



VEHICLE EMISSIONS DISCUSSION PAPER

AUSTRALIAN AUTOMOBILE ASSOCIATION

SUBMISSION



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1 OVERVIEW

The Australian Automobile Association (AAA) is the peak organisation for Australia's motoring clubs and their eight million members. The AAA advances the interests of its constituent motoring clubs as well as all road users across Australia to ensure motoring is safe and affordable, and that Australia's transport infrastructure delivers for the community and the economy.

The AAA welcomes the Australian Government's 2030 greenhouse gas emissions reduction target of 26–28 per cent on 2005 levels by 2030. The Australian Government has indicated that it is targeting a 92 million tonne (MT) reduction in CO₂ from the vehicle fleet with 76 MT to come from the light vehicle fleet.¹ Whilst the government has not yet released its baseline data, modelling undertaken by the Centre for International Economics on behalf of the AAA has estimated that this will mean a 20 per cent reduction in CO₂ emissions from private vehicles by 2030.

One of the key challenges for Australia in the 21st century is to harness the enormous benefits of transport, while at the same time minimising the negative impacts caused by motoring, such as air pollution, death and injury, and greenhouse gas emissions which lead to climate change. Without action, there are likely to be increasingly adverse economic, social and environmental consequences for future generations.

The AAA clubs are in a unique position to help assist motorists contribute to a cleaner, greener community and influence industry and government to take steps that reduce emissions and improve energy efficiency. **This sentiment is reflected by our members with almost 70 per cent indicating they were concerned with the effect that motor vehicles had on the environment. This sentiment has also been increasing over previous surveys.**²

While the AAA accepts the need for motoring Australians to play their part in reducing emissions, the complexity of the issues being considered must not be understated. Each of the policy and regulatory issues being considered by the Ministerial Forum, and covered in the *Vehicle Emissions Discussion Paper* (the Discussion Paper), has the capacity to directly impact the affordability and sustainability of motoring in Australia, and therefore the quality of life and household budgets of Australian families. It is therefore critically important that the cost of regulatory measures in the areas of safety, fuel prices and choice, energy security, induced travel behaviour, vehicle prices, or fleet renewal are fully considered at the regulatory impact assessment stage.

Given the Discussion Paper focusses on 'the *implementation* of more stringent standards' (p.2) the AAA has worked on the basis that a policy of emissions standards is preferred by the Australian Government. Consequently, the submission focuses on the costs and benefits and related processes, together with supporting measures that would need to be addressed in any subsequent Regulation Impact Statement (RIS).

When considering the introduction of new regulations, it is imperative that the Australian Government adhere to the principles set out in the *Australian Government Guide to Regulation*, and in the *COAG Guide for Best Practice Regulation*. These principles include requirements that the government:

- produce clear evidence of a problem that needs to be corrected; and
- fully consider the costs and benefits of all options.

1 Minister Hunt, Ministerial Forum Consultation session, 4 April 2016.

2 Survey by Crosby|Textor of 1,500 road users conducted in 2015.

The AAA notes that the *Vehicle Emissions Discussion Paper* does not provide data regarding the extent of the air quality issues arising from motor vehicles, and is interested to see this presented in the RIS. It would be helpful if these air quality data are presented based on emissions sources so that the problem can be fully understood and an appropriate response developed.

The AAA supports the consideration of a CO₂ standard as part of a package of measures to address CO₂ emissions. However, the AAA wants to ensure a robust methodology is applied to the cost-benefit analysis that underpins a future RIS. In particular, if a stringent CO₂ emissions standard is applied, other aspects of the vehicle which are important to consumers, e.g. price, space, carrying capacity, and engine power, may need to be sacrificed in order to meet the required efficiency standard. Government literature assumes that the costs of forgoing such aspects would be offset by the private benefit of fuel savings made possible through more efficient vehicles. Research conducted by the CIE on behalf of the AAA cautions against this approach. Incentives may need to be offered to offset these opportunity costs.

The AAA holds the view that there is good reason to believe that purchase patterns reflect actual consumer preferences for new vehicles. Consequently, it is possible that the government has not fully considered the real costs to consumers of CO₂ emission standards. This is supported by a recent AAA survey of 1,500 people which found that, of those who bought their vehicles new, fuel efficiency and economy dominated as a factor in consumer vehicle selection. However, it was only the primary factor for around one quarter of those surveyed.³

The AAA welcomes Minister Fletcher's commitment on 4 April to an independent assessment of the link between fuel quality standards (sulphur content) and Euro 6 vehicle technology.⁴ The AAA believes that this work must be completed before a Euro 6 RIS is undertaken, as fuel standards will dictate the costs to consumers of operating Euro 6 compliant vehicles. As the leading consumer advocate, the AAA also sees value in being involved in that work, as any costs that flow from higher fuel standards will be borne by consumers.

Further, the AAA believes that more work needs to be done to adequately assess the possibility that more stringent vehicle standards may require higher quality fuel. If premium fuels are required for the operation of emissions-compliant vehicles, then the higher prices of such fuels represent significant consumer costs which have not figured in government cost-benefit analyses to date.

In this respect, the issue of fuel quality needs to be addressed first. The need for amended fuel quality standards is most likely to be determined by the operability of Euro 6 noxious emission standards. As such, the AAA believes it is essential that the government address fuel quality standards, Euro 6 and CO₂ standards simultaneously.

The AAA congratulates the Australian Government on its commitment to full and effective public consultation as part of its consideration of vehicle emissions regulation and looks forward to working with the government to ensure regulation of emissions from private vehicles is maximised using least cost measures and is not disproportionate to, or considered in isolation of, other sectors of the economy.

³ Survey conducted by Crosby|Textor in 2015.

⁴ Minister Fletcher, Ministerial Forum consultation session, 4 April 2016.

2 SUMMARY OF RECOMMENDATIONS

SECTION ONE

WHOLE-OF-GOVERNMENT APPROACH TO VEHICLE EMISSIONS

RECOMMENDATION 1

The AAA welcomes the Australian Government's integrated approach to considering measures to reduce emissions from Australia's light vehicle fleet and looks forward to providing detailed comments on the Regulation Impact Statements for each of the future proposed measures. The AAA recommends that policy options for Euro 6, CO₂ standards, and fuel quality standards be considered simultaneously to ensure that the interactions between the measures and all flow-on implications can be appropriately addressed in each RIS.

NEED TO MAKE THE CASE FOR REGULATION

RECOMMENDATION 2

The Australian Government should consider all feasible policy options including self-regulatory, co-regulatory and non-regulatory approaches to establish the case for reducing noxious and greenhouse emissions from light vehicles.

SECTION TWO

OPTIONS TO REDUCE VEHICLE EMISSIONS

IMPLEMENTATION OF EURO 6 NOXIOUS EMISSIONS STANDARDS FOR LIGHT AND HEAVY VEHICLES

RECOMMENDATION 3

The AAA welcomes the Australian Government's commitment to commission independent research into the opposing views of the vehicle manufacturing and fuel supply industries to better understand the interaction between Australian fuel quality and Euro 6 vehicle technologies. The AAA recommends that no decision is taken on Euro 6 until after this work has been completed.

IMPLEMENTATION OF FUEL EFFICIENCY (CO₂) STANDARDS FOR LIGHT VEHICLES

RECOMMENDATION 4

The AAA believes in abatement at least cost, however in the absence of a market mechanism it is assumed that Australian motorists should carry a proportionate burden in reducing greenhouse gas emissions. In addition to new CO₂ standards, the Australian Government should consider an integrated strategy that considers other mobility objectives and externalities for the whole vehicle fleet when interventions are developed (see Text Box 1 for full list of recommended measures).

RECOMMENDATION 5

The Australian Government needs to ensure that any CO₂ standard results in real fuel savings across the whole fleet whilst not compromising vehicle cost, safety or choice. If cost, safety or choice is restricted, this would need to be outlined in detail and considered in the RIS.

OTHER COMPLEMENTARY MEASURES TO REDUCE EMISSIONS**FUEL QUALITY STANDARDS****RECOMMENDATION 6**

The Australian Government must ensure any amendments to fuel standards and the corresponding price effects are detailed in a draft RIS so that the full costs of the introduction of a standard are taken into account.

RECOMMENDATION 7

The AAA is supportive of an independent consultant considering the need for an amendment to fuel quality standards and is interested in being a part of this process given the potential for consumers to be affected.

RECOMMENDATION 8

The AAA recommends the Australian Government properly assess the effects emission standards would have on fuel quality.

INFORMATION AND EDUCATION**RECOMMENDATION 9**

The AAA recommends that the fuel consumption label and the Green Vehicle Guide are reviewed with a view to incorporating star ratings and operating cost savings to consumers like the models used in the United States and New Zealand.

RECOMMENDATION 10

The AAA recommends that the Green Vehicle Guide publish the test results for the levels of individual noxious pollutants for each vehicle listed on the Green Vehicle Guide.

RECOMMENDATION 11

The AAA recommends that information provided on fuel consumption labels and the Green Vehicle Guide be embedded into online platforms that consumers visit when researching potential vehicles and that the existing Australia/New Zealand shared labelling system for the energy efficiency of appliances be leveraged if possible.

RECOMMENDATION 12

The AAA recommends that the Australian Government consider providing the mechanism for different jurisdictions to 'opt-in' to used car information schemes by providing templates and backend technical requirements for the production of labels and the option to search used cars on the current Green Vehicle Guide website. This information would need to include relevant caveats around the reliability of used car data.

RECOMMENDATION 13

The AAA supports the suggestion in the Discussion Paper to develop a set of national principles and effective strategies for the implementation and dissemination of eco-driving advice, however this would need to be adequately funded by relevant road authorities or incentivised via the Australian Government's Emissions Reduction Fund.

FLEET PURCHASING POLICY**RECOMMENDATION 14**

The AAA recommends that the Australian Government takes the lead in reviewing its vehicle procurement policy to ensure average carbon dioxide emission intensities are lower than those in the broader Australian fleet.

TAXATION MEASURES**RECOMMENDATION 15**

The AAA does not support the burden of taxation increasing for road users as they currently pay almost \$28 billion annually in taxes and charges.

RECOMMENDATION 16

The AAA supports abolishing the Luxury Car Tax as it is an inefficient tax which targets vehicles that are often the leaders in providing safety and environmental benefits.

RECOMMENDATION 17

The Australian Government should publish a best practice guide for state and territory governments that would seek to influence their concession policies around fuel efficient and low CO₂ emitting vehicles.

RECOMMENDATION 18

The Australian Government should commit to an Infrastructure Australia-led public inquiry into transport market reform and the benefits of road user pricing in the context of the fragmented, underfunded road network.

ALTERNATIVE FUELS AND ELECTRIC VEHICLES**RECOMMENDATION 19**

The AAA recommends the Australian Government investigate low-cost incentives to encourage the uptake of low emission, alternative vehicles in Australia.

RECOMMENDATION 20

The AAA recommends that the Australian Government conduct further research into biofuels, including ethanol, and their suitability to Euro 6 and low CO₂ vehicle technology.

VEHICLE EMISSION TESTING**RECOMMENDATION 21**

The Australian Government should commit to independent audit testing of new and in-service vehicles using laboratory and real driving emissions tests to ensure compliance with noxious emissions standards.

3 POLICY PRINCIPLES OF THE AAA

The AAA has developed policy principles to guide its policy development and input into the deliberations of the Ministerial Forum. The policy principles acknowledge the complex nature of the Ministerial Forum's work and welcome the integrated cross-government approach to addressing the issues.

The policy principles recognise that a balance needs to be achieved whereby motorists are able to fairly contribute to responses to greenhouse and other vehicle emissions and that the lowest cost measures are implemented to address the problem:

- 1** The AAA endorses greenhouse and other pollution abatement measures that deliver abatement at least cost to vehicle owners and the broader Australian economy, balancing the affordability and sustainability of motoring in Australia.
- 2** The AAA endorses a policy response underpinned by equity and flexibility and which does not prescribe sector, purpose, or technology-specific outcomes.
- 3** The AAA endorses a whole-of-economy consideration of both the issues of air quality improvement and greenhouse gas emission reduction, and the measures introduced to deliver desired outcomes.
- 4** The choice of vehicle types offered to the Australian market should not be restricted.
- 5** The adoption of any foreign or international emissions standards must take into consideration the Australian new vehicle fleet and how and why it differs from those found in other markets.
- 6** Independent testing of vehicle emissions under real world driving conditions must be undertaken using Australian vehicles on Australian roads.

4 WHOLE-OF-GOVERNMENT APPROACH TO VEHICLE EMISSIONS

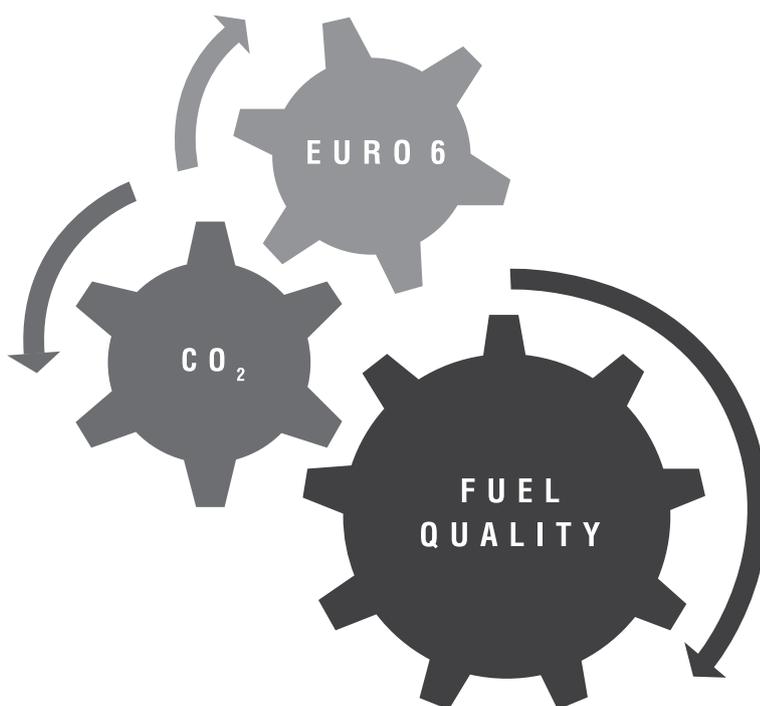
The stated objective of the Ministerial Forum is to coordinate a whole-of-government approach to addressing vehicle emissions, including Euro 6, fuel efficiency and fuel quality standards.

4.1 PROCESS AROUND THE ORDER OF THE DIFFERENT REGULATION IMPACT STATEMENTS

At the stakeholder consultation session held on 4 April 2016, the Department of Infrastructure and Regional Development advised that it expected to release Regulation Impact Statements for Euro 6 and CO₂ standards in the second half of 2016, with a possible RIS for fuel standards to be released some time later.

This approach appears to be flawed, as the costs and other implications associated with an amended fuel quality standard would be unable to be considered in the Euro 6 and CO₂ assessment. The AAA recommends that the most logical sequence would be consideration of the market failure justifying intervention with a standard, immediately followed by an assessment of the need for amendment of fuel standards. This would then provide a common set of parameters for simultaneous development of RIS for fuel standards, Euro 6 and CO₂.

By not considering the true cost of fuel standards as part of the consideration of CO₂ standards and Euro 6, the RIS processes would not fully account for the true underlying costs to consumers. This would mean that the RIS processes were flawed and standards may be implemented based on incorrect assumptions.



4.2 RISKS ASSOCIATED WITH NOT CONSIDERING ISSUES SIMULTANEOUSLY

The risk associated with bringing forward RIS work on Euro 6 and CO₂ ahead of consideration of fuel quality is significant; the following two problems could arise:

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- **Risk 1** Changes to fuel standards could be required post implementation of Euro 6 meaning that the following adverse issues would arise that would not have been incorporated into any RIS:
 - The cost of fuel could potentially increase significantly—for all motorists, not just owners of new technology vehicles.
 - Local refiners would be impacted with consequent impacts on the local refining industry and flow-on effects on local fuel security.

 - **Risk 2** Required changes to fuel standards may be unable to proceed due to the high costs and risks to local refiners, meaning that the following adverse issues would arise that would not have been incorporated into any RIS:
 - Vehicle manufacturers who would have already implemented production changes to deliver Euro 6 vehicles would be affected with any associated costs likely to be borne by consumers.
 - Vehicle technology is not able to operate satisfactorily on Australian fuels, thereby undermining the estimated reduction in emissions, and forcing manufacturers to withdraw vehicles from the Australian market.

4.3 RELATIONSHIP BETWEEN CO₂ AND FUEL STANDARDS

As noted in the Discussion Paper, there is a level of debate regarding the necessity for a lower sulphur limit for petrol to enable Euro 6 noxious emission standards. This will need to be resolved before the implications of the proposed adoption Euro 6 can be understood.

For CO₂ standards, the requirements for increased fuel standards relate only to higher RON, which may assist in improving engine efficiency. Thus, the introduction of a CO₂ standard does not have a strong dependency on the availability of suitable fuel. However, the impact of possible changes to fuel specifications resulting from consideration of Euro 6 will affect the economic assessment of a proposed CO₂ standard. This will need to be taken into consideration in any RIS for a CO₂ standard. This assessment would need to include consideration of any impacts of fuel changes for drivers of new vehicles, and existing vehicles.

The AAA believes that the issue of sulphur content in fuel needs to be resolved as quickly as possible to facilitate the analysis of CO₂ and Euro 6. The AAA is aware that there are already Euro 6 certified vehicles being sold in Australia that are able to use existing Australian fuels, including 91RON petrol. This would suggest that a resolution may be able to be achieved in the short term.

RECOMMENDATION 1

The AAA welcomes the Australian Government's integrated approach to considering measures to reduce emissions from Australia's light vehicle fleet and looks forward to providing detailed comments on the RIS for each of the future proposed measures. The AAA recommends that policy options for Euro 6, CO₂ standards, and fuel quality standards be considered simultaneously to ensure that the interactions between the measures and all flow-on implications can be appropriately addressed in each RIS.

5 NEED TO MAKE THE CASE FOR REGULATION

In addition to the AAA's policy principles outlined previously, in preparing its response to the Discussion Paper, the AAA has reviewed the Australian Government's guidelines for policy development and regulation (copied at Appendix A). In line with those guidelines, the AAA is looking forward to providing more detailed comment on policy options at the Regulation Impact Statement stages later in 2016.

The AAA welcomes the range of issues set out in the Discussion Paper, and the government's commitment to a whole-of-government response to all vehicle emissions. This will ensure that the flow on effects from action in any one area can be adequately considered as a factor for the others. For example, should Euro 6 require a higher fuel standard for vehicles to operate effectively, the potential increased cost of fuel would need to be considered not only in assessing Euro 6, but also when considering CO₂ measures.

For this reason, should the government's policy deliberations following this consultation process tend towards a regulatory response in any of the areas under consideration—CO₂, Euro 6 and fuel standards—the AAA will be looking for a full case to be made, including consideration of all costs and benefits associated with each regulatory response. The RIS processes should also fully consider non-regulatory and co-regulatory options, together with the 'do nothing' option when considering the relative costs and benefits.

In regards to noxious emissions, the AAA acknowledges that light vehicles are a source of toxic air pollution. However, their level of contribution to air quality problems, relative to factors such as industrial activity, dust storms, agricultural activities, wood smoke emissions, salt spray and hazard reduction burns, needs to be quantified to ensure that any regulatory response is appropriate to the contribution from each source.⁵ This is likely to vary across Australia's cities and regional centres and it is important that the response can be targeted to location.

Before proceeding to a regulatory response, research should determine the extent of costs and benefits and that all non-regulatory options are considered.

RECOMMENDATION 2

The Australian Government should consider all feasible policy options including self-regulatory, co-regulatory and non-regulatory approaches to establish the case for reducing noxious and greenhouse emissions from light vehicles.

⁵ www.environment.nsw.gov.au/resources/aqms/160036-nsw-air-quality-statement-2015.pdf.

5.1 FUNDAMENTAL ASSUMPTION OF 'EFFICIENCY GAP' OR 'ENERGY PARADOX' NEEDS FURTHER ANALYSIS

Whilst on the surface it may appear that regulating vehicle emissions via a CO₂ standard will yield savings for the private vehicle user, more detailed analysis is required.

The National Transport Commission reports that 'if all Australians who purchased new vehicles in 2015 had purchased vehicles with best-in-class emissions, the national average carbon dioxide emissions intensity would have been reduced to 82 g/km'.⁶ That would be a 55 per cent reduction from the current national average of 184 g/km.

The thinking as detailed in the Discussion Paper is that the higher technology cost of purchasing a more efficient motor vehicle is paid back over a relatively short pay-back period of 3–4 years through fuel savings, therefore resulting in a 'negative cost' of abatement or net benefit to the consumer.

However, the AAA is concerned that if this were indeed the case, rational consumers would be automatically adopting this purchasing behaviour and a regulated standard would not be required. This observation that consumers do not necessarily take up privately beneficial efficiency measures—including more fuel efficient vehicles—is often referred to as the 'efficiency gap' or 'energy paradox'.

In a comprehensive analysis of the energy efficiency gap, Gerarden et al⁷ provide a taxonomy of potential explanations for the gap and consider empirical evidence for each of these. Table 1 below summarises their taxonomy.

Table 1 Explanations for the 'efficiency gap'

Category of explanation	Detail
Market failures —failures in the market for energy efficiency that mean that consumer preferences for energy efficiency cannot emerge in the market	Information problems; Energy market failures; Capital market failures; Innovation market failures.
Behavioural effects —particulars of consumer behaviour that may diverge from 'fully rational' behaviour	Inattentiveness and salience (fuel efficiency not important); Myopia and short sightedness; Bounded rationality and heuristic decision-making.
Modelling flaws —flaws in models that suggest an efficiency gap in the first place	Unobserved or understated costs of adoption; Ignored product attributes; Heterogeneity in benefits and costs of adoption across potential adopters; Uncertainty, irreversibility and option value.

Source: Based on Gerarden et al 2015

They find that while each explanation is theoretically sound, the empirical evidence is mixed and that further research is needed to further pin down understanding of consumer responses as well as optimal policy measures.

⁶ NTC Australian, *Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2015*, March 2016.

⁷ Gerarden T, Newell R and Stavins R 2015 *Assessing the Energy-efficiency gap* Harvard Environmental Economic Program, Cambridge, Mass, January.

In Australia, work within the Australian Government has not always concluded that these market failures provide a strong case for the introduction of standards: either because the original failure is not sufficiently demonstrated or because the standard is not the best method for addressing the original problem.⁸ More research is needed in this space to support a RIS.

At one extreme, if there are no failures in the market for energy efficient vehicles, and consumers are rational, then current fuel efficiency reflects the preferences of consumers. Consumers do not seek further efficiencies as these would be offset by additional costs. Any move to impose further efficiency, while generating private benefits, will also generate private costs which would offset the private benefits. This would be the case even if the private costs are not evident to analysts. Thus, if there is no clear case for a market failure, then it is not appropriate to include private benefits in a cost-benefit analysis.

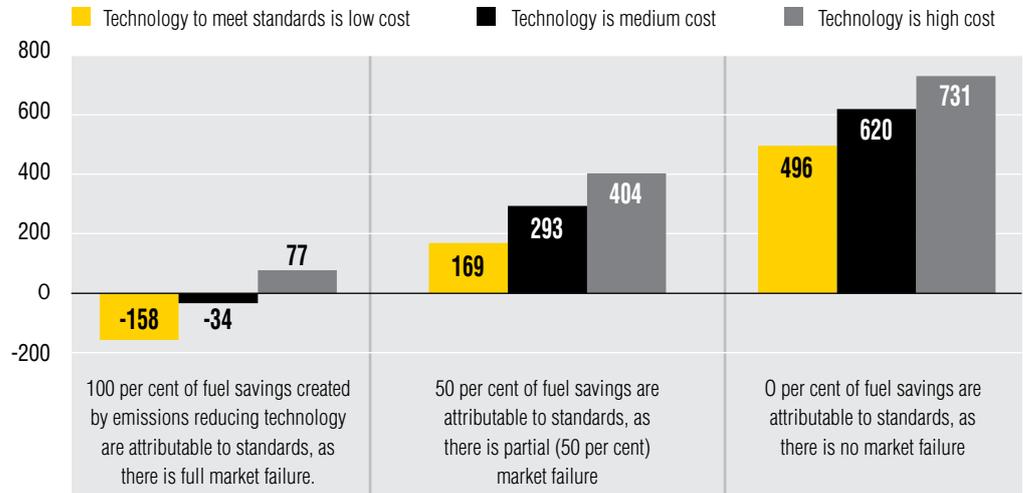
At the other extreme, a clearly identified market failure may mean it is appropriate to include some or all of the private benefits, as these would not necessarily be fully offset by private costs. Even in this case, however, it is important to try to estimate the difference between incremental private benefits and private costs in order to undertake an appropriate cost-benefit analysis.

In order to illustrate how important this point is in determining the net benefits of a standard, Figure 1 below illustrates the cost of abatement (\$ per tonne) under different assumptions about both the costs of new technology to achieve the standard, and the attribution of private benefits to the standard. Where a negative cost is shown in the figure, the measure has benefit to consumers and should be pursued further. However, where the cost is shown as positive this represents a cost to consumers and policy makers would need to rethink factoring this element into the RIS.

The bars on the left assume that the efficiency gap is due to some form of market failure, so that the private benefits of the standard arise as a consequence of the correction of this failure. In this case, and with low technology cost, the cost of abatement is negative; each tonne abated generates a net gain. The same is true with medium technology costs, although not with high technology costs.

⁸ See, for example, Productivity Commission 2005, *The Private Cost Effectiveness of Improving Energy Efficiency, Inquiry Report No. 36*, August 2005 and Department of Infrastructure, Transport, Regional Development and Local Government 2010, *CO₂ emissions standards for light vehicles*, Internal Working Paper, July 2010.

Figure 1 Cost of abatement (\$ per ton) under emissions standards, by assumption on market failure and cost of technology scenario



Data source: The CIE. Note that the analysis underlying these results assumes the imposition of a standard that sees average emissions fall by 5.4 % per year, from 184 gCO₂/km in 2015 to 105 gCO₂/km in 2025. In the counterfactual, business-as-usual scenario, average emissions fall by 2% per year, to reach 150 gCO₂/km in 2025. Cost of abatement is expressed in present value terms over the period to 2040. Incremental vehicle technology costs (the cost to reduce average emissions by 1 gCO₂/km) range from \$41.69 (low), to \$52.10 (medium) to \$61.40 (high).

However, if only 50 per cent of the private benefits are attributed to the correction of a market failure, the costs of abatement increase substantially, and increase further if none of the private benefits are attributed to the correction of a market failure. The pattern of results clearly illustrates the importance of views about underlying market failures in explaining how consumers respond to energy efficiency opportunities.

The conventional thinking associated with negative abatement and high levels of private benefit also does not factor in administrative and marketing costs to industry as well as government compliance costs associated with implementation of a standard. These costs are inevitably passed on to consumers and reduce any private benefit associated with fuel savings.

5.2 NEW VEHICLE STANDARDS DO NOT ADDRESS EMISSIONS FROM THE WHOLE FLEET

New vehicle emissions standards only affect one aspect of vehicle related abatement options. Essentially, emissions from vehicles can be reduced through improved vehicle technology, improved driving efficiency and reduced distance travelled. As Table 2 below illustrates, new vehicle standards only affect one of these.

Table 2 Emissions reduction: new vehicle standards

Margin for emissions reduction	Vehicle type	Emissions reducing impact from new vehicle emission standards?
Vehicle efficiency	New	Yes
	Existing	No
Driving efficiency	New	No. Standards may create a rebound effect as higher efficiency means less need for efficient driving.
	Existing	No
Distance travelled	New	No. Standards may create a rebound effect as higher fuel efficiency means vehicles can travel further for the same cost.
	Existing	No
Other driving externalities	New	No. Standards may create a rebound effect if they lead to greater distance travelled.
	Existing	No

Source: *The CIE*

In addition, standards may have a detrimental effect on other vehicle related externalities (such as congestion) to the extent that they result in rebound effects i.e. where fuel savings result in the consumer driving more, thus cancelling out the savings.

Rebound effects are a very common finding in the analysis of fuel efficiency policies, and there is a large amount of literature looking at their importance and magnitude. Recent studies include the UK Energy Research Centre⁹ and the International Transport Forum.¹⁰ The US Environmental Protection Agency uses a rebound effect of 10 per cent in their analysis of changes to US fuel efficiency standards.¹¹

It is thus important that other transport sector CO₂ abatement measures be implemented to support any proposed standard and minimise any rebound effects.

9 UK ERC 2007 The Rebound Effect UK Energy Research Centre, October. Available at www.ukerc.ac.uk/asset/3B43125E-EEBD-4AB3-B06EA914C30F7B3E/.

10 See van Dender K, and Crist P 2011 *What does improved fuel economy cost consumers and what does it cost taxpayers? Some illustrations*. International Transport Forum, Discussion Paper 2011 16.

11 EPA (Environmental Protection Agency) 2012 *Regulatory Impact Analysis: Final Rulemaking for 2017–2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards* Assessment and Standards Division Office of Transportation and Air Quality U.S. Environmental Protection Agency.

6 AFFECTING CONSUMER PREFERENCES THROUGH INFORMATION, BEHAVIOURAL CHANGE AND INCENTIVES AND THE NEED FOR AN INTEGRATED PACKAGE OF MEASURES

Consumer preferences are an important factor affecting the national average of carbon emissions intensity for new vehicles. If all Australians who purchased new vehicles in 2014 had purchased vehicles with best-in-class emissions, the national average carbon dioxide emissions intensity would have been reduced to 95g/km, a 50 per cent reduction.¹²

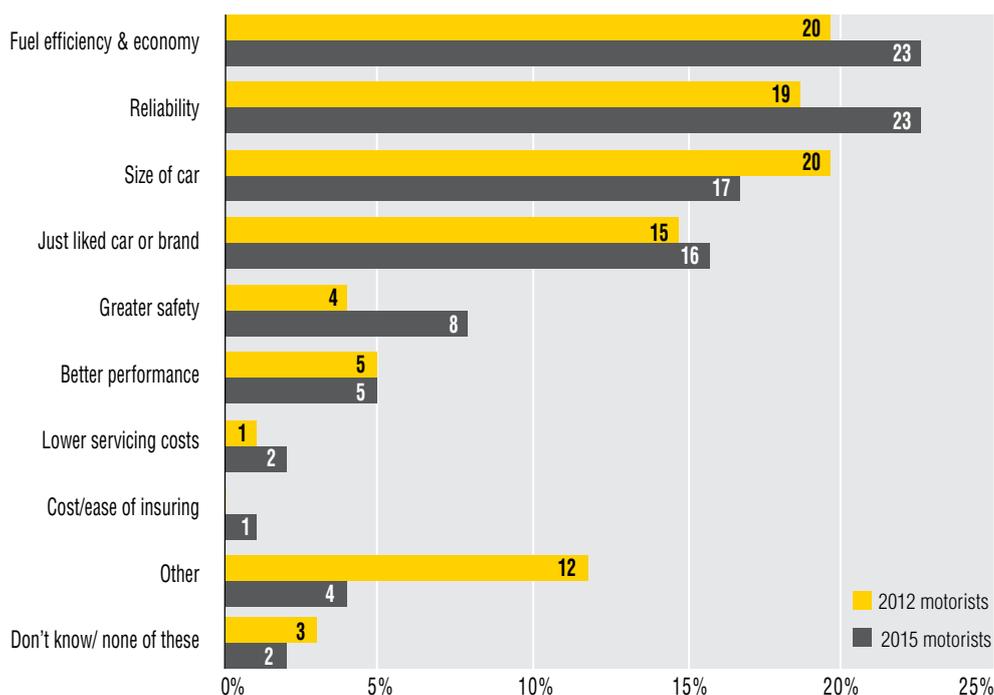
The average emission intensity for new passenger vehicles in the European Union was 127g/km in 2013. In the same year, Australia's average emissions intensity was 182g/km, 43 per cent higher.¹³

Fuel efficiency is important to motorists. A 2015 AAA survey of 1,500 people shows that, of those that bought their vehicles new, the main factors they considered centred on practicality and cost:

- fuel efficiency and economy (23 per cent)
- reliability (23 per cent)
- size of the vehicle (17 per cent)
- liking the brand (16 per cent).

Better performance, greater safety, lower servicing costs and insurance were all secondary considerations for the majority of those surveyed. Interestingly, compared to 2012 when the survey was last run, fuel efficiency and economy increased from 20 to 23 per cent and continued to be equal highest in consideration. However, it was still only the primary decision driver for just one quarter of the people surveyed who had bought their vehicle new.¹⁴

Figure 2 Main Reason for Car Choice: Summary of AAA 2015 Survey



¹² Carbon Dioxide Emissions Intensity New Australian Light Vehicles 2014: Information Paper April 2015.

¹³ Carbon Dioxide Emissions Intensity New Australian Light Vehicles 2014: Information Paper April 2015.

¹⁴ Survey completed by Crosby|Textor in 2015 (unpublished).

Measures that act to influence consumer preference through education, and taxation and other financial incentives will also influence consumer preference.

Providing information to existing vehicle owners is an important element of any policy package to address vehicle emissions, both CO₂ and noxious emissions. The average age of the Australian car fleet is 10.1 years. Australia's light vehicle fleet consists of approximately 13.5 million passenger vehicles.¹⁵ New cars account for approximately 1.15 million sales each year, meaning that 8 per cent of the fleet turns over each year.¹⁶ If the Australian Government emissions policy is focussed on new cars, it would take more than a decade for more than half of the fleet to be covered by a standard after its implementation. Improved information to drivers across the full fleet about better driving behaviour and the financial savings to consumer from more fuel efficient vehicle use would assist in meeting the government's emission reduction targets.

An example of a program that provides information to consumers that results in a change in behaviour is eco-driving programs. Eco-driving information programs encourage driving behaviour that generates fuel savings to consumers and also has the potential to affect the whole vehicle fleet rather than just new vehicles. A case study of a RACQ program and associated modelling completed by CIE is outlined in Section 2. This provides an important lesson to policy makers on the ability of broad measures that can achieve significant CO₂ abatement at minimal cost.

The AAA believes that the most appropriate response to greenhouse and noxious emissions is through an integrated package of measures which spreads the contribution across the entire fleet. The AAA recommends that the Australian Government consider the following measures as part of a package. All of these measures should be considered as part of the future RIS processes for fuel standards, Euro 6 and CO₂ before any specific measure is adopted.

¹⁵ www.abs.gov.au/ausstats/abs@.nsf/mf/9309.0

¹⁶ www.fcmai.com.au/Sales/2015-new-car-market

INTEGRATED PACKAGE
OF MEASURES

- 1** Provision of information to consumers about the emissions and fuel efficiency properties of a range of vehicles, and how to get best fuel efficiency from the existing fleet. This could take a variety of forms, and would involve extension of information already available in the Green Vehicle Guide and other related forums.

- 2** Active measures to reduce the cost of more efficient vehicles, in particular, a review of taxes on imports (tariffs and luxury car tax). Other measures may include incentives such as feebates, encouragement of states to modify registration fees, and the consideration of road user charging in the long term.

- 3** Transport system and infrastructure improvements, including deployment of intelligent transport systems, designed to increase efficiency of vehicle use (reduced travel time, less time spent idling in congestion) and improved choice of mode (public transport, walking, cycling infrastructure).

- 4** Better understanding of emissions performance in actual use (on-road testing).

- 5** Support for personal importation of newer, more efficient, used cars provided they meet current Australian Design Rules (in line with existing AAA policy) so as to help reduce the age of Australia's vehicle fleet and therefore improve environmental performance.

- 6** Consideration of fuel and vehicle standards, including introduction of Euro standard equivalents, provided this is demonstrated to be necessary in achieving emissions reduction targets (CO₂ and noxious emissions) and does not remove fuel choice for the existing fleet.

- 7** Consideration of formal vehicle emissions standards such as those currently in many other countries, accompanied by similar incentive arrangements that have been employed overseas to remove barriers to consumers accessing the required vehicle technology.

Further detail around these measures is included in Section 2, however in summary considerable gains at minimal cost can be achieved by broadening the package to include a suite of reforms rather than just focusing on a standard.

7 FACTORS TO BE CONSIDERED IN THE REGULATION IMPACT STATEMENTS (RIS)

One of the core requirements of a RIS is to establish the underlying rationale and objectives for the proposed regulation, and to demonstrate that the proposal achieves these objectives at minimum cost; that is, that there are no other non-regulatory or regulatory alternatives that could achieve the same objectives at lower cost.

The rationale for an efficiency standard has not been clearly set out, and this would be a key requirement of any future RIS. The rationale has a substantive impact on how benefits and costs are interpreted and treated in the cost-benefit analysis that must underlie the RIS.

Table 3 below sets out the key cost and benefit factors that need to be considered in a RIS.

Table 3 Factors to include in a RIS

Factor	Description
BENEFITS	
Private value of fuel savings	The treatment of these benefits in the cost-benefit analysis (CBA) underlying the RIS depends crucially on the understanding of the original rationale for the standard. In the absence of clearly identified fuel efficiency market failures, it is not appropriate to include private benefits. In the presence of market failures, at least some of the private benefits should be included.
Value of emissions reduction	This needs to be understood in the wider context of emissions policy and includes both CO ₂ and other emissions. Emissions reductions should be valued at the economy wide cost of emissions reductions, accounting for the fact that there may be other low cost abatement options available.
COSTS	
Technology cost or cost of fleet mix change	There are a wide range of technology cost estimates available. The analysis should allow for sensitivity around estimates. As Australia is a technology-taker (technological options are likely to be driven by other markets), the standard may also involve costs (from the Australian import perspective) in terms of upgrading the efficiency of the fleet, compared with what would otherwise have been the case.
Opportunity cost	This factor is often excluded from explicit consideration. However, focus on fuel efficiency characteristics of vehicles must involve some opportunity cost in terms of other characteristics that consumers value like size or reliability.
Rebound effect	It is widely understood that energy efficiency measures involve a 'rebound effect'. In the case of a vehicle efficiency standard, this an increase in kilometres travelled due to the effective reduction in the cost of vehicle travel brought about by increased fuel efficiency.
Other implications of the rebound effect	Increased kilometres travelled will have other implications, including increased congestion, increased non-CO ₂ emissions, road safety costs etc.
Indirect implications for fuel prices	Fuel efficiency from standards may require improvements in fuel quality. This will have indirect implications for fuel choice and prices; this needs to be included in the analysis. Note that changes in fuel prices could affect all vehicles, not just new vehicles.
Compliance costs	Complying with the standard will involve compliance costs for fleet importers and managers.
Administrative costs	Administering the standard will involve government administration costs.
Cost of taxation (to cover administration costs)	Administration costs will involve the use of tax revenue, which has an opportunity cost.

This section provides direct responses to questions posed in the *Vehicle Emissions Discussion Paper* released on 11 February 2016 and is set out in the same format as the Discussion Paper.

Note: the AAA has not provided responses to all questions as some were outside the scope of the AAA's policy expertise.

8 OPTIONS TO REDUCE VEHICLE EMISSIONS

8.1 IMPLEMENTATION OF EURO 6 NOXIOUS EMISSIONS STANDARDS FOR LIGHT AND HEAVY VEHICLES

The AAA is of the view that implementation of Euro 6 emissions standards should only be considered on the basis that it is the appropriate response to a known market failure. The Discussion Paper does not provide evidence of a market failure or of the extent of urban air quality impacts associated with motor vehicles.

The AAA believes that simply stating that Australia has less stringent standards than other comparable countries does not make the case for increasing standards here.

Q1 What are the likely costs and benefits of adopting Euro 6 emissions standards for light vehicles and/or Euro 6 emission standards for heavy vehicles?

The costs involved with adoption of Euro 6 emission standards for light vehicles will include administration and compliance costs (for vehicle manufacturers and regulators), opportunity costs resulting from the imposition of a standard, vehicle technology costs and vehicle operating costs such as fuel and vehicle maintenance. The AAA is mindful that all of these costs are likely to be passed on to motorists, and hence the case for adoption of Euro 6 must be carefully considered against the requirements contained in the *Council of Australian Governments Best Practice Regulation—A Guide for Ministerial Councils and National Standards Setting Bodies*.

See Table 3 in Section 1 that sets out the key cost and benefit factors that need to be included in a Regulation Impact Statement (RIS).

Q2 If Euro 6 standards were adopted, when would be an appropriate start date and why?

If the case to adopt Euro 6 standards is justified, the implementation timeframe will need to accommodate suitable transition times for industry in order to avoid adverse effects on consumers. This consideration may involve vehicle manufacturers and fuel suppliers, noting that the question regarding the need for increased fuel quality standards needs to be answered.

The AAA notes that there was a previous commitment for implementation of Euro 6 standards in Australia by 2018, and that Euro 6 certified vehicles are currently being sold into the Australian market. The AAA encourages the Australian Government to work with industry and stakeholders to undertake consultation on its forthcoming Regulation Impact Statement to determine whether a regulatory response is required, and if so to determine a suitable timeframe for its implementation.

Q3 To what extent do current Australian fuel quality standards limit the adoption/import of existing technologies and models that meet Euro 6 specifications?

The AAA is aware of conflicting views expressed by the vehicle manufacturing and fuel supply industries regarding the necessity for improved fuel quality standards to support Euro 6 engines. The AAA understands that there are some vehicle models currently being supplied to the Australian market fitted with 'Euro 6' engines, but the AAA is not in a position to provide definitive statements on the need for changes to Australia's fuel quality standards to support the adoption of Euro 6 standards.

The AAA welcomes Minister Fletcher's commitment to an independent assessment of the link between fuel quality standards (sulphur content) and Euro 6. The AAA further believes that a decision on Euro 6 should be made after a decision has been reached on fuel quality standards.

RECOMMENDATION 3

The AAA welcomes the Australian Government's commitment to commission independent research into the opposing views of the vehicle manufacturing and fuel supply industries to better understand the interaction between Australian fuel quality and Euro 6 vehicle technologies. The AAA recommends that no decision is taken on Euro 6 until after this work has been completed.

Q4 Are there other ways governments could encourage the purchase and supply of vehicles that meet Euro 6 emissions standards?

Improved advice and guidance for consumers in selecting vehicles with low levels of noxious emissions would assist in helping consumers purchase these vehicles. An important element of this advice is independent and credible information that is presented to consumers in an easy-to-understand manner. The Australian Government's Green Vehicle Guide (GVG) provides consumers with information on CO₂ emissions, fuel consumption, fuel savings and noxious emissions, but fails to synthesise this into readily digestible guidance. From exposure to guidance such as energy labeling of electrical appliances and ANCAP vehicle safety ratings, consumers are familiar with star ratings and the GVG should provide this guidance on vehicle emissions.

Government fleet buying policies could also have a role to play in encouraging vehicle brands to provide vehicles to the market that emit low levels of noxious pollution. Fleet buying policies have been shown to be effective in promoting the availability and uptake of vehicles with 5-star ANCAP safety ratings.

Lastly, support for personal importation of newer, more efficient, used cars provided they meet current Australian Design Rules (in line with existing AAA policy) will also help reduce the age of Australia's vehicle fleet and therefore improve environmental performance.

Q5 What measures could governments adopt to ensure vehicles continue to comply with noxious emission requirements beyond the point of supply to the market?

To ensure continued compliance of vehicles with noxious emissions standards beyond the point of supply to the market, governments should consider in-service audit testing using laboratory tests, real driving emissions tests, or a combination of both for new cars. Similar audit tests of vehicles prior to supply to the market should also be undertaken to ensure that the imposed standards are being met and consumers are receiving the full value of the standards for which they are paying.

Q6 Should the Australian Government conduct a review to consider whether noxious emissions standards for motorcycles should be adopted in Australia?

The AAA does not have a view on this question.

8.2 IMPLEMENTATION OF FUEL EFFICIENCY (CO₂) STANDARDS FOR LIGHT VEHICLES

The National Transport Commission's report *Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014*¹⁷ shows a steady reduction in the national average carbon dioxide emissions intensity for new passenger and light commercial vehicles, 2002–14. The report also shows a reduction in the average carbon dioxide emissions intensities by segment between 2013 and 2014 for all vehicle segments except 'upper large' and 'large' cars (both of which are significantly influenced by sales of Australian-built vehicles, for which the average carbon dioxide emissions intensities increased). This indicates that newer vehicles emit less CO₂ than older vehicles. Therefore, strategies to lower the average age of the Australian vehicle fleet will also yield CO₂ reductions. This is true regardless of whether a fuel efficiency (CO₂) standard is also introduced.

In considering a mandatory CO₂ emissions standard for new light vehicles, the AAA's primary objective is to ensure that any such standard will not unduly burden Australian motorists and represents the least cost across the entire economy. The AAA supports measures to reduce motor vehicle CO₂ emissions, as long as the benefits of reduced fuel consumption (and lower CO₂ emissions) will not be nullified by excessive increases in new vehicle prices, reduced choice of vehicle models, or reduced vehicle safety.

The AAA notes that as a greenhouse measure alone, an emissions standard only affects a subset of the factors that need to be changed to reduce vehicle emissions. This point is well recognised in the broader literature¹⁸ and the AAA considers that the Australian Government should explicitly take this into account.

The AAA is of the view that an integrated strategy would be more effective in reducing CO₂ emissions than a CO₂ standard in isolation as this would cover the whole light vehicle fleet, not only new cars. This could include financial incentives, changes to taxes, initiatives targeting driving behaviours (e.g. eco-driving), vehicle purchasing decisions (e.g. feebates, fleet purchasing policies), road infrastructure improvements (e.g. traffic flows, congestion reduction) and alternative transport options.

RECOMMENDATION 4

Australian motorists should carry a proportionate burden in reducing greenhouse gas emissions. In addition to new CO₂ standards, the Australian Government should consider an integrated strategy that considers other mobility objectives and externalities for the whole vehicle fleet when interventions are developed (see p. 16 for full list of recommended measures).

¹⁷ [http://ntc.gov.au/Media/Reports/\(28DF073D-71D6-40BB-8FC4-C358C475A2B3\).pdf](http://ntc.gov.au/Media/Reports/(28DF073D-71D6-40BB-8FC4-C358C475A2B3).pdf) accessed on 24 March 2016.

¹⁸ See, for example, Parry I, Evans D and Oates, W 2010 *Are Energy Efficiency Standards Justified?* Resources for the Future Discussion Paper DP 10-59, RFF, Washington, and the many references cited within this report.

Q7 What are the costs and benefits of adopting a fleet average standard for fuel efficiency (CO₂)?

One of the core requirements of a RIS is to establish the underlying rationale and objectives for the proposed regulation, and to demonstrate that the proposal achieves these objectives at minimum cost; that is, that there are no alternatives that could achieve the same objectives at lower cost.

As already argued, the rationale for an efficiency standard has a substantive impact on how benefits and costs (the other key requirement of a RIS) are interpreted and treated in the cost-benefit analysis that must underlie the RIS.

See Table 3 in Section 1 that sets out the key cost and benefit factors that need to be included in a RIS.

Q8 If standards were adopted, what would be an appropriate fleet average target for 2020 and why? What would be an appropriate target for 2025 and why?

The appropriate target under a standard should be set by balancing the costs and benefits of that particular target. Clearly, however, this must be in the context of the specific rationale for the standard in the first place.

For example, if private benefits are to be appropriately included in the cost-benefit analysis, then the key trade-off is the point at which increased vehicle costs offset the fuel cost savings. This will imply a considerably tighter standard than cases in which inclusion of private benefits is not appropriate.

If the inclusion of private benefits is not appropriate (that is, if market failures are not clearly identified), the key trade-off is between the cost of abatement under a standard and the cost of abatement under alternative policies or in other parts of the economy.

Q9 How would standards affect the range of vehicles offered in Australia?

The AAA is unaware of any particular analysis of the impact of a standard on the range of vehicles offered, but is strongly supportive of more research into this area given that this is a key policy principle of the AAA's outlined in Section 1.

RECOMMENDATION 5

The Australian Government needs to ensure that any CO₂ standard results in real fuel savings across the whole fleet whilst not compromising vehicle cost, safety or choice. If cost, safety or choice is restricted, this would need to be outlined in detail and considered in the RIS.

Q10 **Apart from standards, are there any complementary or alternative measures that could be adopted to encourage the purchase and supply of more fuel efficient vehicles?**

The nature of complementary measures again depends on the underlying rationale for the standard in the first place. It is unlikely that efficiency standards will address all the identified market failures in fuel efficiency. In this case, the main complementary measure is the continued provision of improved information to consumers.

A major component of this should be provision of information about the performance of fuel efficient vehicles under actual road conditions rather than test conditions. Because an efficiency standard will be based on test performance, it is unlikely itself to solve the information problem relating to actual vehicle performance in on-road conditions.

Other complementary measure that should be considered by government include financial incentives, changes to taxes, initiatives targeting driving behaviours (e.g. eco-driving), vehicle purchasing decisions (e.g. feebates, fleet purchasing policies), road infrastructure improvements (e.g. traffic flows, congestion reduction) and alternative transport options.

Q11 **What would be the most efficient and effective measures to improve the fuel efficiency of heavy vehicles in Australia?**

The AAA does not have a view on this question.

Q12 **Should the Australian Government conduct a review to consider whether fuel efficiency measures for motorcycles should be adopted in Australia?**

The AAA does not have a view on this question.

9 OTHER COMPLEMENTARY MEASURES TO REDUCE EMISSIONS

9.1 FUEL QUALITY STANDARDS

Emission standards may have implications for fuel quality. There is no consensus on the quality of fuel required in order to achieve reductions in noxious and CO₂ emissions. It is possible that the introduction of regulatory standards will make regular unleaded petrol unsuitable for new vehicles. Consequently, it is possible that the specification of regular unleaded petrol may be amended, or the availability of this fuel will be reduced. This would happen at cost to all drivers of light vehicles, whether new or used, and many drivers of older vehicles would pay additional cost for higher quality fuels without any emissions benefits being gained from their vehicles. The Australian Government has not adequately assessed the implications of emission standards on fuel standards, or vice-versa.

RECOMMENDATION 6

The Australian Government must ensure any amendments to fuel standards and the corresponding price effects are detailed in its RIS so that the full costs of the introduction of a standard are taken into account.

Q13 Are there changes to fuel quality standards that could assist with reducing noxious emissions and/or CO₂ emissions?

Fuel quality and vehicle standards need to be aligned in order to achieve targeted reductions in emissions. In the context of CO₂ emissions and noxious emissions from light vehicles, the question of fuel quality is primarily a question about the effect of high sulphur content.

Sulphur content affects noxious emissions and CO₂ emissions differently. The quality of fuel required therefore depends on the desired reductions in noxious emissions, and on the desired reductions in CO₂ emissions. The following discussion will therefore consider the two issues separately in order to avoid confusion.

Noxious emissions

Sulphur content in fuels can affect noxious emissions by degrading emission control systems such as catalysts and particulate filters. However, the extent to which this may be a problem for vehicles to be supplied to the Australian market is unclear. Vehicle manufacturers claim that sulphur levels in Australian petrol would need to be reduced to support tightened noxious emission standards, whereas the petroleum industry disputes this. There does not appear to be any robust objective evidence on which to judge the merits of these claims. The AAA suggests that the Australian Government may need to undertake some testing to gather suitable data as a basis for a decision on the need for lower sulphur levels.

If a reduction in the sulphur level in petrol is required to support Euro 6 vehicles, the RIS will need to address the ramifications for the wider motoring public and consider scenarios in which the sulphur level in 91 Research Octane Number (RON) unleaded petrol is reduced below the current limit of 150 parts per million, or the availability of 91 RON unleaded is adversely affected. This could have significant cost implications for the vast majority of motorists who use 91 RON fuel. This would be particularly bad for those that drive older vehicles, who would be forced to pay a higher price for fuel, without any emissions benefits being realised.

Unless the case is made that there is an urban air quality problem in Australia and this problem is generated by light vehicles, there may not be a strong rationale for enforcing higher fuel standards to achieve reductions in noxious emissions.

CO₂ emissions

Reductions in CO₂ emissions are achieved through improved fuel efficiency. Whether high sulphur content in fuel affects fuel efficiency is not completely clear, although the majority of views seems to suggest that sulphur levels in Australian fuels are unlikely to be an impediment to the introduction of a CO₂ standard for motor vehicles. For example, the International Council on Clean Transportation asserts that 'gasoline sulphur content does not present an obstacle for prominent vehicle efficiency technologies for compliance with CO₂ standards'.¹⁹ On the other hand, the European Commission states that: 'Fuel quality is an important element in reducing the greenhouse gas emissions from transport'.²⁰ This is seemingly consistent with the position of the Discussion Paper: 'The composition of fuels can directly affect noxious and CO₂ emissions from road transport (p.12)'.

However, the Discussion Paper does not take an obvious stance on the issue of sulphur content and CO₂ emissions sulphur. It is crucial that the Australian Government arrives at a clear position on this question.

There is also a possible need to consider increased requirements for RON fuels to support a CO₂ standard. Ambitious fuel consumption targets may result in vehicle manufacturers specifying the use of high octane fuels to achieve fuel consumption reductions. The widespread availability of suitable fuels and the associated costs, including any impact on drivers of older vehicles, need to be considered.

¹⁹ The International Council on Clean Transportation (2014), *Memo on Fuel Quality and Light Vehicle CO₂ Emission Standards for Australia*, p. 1.

²⁰ European Commission: Climate Action, *Road Transport: Reducing CO₂ Emissions from Transport*, http://ec.europa.eu/clima/policies/transport/vehicles/index_en.html, accessed on 21/03/16.

Q14 Do you have new information that could assist with the assessment of costs and benefits of adopting more stringent fuel quality standards, in particular for petrol?

The AAA supports the proposal raised during the Vehicle Emission Consultation Session on 4 April 2016 by Minister Fletcher for an independent consultant to consider the need for amended fuel quality standards for the introduction of Euro 6. Given the potential impact changes to fuel standards could have on consumers in the way of price and choice, the AAA is interested in being involved in this process.

RECOMMENDATION 7

The AAA is supportive of an independent consultant considering the need for an amendment to fuel quality standards and is interested in being a part of this process given the potential for consumers to be affected.

Q15 To what extent, if any, do current fuel quality standards limit the choices of vehicles/ technologies in Australia and why?

The AAA has not received any complaints from its members about Australian fuel quality limiting the availability of particular vehicles.

Q16 Are there other measures that governments could adopt to encourage the supply and purchase of higher quality fuels?

The Australian Government should first adequately address the question of whether higher quality fuel is required in order to meet its emissions targets.

RECOMMENDATION 8

The AAA recommends the Australian Government properly assess the effects emission standards would have on fuel quality.

9.2 INFORMATION AND EDUCATION

The AAA considers that the provision of information on vehicle fuel efficiency is a crucial part of the policy package needed to improve the fuel economy of vehicles and reduce vehicle emissions.²¹

In relation to labelling in particular, according to the International Energy Agency, a combination of direct disclosure with a comparative rating is likely to be the most useful for consumers.²² Countries that have successfully adopted a comparative rating in combination with the direct disclosure method include the United States, the United Kingdom and New Zealand.

The AAA considers that there is considerable scope to make the information provided to Australian consumers under the current GVG easier to understand by incorporating comparative information as well as providing more information about fuel operating cost savings.

The existing Australia–New Zealand shared labelling system for the energy efficiency of appliances²³ could also be leveraged by incorporating the widely accepted and recognised star ratings.

RECOMMENDATION 9

The AAA recommends that the fuel consumption label and the Green Vehicle Guide are reviewed with a view to incorporating star ratings and operating cost savings to consumers like the models used in the United States and New Zealand.

RECOMMENDATION 10

The AAA recommends that the Green Vehicle Guide should publish the test results for the levels of individual noxious pollutants for each vehicle listed on the Green Vehicle Guide.

RECOMMENDATION 11

The AAA recommends that information provided on fuel consumption labels and the Green Vehicle Guide be embedded into online platforms that consumers visit when researching potential vehicles and that the existing Australia/New Zealand shared labelling system for the energy efficiency of appliances be leveraged if possible.

RECOMMENDATION 12

The AAA recommends that the Australian Government consider providing the mechanism for different jurisdictions to 'opt-in' to used car information schemes by providing templates and backend technical requirements for the production of labels and the option to search used cars on the current Green Vehicle Guide website. This information would need to include relevant caveats around the reliability of used car data.

RECOMMENDATION 13

The AAA supports the Discussion Paper's suggestion of developing a set of national principles and effective strategies for the implementation and dissemination of eco-driving advice, however this would need to be adequately funded by relevant road authorities or incentivised via the Australian Government's Emissions Reduction Fund.

21 IEA 2012, *Improving the Fuel Economy of Road Vehicles—A Policy Package*, OECD/IEA, Paris www.iea.org/publications/pp5_fuel_economy_final.pdf

22 IEA 2012, *Improving the Fuel Economy of Road Vehicles—A Policy Package*, OECD/IEA, Paris www.iea.org/publications/pp5_fuel_economy_final.pdf

23 E3 program, see www.energyrating.gov.au/

Q17 Have you found the information provided on the fuel consumption label and the Green Vehicle Guide website useful in considering the purchase of a new vehicle?

The AAA considers that the removal of star ratings from labels has significantly reduced the scheme's effectiveness.

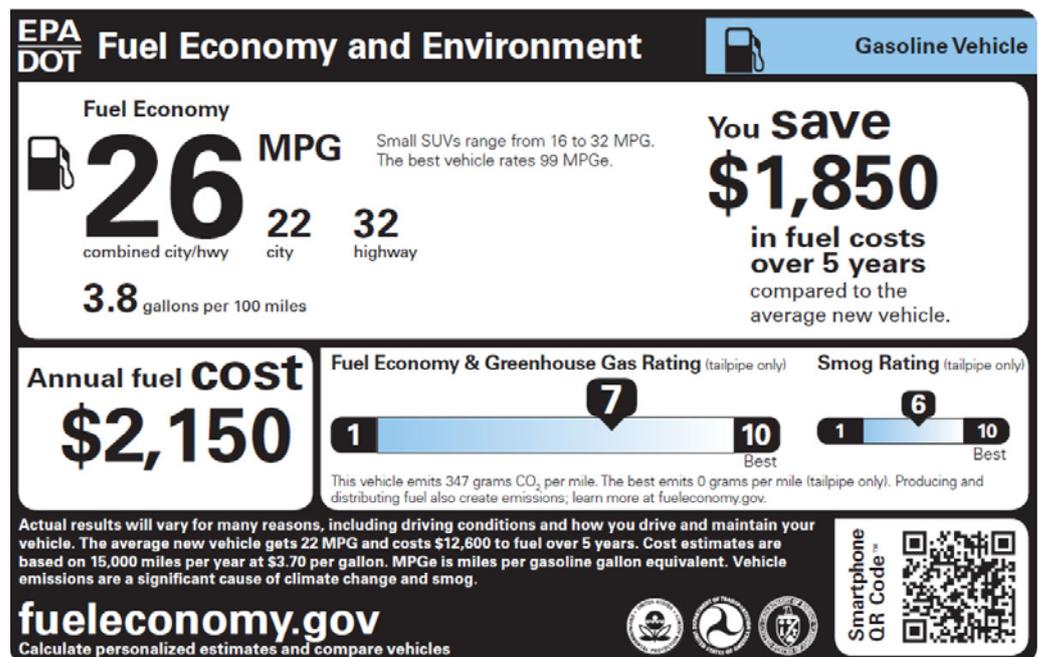
An independent AAA survey of 1,500 road users found that only 3 per cent of motorists considered that the environmental impact of motoring was their top priority in relation to road use and transport.²⁴ However almost 20 per cent indicated that the cost of cars and motoring, including fuel was their top concern. Consequently, refocusing the GVG to appeal to motorists concerned about costs as well as environmental factors could result in increased effectiveness. This would achieve environmental benefits as well as savings to households.

Q18 How could the information provided on the fuel consumption label and the Green Vehicle Guide be improved to encourage the purchase of more efficient vehicles?

The AAA remains strongly opposed to the removal of star ratings from the GVG as many consumers will be unable to understand the complexity of vehicle emissions. The AAA supports the enhancements of the GVG including the improved fuel calculator, search function and multiple platform and device support, but these need not exclude the provision of star ratings.

While the AAA supports the Discussion Paper's suggestion of reviewing the GVG in 2016, we believe that the star ratings should be restored as an interim measure. The GVG review should consider including operating cost savings to consumers as included in the US (see Graphic 1) and New Zealand models and leverage the successful labelling system for the energy efficiency of appliances. Finally, the review could consider expanding the labelling system to incorporate used cars.

Graphic 1 United States Fuel Economy Label



Source: United States Environment Protection Agency, www.epa.gov

24 Survey conducted by Crosby|Textor in 2015.

Q19 Have manufacturers and dealers found the information provided on the fuel consumption label and the Green Vehicle Guide useful for product planning and marketing?

The AAA does not have a view on this question.

Q20 At what point in the decision making process is information on vehicle efficiency most effective in influencing purchasing decisions and what information mediums are most effective?

Consumers are changing the way they purchase cars all over the world. The traditional dealership model is also evolving, which will have an impact on how information is delivered to consumers into the future. Consumers are increasingly researching vehicle choice online before speaking with dealers, and this provides an opportunity for fuel efficiency and emissions information to be provided early in the decision making process.

McKinsey's 2013 Retail Innovation Consumer Survey of 4,500 customers across the US, Europe and China found that the average number of customer visits to dealers before buying a car has dropped from up to five to just one for some brands in some geographies.²⁵ In addition, more than half of the surveyed buyers would consider buying a vehicle online, 90 per cent of car buyers turn to a Google Search for a more efficient research process and lastly consumers are now taking less time to decide on a final purchase.

Importantly, there is scope for targeted information campaigns to influence a consumer's car choice during the research phase. Four out of five of those surveyed were undecided on the brand or model they wanted when they began their research journey and one in four individuals purchased a brand they discovered during their research (up from one in ten in 2011), and half of purchasers bought a brand that had not been a favourite at the start.

Australian research delivers similar results. Consumers, much like the international trend, are turning to the internet when contemplating car purchases and they are increasingly looking for easy, entertaining ways to gain information quickly. According to a recent Google report, YouTube has emerged as a prominent resource for consumers. The study found that 53 per cent of buyers used YouTube to watch automobile videos, and that number surged to 75 per cent for luxury automobile buyers.²⁶

In light of this research, it is critical for information to be available to consumers early in their research phase. Information provided by sources such as the GVG needs to be embedded into online platforms that consumers visit when researching potential vehicles. By the time a consumer visits a car dealership and has the opportunity to view the GVG label, he or she has often already made a decision on a brand and the potential for the information to affect consumer choice is limited.

Emissions information could be incorporated into independent car rating programs such as the Australia's Best Cars program run by the AAA, blogs, vehicles manufacturer websites, search sites such as carsales.com and other online resources. The review into the GVG should look at different platforms the star ratings could be embedded into. Different online platforms like Youtube or social media channels should also be explored.

25 McKinsey's 2013 Retail Innovation Consumer Survey: Accessed at: https://www.mckinsey.de/sites/mck_files/files/brochure_innovating_automotive_retail.pdf

26 <https://www.thinkwithgoogle.com/articles/consumers-take-the-wheel-how-digital-is-changing-the-australian-auto-industry.html>

Q21 What could governments do to improve the availability of data on fuel efficiency of used vehicles?

The AAA understands that some countries, such as New Zealand, require traders and private sellers to affix a fuel economy label, and display information on trading websites, where data are available. The AAA appreciates that the Australian Government does not have jurisdiction over second hand car sales, however the review could provide the mechanism for different jurisdictions to 'opt-in' to such an arrangement by providing templates and backend technical requirements for the production of labels and the option to search used cars on the current GVG website.

Consideration would also need to be given to the accuracy and validity of fuel consumption information for a used vehicle from the original test of the vehicle's model when it was new.

Q22 How could governments encourage more efficient driver behaviour?

The AAA supports the view that significant fuel efficiency and cost savings for individual motorists can be achieved through changing driver behaviour, collecting and analysing fuel consumption data, planning more efficient routes, better load management, purchasing vehicles appropriate for their use and properly maintaining vehicles.

Through the AAA's member clubs various eco-driving initiatives have been trialed and some are currently underway. The RACQ completed a major investigation into eco-driving in 2012 jointly funded by the Queensland Government. It found that average yearly fuel savings of \$98 were achieved when an online learning tool was provided to research participants. The report found that the online tool was the cheapest and easiest option to implement on a mass scale. This training had the highest cost-benefit ratio and the report indicated that it could also be easily incorporated into learner driver training.²⁷

Further modelling of this program and the impact on emissions is outlined in the case study below.

²⁷ RACQ EcoDrive Research Study – Final Report: 2012

CASE STUDY RACQ ECO-DRIVING PROGRAM

Table 4 below presents costs, benefits and net benefits of teaching all Australian drivers 'eco-driving'. Reductions in fuel consumption are based on findings reported in Graves et al 2012.²⁸

The analysis uses RACQ option 1, which is an online module that was found to reduce fuel consumption by an average of 4.5 per cent. It could create \$22 billion of net benefits between 2015 and 2040. This is associated with abatement of 76Mt of CO₂ over the same period.

Table 4 Costs, benefits and net benefit of teaching drivers 'eco-driving' relative to business as usual (billions \$, 2015 dollars, NPV terms)

Cost or benefit	Eco-driving options
	RACQ OPTION 1
Cost: Dead Weight Loss (DWL) of taxation that is levied to pay for program	-0.5
Cost of program participants time	-1.7
Benefit: fuel expenditure savings	23.4
Benefit: value of reduced emissions	0.9
NPV	22.1

Notes: There is a direct financial cost to government of providing eco-driving training. However, as this is a transfer, this direct financial cost is not included (or included as zero cost) in the economic cost-benefit analysis. The dead weight loss that is created by this transfer is included as an economic cost. Cost of program includes updated training every 10 years. *Source: The CIE.*

The RACQ study finds that drivers' fuel use declines after they have completed eco-driving training. If fuel use had not declined after the training, this would suggest there is no underlying problem or a different problem. As eco-driving training is creating private benefits (fuel savings) by solving a problem (driving habits), we attribute the private benefits created to the training. The opportunity costs created by the training are the dead-weight-loss of the taxes required to pay for the schemes and the time cost to drivers when they participate in the scheme.

The AAA supports the Discussion Paper's suggestion of developing a set of national principles and effective strategies for the implementation and dissemination of eco-driving advice. However this would need to be adequately funded by relevant state road authorities or incentivised via the Australian Government's Emissions Reduction Fund.

In addition, the AAA is a strong advocate for road system reform with the introduction of road user charging. The current system is inefficient because road users do not receive signals to use the network in the most cost-effective way thus resulting in overuse in some situations with the result being increased fuel costs and emissions. According to Infrastructure Australia 'the absence of price signals means users have only limited information and incentives to use the network efficiently, while providers have poor information on which to base investment decisions'.²⁹

The AAA supports a reformed charging framework for roads which would see all existing taxes and fees removed and replaced with direct charging that reflects each user's own consumption of the network with appropriate concessions for lower socio-economic users and regional and rural network users that have little alternative transport options.

²⁸ Graves G, Jeffreys I & Roth M 2012 *RACQ EcoDrive Research Study Final Report*. RACQ, October.

²⁹ http://infrastructureaustralia.gov.au/policy-publications/publications/files/Australian_Infrastructure_Plan.pdf

9.3 FLEET PURCHASING POLICY

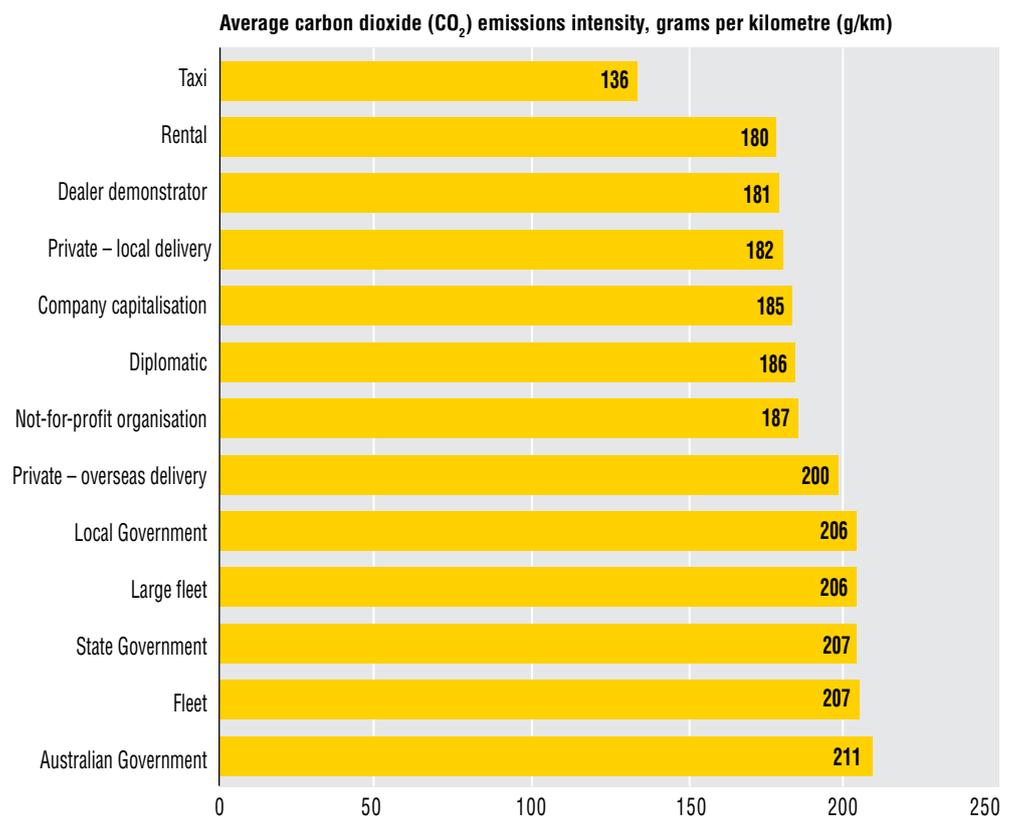
The AAA considers that a significant opportunity exists to review the Australian Government's fleet policy given that the three current Australian light vehicle manufacturers, Ford, GM Holden and Toyota have all announced that they will close operations by the end of 2017.

Q23 What role, if any, should the government fleet purchasing policy play in encouraging the supply and purchase of more efficient vehicles?

Currently the Australian Government fleet performs poorly when compared to private and other business passenger vehicles. Private buyers purchased vehicles with the lowest average emissions intensity (182 g/km), followed by business buyers (193 g/km) and government buyers (207 g/km).³⁰ Also when trends are examined, business buyers recorded a 2.5 per cent improvement in average emissions intensity while government only recorded a reduction of 1.5 per cent between 2013 and 2014.

When these buyer types are broken down further, it is clear that the Australian Government fleet lags behind other businesses when carbon dioxide emissions are examined.

Figure 3 Average CO₂ emissions for new passenger and light commercial vehicles by detailed buyer type



Source: NTC: Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014: Information Paper: April 2015

³⁰ NTC: Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2014: Information Paper: April 2015

There is also strong evidence to suggest that changes in fleet policy have a significant impact on manufacturers. According to a recent Federal Chamber of Automotive Industries submission:

Vehicle brands face a range of de-facto regulations in the form of safety and environmental star ratings and buyer requirements. They face a range of competitive pressures to continually improve environmental performance and safety standards. For example, around 30–50 per cent of vehicle sales are sold to governments and fleets that frequently require a 5 star ANCAP rating and/or 4 star GVG rating.³¹

RECOMMENDATION 14

The AAA recommends that the Australian Government takes the lead in reviewing its vehicle procurement policy to ensure average carbon dioxide emission intensities are lower than those in the broader Australian fleet.

9.4 TAXATION MEASURES

The AAA is supportive of measures that create incentives for households and businesses to explore low-cost ways to reduce greenhouse gas emissions in addition to bolstering consumer information and education which was detailed in Section 9.2.

However, while the AAA accepts that motorists should contribute to emissions reduction targets, they should not be expected to bear more than their fair share of the burden. The Australian Government estimates that Australians already spent around \$28 billion in 2013–14 in a range of different taxes and charges; this makes motoring one of the most highly taxed activities in our economy.³²

The AAA believes that the tax system for motorists needs to be reviewed with a view to promoting the Australian Government's policy objectives in relation to higher efficiency vehicles. This needs to be consistent with other policy objectives of road safety and the long-term objective of transport market reform.

RECOMMENDATION 15

The AAA does not support the burden of taxation increasing for road users as they currently pay almost \$28 billion annually in taxes and charges.

RECOMMENDATION 16

The AAA supports abolishing the Luxury Car Tax as it is an inefficient tax which targets vehicles that are often the leaders in providing safety and environmental benefits.

RECOMMENDATION 17

The Australian Government should publish a best practice guide for state and territory government that would seek to influence their concession policies around fuel efficient and low CO₂ emitting vehicles.

RECOMMENDATION 18

The Australian Government commit to an Infrastructure Australia led public inquiry into transport market reform and the benefits of road user pricing in the context of the fragmented, underfunded road network.

³¹ Federal Chamber of Automotive Industries Submission to the Inquiry into aspects of road safety in Australia

³² Bureau of Transport, Infrastructure and Regional Economics (BITRE) 2015, *Australian Infrastructure Statistics Yearbook 2015*

Q24 How could taxes and charges for motor vehicle purchase and/or use be reformed to encourage the purchase and supply of more efficient vehicles?

In addition to measures that bolster information and education, the AAA is supportive of the implementation of broader transport market reform in the long term. A reformed fuel taxation and road pricing system would ensure there is transparency for consumers, maximising the potential for behavioural change through price signals and creating a mechanism that ensures revenue is invested in better transport infrastructure, including emission-reducing improvements to the transport network that could include smart technology and intelligent transport systems.

An ideal road user charge would reflect factors such as location, time of day, vehicle mass and distance travelled. It would also reflect the costs of road wear, congestion, environmental impact and road crashes. The model would also include appropriate offsets for users that have little public transport alternatives (regional and rural users) and have lower capacities to pay (i.e. access to concessions like those that currently exist for registration and other motoring fees). The model would only be supported by the road-using public if it progressively (i.e. revenue-neutrally) replaced all current motoring fees and charges and was supported by the findings of an evidence based, independent public inquiry examining the implications of its implementation by Infrastructure Australia.

The AAA supports a road user charge for a number of reasons; key to this is the fairness of the model. The model would not discriminate between fuel efficient new cars and cars that may have been on the road for over 10 years and are often owned by drivers that cannot afford a new car. Obviously the current fuel excise model incentivises the purchase of fuel efficient cars and does support the reduction of CO₂ in the short term. However, as electric vehicles become more prominent and fuel efficiency improves these benefits will be eroded. Further, there is no reason that the new model couldn't support incentives for those that drive certain fuel efficient vehicles into the future, but these incentives could be engineered in a way that would be much fairer and only incentivise the purchase of vehicles with very high upfront technology costs.

The AAA recognises that road market reform including the introduction of road user charging is some 10–15 years away from implementation. In the interim governments should ensure that broader taxation on motoring is consistent with climate objectives. The Productivity Commission's 2014 Inquiry into Australia's Automotive Manufacturing Industry recommended removing the Luxury Car Tax as it was inefficient and often penalises the purchase of vehicles that are the leaders in providing safety and environmental benefits. The AAA supports the abolition of this tax and the current passenger vehicle tariff and also supports reviewing other vehicle related taxes such as the Fringe Benefit Tax to ensure they do not create adverse climate change outcomes. Alternatively, the Australian Government may wish to consider other options around tax reform that would encourage consumers to purchase more efficient vehicles.

In the short term, while road user charging models are under consideration, the AAA is supportive of many of the measures currently in place across state and territory governments to encourage the purchase of fuel efficient vehicles given their high upfront cost and low market saturation. This is often achieved by using various concessions in the application of stamp duty and registration.

According to the Discussion Paper examples include:

- under the ACT scheme, new vehicles producing less than 130g/km pay no stamp duty and vehicles that produce between 131 and 175g/km pay a reduced rate
- the Queensland Government levies different rates of stamp duty based on vehicle engine type, with the lowest rate applying to electric and hybrid vehicles and the highest rates applying to vehicles with seven or more cylinders; and
- the NSW and Victorian Governments currently offer a reduced registration charge for hybrid and electric vehicles.

The AAA understands that in some jurisdictions, registration charges vary on the basis of vehicle weight having the effect of penalising hybrid vehicles, which may be heavier than equivalent petrol or diesel vehicles. Providing incentives to certain vehicles should also be reduced where certain technologies saturate the market or come down significantly in price. Consequently, the Australian Government should look at reviewing measures currently in place and publishing a best practice guide for state and territory governments to consider on a voluntary basis.

Q25 To ensure incentives do not have any unintended consequences on air quality, should incentives include noxious emissions requirements as well as CO₂ requirements, or do current noxious emissions standards sufficiently mitigate this risk?

The AAA understands that this question refers to a situation where incentives that target low CO₂ emissions result in a shift towards diesel vehicles (diesel emits less CO₂ than similar petrol engines), with a consequent increase in toxic pollution levels (diesels emit more toxins than similar petrol engines).

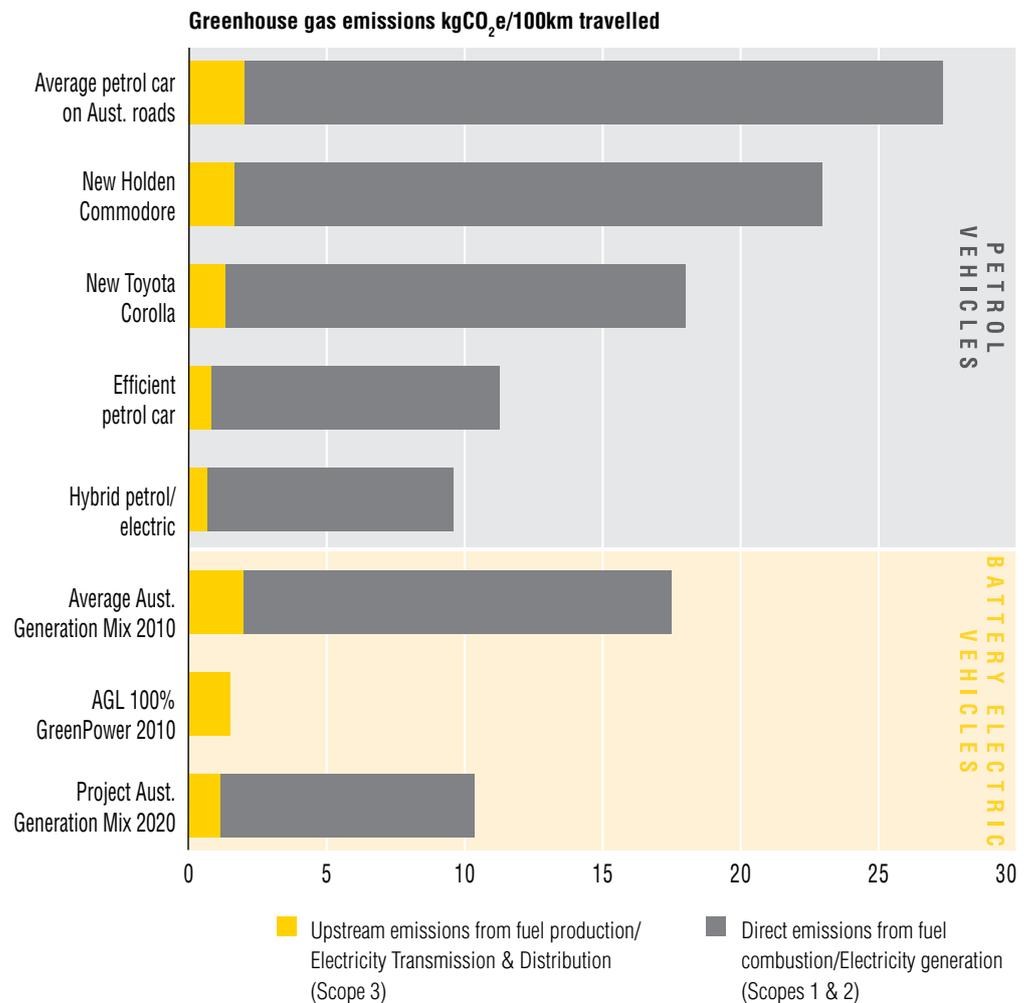
Whilst it would be possible to construct a complex system of incentives designed to promote vehicles with low CO₂ emissions and mitigate possible unintended consequences, such systems are likely to be confusing for consumers and may reduce the effectiveness of the incentives. If incentives for low CO₂ emissions were to result in a shift toward a greater proportion of diesel vehicles, any effects on air quality would be more effectively dealt with through noxious emissions regulation.

9.5 ALTERNATIVE FUELS AND ELECTRIC VEHICLES

Increasing the proportion of alternatively-fuelled vehicles in the Australian fleet will be an important aspect of efforts to reduce greenhouse gas emissions from road transport. In particular, increasing the uptake of electric vehicles will assist CO₂ abatement measures, since such vehicles have zero emissions at the tailpipe and consequently generally cause fewer greenhouse gas emissions over the lifecycle of the fuel.

This is detailed in Figure 4 below which clearly shows that although there are greenhouse gas emissions incurred from charging an electric battery powered vehicle, these vehicles still generate less emissions than an average petrol car. Interestingly, this graph also shows that a hybrid/electric car generates lower emissions than an electric car when the full lifecycle of fuel is taken into account.

Figure 4 Whole-of-lifecycle Emissions — comparison



Source: Vassallo A, Gomme P & Blik J 2014, TransGrid Powering Sydney's Future—Electric Vehicles: The Potential Influence of Electric Vehicles on the Transmission Network Serving Sydney, USYD-CERC1-2014, (p.9). Sydney, Australia: Faculty of Engineering and Information Technologies, University of Sydney.

Q26 What measures could be adopted to improve consumer awareness of the benefits of alternative fuelled and electric vehicles, particularly where they complement environmental benefits?

The benefit that accrues to consumers through the better vehicle efficiency of electric and alternatively-fuelled vehicles is both financial and environmental. It is imperative that consumers are made fully aware of both aspects when deciding on which new vehicle to purchase. Specific improvements to the fuel consumption label, and particularly the inclusion of estimated fuel savings, would constitute a sensible measure to improve consumer awareness (refer to the AAA's response to questions 17–22). However, in order to not mislead consumers, fuel lifecycle CO₂ (i.e. non-tailpipe emissions generated in the production of electricity) should be incorporated into environmental labels provided to consumers and information about the source of energy should be provided at different charging stations if possible.

Q27 What measures could be adopted to encourage the supply of alternative fuelled vehicles and supporting infrastructure, to reduce emissions from road transport?

In Australia, sales of electric vehicles to date have been negligible due to higher purchase prices and a so-called 'range anxiety' about the lack of recharging stations. Around 1,100 electric vehicles were sold in Australia during 2014, which equates to 0.1 per cent of total new vehicle sales.³³

The CSIRO has surveyed a sample of the general population in the state of Victoria. Participants were asked which factors would encourage them to purchase an electric car. From most important to least important, the results were: low purchase price, environmental benefits, running costs, range and better capacity, and finally efficiency of recharging and availability of recharging points.³⁴

Estimates by the Victorian Department of Transport suggest that on a business-as-usual model, 'the electric vehicle operating cost advantage is expected to outweigh the purchase price penalty for most Victorian drivers' by the year 2020. This means that during the period of ownership, savings made through reduced operating costs will be greater than the initial penalty of a higher purchase price relative to conventional vehicles.³⁵ The Department notes that government policy will be required to bring forward from 2020 the anticipated 'take-off point'.

The Australian Government could consider a range of incentives to accelerate uptake of low emission vehicles in Australia. For example, Californian drivers of electric vehicle and other zero- or low- (tailpipe) emission vehicles are granted access to motorway lanes otherwise reserved for high occupancy vehicles. A range of other incentives are also in place, including a federal tax credit of up to US\$7,500 for purchases of electric vehicles.³⁶

33 VFACTS National Report, Federal Chamber of Automotive Industries, December 2014

34 CSIRO 2011, *Social Study on Attitudes, Drivers and Barriers to the Uptake of Electric Vehicles*. <https://publications.csiro.au/rpr/download?pid=csiro:EP113815&dsid=DS3>

35 Source: Victorian Government 2013, *Creating A Market—Victorian Electric Vehicle Trial Mid-Term Report*, Department of Transport. http://apo.org.au/files/Resource/vicgov_electric-vehicle-trial-mid-term_2013.pdf

36 Vassallo A, Gomme P & Blik J 2014, *TransGrid Powering Sydney's Future—Electric Vehicles: The Potential Influence of Electric Vehicles on the Transmission Network Serving Sydney*, USYD-CERC1-2014, (p.18). Sydney, Australia: Faculty of Engineering and Information Technologies, University of Sydney.

In relation to supporting infrastructure, Tesla has recently rolled out a range of different charging stations in key long distance routes across Australia. Further, in an Australian first the RAC installed fast charging stations connecting Perth CBD to the South West of Western Australia with the RAC Electric Highway. As stated in the previous question, incentives for the production of more renewable energy may be generated if information about the energy source (i.e. partly renewable, or coal fire powered) is provided at individual charging stations.

RECOMMENDATION 19

The AAA recommends the Australian Government investigate low-cost incentives to encourage the uptake of low emission vehicles in Australia.

Q28 **How might fuel standards need to be adapted to accommodate alternative fuels?**

Consideration may need to be given to standards for fuels such as biofuels and blends, liquefied and compressed natural gas, and hydrogen. Consumer confidence in the quality, availability and suitability of fuels for their vehicles will be an essential element of increasing the use of such fuels. The AAA believes that further research into the suitability of biofuels, including ethanol, should be considered as part of the consideration of fuel quality standards.

RECOMMENDATION 20

The AAA recommends the Australian Government conduct further research into biofuels, including ethanol, and their suitability to Euro 6 and low CO₂ vehicle technology.

9.6 VEHICLE EMISSION TESTING

The AAA notes that in-service vehicle emissions are influenced by the maintenance of the vehicle, and that the noxious emission standards include durability requirements for compliance up to 100,000km (Euro 4) and 160,000km (Euro 5 and Euro 6). To verify these requirements are being met, and to monitor the effectiveness of emissions regulations over time, the Australian Government should undertake testing of emissions from vehicles beyond the point of supply to the market. The Australian Government should consider in-service audit testing using laboratory tests, real driving emissions tests, or a combination of both.

Similar audit tests of vehicles prior to supply to the market should also be undertaken to ensure that any imposed standards are being met and consumers are receiving the full value of the standards for which they are paying.

RECOMMENDATION 21

The Australian Government should commit to independent audit testing of new and in-service vehicles using laboratory and real driving emissions tests to ensure compliance with noxious emissions standards.

The costs of audit testing should be met by the Australian Government, and could be funded via a small fee levied on the compliance approval for each vehicle supplied to the Australian market. These funds should be based on cost-recovery, and should be used to audit mandatory safety standards, as well as emissions.

The AAA is undertaking a program of Real Driving Emissions (RDE) tests on Australian vehicles using fuels available to Australian motorists at the bowser, and driving on Australian roads. Portable Emissions Measurement System (PEMS) equipment mounted in the vehicle, and capable of measuring to the level of accuracy required by Euro 6 emission standards will be used for these tests. Results will be published and fed into the process for consideration of emissions regulations in Australia.

Q29 Should the Australian Government conduct a testing program to assess the effectiveness of UN Regulations in reducing real-world emissions?

The benefits of emissions regulations can only be realised in the real world. Laboratory-based tests are a simplified proxy measure, and the real-world benefits must be independently assessed to ensure that benefits for which consumers pay have been achieved. A suitably designed, government-run test program is the best way to measure the real-world effectiveness of any imposed emissions standard.

Q30 How should the costs of a testing programme be met?

The costs of audit testing should be met by the Australian Government, and could be funded via a small fee levied on the compliance approval for each vehicle supplied to the Australian market. These funds should be based on cost-recovery, and should be used to audit both emissions, and mandatory safety standards, noting that the Australasian New Car Assessment Program arguably partially fulfils an audit role for crash testing.

Q31 How could UN Regulations for vehicle emissions testing be improved?

The AAA understands that the United Nations is developing a revised laboratory emissions test. Until these details are confirmed, it is difficult to suggest additional improvements. Consideration should be given to adopting a real driving emissions test.

TEN PRINCIPLES FOR AUSTRALIAN GOVERNMENT POLICY MAKERS:³⁷

- 1 Regulation should not be the default option for policy makers: the policy option offering the greatest net benefit should always be the recommended option
- 2 Regulation should be imposed only when it can be shown to offer an overall net benefit
- 3 The cost burden of new regulation must be fully offset by reductions in existing regulatory burden
- 4 Every substantive regulatory policy change must be the subject of a Regulation Impact Statement
- 5 Policy makers should consult in a genuine and timely way with affected business community organisations and individuals
- 6 Policy makers must consult with each other to avoid creating cumulative or overlapping regulatory burdens
- 7 The information upon which policy makers base their decisions must be published at the earliest opportunity
- 8 Regulators must implement regulation with common sense, empathy and respect
- 9 All regulation must be periodically reviewed to test its continuing relevance
- 10 Policy makers must work closely with their portfolio Deregulation Units throughout the policy making process

COAG PRINCIPLES FOR REGULATION AND STANDARDS SETTING:³⁸

- 1 Establishing a case for action before addressing a problem
- 2 A range of feasible policy options must be considered, including self-regulatory, co-regulatory and non-regulatory approaches, and their benefits and costs assessed
- 3 Adopting the option that generates the greatest net benefit for the community
- 4 In accordance with the Competition Principles Agreement, legislation should not restrict competition unless it can be demonstrated that:
 - a the benefits of the restrictions to the community as a whole outweigh the costs
 - b the objectives of the regulation can only be achieved by restricting competition
- 5 Providing effective guidance to relevant regulators and regulated parties in order to ensure that the policy intent and expected compliance requirements of the regulation are clear
- 6 Ensuring that regulation remains relevant and effective over time
- 7 Consulting effectively with affected key stakeholders at all stages of the regulatory cycle
- 8 Government action should be effective and proportional to the issue being addressed.

³⁷ www.cuttingredtape.gov.au/handbook/ten-principles-australian-government-policy-makers

³⁸ https://www.dpmc.gov.au/sites/default/files/publications/COAG_best_practice_guide_2007.pdf.



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