicle efficiency regulation.

Recommendation – Information and Education

- Government should invest in improved infrastructure, driver education and Intelligent Transport Systems to improve traffic flow and reduce traffic congestion.

Recommendation – Alternative Fuels and Electric Vehicles

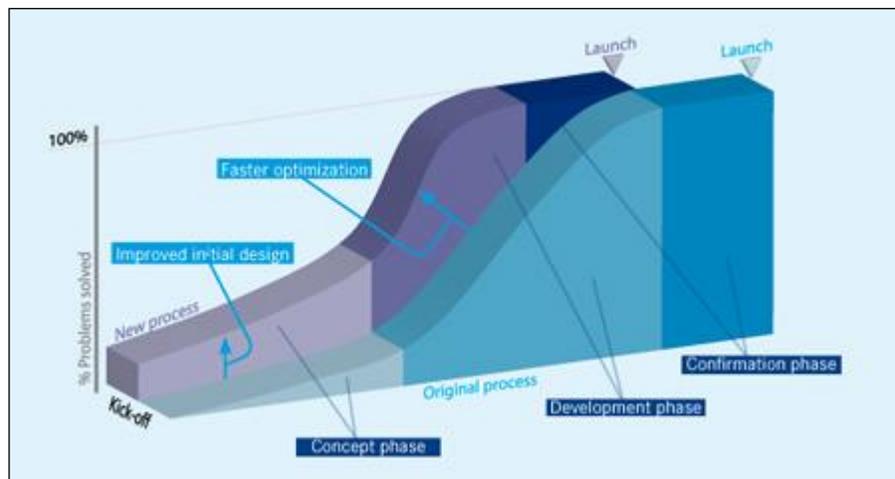
- Government should implement a number of strategies designed to increase the uptake of EVs in the Australian market and remaining in place until a set percentage market penetration is achieved. MMAL offers to provide government with expert advice on this matter drawing from international experience gained over 40 years of developing, producing and offering EVs to various global markets

Adopt Euro 6 noxious emissions standards for light vehicles

Develop Fuel Efficiency (CO₂) Standards

The release of an all new model provides the highest potential for major advancements achieved by the introduction of new technologies including those specifically related to vehicle efficiency and vehicle emissions reduction.

With the complexity of modern motor vehicles, development of an all new vehicle model is an extensive and expensive undertaking. Whilst the time to actually develop such a model has fallen in recent times assisted by the use modern Computer Aided Engineering (CAE) techniques, the minimum development time from the end of the initial concept phase, which itself can take up to 18 months, is unlikely to be less than 18 months and is more likely to be 24~30 months. At the point of development kick off, the automotive industry requires regulatory certainty with all market requirements clearly defined and fixed.



Typical automotive product sales cycles range between 5 and 10 years. This means that a completely new model that was introduced into the Australian market in 2016 is not likely to be replaced by another all new model of the same size and target customer group until at least 2021 and more likely closer to 2026. Conversely, a new model which is first conceived at the end of 2016 and takes into account known regulatory requirements at that time could not be ready for introduction to the market until at least the end of 2020. Automotive manufacturer's advanced product plans take such development and sales cycles into account.

Recommendation

- Government should provide adequate lead time taking into account product design and development cycles and available OEM resources when considering vehicle efficiency (CO₂) standards and vehicle emission standards.



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Adopt Euro 6 noxious emissions standards for light vehicles

Develop Fuel Efficiency (CO₂) Standards

Fuel efficiency standards are, of their very nature, highly complex and difficult instruments for regulators to develop and implement. Once implemented, they impose significant additional complexity to vehicle manufacturers' long term strategic and product plans and impose significant burden upon administrative, manufacturing and development resourcing and investment cost.

In a highly competitive market environment with over 50 brands offering in excess of 650 models, manufacturers' long range product plans are highly confidential and carefully guarded.

Mitsubishi Motors is unable to provide detailed information with respect to its strategic and product plans, cost and resourcing in a public submission as such knowledge may be used by its competitors to gain commercial competitive advantage. However, in recognition of the importance that government have a comprehensive understanding of the down-stream implications of fuel efficiency standards, MMAL offers to engage in confidential, one on one detailed discussions with regulators at which some of the more classified elements can be examined.

Recommendation

- Government should accept MMAL's offer to participate in details discussions relating to the design and implementation of a vehicle efficiency regulation.

Other complementary measures

Fuel Quality Standards

MMAL believes that vehicle emissions, vehicle efficiency and fuel quality standards are inextricably linked and cannot be considered in isolation.

MMAL notes that Unleaded Petrol with 95RON, 10ppm (max) sulphur is not currently available in the Australian market. MMAL asserts that petrol conforming to this fuel quality standard is absolutely essential for the emissions systems required to meet advanced vehicle emissions and vehicle efficiency standards. This fuel must be widely available in the market place prior to or concurrently with the introduction of vehicle emissions and vehicle efficiency standards. MMAL recognises that there will be significant investment and lead time required by refiners in Australia in order to meet this fuel quality standard.

Mitsubishi Motors recognises that there is a large existing vehicle fleet in Australia which were designed for and can operate effectively on current Un-Leaded Petrol (ULP) 91RON, 150ppm petrol. MMAL believes that, as a result of this, there is a need for co-existent fuel quality standards to meet the different market needs of vehicles equipped with current and the new technology emissions systems that will be required to meet vehicle emissions and vehicle efficiency standards.

At the Ministerial Forum stakeholders round table meeting held on 4th April 2016, the Australian Institute of Petroleum (AIP) advised a two year assessment of viability and a 5 year implementation plan would be required should the government decide to mandate 95RON, 10ppm sulphur petrol. MMAL believes that this time frame must be considered in any decision to mandate vehicle emissions and vehicle efficiency standards as this fuel is absolutely essential to vehicles meeting these standards.

MMAL welcomes government's suggestion that an independent expert mutually acceptable to government, FCAI and AIP be engaged to examine the case for mandating low sulphur fuel quality standards.

Recommendations

- Government should consider vehicle efficiency (CO₂) standards or targets concurrently with vehicle emission (pollutant) standards (i.e. ADR 79/0x or Euro 5/6) and fuel quality standards as they are all interrelated and co-dependent. Mandating any one element in isolation may result in inefficient or ineffective achievement of vehicle emissions objectives.
- Government should maintain a ULP 91RON, 150ppm fuel quality standard as a legacy fuel whilst market demand remains for this fuel.
- Government should mandate a PULP 95RON, 10ppm sulphur fuel quality standard so that market fuel for Euro6 compliant vehicles matches the fuel required for the certification, durability and on-board diagnostics requirements of these vehicles.

Other complementary measures

Fuel Quality Standards (cont)

Another key factor for government to consider is the potential for mis-fuelling by consumers either inadvertently or as a direct result of the relative price of different market fuels. With a substantial forecourt price difference, typically around \$0.10 per litre between ULP and the existing Premium Unleaded Petrol, 95RON, 50ppm sulphur (PULP), there is significant financial incentive for consumers to disregard the manufacturer's recommendation with respect to fuel.

MMAL supports government maintaining a fuel quality standard for ULP as a legacy fuel whilst demand driven by the existing vehicle fleet remains

In addition, MMAL supports government introducing a new fuel quality standard for PULP to support the introduction of new vehicle technologies for vehicle efficiency and vehicle emissions standards,

MMAL identifies a very real concern that mis-fuelling may result in environmental, health and economic benefits leading from the introduction of those standards being under achieved.

At the Ministerial Forum stakeholders round table meeting held on 4th April 2016, the Australian Institute of Petroleum (AIP) advised that demand for PULP approximately 30% of the overall petrol market and was increasing at approximately 1% per annum. Over time, MMAL would expect to see demand for ULP reduce at an increasingly rapid rate as the vehicle fleet is gradually replaced.

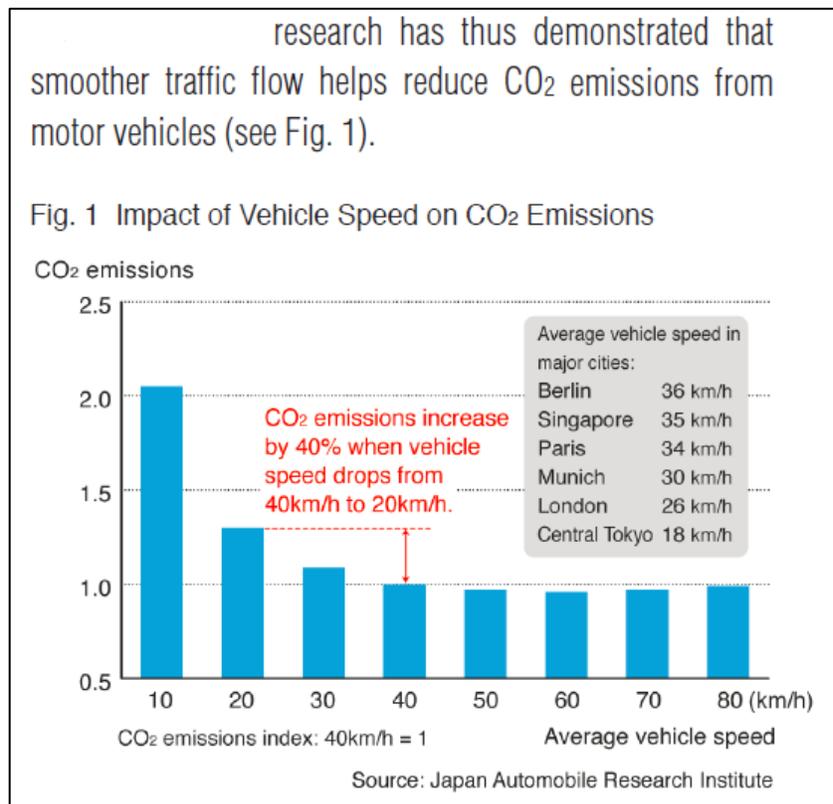
Recommendations

- Government should take measures which will minimise mis-fuelling by consumers with ULP using either price parity (PULP price matching ULP) or some other robust means.

Other complementary measures

Information and Education

Continued research by the Japanese Automotive Research Institute (JARI) has found that improving traffic flows and reducing congestion will have a positive effect reducing vehicle emissions.



Source : 2016 Report on Environmental Protection Efforts
www.jama-english.jp/publications/env_prot_report_2016.pdf

Improvements in road traffic flow can be achieved by investment in road infrastructure and Intelligent Transport Systems which:-

- Interactively control traffic signals in real time
- Provide navigation systems with real time information on road traffic congestion
- Advise alternative route information.
- Collect data for future urban planning

Furthermore, driver behaviour is a significant contributor to efficient vehicle operation. Promotion of eco-driving tips are a proven effective method of improving fuel economy and reducing emissions.

Ten Tips for Fuel-Conserving Ecodriving (as promoted in Japan)

- 1. Accelerate gently.**
Think "eco-start" when you accelerate—increasing your speed at a relaxed pace, to 20km/h in 5 seconds, boosts fuel efficiency by 10%. Gentle acceleration also contributes to safer driving.


- 2. Maintain a steady speed and keep your distance.**
Maintain a suitably steady speed for safe and fuel-efficient driving. Tailgating leads to unnecessary acceleration/deceleration, resulting in 2% and 6% lower fuel efficiency in urban and suburban areas, respectively.


- 3. Slow down by releasing the accelerator.**
Releasing the accelerator when recognizing the need to slow down (e.g., at changing traffic lights) stops the fuel supply, resulting in a 2% gain in fuel efficiency. Use your engine's braking function whenever appropriate, including on downhill descents.


- 4. Make appropriate use of your air conditioner.**
The AC function is for cooling and dehumidifying only, so don't leave your AC on when you're heating the cabin. When you do use it, be sure not to set it too low. (Continuous use of the AC functioning at 25°C when the outdoor temperature is 25°C results in a fuel efficiency loss of 12%.)


- 5. Don't warm up or idle your engine.**
Today's passenger cars don't require warming up, so start off slowly right after turning on the ignition. When waiting or loading/unloading, make a habit of turning your engine off instead of letting it idle. Ten minutes of engine idling (with the AC off) wastes 130cc of fuel. (See notes below.)


- 6. Plan your itinerary to avoid congested routes.**
Plan the route to your destination using a map or your navigation system before starting off. Check traffic information to avoid congested areas and save time and fuel. Ten minutes of unnecessary driving in a one-hour trip results in a 17% drop in fuel efficiency.


- 7. Check your tire pressure regularly.**
Driving on tires whose air pressure is 50kPa (0.5kg/cm²) lower than it should be decreases fuel efficiency by 2% in urban areas and 4% in suburban areas. Timely replacement of engine oil and items such as oil filters and air cleaner elements also contributes to increased fuel efficiency.


- 8. Reduce your load.**
Onboard weight is a key factor in fuel efficiency performance. Driving with 100kg of unnecessary onboard weight causes a 3% loss in fuel efficiency. Another factor is your vehicle's aerodynamic drag, which you can reduce by removing exterior rack equipment when not in use.


- 9. Respect parking rules and regulations.**
Don't leave your vehicle where it blocks traffic. Illegal or imprudent on-street parking causes traffic congestion which leads to increased emissions and a greater risk of accident. Roads that are not encumbered by illegally or improperly parked vehicles promote smoother traffic flow and higher fuel efficiency.


- 10. Check the readings on your fuel efficiency-monitoring equipment.**
Be aware of your vehicle's fuel efficiency performance by consulting onboard equipment that monitors it.



Notes: 1. Warming up a vehicle engine is necessary only in extremely cold climates (-20°C or colder) or after long periods of non-use. 2. For drivers stopping engine idling manually, i.e. by turning their vehicle's ignition off and then back on again, caution is advised as follows (but does not apply to drivers of vehicles equipped with idling-prevention systems): 1) Stepping on the brake pedal repeatedly during engine shut-down may diminish braking power. 2) Drivers not accustomed to shutting down their engine and starting them up again may experience slow or faulty restarts. 3) Excessive shutting down and restarting may drain the batteries, resulting in engine start-up failure. 4) Do not use this method when stopped at the head of a line or on a gradient, because turn signals and windshield wipers, as well as airbags and other safety features, will not function during engine shut-down.

Source : 2016 Report on Environmental Protection Efforts
www.jama-english.jp/publications/env_prot_report_2016.pdf

Recommendation

- Government should invest in improved infrastructure, driver education and Intelligent Transport Systems to improve traffic flow and reduce traffic congestion.



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Other complementary measures

Fleet Purchasing Policy

MMAL supports the FCAI submission on this matter.

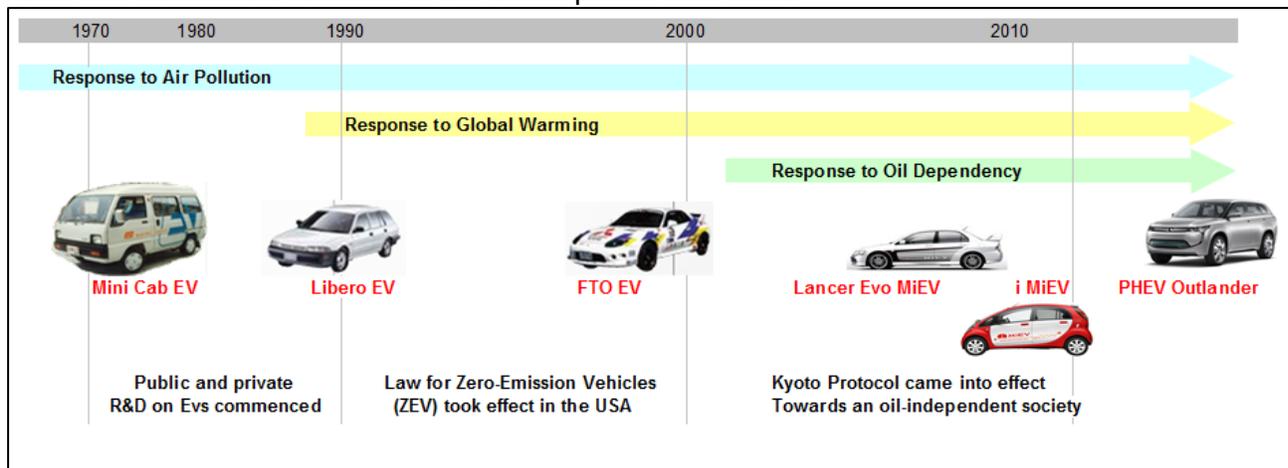
Other complementary measures

Alternative Fuels and electric vehicles

MMC first produced an Electric Vehicle at the request of the Japanese government in 1971.



MMC has been at the forefront of EV development ever since



MMC is a global leader in Electric Vehicles and EV technologies.



MMC produced the world's first mass-produced Electric Vehicle, the i-MiEV. This unique and innovative model was introduced in Japan in 2009, Australia in 2011 and globally thereafter. MMC produced the world's first 4WD Plug In Hybrid Electric Vehicle (PHEV) Sports Utility Vehicle. The PHEV Outlander was introduced in Japan and Europe in 2013, Australia in 2014 and is being progressively released on a global basis according to market demands.

MMC has a goal of having 20% of its global vehicle production consist of plug in electric vehicles by 2020 contributing to a 50% efficiency improvement in its new vehicle fleet in the same period. In order to achieve this goal, MMC expects that a number of strategies will be required globally and regionally to improve the uptake of EVs in the market place.

These strategies include

- Having a stated government volume target for the economy
- Direct Incentives/subsidies for purchasers of EVs
- Concessional treatment in vehicle efficiency regulations
- Purchase of EVs by government departments
- Registration and 3rd party insurance reductions
- Import Duty reductions
- Goods and Services Tax (VAT or equivalent) reductions
- Luxury Car Tax reductions
- Planning and building regulations - Recharge points in new office and apartment buildings
- Traffic Management - access to travel in high occupancy lanes.
- Allocated parking spaces

It is important for Government to understand that critical to the success of these strategies is a fundamental shift in consumer demand for low emission vehicles, including EVs. The National Transport Commission (NTC) report into the "Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2015" notes that

"Consumer preferences are an important factor affecting the national average of carbon dioxide emissions intensity for new vehicles."

and

"Australian consumer preferences for heavier vehicles with larger and more powerful engines, for example, SUV Medium, SUV Large and SUV Upper Large segments made up 30% of all passenger vehicle sales in 2014."

Source: [http://www.ntc.gov.au/Media/Reports/\(C19AD85F-32EC-4605-886F-8448F1CB00A2\).pdf](http://www.ntc.gov.au/Media/Reports/(C19AD85F-32EC-4605-886F-8448F1CB00A2).pdf)

In overseas markets many of the strategies for increasing demand for EVs and Low Emission Vehicles in general have been time based and often, when strategies have been withdrawn or wound back, consumer preference has tended to revert to some degree. MMAL believes that any strategies should be based on the achievement of a set penetration level of the Low Emission Vehicle (or EV) rather than time based allowing permanent consumer preference change to be achieved.

Recommendation

- Government should implement a number of strategies designed to increase the uptake of EVs in the Australian market and remaining in place until a set percentage market penetration is achieved. MMAL offers to provide government with expert advice on this matter drawing from international corporate experience gained over 40 years of developing, producing and offering EVs to various global markets



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Other complementary measures

Vehicle Emissions Testing

MMAL supports the FCAI submission on this matter.

END OF COMMENT