

Submission to the Department of Infrastructure etc re Fuel efficiency standards

Philip Laird, University of Wollongong, May 2023

1. Action on this front is long overdue. This submission is based on research conducted at the University of Wollongong, however, the conclusions and views are those of the writer.

As demonstrated by changing weather patterns and older reports¹ and a 2021 report “Net Zero by 2050” of the International Energy Agency², there is good reason for addressing climate change.

The 2008 Garnaut Review informed Australia that without stronger action, droughts and bushfires would become more frequent and intense, and “observable by 2020”.

Which indeed both droughts and bushfires were. Now Australia has more floods to contend with and climate risk is of increasing concern.

2. Australia’s record to date in reducing its CO₂ emissions has been taken to task by many commentators. It also has an excessive level of emissions per capita.

The action of the new Government in 2022 to legislate for a 43 per cent in reductions means that Australia is now more in line with Britain, Canada, New Zealand and the United States of America.

3. This writer is of the view that targets are more likely to be met if a price is placed on carbon emissions. In the absence of a price on carbon emissions, measures such as an effective fuel efficiency standard become even more important.

4. Some 8 years ago, a 2015 Turnbull government initiative to phase in from 2020 to 2025 a standard of 105g of CO₂ per kilometre for light vehicles was “shelved after internal opposition and criticism from the automotive lobby”.³

One cost of this policy failure in 2015 has been that the uptake of electric vehicles has since been slow; another cost is higher emissions than need be for many years (due to the large uptake of SUVs and other emission intensive vehicles and the fact that vehicles last for years).

5. The April 2023 consultation paper Fuel Efficiency Standard – Cleaner, Cheaper to Run Cars for Australia on page 14 notes

“Australia is starting from behind. The Bureau of Infrastructure, Transport and Regional Economics (BITRE) estimates that new vehicles sold in Australia in 2021 have a CO₂ intensity of 173.6 g CO₂/km. This compares to 115 g CO₂/km in the 29

¹ See for example, See for example, Steffen, W (2006) *Stronger evidence but new challenges: ‘Climate change science 2001 – 2005*, DEH-AGO, and Australia vulnerable in a warming planet - leaked IPCC report finds, Sydney Morning Herald 10 October 2013, where an Intergovernmental Panel on Climate Change's (IPCC) report examined impacts and vulnerabilities from global warming and details a grim outlook for Australia.

² <https://www.iea.org/reports/net-zero-by-2050>

³ <https://theconversation.com/transport-is-letting-australia-down-in-the-race-to-cut-emissions-131905>

European countries reported by the National Transport Commission, or 169 g CO₂/km in the US (NTC 2022).”

It is submitted that there is no time to lose. As noted by the Department of Climate Change, Energy, the Environment and Water in its Australia’s emissions projections 2022 (on page 35)

The main contributors to transport emissions in Australia are light duty vehicles, which includes cars and light commercial vehicles, such as vans and utes. In 2019, light duty vehicle emissions accounted for 62% of all transport emissions, or 62 Mt CO₂-e.

Light duty vehicles are passenger vehicles and light commercial vehicles including cars, station wagons, SUVs, vans and utility vehicles (utes).

6. BITRE data shows that emissions from cars increased by some 16 some per cent from 2005 to 2019 (before temporary COVID-related reductions; they have since rebounded). It is going to take a real effort by government to turn this around.

7. Accordingly, it is recommended that (as per page 16), Australia should

Start strong: A second option would be to set relatively ambitious targets early on and then to continue strong emissions reductions in the early years. This would have the advantage of getting a lot of the hard work done early, and achieve emissions abatement objectives. This option would be more disruptive for suppliers however, and may require substantial expense without some other balancing factor (such as higher credits or broader exemptions).

In addition, given the delays to date, there is a case for “Immediate commencement when relevant legislation enters into force.” (as noted on page 26)

8. It is of note that New Zealand has already moved to implement a Fuel Efficiency Standard. To quote from the consultation report.

New Zealand

New Zealand legislated a mandatory fuel efficiency standard in 2022. New Zealand also adopts separate standards for passenger and light commercial vehicles along similar lines to the US approach. However, like the EU standard, New Zealand has adopted limit curves which adjust requirements for suppliers (for both new and second-hand imports) by the mass of the vehicles supplied. These limit curves will become progressively more stringent from 2023 to 2027.

Like the US standard, the New Zealand standard allows credits to be accrued for surpassing the standard, carried forward, carried back or traded with other manufacturers. However, the New Zealand standard does not offer any technology (off-cycle) based credits.

New Zealand’s fuel efficiency standard is aiming to achieve a 62-65% reduction (on 2021 levels) in CO₂ emissions from new passenger and light commercial vehicle by 2027. While this is faster rate of reduction than the EU and US standards, they are starting from a higher baseline. The faster rate of improvement is intended to also reduce the difference in the average fuel efficiency of vehicles sold in New Zealand relative to other advanced economies with fuel efficiency standards.

9. The Climate Council report of May 2023 *Shifting gear: the path to cleaner transport* on page 45 notes, inter alia;

Introducing fuel efficiency standards is an essential policy lever to incentivise vehicle manufacturers to bring more cheap, clean EVs to Australia so more people can buy them.

Strong fuel efficiency standards:

- › are mandatory for all manufacturers selling in the Australian market - voluntary standards will not be sufficient to drive rapid change;
- › can be implemented as soon as possible - as every vehicle sold today will be on the road for 10 years or more;
- › ensure *Paris Agreement* commitments remain within reach by seeing 100 percent of new vehicles sold being zero emissions as soon as possible (and not later than 2035);
- › deliver the actual headline emissions reduction stated - without being watered down by credits and loopholes for manufacturers;
- › address the recent trend of Australians buying larger and heavier vehicles and avoid inadvertently encouraging an ongoing shift to these vehicle types; and
- › are supported by enabling policies - including tax policy, incentives, charging and equity initiatives.

Each of these measures are considered to be fair comment and good advice.

10. The remainder of this submission will deal with transport in general. This sector, since the 1990s, has had the fastest growth in emissions. Hence the need for ongoing need to reduce emissions in this sector.

11. As the 2007 Prime Ministerial (Howard Government) Task Group on Emissions Trading issues paper noted, inter alia, in 'Context setting': "***Significant effort will also be needed to restrain emissions in other sectors, especially transport.***"

However, the efforts made to date by the Australian government to restrain greenhouse gas emissions in transport and to improve overall energy efficiency in transport have been far too limited to date.

One move that would help would be to implement the relevant recommendations of the 2010 Henry Tax Review for transport (some follow in part).

Recommendation 61: Governments should analyse the potential network-wide benefits and costs of introducing variable congestion pricing on existing tolled roads (or lanes), and consider extending existing technology across heavily congested parts of the road network. Beyond that, new technologies may further enable wider application of road pricing if proven cost-effective. ...

Recommendation 62: The Council of Australian Governments (COAG) should accelerate the development of mass-distance-location pricing for heavy vehicles, to ensure that heavy vehicles pay for their specific marginal road-wear costs. Revenue from road-wear charges should be allocated to the owner of the affected road, which should be maintained in accordance with an asset management plan. ...

12. A National Strategy for Lowering Emissions from Urban Traffic and a National Action Plan, as approved by the Australian Transport Council in August 2002, recommended a new approach. To quote from the communique for this meeting: *The Strategy and Action Plan developed by the National Transport Secretariat in collaboration with all states, territories and the Commonwealth government provides a groundbreaking*

national approach to reducing greenhouse emissions from the transport sector. This includes, within the next 5-10 year 'programs that encourage people to take fewer trips by car' and transport 'from predominantly fixed to predominantly variable costs' to '... ensure that transport users experience more of the true cost of their travel choices.'

New Zealand has followed this approach for years with higher fuel excise (coupled with road user charges) and lower annual registration and third party person insurance charges. Australia would do well to move in this direction.

In 2008, the Garnaut climate change review observed⁴ that *"Governments have a major role in lowering the economic costs of adjustment to higher oil prices, an emissions price and population growth, ... Mode shift may account for a quarter of emissions reductions in urban public transport..."*

The Organisation for Economic Co-operation and Development (OECD) in its 2004 Annual Report noted (page 48) the need for government to avoid '*Environmental harmful subsidies*' that exacerbate adverse environmental impacts; also (page 51) that *governments can use taxes to encourage their citizens to take better care of their environment.*

It can be convincingly argued that Australia's recent past and present road pricing policies have encouraged an increase in road vehicle use. This is by design or accident and coupled with a past lack of investment into both urban and regional rail,⁵ has led to excessive automobile dependence in our main cities.

It has also ensured that Australia continues to have one of the highest road freight activity in the world (expressed as net tonne kilometers per capita).

More and recent comment by this writer on reducing transport emissions in Australia is given in Appendix A. Older comment is given in Appendices B and C.

13. The Bureau of Infrastructure and Transport Research Economics (BITRE), then under the name of The Bureau of Transport and Regional Economics under produced a report in 1996 on 16 measures for reducing greenhouse gas emissions in transport. The measures included reducing vehicle kilometres travelled (VKT), reducing emissions per VKT, and four road pricing measures (mass-distance charges for heavy trucks, tolls, internalising transport externalities and emission charging), carbon taxes and tradable permits. Optimal road pricing was held to offer the best way forward.

The most recent report by this agency on greenhouse and emissions appears to be in 2012 with its Greenhouse gas abatement potential of the Australian transport sector—Summary report.

An updated report from this respected agency on effective ways for Australia to reduce emissions in transport, produced without undue delay, would be most helpful.

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⁴ Garnaut Climate Change 2008 review - Chapter 21 -'Transforming transport' at <http://www.garnautreview.org.au>

⁵ See for example, Dr Hewson, Australian Financial Review (NSW, *Shunted into a siding*, 1 Feb 2008) "One area of significant potential change is the balance between road and rail transport ... Yet, generally, our governments underinvest in rail while overinvesting in ...

APPENDIX A Why electric vehicles won't be enough to rein in transport emissions any time soon

See the December 2023 Conversation article <https://theconversation.com/why-electric-vehicles-wont-be-enough-to-rein-in-transport-emissions-any-time-soon-195722> for graphs and links.

Progress towards Australia's new [emissions target](#) of a 43% reduction by 2030 (from 2005 levels) has been decidedly mixed. Emissions [in the electricity sector](#) have fallen in recent years, but the upward trend in another major sector, transport, is [set to continue](#).

There is a widespread view, [implicitly encouraged](#) in some states, that transport emissions can simply be reduced by more use of electric vehicles powered from renewable energy sources. On the contrary, reducing overall transport emissions will require policy reform and infrastructure investment on many fronts.

Recent decades, though, have been marked by a lack of action. The 2022 [International Energy Efficiency Scorecard](#) shows how far Australia has fallen behind. Overall, Australia [ranked 18th](#) out of 25 of the world's largest energy users, and 23rd for transport.

On five of the nine criteria for assessing transport, Australia scored zero points. These were: no 2025 fuel economy standards; poor on light vehicle average fuel economy; low electric vehicle sales share; no heavy vehicle fuel economy standard; and no smart freight programs.

The federal government has acknowledged effective vehicle fuel-efficiency standards are long overdue. And, as the source of [45% of all pre-COVID transport emissions](#), reducing emissions from cars is important – but it's only part of the solution.

It will take years for more efficient cars and electric vehicles to replace the current less energy-efficient ones. [Recent experience](#) also suggests more than high petrol prices will be needed to reduce vehicle travel and emissions.

What more can be done?

Reducing transport emissions was the subject of reports produced by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) [up to 2009](#). Proposals included “no regrets” measures such as more freight on rail, while effective road pricing reform (to strengthen the connection between costs to drivers and travel times and distance) was judged to “offer the largest potential for reducing greenhouse gas emissions from transport”.

Only a few measures were implemented, such as energy labelling of cars and 50km/h urban speed limits. As a result, [BITRE data](#) show overall transport emissions (excluding electric rail) increased some 19% from 2005 to 2019 (before temporary COVID-related reductions). There were increases of 16% from cars, 16% from articulated trucks and 50% from domestic aviation.

To turn this around, the federal government has set up a Net Zero Unit. The minister responsible for transport, Catherine King, [acknowledged](#): “Achieving our government's emissions reduction targets on the path to net zero by 2050 will require concerted action to drive emissions lower across the transport sector.”

In a recent (2022) [consultation paper](#) for the forthcoming National Electric Vehicle Strategy, the ministers' foreword noted:

“Today, Australians are being sold some of the highest-emitting cars in the world. On average, new passenger vehicles in Australia have around 20% higher emissions than the United States, and around 40% higher emissions than in Europe. We need to catch up to the rest of the world when it comes to transport emissions.”

What's being done overseas?

Measures that have worked overseas include better public transport (which was effective during the 2010s in Australia) and congestion pricing (charging drivers for travel at peak traffic times) in major cities.

A further measure, recommended 20 years ago by state transport ministers, was to move from high annual registration fees to higher fuel excise. This would mean people who drive their cars less are not subsidising those who drive their cars more. New Zealand has adopted this approach.

New Zealand has also adopted an [Emissions Reduction Plan](#) that includes “a focus on reducing reliance on cars and delivering considerable change in walking, cycling and public transport. The transport actions set a target to reduce vehicle kilometres travelled by the light vehicle fleet by 20%, by 2035.”

This ambitious target is complemented by other measures, including land-use planning to reduce the distances people need to travel to get to work, services and amenities.

[Britain](#) and [Europe](#) have introduced similar strong measures.

Shifting freight to rail and sea

As has often [been said](#), “without trucks, Australia stops”. However, the convenience of moving freight by trucks, which has been boosted over the past three decades by a much-improved road system and larger and heavier trucks, comes with many costs.

One cost is the impact of more trucks on the roads. A further cost is higher emissions. Trucks [use three times the energy](#) and so produce three times the emissions of a given freight task done by rail or sea.

I have calculated that if rail were to regain a 50% share of the freight on the Sydney-Melbourne route alone, it would cut emissions by over 300,000 tonnes a year. This is the equivalent of taking about 100,000 cars off the road.

Keeping aviation emissions in check

Although domestic flights were producing just 9% of all pre-COVID transport emissions in Australia, a 50% increase in aviation emissions from 2005 to 2019 demands government action to limit further growth. This will be a challenge given Australians' reliance on flying between capital cities and to regional centres.

Other countries such as France are [limiting short-haul air travel](#) where rail is an alternative. Globally, as the International Energy Agency has [noted](#):

“Rail transport is the most energy-efficient and least carbon-intensive way to move people and second only to shipping for carrying goods.”

One corridor where an improved train service competes with regional aviation is Bundaberg to Brisbane. On many other corridors, such as Canberra to Sydney, more frequent and faster trains would be well received and would reduce emissions.

In the longer term, a dedicated high-speed rail service – electric trains moving at over 250km per hour – will be needed between Melbourne and Sydney. In the medium term, track upgrades and tilt trains offer scope to [cut the travel time](#) from 11 to about six hours within four years.

Australia needs to act with urgency on all fronts – cars, freight and aviation – to get transport emissions on track for net zero.

NOTE ADDED An older article by this writer at <https://theconversation.com/transport-is-letting-australia-down-in-the-race-to-cut-emissions-131905> noted, inter alia,

Australia's low transport energy efficiency (and so high CO₂ emissions) has also attracted overseas attention. The American Council for an Energy-Efficient Economy rates the world's 25 largest energy users for sectors including transportation. In 2018, Australia slipped two places to 18th overall.

It was 20th for transportation in 2018 with just 6.5 points out of a possible 25 on nine criteria. As noted above, Australia further slipped by 2022 to be ranked 23rd out of 25 for transportation.

APPENDIX B Some older overseas perspectives

On 14 December 2007 an "**International Symposium - Climate Change and Transport Strategy Forum**" was held at Nagoya with a total of approximately 350 experts in attendance from Japan and around the world, who specialize in climate change, transportation and the economy. The Symposium's Keynote Speaker was Lord Nicholas Stern, Professor at the London School of Economics who spoke on "Climate Change, Economics of a Global Deal and the Role of Transport".

What follows is edited from an account at the website <http://ecotransport.jp/en/eventreport.html>

- Unless action is taken now to reduce greenhouse gases (GHG), there is positive scientific evidence that a major disaster will result.
- Targets must be established to prompt action now to reduce CO₂e (CO₂ equivalent) throughout the world by 50% (80% in developed nations). For example, targets achievable by 2020 need to be set.
- There is no specific remedy, but a combination of mitigating mechanisms are required, including a pricing system (taxes, ETS), regulations, infrastructure investment, public transportation systems, and technology.
- Transport is a principal source of GHG emissions, and thus one major cause of climate change
- Such emissions account for 13~14% of CO₂e and 23~24% of CO₂ emissions (30% in OECD nations)
- On the per passenger-kilometer basis, railways have a much smaller impact on the environment and climate change than aircraft or automobiles.
- The demand for aircraft and airports is continuing its rapid increase (5% annually on a global scale). Airports and aircraft management systems are directly confronting a serious problem of capacity.
- The development of high-speed railways on high-density urban lines can alleviate problems of congestion as well as automobile and aircraft transport capacity, in addition to being consistent with appropriate climate change policies.

In brief summary, "***delaying climate change mitigation is dangerous and costly***" and when we consider passenger transportation from the perspective of the global environment, it is necessary to increase the traffic share allocated to railways.

APPENDIX C 1979-1999 Some older Australian Reports re transport

i. Following the second world oil price shock, a then relatively 'new' approach to energy use in transport was suggested in 1979 in an Australian Transport Advisory Council publication called *Transport and Energy Overview*.

Although the data used in this report is now dated, the approach is commended, as are the conclusions. In part: *"... rail is relatively energy efficient compared to road for long distance freight ... (and) ... does have fuel substitute options, such as coal-oil slurries or electrification As far as possible pricing and cost recovery policies should be consistent across the modes so as to encourage use of modes appropriate to particular tasks. Appropriateness may be defined broadly as minimising the total social cost of transport services, including externalities.*

ii. From 1992 to 1994, a National Transport Planning Task Force examined in detail Australia's transport system and made 16 pertinent recommendations to . Regretfully, neither side of politics were inclined to adopt, or even respond to these recommendations. The central finding of this TaskForce in their main report was: ***'Perpetuation of existing arrangements will condemn the nation to ineffective results'***

Or, as stated by Deputy Prime Minister Anderson on 21 May 2002 when releasing the then Federal Government's 'AusLink' concept **"We cannot go on this way. We have to make changes now."**

iii. In the late 1990s, two notable contributions to the transport debate in Australia were made by non government organisations.

One was from the Chartered Institute of Transport in Australia who issued a statement at its 1998 National Symposium: *"Our greatest ever source of cheap energy may soon contract and the 'Petroleum Age' in which we live now can be seen to be approaching an eventual end. ...The Symposium heard that a clear consensus is emerging that cheap oil production outside the Middle East will begin permanent decline around the year 2000, to be followed by permanent world decline within 15 years ...'More of the same' in our current transport plans and ways of thinking is no longer tenable. ..."*

The Institution of Engineers, Australia (a 1999 TaskForce (chaired by the late Ted Butcher AM) *Sustainable transport: responding to the challenges*) found that we have major problems in major cities, and, there is a need to respond to the challenges.

In brief:

- A Taxation and fiscal policy instruments should encourage sustainable transport. At present, these measures encourage car and truck use.
- B There is a strong case for increased investment in transport infrastructure that is more sustainable and less greenhouse gas intensive. Where market forces fail, government should intervene.
- C More holistic approaches to transport decisions are needed that integrate considerations of impacts on health, sustainability and greenhouse gas emissions.
- D There is a need for research to support cleaner transport fuels and technologies, along with transport pricing, economics and demand management technologies.