



AAA SUBMISSION TECHNOLOGY INVESTMENT ROADMAP DISCUSSION PAPER



Australian
Automobile
Association

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Summary

The Australian Automobile Association (AAA) welcomes the Australian Government's Technology Investment Roadmap to accelerate low emissions technologies and the Government's approach to support consumer choice as new technologies come to market. The AAA welcomes the opportunity to provide feedback on the discussion paper.

The AAA is the peak organisation for Australia's motoring clubs and their eight million members. The association's constituent clubs are the NRMA, RACV, RACQ, RAA, RAC, RACT and the AANT. The AAA regularly commissions research and develops in-depth analysis of issues affecting transport systems, including affordability, road safety and vehicle emissions.

The AAA welcomed the Government's commitment to reduce Australia's carbon dioxide (CO₂) emissions by 26-28 per cent on 2005 levels by 2030 as part of the Paris Agreement. With the Australian light vehicle fleet contributing around twelve per cent of Australia's CO₂ emissions, the AAA is committed to working with the Government to ensure the light vehicle fleet makes a valuable contribution to Australia's 2030 target.

The AAA presents this submission focussing on the transport sector, which represents approximately 20 per cent of Australia's total greenhouse gas emissions¹, and provides the following key recommendations to accelerate the uptake of low emissions technologies in the Australian light vehicle fleet:

- 1. That the Government implement a non-regulatory, independent real-world fuel consumption and vehicle emissions testing program to provide consumers with information and confidence that their vehicle investment will result in real benefits.**
- 2. That the Government introduce a CO₂ standard designed for the Australian market to support the continued rollout of fuel-efficient vehicles while maximising consumer choice.**
- 3. That the Government introduce Euro 6 vehicle noxious emissions standards to mitigate the potential for undesirable health consequences.**

The AAA strongly believes that non-regulatory, real-world independent testing be introduced to provide consumers with accurate environmental information about the vehicle they purchase; and to complement regulation by accelerating the uptake of low emissions vehicles into the Australian fleet well ahead of mandatory regulation.

The transport sector

The transport sector is the third largest contributor to emissions in Australia, behind the electricity and stationary energy (excluding electricity) sectors, and represents roughly 20 per cent of Australia's national greenhouse gas emissions. Light vehicle (cars and light commercial vehicles) emissions represent roughly 63 per cent of transport emissions².

The AAA is committed to working with the Government to ensure the light vehicle fleet makes a valuable contribution to Australia's 2030 Paris Agreement target.

One of the key challenges for Australia and the rest of the world is to harness the enormous benefits of transport while also minimising the environmental impact of travel. The AAA recognises that motorists must play a role in improving our national environmental performance.

Focussing on transport and light vehicles, the Government's discussion paper emphasises electric vehicles, and the AAA looks forward to the release of the forthcoming National Electric Vehicle Strategy and how it will manage the technological shift to electric vehicles.

However, the benefits from electric vehicles are likely to be realised in the longer term as they penetrate the fleet in greater numbers. The discussion paper notes that hybrid vehicles and improved components/ lightweighting offer the most potential for abatement in the shorter term, while Figure 7 identifies more efficient internal combustion engine vehicles as a priority transport technology, also noting:

"A host of technologies are close to commercial readiness but not being deployed at scale. For example, the latest engine and hybrid technologies (energy management technologies and electric vehicles, among others) are not reaching the Australian market in significant volumes.³"

The AAA is concerned that the Australian Government appears to have no plan to support the accelerated penetration of these technologies into the Australian market.

Australia's fuel quality standards do present a challenge in offering some of the latest engine technologies in Australia and this must be acknowledged. The Australian Government has announced updated fuel standards to reduce sulphur content, bringing Australia's petrol standard closer to that of Europe and Japan from 1 July 2027.

However, there are mechanisms available to the Government that can accelerate the penetration of low emission vehicles prior to the availability of cleaner fuel in the market.

To do nothing else to encourage and accelerate the number of low emission vehicles in Australia before 2027 would be a lost opportunity.

Real-world emissions testing

The AAA strongly believes in the need to introduce a non-regulatory vehicle emissions test program in Australia to independently measure the emissions performance and fuel consumption of new vehicles and new technologies in real-world conditions, and to publish the results through the Government's Green Vehicle Guide website.

www.greenvehicleguide.gov.au

The need for real-world vehicle emissions testing in Australia

Currently, Australians are not able to make informed decisions about the true environmental impact and fuel consumption of the car they purchase, and this affects the confidence that their investment will result in genuine economic and/or environmental benefits.

The only information available to consumers about a car's fuel consumption and emissions performance comes from standard laboratory tests undertaken to comply with emissions regulations.

However, those laboratory tests are conducted under controlled conditions and in most cases do not represent how cars perform under real-world driving conditions. The Volkswagen diesel emissions scandal clearly demonstrates how this laboratory test has been manipulated and cheated by car manufacturers.

In the wake of the Volkswagen scandal, the AAA and its member clubs commenced testing the difference between emissions in the lab and in the real world⁴.

Thirty vehicles were tested on a 90-minute real-world circuit divided equally into urban, rural and highway conditions. Tests were conducted according to European Commission protocols adapted for Australian driving conditions and speed limits. The tests measured fuel consumption (directly related to CO₂ emissions) as well as noxious emissions.

The final results found:

- » **vehicles (not including plug-in hybrids) used up to 59 per cent more fuel than advertised, and 23 per cent more on average**
- » **one plug-in hybrid vehicle used more than four times the reported fuel consumption from the lab test**
- » **vehicles produced up to seven times the legal laboratory limit of some noxious emissions**
- » **11 out of 12 diesel cars tested exceeded the legal laboratory limits for noxious emissions.**

These results show that the lab testing system is broken and consumers and policy-makers are being misled.

Without regulation to support the rollout of more fuel efficient vehicles in Australia, the Government is relying on market forces and consumer demand. However, there is no accurate information available to stimulate that demand and provide confidence to consumers that their vehicle investments will see real environmental benefits.



A real-world vehicle emissions test program

Real-world testing is urgently needed in the Australian car market to ensure consumers and policy makers are basing decisions on actual performance.

Real-world testing is already being rolled out overseas. On-road, real-world emissions testing already applies to heavy vehicles in the USA and is already in place for light vehicles in Europe. Paris and London authorities have also announced real-world testing programs to improve consumer information.

Only a testing program conducted in Australia, testing Australian-specification vehicles on Australian roads and using Australian fuels can provide Australian consumers with the accurate information they deserve.

It will:

- » **empower consumers to make more informed purchasing decisions**
- » **make choosing a more efficient vehicle easier**
- » **drive down costs to consumers and deliver meaningful environmental benefits**
- » **allow policy makers to ensure emissions regulations are having an impact in the real world.**

A non-regulatory program could be implemented immediately and would also provide a technology-neutral tool for government to accelerate the uptake of low-emissions vehicles ahead of regulation. This could be a similar model to the Australasian New Car Assessment Program (ANCAP), which publishes independent safety ratings for consumers and has seen the safety levels of new vehicles in Australia increase well beyond the minimum standards required by regulation.

AAA polling of 4,963 people in April 2020 found that the majority of respondents (60 per cent) are either unsure or do not trust manufacturers about emissions statements. Furthermore, 78 per cent of respondents do not find the current system of laboratory testing satisfactory and would rather have tests conducted on-road to better reflect actual driving conditions. Only 22 per cent of respondents supported laboratory testing.

The AAA proposes that 60 new vehicle models available in Australia each year be subject to a real-world test. This would provide a comprehensive database over time and results for approximately 60 per cent of new vehicle sales within two years.

The AAA estimates that it would cost in the order of \$3 million per year to test 60 vehicles and report the results to consumers through the Government's Green Vehicle Guide.

This cost should be covered by the Government, given the high level of consumer and environmental benefit that the program would deliver, and the information that will flow to policy-makers who develop and administer regulations.

A CO₂ standard

With the light vehicle fleet contributing around 12 per cent of Australia's CO₂ emissions¹, the AAA believes an appropriate fuel efficiency or CO₂ standard is needed to drive abatement in the transport sector.

The AAA acknowledges there are many views on what the most appropriate CO₂ standard is for the Australian light vehicle fleet. The AAA is committed to working with the Government to develop an approach to CO₂ standards that addresses the need to reduce vehicle emissions while not unduly impacting on consumer choice and costs.

International CO₂ standards provide a foundation for the development of a CO₂ standard for the Australian light vehicle fleet. However, the AAA does not support the adoption of a specific target that has been set in another jurisdiction, as this target would be based on the fleet characteristics and travel behaviour of that jurisdiction.

A CO₂ target for light vehicles is measured across the whole fleet: there is no CO₂ target for an individual car. In the European Union, each manufacturer is required to meet a specified sales-weighted CO₂ limit based on the average mass of new cars sold, with different targets for passenger cars (including SUVs) and light commercial vehicles. In the United States, the fuel consumption requirement is based on the average footprint (plan area between wheels) of vehicles sold by each manufacturer, and has separate requirements for passenger cars and light trucks (including SUVs). In both cases, the CO₂ target is designed around the composition of their whole vehicle fleet and is not applicable to another fleet's composition.

We can learn much from overseas about the design of CO₂ standards, and adopt the best features from each. However, an Australian CO₂ target must be designed for the Australian light vehicle fleet.

Importantly, alongside any regulation should be the provision of information on fuel consumption that better reflects the local real-world experience, as detailed in the previous section. This is particularly important, as results from lab tests do not necessarily translate into real-world performance, and the relative fuel consumption between vehicles in the lab is not necessarily indicative of their relative fuel consumption on the road.

Improved lab test cycles are expected to close the gap between laboratory and real-world results. However this does not change the fact that a lab test is not a real-world driving test, that it will still be performed overseas, and in some cases by the very manufacturer making the emissions and fuel consumption statements.



Noxious vehicle emissions

The AAA believes that engine technologies for improved environmental performance cannot be each considered in isolation because they are interrelated. The introduction of a CO2 standard in isolation may result in undesirable outcomes, such as increased noxious emissions affecting air quality due to greater numbers of diesel or petrol direct-injection vehicles which offer improved fuel consumption. This may then necessitate the introduction of Euro 6 standards to limit noxious emissions and mitigate the health consequences. These standards in turn would necessitate the use of low sulphur fuels, which prompts consideration of how cleaner fuel quality will be implemented in Australia.

The AAA supports the introduction of Euro 6 emissions standards within suitable timelines, balancing the health and environmental benefits with consumer choice and cost.

The Government has announced improvements to Australia's fuel quality to reduce the sulphur content in Australian petrol effective from 1 July 2027. This timeframe is significant, as this change is expected to facilitate the effective operation – and supply – of vehicles with petrol engines designed to be compliant with the requirements of the latest versions of Euro 6 standards, already in place in Europe. (It should be noted that current sulphur levels in Australian diesel fuel would support Euro 6 diesel engines.)

There are additional details that need to be worked through, such as the aromatics content of petrol in Australia and the related effect on octane ratings. However, the AAA is committed to working with the Government to ensure the appropriate implementation of Euro 6 standards in Australia.



Responses to issues

a) The challenges, global trends and competitive advantages that should be considered in setting Australia's technology priorities

With respect to new light vehicles, Australia is a taker of technology with 100% of new light vehicles imported. It is therefore of critical importance that Australia position itself to take full advantage of new technology as it becomes available.

Priority considerations include local standards such as fuel quality; as well as infrastructure to support new technology such as the ability of electricity grids to support electric vehicle charging, or connectivity requirements to support emerging connected vehicle technologies.

b) The shortlist of technologies that Australia could prioritise for achieving scale in deployment through its technology investments (see Figure 7)

Figure 7 broadly identifies categories for technologies that could be prioritised in the transport sector and appears to group several technologies listed in Appendix A of the discussion paper under the title 'More efficient internal combustion engines'.

The AAA notes that battery, hybrid and plug-in hybrid electric vehicles are considered under the same heading in Figure 7. These are generally considered to be separate technologies with separate considerations and maturity levels. The AAA recommends that these three technologies be considered separately as the penetration rates vary significantly as well as the issues affecting their deployments. The AAA has adopted a technology-agnostic approach to emissions reduction and prefers to see technologies grouped by performance, such as ultra-low emission and ultra-low fuel consumption technologies.

c) Goals for leveraging private investment

When it comes to light vehicles, the Government is currently relying on market forces and consumer demand to increase the uptake of ever more fuel-efficient vehicles. However, there is poor information available as to the environmental performance and fuel consumption of vehicles under real driving conditions to allow consumers to make informed decisions when purchasing a vehicle.

To ensure consumers, including private business and fleet buyers, have confidence in the environmental impact of their vehicle investments, independent and transparent information that reflects the local real-world environmental performance of vehicles is needed. A program that publishes independent emissions and fuel consumption test results would not only achieve this but would also encourage manufacturers to offer environmentally friendly technologies in Australia and promote competition based on environmental performance.

Many consumers and fleet-buyers will also be motivated by the opportunity to save money on fuel, but need reliable information on which to be able to make this judgement.

d) What broader issues, including infrastructure, skills, regulation or planning, need to be worked through to enable priority technologies to be adopted at scale

In addition to appropriate CO2 and Euro 6 emissions regulations covered in this submission, infrastructure presents an issue for the greater rollout of several vehicle technologies.

The National Electric Vehicle Strategy is expected to explore charging infrastructure and grid integration among other topics relating to the transition to electric vehicles. However, fleet technologies such as connectivity and Intelligent Transport Systems (ITS) offering improvements in congestion and network efficiency may also require supporting infrastructure to transmit and ingest potentially large amounts of data.

There remains uncertainty surrounding Australia's readiness for the increasing rollout of connected vehicles and telematics, with low penetration rates of the technology currently available. However, without an in-depth understanding of the infrastructure to support such technology, we cannot expect it to be offered in the Australian market in significant volumes.

Conclusion

The AAA believes that emissions abatement from new light vehicles can contribute to Australia's national emissions reduction targets. However, with respect to light vehicles, the discussion paper focusses narrowly on battery electric vehicles.

While the discussion paper notes that hybrid technologies and more efficient internal combustion engines are priority technologies, the AAA is concerned that there appear to be no plans to accelerate their deployment in Australia.

The AAA strongly believes that a non-regulatory, real-world emissions testing program in Australia would accelerate the deployment of vehicles offering real environmental benefits. At the same time, two complementary regulatory measures implementing an appropriate CO2 standard and Euro 6 emissions requirements are necessary for Australia to reach its environmental goals.

ENDNOTES

- 1 Australian Greenhouse Emissions Information System; Department of Industry, Science, Energy and Resources, June 2020.
- 2 Quarterly Update of Australia's National Greenhouse Gas Inventory: September 2019; Commonwealth of Australia 2020.
- 3 Appendix B, Transport Investment Roadmap Discussion Paper; Department of Industry, Science, Energy and Resources, 2020, p.60.
- 4 Real World Driving Emissions Test Summary Report; ABMARC, 2015; Available at: <https://www.aaa.asn.au/wp-content/uploads/2018/03/Real-World-Driving-Emissions-Test-Summary-Report.pdf>

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