Light Vehicle CO₂ Emissions Standards for Australia

Submission by: Australasian Fleet Management Association

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Introduction
The Australasian Fleet Management Association (AfMA) would like to thank the Department of Infrastructure and Transport for the opportunity to respond to this important discussion paper regarding ‘Light vehicle CO₂ emissions standards for Australia’.

AfMA is a not for profit Association for Fleet Managers, those professionals who manage vehicle fleets within organisations. Our 575 plus members (November 2011) are represented across all levels of government and the private sector.

With over 800,000 vehicles under their control our members play an important role in the Australian economy and the fleet/transport industry. It has been estimated that about 75% of locally produced passenger vehicles are purchased by fleets and in excess of 50% of all yearly new vehicle registrations are taken up by fleets.

AfMA has long had concern regarding emissions, urban air quality and the resultant negative impact on public health and supports the development of ‘Light vehicle CO₂ emissions standards for Australia’.

The Association is pleased to provide some of its thoughts and observations with the view of assisting the Government in this task.

Executive summary
While the discussion paper focuses on the issue of CO₂ AfMA would suggest that there are a series of interconnected and related issues that would benefit from a single integrated approach; we would recommend such an approach be adopted.

This should encompass issues such as an emission per kilometre target, adoption of best practice in emissions reduction eg Euro 5 and 6, fuel efficiency (litres per kilometre) standards and fuel quality issues.

Emissions can, and should be addressed by Government. The opportunity to introduce best practice for vehicle emissions is an opportunity for Government to grasp.

We have attempted to respond to each question. However from a fleet management perspective there are often interrelated issues that swamp/negate any benefit that a proposed change many bring. Where such cases exist we share our observations with the committee in an effort to provide a picture of the reality of the fleet manager’s day to day situation and how that drives their decision making.

While Fleet Managers can differentiate between marketplace products the standards to which these products must comply rest solely in the Government’s sphere of responsibility. Government needs urgently to grasp these issues and take
the lead in producing a benefit to the community and the environment while presenting a viable financial outcome for business fleets.

The RIS notes overseas manufacturing accounts for 85% of all models sold into the Australian market. Although the RIS suggests that vehicles are produced in different locations for the Australian and European markets, AfMA would contend that it is the destination rather than the origin that is important as it is the destination that determines the standards to which vehicles must comply.

Most, if not all, the vehicle makes and models available in Australia are also available in the far more developed and stringent emissions standard regime of the European market, giving rise to the question of why Australia accepts a lower standard.

The Association’s main contention is that it would be beneficial that Australia, at the earliest opportunity, to mirror both the European standards and schedule for introduction and that their adoption is mandatory rather than voluntary.

Not to do so runs the risk that Australia becomes the market where old and redundant technology based vehicles are accepted. History already shows that vehicles have been de-specified for the Australian market.

There has been a numerical decline (see RIS table 1) in emissions both in Australia and Europe between 2003 and 2010. However, statistically Australia continues to lag European emissions levels by around 33% and in reality Australia has made no inroads into this emission level disparity.

It is recognised that vehicles currently manufactured in Australia may struggle to meet best practice in emissions standards. However, the large vehicle market sector has declined substantially since 2003 by some 60% on this year’s forecast sales figures reflecting in a continuing change in marketplace demand.

Many countries in Europe have reduced the level of CO2 by turning to the greater use of diesel fuel. Australia is also experiencing an uptake of diesel driven vehicles however, diesel and its associated Nox and particle matter (PM) emissions present their own problems for air quality. An earlier adoption of Euro 5 and 6 emissions standards than currently suggested will go a substantial way in addressing this problem.
The issue in a broader perspective

An Issue of Health

The concentration of vehicle emissions in urban areas results in ongoing pollution problems, including frequent breaching of air quality standards, and pollution related health problems in our major cities.

The Australian government has a policy of encouraging substantial population growth. The majority of Australians live clustered along the coastal fringes thus increases in population will extend the population density and is likely to exacerbate the urban air quality but also negatively impact population health issues.

There are substantial costs, both in human and economic terms, due to vehicle emissions. Infrastructure Australia’s report ‘Major Cities Unit: State of Australian Cities 2010’ stated that:

“The increasing trend in transport emissions is of particular concern to Australia’s cities, which feature high levels of personal car use and automobile dependency. Strong growth in emissions from the transport sector is expected to continue, with direct CO$_2$ equivalent emissions projected to increase by 22.6 per cent over the period 2007 to 2020” (Infrastructure Australia; Major Cities Unit: State of Australian Cities 2010, Page 79, Figure 5.9).

The Bureau of Transport and Regional Economics estimated “that in the year 2000 motor vehicle-related ambient air pollution accounted for between 900 and 4,500 morbidity cases - cardiovascular and respiratory diseases and bronchitis - and between 900 and 2,000 early deaths”(Working Paper 63 Health Impacts of Transport Emissions in Australia: Economic Costs, p. ix).

It went on to say: “The economic cost of this premature mortality was between $1.1 billion and $2.6 billion (central estimate $1.8 billion). In addition, the estimated economic cost of morbidity was between $0.4 billion to $1.2 billion (central estimate $0.8 billion).”(Working Paper 63 Health Impacts of Transport Emissions in Australia: Economic Costs, p. xiii)

Although the Association has no expertise in the health arena AfMA would suggest that every opportunity to mitigate these outcomes and costs should be seized by government.
Detailed submission
In response to specific issues presented in the RIS the Association comments as follows:

Question 1
Do you support the setting of staged short and medium term targets?

AfMA’s comment
AfMA agrees with setting short and medium term targets.

However, targets should reflect levels comparable to those in similar/competing markets such as the European Community.

Imports currently account for about 85% of sales with the majority of imports sourced from Japan, Thailand, Korea, Germany and South Africa, with these five countries accounting for 75% of all sales. (RIS page 4, paragraph 2.3).

AfMA has some difficulty with the conclusion expressed in Table 4 (RIS page 14) and the associated comment that states:

“On the evidence to date, achieving even more stringent standards than the most stringent scenarios set out in Table 4 would make adjustment to the standards significantly more difficult for manufacturers for a relatively small increase in near-term abatement”.

Although not researched by AfMA we have an assumption that the majority of the imported vehicle models are also available in Europe whether they are manufactured in the Asian region or not. Therefore, we would contend that any difference in specifications for the same make and model for different markets is purely at the manufacturers’ discretion.

As we see it, the makeup of the Australian fleet aligns more closely to the vehicle mix of Europe so it would seem logical that the overseas manufacturers would be able to deliver the same standards in vehicle quality and technology to the Australian market.

The Association accepts that there could be differences in market mix by vehicle category. Should this be the case then an adjustment in emission level may be warranted although we would doubt any differences would be of a level sufficient to skew the data.
**Question 2**
If yes, do you consider 2020 is the logical date for a firm second stage target?

AfMA’s comment
As it is the Association’s contention that Australia adopts the European standards and the implementation dates we suggest that these should be the target dates. (See table below in response to Question 6)

**Question 3**
Do you consider it is appropriate to set a target beyond 2020 at this stage?

AfMA’s comment
As above, it is the European standards that are driving this issue we would suggest that consideration be given for Australia to follow the EU emission standards and implementation timing.

**Question 4**
Do you consider 2010 is the appropriate base year for determining the targets?

AfMA’s comment
Please refer to our comments above.

**Question 5**
What rate of CO₂ emissions reduction do you consider is achievable by 2015 and 2020 in Australia?

AfMA’s comment
See our response to questions 1, 2, 3 and 4.

AfMA’s suggestion is that the European standard and implementation timetable be adopted. This would mean the phasing in of 130 grams per kilometre for new passenger vehicles would be required to start in 2013 for 65% of new vehicles produced with the remaining 35% to be completed by 2015.

For Light Commercial Vehicles up to 3.5tonnes gross mass phase in of 175 grams per kilometre would be required to start from 2014 with 70% of vehicles and be complete by 2017.

While it appears a large leap, on paper, around 7.5% per year over 2011/2020, to meet EU CO₂ targets one would assume that these makes and models are already being produced to EU standards.

It is interesting to note that while RIS Table 1 Annual Reduction in New Vehicle Fleet Average CO₂ Emissions in Australia and Europe (2003-2010) shows a numerical reduction in emissions, statistically Australia has remained a constant 33% behind
Europe. The reality is that in the period 2003/2010 Australia has made no inroad in closing the Australian/European emissions gap.

The Association feels that data can and does sometimes cloud the issue. Rather than compare data contrasting the differences between Australia and Europe a more pertinent question would be why is this so? Basically the same makes and models are available in both markets. A question then follows does Australia receive a lesser product, and if so, why do we accept this?

As to the question of the cost of emission reductions we note that cost comparisons between Australia and Europe show that on balance the base vehicle prices in Europe are comparable and in some cases lower than in those charged in Australia.

It must be clear that emissions reductions in the new vehicle fleet are unlikely to be delivered in a non-regulatory environment therefore it is up to Government to urgently grasp the issue and facilitate solutions.

**Question 6**

What do you think is a reasonable CO\(_2\) target for the Australian new light vehicle fleet in 2015 and 2020?

**AfMA’s comment**

Please see our response to questions 1 through 5.

Also one of our concerns is mirrored in the RIS (page 8) where the comment is made that:

"in the absence of mandatory standards in Australia it is likely that sourcing decisions by global vehicle manufacturers will see the most fuel efficient vehicles and components being allocated to markets with mandatory standards in place”.

This view is supported by a finding from an August 2008 enquiry by the Victorian Parliament all party Road Safety Committee into vehicle safety which made the following observations:

“This report found that the availability of safety technologies is at a far lower rate in Australia than overseas, and international developments in Intelligent Transport Systems are seeing Australia fall further behind”. (Victorian Parliament Road Safety committee inquiry into vehicle safety August 2008, Executive Summary: page xi.)

“Contributing to disparities between leading countries and Australia is the practice of de-specification. The committee has seen convincing evidence that vehicles imported, and even those manufactured in Australia, often have safety technologies removed from models sold in Australia. While manufacturers dispute the practice of de-specification the committee considers that de-specification claims are valid”.
That a culture of de-specification was identified by the Victorian Parliament Road Safety committee inquiry into vehicle safety August 2008 is of concern. Short of a mandatory requirement we see no driver for the introduction of advanced emission reduction technology by manufacturers.

Setting standards significantly adrift from Europe both in emissions levels and implementation dates would continue to see Australia lagging significantly behind best practice. We can see no valid reason why Australia should expect a lesser product or standard.

The table below represents AfMA’s understanding of the intentions of countries and regions and the level of emissions and timing for adoption.

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*Suggested voluntary scheme.
@Phase in starting in 2013 for 65% of new passenger vehicle production and to be completed by 2015.
#Proposed target for Light Commercial Vehicles up to 3.5ton gross mass. Phase in starting from 2014 with 70% of vehicles and to be complete by 2017.
^The EU has set a long term target of 147 has been set but is subject to review in 2013.
Data has been compiled from several media sources.

**Question 7**
Are there any impediments to Australia achieving the more ambitious rates of reduction embodied in Scenarios 5 and 6 above?

**AfMA’s comment**
We see no impediment to adopting a more ambitious target such as the European standards. Please also refer to our earlier comments.

**Question 8**
Do stakeholders have any information on costs and benefits of standards which would assist the Department of Infrastructure and Transport in the preparation of the cost benefit analysis for the implementation RIS?

**AfMA’s comment**
The Association does not have any independent information other than that which is referenced in this submission or already in the public domain.

**Question 9**
Should Australia set a single set of CO₂ targets for all light vehicles, or is there merit in establishing separate targets for passenger vehicles (cars and SUV’s) and for LCV’s (utes and vans)?

**AfMA’s comment**
Our view would be to have a target starting in 2013 for new passenger vehicle production and to be completed by 2015.

The target for Light Commercial Vehicles up to 3.5tonnes gross mass should start in 2014 and to be complete by 2017. Also please refer to our previous comments regarding the adoption of the EU system.

**Question 10**
Do you support the idea of bonus credits for new technology vehicles (such as EV’s), flex fuel vehicles and other technologies, or should the CO₂ standard be purely performance based, treating all vehicles on the same basis (using the CO₂ emissions result on the standard ADR test)?

**AfMA’s comment**
There are already a number of existing assistance programs for the manufacturing industry. We are not sure whether this question is suggesting the introduction of a new credits system?

Irrespective of the above AfMA would like to make a number of observations. There is a downside for the fleet manager in the adoption of new technology.

Usually this is in the form of an increase in unit price. However, it is the additional negative consequence that is created by a contradiction between government policy, reducing emissions, and existing legislation such as Fringe Benefit Tax (FBT).

The combined FBT and stamp duty impost present a considerable financial disincentive for fleet managers to adopt initiatives that come with an increase in unit price. See FBT in ‘other considerations’ section below.

On occasions modification/upgrades are performed as an aftermarket activity; dual/flex fuel conversions such as adding an LPG capability is one example. As there are several devices with unsubstantiated or questionable value, the issue is which modifications/upgrades could/would qualify for additional credits.
As a matter of principle we would like to see any additional financial burden associated with the adoption of emission reduction initiatives removed from the fleet manager.

The Association suggests that extreme care be taken in identifying whether ‘new technology’ does indeed fulfil the claim of emission reductions. For example with regard to the use of the all Electric Vehicle (EV) please see our comments in the ‘other Issues’ section below.

With reference to ADR’s the Association has some concern in the continued use of a system that inhibits Australia in the use of best practice produces. For example there are heavy trucks meeting Euro 6 emissions standards that technically cannot be imported into Australia. AfMA believes that such a situation should not be acceptable.

We bring to your notice the findings of the Victorian Parliament Road Safety committee inquiry into vehicle safety August 2008 where the committee noted:

“The committee considers that the Australian Design Rules (ADR’s) are increasingly outdated and do not reflect international developments in vehicle safety.” (Victorian Parliament Road Safety committee inquiry into vehicle safety August 2008, Executive Summary: page xii.)

**Question 11**
If you support credits, what vehicle types do you consider qualify for a credit and why?

**AfMA’s comment**
Please see our above response to questions 7 and 10.

**Question 12**
Do you support an attribute based standard?

**AfMA’s comment**
The Association is unable to assess and evaluate the attribute based approach. We do make the observation that the Australian market does in our estimation more closely align with the EU market characteristics rather than those of the USA.

**Question 13**
If so, do you have a preference for mass or footprint?

**AfMA’s comment**
The Association is unable to assess and evaluate/compare the footprint and mass methods however, we again make the observation that the Australian market does more closely aligns with the EU market characteristics rather than those of the USA.
**Question 14**
If you do not favour an attribute based standard, what is your preferred approach and why?

AfMA’s comment
Please see our above comments.

**Question 15**
Do you consider there are any other data elements which might also be required for the standards to be effective and enforceable?

AfMA’s comment
The Association has no comment on this item.

**Question 16**
Do you agree that the current VFACTS database (supplemented and audited as necessary) is suitable as the primary data source for assessing and reporting compliance with the standards?

AfMA’s comment
We would agree if the figures actually reflect vehicles sold and does not include such items as vehicle movements from factories to dealers (forecourt stock) for example.

**Question 17**
Do you also agree that data collected for the purposes of the standard should be made publicly available on an annual basis?

AfMA’s comment
The Association would agree with the data being publicly available.

**Question 18**
Do you agree that the Motor Vehicle Standards Act is the most appropriate primary legislation under which to write appropriate CO₂ regulations?

AfMA’s comment
The Association has no comment on this item.

**Question 19**
If not, what alternative legal framework would you propose?

AfMA’s comment
The Association has no comment on this item.

**Question 20**
Do manufacturers, particularly importers, have any views regarding the identification of responsible entities under the standards?
AfMA’s comment
The Association has no comment on this item.

Question 21
Do you consider there is merit in allowing manufacturers to pool, or is it an approach that manufactures are unlikely to pursue?

AfMA’s comment
If the question, as we understand it, is can manufacturers pool or average emissions across their range of their models the Association sees no difficulty with such an approach.

However, it could be problematic when applied to an Australian context. Certain issues arise when defining what are a particular manufacturer’s makes and models. For example what is the model range for Ford? Does it include all divisions and all manufacturing locations, Ford USA – Ford UK – Ford Europe – China etc, of the company or is it just models available in Australia. Should it only apply to vehicles produced in an Australian facility?

AfMA’s view tends to lean towards the average of vehicles available in the Australian market.

Question 22
Do you think there is sufficient merit to warrant the inclusion of banking and trading systems as a feature of Australia’s CO2 standards?

AfMA’s comment
The Association would suggest that if the intention is to achieve a reduction in emissions then a trading scheme we would propose defeats this objective. A trading scheme would in practice just transfer emissions elsewhere. Substitution schemes such as tree planting present their own problems. When does the tree begin to negate the emissions? Is it from day one or how long does it last are issues requiring attention.

Question 23
Do you agree such systems are only possible where annual targets are set?

AfMA’s comment
The Association would agree that targets are an essential part of any control/management system. Also see our comments in response to question 21.

Question 24
Do you agree that financial penalties are the most effective way to address non-compliance?
AfMA’s comment
Financial penalty is the method chosen under the European model based on a manufacturer’s average over its model range. The Association has no knowledge at this time as to how a manufacturer’s model range is to be determined; see our comments in question 21.

Additionally what happens if a vehicle model exceeds the allowable limit? What are the manufacturer’s options? If a financial penalty is set too low could the manufacturer just pay the fine and sell the vehicle. Or should that vehicle model be unable to be offered for sale in the Australian marketplace.

This would be similar to the approach taken by Victoria with regard to Electronic Stability Control (ESC) where from January 1st 2011 it was a mandatory requirement for vehicle registration in the State.

Question 25
If not, what alternative would you suggest?

AfMA’s comment
See response to Question 24.
Other Considerations

Emissions are simply one of a number of interrelated issues associated with attaining a low emission environment. There are many opportunities to develop a supply of alternate sources of fuel, whether it is electricity based, biodiesel, ethanol production in all its forms, coal gas to liquid technology, coal to liquid, natural gas Hydrogen or LPG.

Many of these will take some years before sufficient substitution capacity is development and in the meantime fleet managers have to deal with the day to day realities of the business environment.

Even when technological solutions are forthcoming care is needed to ensure that the ‘solution’ proposed does in fact deliver what is being promised. In addition there are more than a few non-product impediments to successful adoption/implementation of viable emission reduction products.

The Association would like to share with the committee some of its observations in this area.

All Electric Vehicles (EV’s)

AfMA has looked at the attraction of the all electric vehicle and from our perspective a number of conclusions are obvious. It is clear that until power generation emissions are reduced then EV’s will not deliver an advantage in CO₂ emissions. In addition, because of the price premium that will be associated with the purchase of EV’s, they are not likely to present value for money on any level.

With the introduction of the all-Electric Vehicle (EV) the Association sees a blurring of the conventional boundaries used in defining fuel consumption and there associated CO₂ per kilometre travelled. Traditionally the fuel used in providing the motive power, usually hydrocarbon based, is included in this calculation; the availability of Hybrid and EV vehicles has challenged the convention.

It is important to bear in mind that any EV is only emission free if no emissions are produced in the electricity generation process that is used to provide the charge to the EV batteries. Where electricity is generated by burning coal, particularly brown coal, any advantage an EV might have over a petrol, diesel or LPG vehicle can quickly disappear.

While the rating of EVs as having zero tailpipe emissions is correct the issue here is that an existing method, although inappropriate, is retained as the measure. EV’s and plug-in Hybrids have blurred the relationship between fuel and emissions. However, an EV can only be as ‘green’ as the electricity used to charge the batteries.
Outside a directive from management the Fleet Manager usually needs to build a business case for change. In this two questions are paramount. Will what is being proposed give a real reduction in emissions and will it present value for money?

With emissions associated with battery charging we have a concern as to whether under current power generation system constraints EV’s can provide a reduction in CO2.

Using existing data the Association’s assessment is that, except in Tasmania and in some instances the Northern Territory, the use of EV’s can actually lead to an increase in emissions. This emissions increase can be negated by the purchase of ‘green electricity’ however this cost only adds to the problem of the ‘value for money’ proposition.

**Comparison of Power station and conventional fuel emissions**

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Empa a Swiss organisation undertook a study and published its findings in an article titled ‘The Eco-balance of Li-ion rechargeable batteries for electric cars’ dated 27th August 2010. Empa provided a formula to determine the equivalent CO2 produced by a power generation facility to charge the EV battery: 24 (battery size) x 0.13 (Tasmania average power generator emissions per kWh) = 3.12 kg CO2 per 100 kilometres.

AfMA also sees a number of prerequisites to mass market penetration of EV’s. These include the development of an infrastructure for charging, standards on plugs and connectors (AfMA understands that there are already two types of plugs in circulation, one developed for Europe and another for the USA) as well as protocols and functional standards for billing both at home and en route.
The active collaboration of state/local governments, shopping centres, car park operators, electricity generating and distribution companies and many other businesses not currently operating in transport energy supply is a major challenge needing attention to enable the provision of a charging infrastructure. A body, whether that is regional, state, federal or independent, must also be put in place to coordinate these activities.

Our conclusion in respect to EV’s is that currently from an emissions and value for money perspective the bottom line is that electric vehicles at present do not provide attributes and benefits equal to those of most equivalent conventionally powered cars.

If you accept that the marketplace is the best driver for the adoption of new technology then there is a need to understand the motivations for fleet managers.

Firstly vehicles are identified from a ‘fit for purpose’ perspective, that is, what task it is required to meet. Secondly the value for money proposition is derived from a ‘whole of life’ cost calculation, where the vehicle that meets the ‘fit for purpose’ requirement at the lowest cost will be obtained.

As soon as additional costs are incurred, which is the case for greener vehicles such as LPG, diesel or EV’s they become disadvantaged due to acquisition cost premiums and their associated FBT and stamp duty imposts.

**Current Financial Disincentives**

Federal and State Government environmental, road safety and taxation policies are often at odds with good corporate behaviour.

For example, initiatives to reduce emissions and road trauma are subject to several taxation systems that actively punish businesses financially for adopting new technology and being socially responsible.

The current Fringe Benefit Tax (FBT) system actively provides financial disincentives for the inclusion of environmental initiatives. For example, should a fleet manager purchase an LPG or diesel engine it is likely to cost upwards of $2,000 over the petrol variant?

This additional $2,000 is then subject to stamp duty (a state tax) and FBT (if applicable) there is a substantial financial disincentive as a 100 vehicles fleet on a 3 year ownership the additional costs become:

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\begin{align*}
$2,000 \times 3\% \text{ stamp duty} \times 100 \text{ vehicles} &= $6,000 \text{ plus} \\
$2,000 \times 20\% \text{ FBT} \times 2.0647 \times 46.5\% \times 100 \text{ vehicles} \times 3 \text{ years} &= $115,209 \\
\text{Subtotal (additional tax for adding} $2,000 \text{ of equipment)} &= $121,200
\end{align*}
\]
Should an all Electric Vehicle (EV) be acquired currently we would expect to see a minimum of a $10,000 premium. When this cost is factored into the ‘whole of life cost’ the additional costs escalate substantially.

$10,000 x 3% stamp duty x 100 vehicles = $30,000
$10,000 x 20% FBT x 2.0647 x 46.5% x 100 vehicles x 3 years = $576,051
Subtotal (additional tax for EV with $10,000 cost premium) = $606,000 plus

These two examples show scenarios where undertaking an emissions reduction initiative makes no sense from a financial perspective due to the impediment of taxation (stamp duty and FBT). The figures above, $121,200 and $606,000, represent the additional taxation for a 100-vehicle fleet.

Also in relation to FBT vehicles are assigned an FBT value based on the cost of the vehicle plus accessories. How will the government deal with FBT on an EV where the battery is not included in the vehicle purchase price (as per the Better Place model). Is the battery, at prices upwards of $10,000, subject to FBT or not?

Vehicles with reduced emissions features should be more financially attractive to fleets, not less. There is an urgent need to reconcile the legislative conflicts that produce disincentives.

**Australian made Vehicles**

The Association is aware that some of these issues may present challenges for Australian vehicle manufacturers. We have noted that over a number of years that the difficulties facing Ford, Holden and Toyota have increased.

AfMA’s research via our Fleet Influences, Intentions & Satisfaction Survey indicates that the vehicle fleet profile and consumer preferences for these manufacturers have been in transition for some time. The main element of this shift has been a significant move from large to medium and small passenger vehicles. Sales of Australian manufactured large cars have fallen consistently since 2003. This year they are expected to represent just 40% of the 2003 level.

From a vehicle user perspective fleet managers are only able to choose from what is available in the marketplace. What is, or can be, available is under the direct control of Federal and State Government as it is these two institutions that set the rules and regulations for the marketplace.

While not choosing winners or losers the time may be near that government need to make choices on which path it should follow and what industries it should support.

AfMA appreciates the opportunity to share its observations on the subject of emission standards.