



TECHNOLOGY INVESTMENT ROADMAP DISCUSSION PAPER A FRAMEWORK TO ACCELERATE LOW EMISSIONS TECHNOLOGIES

AUSTRALIAN TRUCKING ASSOCIATION SUBMISSION 19 JUNE 2020

1. About the Australian Trucking Association

The Australian Trucking Association and its member associations collectively represent 50,000 businesses and 200,000 people in the Australian trucking industry. Together we are committed to safety, professionalism and viability.

2. Summary of recommendations

Recommendation 1

Australian Government infrastructure investment should prioritise moving the freight task with less vehicle movements by:

- **Prioritising investment to fix gaps in the network for High Productivity Freight Vehicle access**
- **Ensure funding agreements require improved access for HPFVs to be gazetted by road managers**
- **Make road funding decisions based on whole of corridor assessments**
- **Transition the National Land Transport Network to a minimum A-double HPFV gazetted network.**

Recommendation 2

The Australian Government's National Electric Vehicles Strategy should prioritise bringing forward electrification in urban delivery and service vehicles.

Recommendation 3

The Australian Government should directly engage truck manufacturers (OEMs) on the right policy settings to incentivise electric heavy vehicles.

Recommendation 4

The Australian Government should support and incentivise the development of an Australian hydrogen industry, including for industrial uses.

Recommendation 5

The Australian Government should support and incentivise the development of hydrogen transport networks, including refuelling infrastructure.

Recommendation 6

The Australian Government should support and incentivise the development of hydrogen heavy vehicles, including support for trials and pilots.

Recommendation 7

The Australian Government should review heavy vehicle design rules, including mass and length, which are likely to hinder the commercial viability of hydrogen fuel cell vehicles.

Recommendation 8

The Australian Government should not pursue modal shift policies, which are not consistent with the Government commitment to focus emissions reduction on technology, not taxes.

Recommendation 9

The Australian Government should, through the National Cabinet and Council on Federal Financial Relations, encourage the reduction of stamp duty on new heavy vehicles.

Recommendation 10

The Australian Government should make the 50 per cent investment allowance permanent, to incentivise the purchase of new heavy vehicles and reducing the average age of the heavy vehicle fleet.

3. Introduction

The Australian Government has released the *Technology Investment Roadmap Discussion Paper: A framework to accelerate low emissions technologies*. Later in 2020, the Government will make the first annual Low Emissions Technology Statement to articulate the Government's technology investment priorities and progress towards them.¹

The ATA welcomes the intent to reduce emissions by accelerating new and emerging technologies. This intent would be bolstered with a stronger commitment to enable existing transport technologies with the ability to reduce emissions.

The Government has committed to meeting Australia's Kyoto-era and 2030 climate change targets.² Additionally, all states and territories have emissions reduction targets towards net zero by 2050.³

The transport sector accounts for approximately 20 per cent of Australian emissions.⁴ In April 2019 the Emissions Reduction Assurance Committee (ERAC) review discussion paper of the transport method for crediting emissions under the Emissions Reduction Fund (ERF) highlighted projected trends in transport emissions from 2018 out to 2030.

The projections indicated that cars and light commercial vehicles contributed 60 per cent of transport emissions in 2018, but domestic shipping, aviation, railways, rigid and articulated trucks are projected to contribute the bulk of the growth in emissions to 2030.

Of the projected growth rates, the ATA notes that articulated trucks are projected to have the smallest growth rate (15.4%) compared to rigid trucks (22.2%), railways (25%), domestic aviation (33.3%) and domestic shipping (50%).

For cars (projected growth rate of zero per cent to 2030) and light commercial vehicles (6.3%), it would appear that these projections rely on improvements to the emissions performance of these sectors to achieve minimal growth in emissions whilst at the same time the number of vehicles is likely to increase.⁵

The Technology Investment Roadmap Discussion Paper sets out low emission options for heavy vehicles and road freight as a challenge to be addressed beyond 2030. Ultimately, such an approach would represent a failure to implement solutions, in particular High Productivity Freight Vehicles, which are available today.

Reducing emissions is a critical public policy objective.

¹ Australian Government. [Technology Investment Roadmap Discussion Paper: A framework to accelerate low emissions technologies](#). May 2020. 4.

² Australian Government. May 2020. 3.

³ Austroads. [Issues Paper AP-C110-20: Decarbonisation of Road Transport Network Operations in Australia and New Zealand](#). May 2020. 7.

⁴ Austroads. May 2020. 14.

⁵ Emissions Reduction Assurance Committee. [Consultation paper: Review of the Carbon Credits \(Carbon Farming Initiative – Land and Sea Transport\) Methodology Determination 2015](#). April 2019. 2.

4. High Productivity Freight Vehicles – moving more freight with less truck movements and lower emissions

In 2020, the technology already exists to move more road freight with lower emissions: high productivity freight vehicles.

For example, **using an A-double instead of a semi-trailer to move 1000 tonnes of freight would reduce emissions by 28 per cent, and the number of truck trips required can be reduced in half.**⁶

Austrroads has reported that high productivity freight vehicles (HPFV) reduce emissions, reduce diesel use and that operational HPFV fleets, due to the use of newer vehicles, are reported to make use of the latest emissions standards.⁷

Between 1971 and 2007, trucking industry productivity increased six-fold due to the uptake of vehicles like B-doubles. It has been estimated that in the absence of productivity improvements over this period that nearly 150,000 articulated trucks, in addition to the 70,000 registered for use in 2007, would have been required to undertake the 2007 articulated truck freight task.⁸

The 2019 Australian Infrastructure Audit found that:

- HPFVs reduce total vehicle movements, reduce congestion growth, lower costs of freight, enable faster delivery times and are more likely to be safer, quieter and be less emissions intensive⁹
- Despite their benefits, the use of HPFVs on our roads has been limited
- Restricting the use of HPFVs locks in high freight costs for businesses and consumers, and limit benefits to road safety, air pollution and amenity.¹⁰

Enabling better road access for HPFVs would enable the road freight task to be done with less vehicle movements and lower emissions. However, there are gaps in the road infrastructure network.

The ATA submission to the Newell Highway Corridor Strategy analysed access for various HPFV combinations on the Newell Highway. For most combinations above the B-double, there are significant gaps in access (see [Attachment A, ATA submission to the Newell Highway Corridor Strategy](#)). On other freight routes, such as the Princes Highway, there are still gaps in infrastructure access for B-doubles.

These infrastructure gaps for HPFVs will result in the road freight task being moved in more truck movements, and higher emissions.

⁶ ATA. [Truck Impact Chart](#). March 2018. 25.

⁷ Austrroads. Quantifying the Benefits of High Productivity Vehicles. 2014. pi.

⁸ Bureau of Infrastructure, Transport, and Regional Economics. *Truck productivity*. 2011. pixy.

⁹ Infrastructure Australia. [An Assessment of Australia's Future Infrastructure Needs: The Australian Infrastructure Audit 2019](#). June 2019. 344.

¹⁰ Infrastructure Australia. 2019. 345.

To reduce emissions, reduce vehicle movements, improve productivity and safety outcomes, the Australian Government should prioritise delivering a national HPFV network.

Recommendation 1

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5. Encouraging electrification of the delivery fleet

Electric vehicles, apart from light vehicles, are likely to have greater potential for urban intensive uses such as delivery vehicles (heavy and light rigids), buses and service vehicles (such as waste vehicles).

At a global level, Volvo Trucks are pioneering electric trucks as a viable commercial solution for cities and businesses. An important part of Volvo Trucks ambition to move towards zero emissions, electric trucks also have potential for delivering quieter cities, cleaner urban air and better traffic flow. The vehicles are intended for urban use, such as deliveries, waste collection and light construction transport.¹¹

The Technology Investment Roadmap Discussion Paper cites that the National Electric Vehicles Strategy as an upcoming element of the Government's broader energy and emissions reduction policies.¹² This strategy should address policy incentives for bringing forward electrification in urban delivery and service vehicles.

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6. Bringing forward hydrogen fuel cell vehicles

In terms of non-diesel technologies beyond urban uses, hydrogen fuel cell heavy vehicles have the potential to offer quick refuelling and the design features of permitting greater vehicle range. However, take up within industry will remain low until refuelling infrastructure is in place and it is demonstrated that whole of life cycle running costs have reduced. Take up may vary by industry sector and be dependent on how accessible the technology becomes.

As pointed out by the 2019 Hydrogen for Transport issues paper, the freight sector is highly cost-competitive and additional costs cannot usually be recovered from customers.¹³ The industry is also characterised by small businesses. More than 93 per cent of trucking operators having a turnover of less than \$2 million and more than 98 per cent have 19 or fewer employees.¹⁴

¹¹ Volvo Trucks Global. [Electromobility](#). Accessed 17 June 2020.

¹² Australian Government. [Technology Investment Roadmap Discussion Paper: A framework to accelerate low emissions technologies](#). May 2020. 12.

¹³ Australian Government. [Hydrogen for transport issues paper](#). National Hydrogen Strategy Issues Papers. July 2019. 8.

¹⁴ Australian Bureau of Statistics. [8165.0 Counts of Australian Businesses, including entries and exits, June 2014 to June 2018](#), businesses by main state by industry class by turnover size ranges, June 2018 (a) and business by main state by industry class by employment size ranges. June 2018.

Government policy and investment will be critical to bringing forward hydrogen as a viable energy source for transport.

BP, a foundation sponsor of the ATA, has previously outlined considerations for the Australian Government to develop hydrogen as a local energy source.

Developing local industrial use of hydrogen would support a pathway to developing an export industry and the cost competitiveness of green hydrogen. BP's Kwinana refinery is evaluating the prospect of generating green hydrogen for its desulphurisation process and decarbonisation of an element of the oil refining process.¹⁵

BP have also set out key considerations for hydrogen as a transport fuel. These include:

- Designing a refuelling network and supporting infrastructure around the needs of end users. Specifically, to begin with this should focus on business to business ecosystems for heavy transport (both on and off road).
- A hydrogen ecosystem is underpinned by an end-to-end solution, which is economically viable within a geographically sensible supply envelope.
- Following the establishment of a business to business ecosystem, the market could expand into providing hydrogen into a business to consumer network.¹⁶

Ultimately, BP observes that investment in hydrogen is expected to be uneconomical at this stage and scale of the technology, and that it will be dependent on some form of incentive or support. Potential options could include targeted funding, excise production subsidies, carbon offset arrangements and feed in tariffs.¹⁷ The Australian Government should further develop and implement measures to bring forward the development and availability of hydrogen.

Hydrogen fuel cell heavy vehicles

Whilst real-world examples of hydrogen fuel cell electric vehicles (FCEV) trucks exist, none are in mass production.¹⁸ Without Government assistance, it is unlikely that a Original Equipment Manufacturer (OEM) of heavy vehicles would see a return on investment in hydrogen fuel cells for some time, and at current prices (if sold commercially), a trucking operator would also fail to see a return on investment.¹⁹

The ATA welcomes existing Government incentives. The Hydrogen Transition Centre, established by Deakin University with \$2 million in Australian Government funding, will partner with truck manufacturer PACCAR to further develop the potential of this technology.²⁰

¹⁵ BP. [Submission to National Hydrogen Strategy Issues Papers](#). August 2019. 2.

¹⁶ BP. 2019. 3.

¹⁷ BP. 2019. 5.

¹⁸ Australian Government. [Hydrogen for transport issues paper](#). National Hydrogen Strategy Issues Papers. July 2019. 8.

¹⁹ Information provided to the ATA. 2020.

²⁰ Deakin University. [Warrnambool research centre tests trucks running on water](#). 16 December 2019.

Delivering this solution for road freight transport in Australia will need to resolve some additional issues, including:

- Localising hydrogen fuel cells to be appropriate for Australia's High Productivity Freight Vehicles
- Heavy vehicle mass and length concessions to account for the hydrogen fuel cells
- Upskilling technicians, including in the vehicle dealer network, to ensure these vehicles are supported, including in regional areas
- Designing hydrogen heavy rigids, for smaller transport tasks that need greater range.²¹

Government investment and policy frameworks will be critical to green hydrogen becoming a commercially viable, realistic low emission transport technology. This task cannot be pushed out to 2030 and beyond, development support and incentives need to progress in the near-term future.

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²¹ Information provided to the ATA. 2020.

7. Modal efficiency

The discussion paper cites mode shift technologies as an indicative priority technology for transport.²² Additionally, a recent Austroads research report, commissioned by governments, recommended use of road pricing to incentivise modal shift.²³

The Productivity Commission considered freight modal issues in its draft report on national transport regulatory reform.

The Commission stated:

At the outset, it should be recognised that the choice of mode is a commercial decision, and government regulation should be neutral. Businesses will select the mode which best meets their needs. As road and rail have different strengths, they are not perfect substitutes. Much of the freight load on major routes will not be contestable, and in many cases road and rail act as complementary modes of transport. Where competition is possible, the relatively agile nature of road transport means that rail will not be suitable for all freight tasks and will be less efficient when there is double and triple handling over relatively shorter distances. As such, it is difficult to estimate the degree of substitutability, particularly as it is not possible to assume that all freight traffic on a given highway could be replaced by rail (as trucks may enter and exit at various points).²⁴

Modal shift quotas, or pricing regimes to incentivise modal shift, are effectively a tax on road freight, and especially on the part of the freight task where rail does not offer a substitute.

Such an approach is not consistent with the Government's focus on keeping the economy strong and focusing emissions reduction on technology, not taxes.

Recommendation 8

The Australian Government should not pursue modal shift policies, which are not consistent with the Government commitment to focus emissions reduction on technology, not taxes.

²² Australian Government. [Technology Investment Roadmap Discussion Paper: A framework to accelerate low emissions technologies](#). May 2020. 32.

²³ Austroads. [Issues Paper AP-C110-20: Decarbonisation of Road Transport Network Operations in Australia and New Zealand](#). May 2020. 26.

²⁴ Productivity Commission. [National transport regulatory reform](#). Draft report. November 2019. 302-303.

8. Investment in new vehicles

Any new technology for road freight transport, whether it is electric, hydrogen, will have minimal impact unless trucking operators invest in new heavy vehicles.

ANZ analysis in 2017 found that the national average fleet age for heavy vehicles continues to age at record levels, and that the **industry will need to invest in excess of \$3.5 billion in capital over the next 5 years just to meet expected demand.**²⁵

Investment needs to be higher to reduce the average age of the truck fleet and to increase the proportion of vehicles that meet newer emission standards.

More broadly, it illustrates the challenge for electrification and hydrogen is greater than developing the technology. The vehicles need to be purchased and deployed within the active truck fleet.

Stamp duty

The Australia's Future Tax Review (Henry Tax Review) recommended in 2010 that there should be no role for any stamp duties in a modern Australian tax system.²⁶ In 2015, the Australian Government released a tax discussion paper (Re: think) noting that stamp duties are some of the most inefficient taxes levied in Australia, and that such taxes are more likely to discourage turnover of taxed goods.²⁷

KPMG has noted that the more inefficient or distorting a tax is, the more likely resources will be moved away from their highest-value use, leading to lower productivity across the economy and lower living standards.²⁸ KPMG also reported that motor vehicle taxes, including stamp duties, are taxes on capital and increase the cost of investing in motor vehicles. This in turn leads to a reduction in investment in vehicles, and a high excess burden.²⁹

Stamp duties are a disincentive on integrating new technologies and new emission standards into the heavy vehicle fleet.

Investment allowance

New vehicles would also be incentivised by a permanent extension of the 50 per cent investment allowance.

As part of the economic measures in response to the impact of COVID-19, the Australian Government introduced a time limited 15 month investment incentive to support business investment and economic growth, by accelerating depreciation deductions.³⁰

However, the pressing need to upgrade the truck fleet with newer vehicles illustrates that the public policy objective of incentivising new vehicle purchases will extend beyond the

²⁵ ANZ, information provided to the ATA. 2017.

²⁶ Recommendation 51 in [Australia's Future Tax System report to the Treasurer](#). December 2009.

²⁷ Australian Government. [Re:think tax discussion paper](#). March 2015. 145.

²⁸ KPMG. [Economic Analysis of the Impacts of Using GST to Reform Taxes](#). September 2011. 1. 4.

²⁹ KPMG. 2011. 6.

³⁰ Australian Government. [Fact sheet: Economic response to the coronavirus, Delivering support for business investment](#). 3.

currently scheduled 15 months of the 50 per cent investment allowance. To contribute to deploying newer heavy vehicles into the fleet, the investment allowance should be made permanent.

Recommendation 9

The Australian Government should, through the National Cabinet and Council on Federal Financial Relations, encourage the reduction of stamp duty on new heavy vehicles.

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The Australian Government should make the 50 per cent investment allowance permanent, to incentivise the purchase of new heavy vehicles and reducing the average age of the heavy vehicle fleet.

9. ATA contact

The ATA contact for this submission is Samuel Marks, Transport and Infrastructure Adviser at samuel.marks@truck.net.au or on 02 6253 6923.