



NATIONAL ROAD TRANSPORT ASSOCIATION

Submission to the Climate Change Authority

2024 Issues paper: Targets, Pathways and Progress

16 May 2024

1. Executive Summary

The Climate Change Authority (CCA) review of the potential technology and emissions pathways for reducing carbon emissions from heavy vehicles is limited in scope and would lead to higher overall emissions and higher costs if reflected by government policy.

This will undermine the CCA's intent to recommend a 2035 economy wide emissions target that is both ambitious and achievable.

Whilst both battery electric vehicles and hydrogen fuel cell electric vehicles hold significant potential for reducing road freight emissions, they are insufficient on their own, especially in the short term.

The CCA exclusion of fuel efficiency, operational efficiencies and renewable diesel would result in higher costs and higher emissions. It would delay emissions reduction potential, resulting in higher overall emissions from road freight up to 2050.

2. About NatRoad

The National Road Transport Association (NatRoad) is Australia's largest national representative road freight transport operators' association. NatRoad represents road freight operators, from owner-drivers to large fleet operators, general freight, road trains, livestock, tippers, express, car carriers, as well as tankers and refrigerated operators.

3. Technology pathways for road freight transport

Trucking is diverse – with a range of transport tasks, distances travelled and weights carried. Australian trucking is unique – with higher vehicle payload and longer distances when compared to a range of overseas markets. This heavier end of the truck fleet also moves the most freight. At the same time, the majority of the heavy vehicle fleet is urban based and travelling shorter distances. This diversity will require a mix of technology solutions for low emissions transport, especially in the short term.

The CCA assessment of technology pathways for heavy vehicles appears to provide only very limited consideration of these issues.

Due to this diversity in transport tasks, it is fundamental that trucking businesses remain best placed to choose the best truck, and the best low emissions transport solution, for each specific transport task. The pace of technological development is also an unknown, such as the potential for improvements to battery technology.

Government policy should seek to maximise the choices that industry has to pursue decarbonisation, but not to make those choices for the trucking operator.

This submission sets out some of the major considerations for each pathway which apply to heavy vehicles and highlights some concerns with the scope of the CCA assessment.

Battery electric trucks

As mentioned in the CCA assessment, battery electric trucks are available now (in limited numbers) and can be deployed for urban and lighter payload tasks. They face a significant cost barrier, and whilst this can be expected to reduce over time it should be noted that a failure to bring forward the point of cost parity by using Government financial incentives will result in a delayed transition, with higher overall emissions.

The CCA assessment should be expanded to include the non-existent charging infrastructure network for electric trucks, which is another significant barrier likely to delay the take up of electric trucks and hinder the potential use cases for electrification.

Hydrogen fuel cell electric and hydrogen combustion engines

As outlined in the CCA assessment, hydrogen fuel cell electric vehicles (FCEV) provide another pathway for transport tasks which require longer range and heavier payloads. However, development of this technology remains at an early stage and the hydrogen refuelling network is non-existent.

Unfortunately, the CCA assessment excludes a number of fundamental issues. This includes:

- The cost of producing green hydrogen remains significant and most international studies suggest that cost parity with diesel will be significantly delayed compared to electric trucks. A critical issue will be if Australia can utilise its unique characteristics to produce lower cost green hydrogen on an earlier timeline. Without this development, relying solely on hydrogen to decarbonise heavier and longer distance trucks will result in a delayed and more costly transition.¹
- Hydrogen fuel cell electric vehicles appear likely to still face weight and range limitations compared to internal combustion engine vehicles. The form of hydrogen has a direct impact on its capabilities for heavy vehicles. Liquid hydrogen appears to have the most potential for increased range and weight capabilities but it is also more expensive to produce (compared to compressed gas forms of hydrogen). Either way, based on the current technological development it appears that hydrogen is unlikely to be capable of transporting the heaviest transport tasks that are part of the Australian freight task. Additionally, provision of hydrogen refuelling in more remote areas is likely to be challenging.
- Hydrogen fuelled internal combustion engine vehicles may have relevance for some transport tasks beyond the capability of FCEVs, and increase the economies of scale for hydrogen production and refuelling networks. Unfortunately, these are not considered in the CCA assessment (as reflected by the issues paper) despite being under development by major truck engine manufacturers.

Renewable diesel

The CCA exclusion of renewable diesel would result in higher emissions from road freight transport. As a potential 'drop in' solution, renewable diesel could result in significant emissions reduction whilst the roll out and development of electric and hydrogen vehicles continue. Renewable diesel

¹ Budget 2024-25 announcements by the Australian Government may improve this outlook, depending on the details of their implementation.

could contribute to increased emission reductions in the short to medium term, resulting in lower overall emissions from road freight transport out to 2050. Additionally, Australia may be dependent on renewable diesel as the only viable option for the heaviest and most remote transport tasks.

However, industry faces significant challenges with higher costs and limited supply of renewable diesel in Australia.

Improving efficiency

The exclusion of fuel efficiency and operational efficiency because they cannot completely abate emissions is incredibly short-sighted. Due to the diversity of transport tasks and the mixed nature of technology solutions for decarbonising road freight transport, improving efficiency can reduce emissions now from transport use cases where other solutions are not yet viable. This contributes to lower cumulative emissions and would assist in meeting interim emission targets on the pathway to net zero.

The International Road Transport Union (IRU) have demonstrated that a focus on improving efficiency can reduce the costs to both government and industry in the transition to net zero by 2050, whilst enabling more goods to be moved and allowing for a transition to electric, hydrogen and other alternative fuels over time.²

It should be noted that Europe's freight task has lower vehicle payload and shorter distances than Australia, so should be more naturally suited to electrification. The role for efficiency in reducing emissions will likely be greater in Australia.

NatRoad has launched a new initiative for trucking operators, [Get Fleet Fit](#), to help guide small businesses towards improved fuel efficiency, reduced emissions, lower costs and alignment with expectations for reducing emissions from both customers and governments.

4. Need for a cost-effective transition strategy

The Australian economy is delivered on the back of a truck, and this will be no different as we transition to a net zero carbon economy.

Road freight transport is largely a small business industry operating on tight margins, there is no pathway to a low emissions future without ensuring the cost effectiveness of that transition.

The enablers for reducing road freight emissions include:

- Alternative fuels and energy, including electric vehicles, hydrogen and renewable diesel.
- Improved energy efficiency, including improvements to vehicles and fuel efficiency, and increased use of high productivity freight vehicles.

The [NatRoad industry whitepaper on road freight decarbonisation](#) and our recent [submission on electric heavy vehicles](#) include a number of recommendations around the actionable steps that Government can implement, and should be considered as an attachment to this submission.

² See IRU, 2023, [Green Compact Research Study: Europe](#). NatRoad, as an IRU member, has access to the full research study.