



# Response to the Vehicle Emissions Discussion Paper

Australian Automotive  
Aftermarket Association

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**Australian Automotive Aftermarket Association**

Serving the automotive parts, accessories, tools & equipment industry in Australia since 1980.

## The Australian Automotive Aftermarket Association

The Australian Automotive Aftermarket Association (AAAA) represents over 2000 companies nationally that are engaged in the manufacture and distribution of automotive aftermarket parts, accessories, workshop tools and equipment in a sector that turns over \$11 billion per annum, exports \$800 million worth of product and employs over 40 000 Australians.

Our links to our colleagues in international markets are extensive. We have visited and hosted our collegiate associations from Asia and Europe and we enjoy a highly productive and intensive exchange of ideas and support from the American Specialty Equipment Market Association (SEMA) and the Auto Care Association. We travel extensively throughout the US, Asia and Europe attending and facilitating trade missions and we regularly receive market intelligence that we share with our exporters and aftermarket product development community.

AAAA members manufacture, distribute and fit motor vehicle components that:

- Last the life of the vehicle or are replaced irregularly during the life of the vehicle, usually as the result of a crash or a major mechanical failure – e.g. seats, instrument panels, engines, and transmission; or
- Are replaced regularly throughout the life of the vehicle because of normal wear and tear – e.g. filters, tyres, wiper blades, spark plugs, bulbs, batteries and brake pads.
- Are manufactured and distributed to maintain or enhance the appearance and performance of vehicles, including accessories, safety, comfort, appearance, entertainment and information, functional performance, body components, tools and equipment, mechanical, lubricants, additives and chemicals.

The economic contribution of the automotive aftermarket is significant. The market is growing due to the increase in the motor vehicle stock in Australia. There are 17.6 million motor vehicles serviced by aftermarket component producers and the number of registered vehicles is increasing by 2.5% annually, the average age of all vehicles registered in Australia is over 10 years. The Australian automotive aftermarket has earned an enviable reputation internationally as a supplier of world-class innovative automotive products and Australian manufacturers are known for their flexibility and ability to supply high quality product often in niche volumes in a timely and consistent manner.



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## Introduction

The Australian Automotive Aftermarket Association (AAAA) represents the interests of manufacturers, distributors, wholesalers, importers, mechanical repair & modification services and retailers of automotive parts and accessories, tools and equipment in Australia.

Our members are responsible industry participants that have built their commercial models around standards compliance. We are not interested in automotive components that are not in the public good, and we have been particularly active in advocating for emission controls, reduced noise pollution and enhanced road safety. Our responsible approach to representing the interests of over 2,000 members allows us to work cooperatively and constructively with government across the areas of road safety, vehicle standards and environment.

For a number of years, the AAAA has highlighted the concerning environmental implications associated with gross vehicle emitters. We believe that it is important for government to legislate vehicle exhaust emission limits and to ensure that these are appropriately enforced.

Despite increased regulation of vehicle emission standards and a reduction in emissions by recently manufactured vehicles, polluting emissions from motor vehicles continue to damage our environment, our health and our economy.

We should be concerned about our car emissions – a measurable improvement in our air quality, the health of our children and the future of our urban environment could be achieved if greater attention were paid to this issue.

We have become complacent – there is amongst the community, and amongst governments a view that unleaded petrol, the introduction of catalytic converters and the adoption of European standards for vehicles is the only solution needed. This is not the case: there is overwhelming evidence that when vehicles are poorly maintained, we reduce and potentially eliminate the benefits of new vehicle standards.

Recent research confirms that our children are becoming sick, cancer rates are trending upwards and our communities are increasingly polluted. Without a public policy response this trend will increase, and the lag in understanding the consequences of this negligence will require a higher level of intervention to repair the damage. It's going to get worse – there will be more cars on the road, and more poorly maintained vehicles emitting pollutants into the atmosphere.

Throughout the world there are many methods that governments use to monitor air quality and to address polluting vehicles, from mandatory inspections of cars to random testing of exhaust fumes. There are too many different schemes to detail here and it is not necessary to do so, because the heart of the issue is that Australian governments currently do very little to mitigate the damage being done today and into the future. Australia is behind any developed and many developing nations in acknowledging the issue of in-service vehicle emissions as a serious environmental concern.

There is evidence that our health and air quality is affected and yet there are only minor policy responses in operation in Australia. There is a range of *'dob in a smoky vehicle'* schemes in operation in most

states in Australia. In our industry's experience the *'dob in a smoky vehicle'* practice is outdated and deeply flawed. New technology in vehicles effectively ensures that a car does not emit dark smoke until the car is in very serious trouble. Our catalytic converter manufacturers can show that a car that is emitting dangerous particles some 100 times over the recommended limit will emit dense white smoke, not black or brown emissions.

An in-service vehicle that is emitting black smoke has serious engineering faults and it will not be long before that car is off the road – the engine is compromised and the black smoke is a sign that the car is about to stop running entirely. The dob-in scheme requires action by other motorists, many of whom don't know how to report or don't bother, and it requires a skilled person to know that the emissions are likely to be over the limit and dangerous to our community.

In some states of Australia a mandatory condition of vehicle registration exists for vehicles that have received significant enough modification to undertake an emissions test. Unless a vehicle is significantly modified, 'docked in' or pulled over by the police, in-service vehicles are not required to undertake any emissions testing for the life of the vehicle. There is an enormous amount of regulation dedicated to the emissions standards of new vehicles and little or no effort dedicated to monitoring emissions after the car hits the road. In no state in Australia is there routine or random inspection of vehicles for emissions compliance.

There is a false assumption that if the vehicle no longer meets emission compliance standards it will be visible to the police and the community. Thick white smoke is hard to see for a non-exhaust expert. We need to do more, and it starts with recognising that the federal government's past efforts on this issue have not been particularly effective.

The most effective method of protecting the air we all breathe is to service your car – and yet only one in three drivers service their vehicles regularly. There are many studies that conclude that of all of the policy options available, regular vehicle maintenance is the most effective. Some countries require vehicle owners to service their car on a regular basis, others encourage servicing by the undertaking random testing or by educating drivers about the dangers of not servicing their cars. In Australia, we ignore the problem in trusting that vehicle standards that govern the production of new cars will be effective. North American states have progressively launched public awareness and education campaigns – the *'Be Car Care Aware'* campaign in the United States and Canada is an example of a shared recognition of the issue combined with public and private funds that support a campaign encouraging drivers to service their vehicles. Public campaigns will not address negligent car owners, but they do assist responsible owners to understand the consequences of neglecting the maintenance of their vehicles.

Our community does care about the environment, and it is important that government respond accordingly. However, many people that care about their personal effect on our planet would not be aware that their decision to under-maintain their vehicles is likely to be the biggest decision they make to harm our environment. The consequences of a majority of Australia's car owners deciding not to service their vehicles regularly will result in a serious and long lasting impact on the future of our planet.

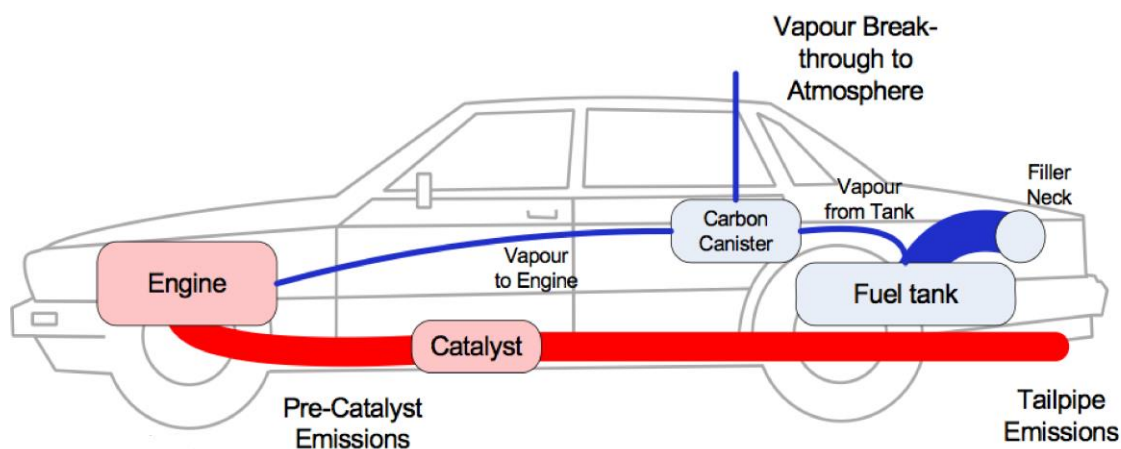
## Motor Vehicle Pollution, the Environment and Health

Driving a car is probably a private citizen's most polluting activity, and the emissions from millions of cars add up to a significant health and environmental problem.

Motor vehicle pollution arises from the process of fuel combustion and from fuel evaporation. As a by-product of fuel combustion, vehicles produce:

- hydrocarbons, which react with nitrogen oxides and sunlight to form ozone and smog – this is a major urban pollution problem, causing lung damage and respiratory problems, and other exhaust hydrocarbons are toxic with the potential to cause cancer
- nitrogen oxides, which are precursor to the formation of ozone, and contribute to the formation of acid rain
- carbon monoxide is a product of incomplete combustion and is a poison which reduces the flow of oxygen in the bloodstream and is dangerous for people with heart disease
- carbon monoxide is a greenhouse gas which traps the earth's heat and contributes to global warming

Evaporative emissions occur as temperature rises, heating fuel and venting gases, as fuel evaporates from a hot engine during normal running, as evaporation continues from the hot engine after the car is parked, and during refuelling when vapours present in the tank are forced out.



*Source: Second National In-Service Emissions Study. © Orbital Corp<sup>1</sup>.*

Two recent reports have highlighted the health dangers of motor vehicle emissions. In June 2012 the International Agency for Research on Cancer (IARC) classified diesel engine exhaust as carcinogenic in humans. The Bulletin of the World Health Organisation, reporting this finding, noted that diesel combustion produces many more particles per unit volume of air than gasoline combustion, and the higher the particle concentration in ambient air, the greater the risk of lung and heart disease. Air

<sup>1</sup> Orbital Corp 2009. *NISE2 – Second National In-Service Emissions Study (PowerPoint Summary)*. [www.environment.gov.au/archive/transport/publications/pubs/nise2-ppt.pdf](http://www.environment.gov.au/archive/transport/publications/pubs/nise2-ppt.pdf)

pollution causes a large disease burden and approximately 1.3 million deaths a year in cities with more than 100 000 inhabitants. Diesel also generates potent short-acting pollutants linked with climate change<sup>2</sup>.

In Australia the National Environment Protection Council commissioned the Australian Child Health and Air Pollution Study, which found that **in a sample of 2860 primary school children, nitrogen dioxide (NO<sub>2</sub>), found in motor vehicle exhaust, was present in the lungs of two thirds of the children tested**. In the cases where NO<sub>2</sub> was detected in children's lungs, the researchers consistently found those children experienced "asthma-like" symptoms, including "wheeze". Their lung volume was reduced and their airways inflamed. The report calls for major reductions in particulate matter (airborne fine particles of soot), carbon dioxide, NO<sub>2</sub> and ozone, stating that there are many pollutants without a safe "threshold". The report suggests that addressing this issue is best achieved by **limiting motor vehicle emissions**, investing in more public transport and through better urban design<sup>3</sup>.

Motor vehicles are the major emitters of ambient air pollutants<sup>4</sup> in urban Australia. The economic cost of motor vehicle pollution related mortality (deaths) and morbidity (years of healthy life lost due to disability) is estimated to be between \$1.6 billion and \$3.8 billion per annum.

During the 1990s lead emissions for motor vehicles and other pollutants such as volatile organic compounds and carbon monoxide reduced. These reductions are attributable to emissions control technology—notably catalytic converters—and new fuel standards. Motor vehicle emission of nitrogen oxides, carbon monoxide and sulfur dioxide are predicated to decline significantly by 2020 because of changes to new vehicle emission standards and fuel standards. This is good news, however, what is not generally understood is that the assessment of reduced pollutants is based on an assumption that the new emissions control technology is well maintained – an assumption that we can now say is unfounded. New emissions control technology that is not universally well maintained has led to a false confidence that the anticipated 2020 rates will be achieved. It also leads to less monitoring, less education and less policing of gross polluting vehicles. Regulators falsely believe that as old cars are removed from the road, newer cars with better technology will dominate and pollutants will reduce. This is correct in theory but not correct in the reality of today's on-road experience.

The base line study in this field remains the National In-Service Vehicle Emissions Studies (NISE) that is prepared regularly by the Federal Office of Road Safety. The NISE reports are intended to:

- Estimate the total emissions of the current passenger car fleet, and of the specified sub-sets of the fleet, before and after tuning;
- assess the extent of emission control system deterioration and failure;
- assess the emission performance of vehicles with reference to their original requirements
- identify the likely causes of vehicles' poor emissions performance;
- assess the potential for reductions in emissions from the in-service fleet from regular maintenance/repair;

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<sup>2</sup> World Health Organisation 2012. *Public health round-up*. [www.who.int/bulletin/volumes/90/7/12-010712/en/](http://www.who.int/bulletin/volumes/90/7/12-010712/en/)

<sup>3</sup> Williams et al 2012. *Australian Child Health and Air Pollution Study (ACHAPS)*. <http://www.scew.gov.au/system/files/resources/8f043cf5-a911-c1c4-8d3d-143ed55cb112/files/achaps-final-report-may2012.pdf>

<sup>4</sup> Department of Infrastructure and Transport 2010. *Final Regulation Impact Statement for Review of Euro 5/6 Light vehicle Emissions Standards*.

- assess the need for inspection programs including the effectiveness and relative cost of a range of possible tests and inspections aimed at identifying high-polluting vehicles; and
- establish a statistical base for projecting future emission levels of passenger cars

The NISE reports clearly state that motor vehicle pollution levels are reduced through the introduction of exhaust emission standards, but that tighter standards are only one aspect of the solution. Once in service, vehicles can deteriorate and can be subject to abuse and tampering. Noting increases in car usage and the total vehicle population, the NISE reports conclude that ensuring vehicles are well maintained is as important as introducing tighter vehicle standards.

Australian reports and international studies on vehicle emissions provide evidence that:

- While newer cars begin with low emissions, they can deteriorate rapidly unless they are kept in good condition;
- Older cars have relatively high exhaust emissions, but contribute less to total emissions because of generally lower distance travelled;
- Newer cars have higher average travel and have generally lower average emissions provided they are well maintained;
- Evaporative emissions were significantly reduced when cars were tuned and new fuel filler caps fitted.

Studies related to the age of cars consistently find that while older cars are often blamed for air quality problems, and it is true that individual vehicles can be very high emitters (up to 100 times greater than new cars), these cars make up only a small proportion of the total population, and are generally driven for shorter distances. Indeed there is ample evidence to confirm that while emissions from older vehicles are higher than more modern cars, this is not to an extent that makes them stand out as a significantly different class of vehicle. At the other end of the age spectrum, modern vehicles are the most numerous group and cover the highest kilometres per vehicle.

Australian and North American emissions reports reveal a concerning fact that cars fitted with catalytic converters show a greater rate of deterioration over time and kilometres travelled than non-catalytic converter equipped cars. Very few drivers would be aware that in relation to evaporative emissions, a significant improvement can be achieved in many cases by the simple maintenance task of replacing non-standard or defective fuel filler cap.

The potential for improvement in Australian car pollution is significant. There is widespread agreement and evidence that significant reductions in pollution levels can be achieved through good maintenance practices: a well maintained passenger car fleet could reduce pollution to between 9% and 25% below existing levels, and these reductions would be accompanied by substantial greenhouse gas reduction and fuel savings of up to \$.5 billion per annum.

AAAA members collectively service a significant proportion of the Australian passenger car fleet, and in their experience owners service their cars regularly for the first three or four years of their life, while they are still under warranty, but car servicing reduces to an alarmingly low rate after the first three years.

While modern cars require servicing less frequently than previously, as they age, particularly after seven or eight years, their emissions increase rapidly if they are not regularly serviced.

Our members consistently tell their customers that regular servicing and maintenance is more economical for them as owners, keeping their cars running well and avoiding the need for major repairs, and is good for the environment by reducing their vehicles' emissions. This message is not reaching enough car owners: the reason most car owners visit an auto mechanic is to repair, not to maintain. Car owners wait until the car is defective before taking a car to vehicle service and repair. It is only after a breakdown or threat of breakdown that the vehicle is examined and tuned for effective running, effective fuel consumption and lower emissions.

## Possible Government Responses

Regulators have traditionally addressed the issue of identifying and rectifying the group of worst polluting cars in several ways, by:

- subjecting all vehicles to an inspection and maintenance regime;
- including pre-defined groups selected by age or kms travelled; or
- targeting vehicles to be included by a filtering mechanism such as remote sensing or a short test, possibly at the roadside.

Whilst these responses rely on the cooperation of state governments, we believe that the Federal Government should show leadership on this matter through the Council of Australian Governments, and work to secure a consistent emissions testing regime throughout Australia.

## Vehicle Emission Testing

We believe that if government were truly committed to reducing vehicle emissions, all vehicles would be required to undergo periodic emissions testing as a requirement of vehicle registration. We estimate that at least 70% of independent automotive service and repair workshops are able to conduct emissions tailpipe testing using either a 4- or 5-gas analyser.

However, we recognise that a comprehensive inspection regime has very high infrastructure and recurrent cost implications if conducted by government, possible abuse if out-sourced, and would be politically unpopular. The evidence shows that selection of a class of vehicles, most probably relating to age, would have limited effect on total emissions.

Identification of high polluting vehicles, possibly by visual or roadside identification, can also be criticised for the subjective nature in which vehicles are selected for testing. However the actual roadside test has a relatively low cost and can be effective if combined with a driver education campaign.

Similar to the campaign on driving under the influence of alcohol and drugs, an effective government response is to use a multi-faceted approach: a concentrated effort on increasing awareness on the consequences of driver behaviour combined with random road-side testing is likely to be the best balance of effectiveness and cost.



## Consumer Campaigns

It is the AAAA's position that we need a shared acknowledgement of the problem that in-service car emission is an economic, environmental and health hazard. Moreover, we need a dialogue about the solutions: **a dialogue between car owners, government and the service industry to work together for a solution that improves our environment for our children and ourselves.**

Our view is that a public campaign to convince car owners to have their cars serviced and tuned regularly would be the most effective way of reducing total motor vehicle emissions, if led by the automotive aftermarket sector in combination with a government regulatory and enforcement regime. The environmental benefits of regular vehicle maintenance are well noted, and information programs designed to encourage regular servicing have been successfully implemented overseas based on a cooperative approach between industry and government.



An effective example of such a campaign is the Be Car Care Aware campaign ([www.carcare.org](http://www.carcare.org)) – a consumer education program in the United States about the benefits of regular vehicle care, maintenance and repair.

The campaign was established by the Auto Care Association (formerly the Automotive Aftermarket Industry Association or AAIA) through their not-for-profit division, the Car Care Council. Built around three key message areas of dependability and safety, protecting the environment, and enhancing and maintaining vehicle value, the campaign is the automotive aftermarket industry's response to provide independent, expert information to help educate consumers on the importance of consistent, timely vehicle maintenance.

The campaign is supported by government, the private sector, and the Auto Care Association. Specific initiatives such as National Car Care Month (April) receive funding and promotion from the US Government's Environmental Protection Agency (EPA). Various state government agencies and departments also play a role in promoting Car Care Month.

The Car Care Council provides a website which has the ability to develop a maintenance schedule for a consumer's vehicle based on make and model, offering free service reminder emails. The website also includes videos, virtual tours, a search tool to find local repair shops and a free guide on proper maintenance, fuel economy and environmental awareness both online and available in print form – posted to consumers at no cost. The Car Care Council also provide an industry website for aftermarket repairers to access the campaign toolkit as well as purchase materials for display at the point of sale.

The Auto Care Association supports workshops with promotional material for local marketing, and promotes their events online. Hundreds of events run in a given year, including regular vehicle safety checks run on a Saturday morning, free of charge for consumers, where a set inspection sheet is completed and given to the consumer.

The campaign has been widely acknowledged as being successful and is believed to have increased the levels of preventative vehicle maintenance over the past twelve years. As a result, the campaign has been successfully adapted and launched in the Canadian market.

The Be Car Care Aware campaign is a model that we believe could work in Australia, and could be a successful component of a range of community, industry and government initiatives to address the problem of vehicle emissions. We believe that such a campaign could be delivered by industry associations in partnership with government at minimal cost to the taxpayer.

An education campaign designed to prevent harmful vehicle emissions, delivered by industry with the support of government, presents significant value and could ultimately reduce the amount of taxpayer funds spent on enforcement of government regulation.

### Vehicle Maintenance Services

Motor vehicle pollution levels are reduced through the introduction of emission standards, but tighter standards are only one aspect of the solution – once in-service, vehicles can deteriorate and can be subject to abuse and tampering. Ensuring vehicles are well maintained is as important as introducing tighter vehicle standards.

AAAA strongly submits that these objectives will only be achieved through a greater emphasis on fair competition in the industry, reduction of the protection of vested interests, and full disclosure of information to the consumer's nominated repairer. This is not currently the case in relation to the consumer's ability to choose who they want to maintain or repair their vehicle. At present vehicle importers restrict access to much of the information required to repair or maintain complex modern vehicles to authorised dealerships. This means that it can be difficult and challenging for independent repairers to repair these vehicles, limiting competition and increasing costs for consumers.

AAAA suggests that the development and implementation of a Mandatory Code of Conduct for the Sharing of Vehicle Service and Repair Information is the most effective way to introduce an industry-wide solution to address the data/tool access requirements of the independent aftermarket. Many other global jurisdictions including the European Union and United States have introduced requirements for OEMs to provide full disclosure of information to the car owner's nominated repairer.

Vehicle standards are a means to an end. There is a reason for Australian vehicle standards; as a community we want a safer and cleaner community environment. In Europe emissions standards were adopted with right to repair regulations i.e. vehicle manufacturers are required by law to share the data to enable all repairers to service vehicles. This linking of data sharing with the emissions regulation ensures that the vehicles are compliant both at point of sale and in-service – vehicles are therefore, sold and maintained at the appropriate standard.