

# Transport and Infrastructure Net Zero Consultation Roadmap

## Take the survey

Department of Climate Change, Energy, Environment and Water

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- 1 Confirm that you have read and understand this privacy notice.  
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Australian Trucking Association
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Yes
- 5 First name  
Not answered
- 6 Last name  
Not answered
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Not answered

- 8** Phone  
Not answered
- 9** Who are you answering on behalf of?  
Organisation
- 10** Organisation name  
Australian Trucking Association
- 11** What best describes you or your organisation?  
Not answered
- 12** What sector do you represent?  
Not answered
- 13** What state or territory do you live in?  
Australian Capital Territory
- 14** Postcode  
2603
- 15** What area best describes where you live?  
City
- 16** 1. Do you support the proposed guiding principles?  
Not answered
- 17** 1.1 Please add details to your response.  
Not answered
- 18** 2. Do you support the use of the avoid-shift-improve framework as a tool to identify opportunities for abatement?  
Not answered

- 19** 2.1 Please add details to your response.  
Not answered
- 20** 3. Do you agree the development of a national policy framework for active and public transport will support emissions reduction?  
Not answered
- 21** 3.1 Please add details to your response.  
Not answered
- 22** 4. What should be included in a national policy framework for active and public transport and how should it be developed?  
Not answered
- 23** 5. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure the movement of people contributes to transport emissions reduction?  
Not answered
- 24** 6.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure that the movement of goods contributes to transport emissions reduction?  
Not answered
- 25** 6.2. How would these actions address the identified challenges and opportunities for emissions reduction in the movement of goods?  
Not answered
- 26** 7. Do you agree with the proposed net zero pathway for light road vehicles?  
Not answered

- 27 7.1 Please add details to your response.  
Not answered
- 28 8. The Australian Government is currently developing an Australian New Vehicle Efficiency Standard and has already begun to implement actions in the National Electric Vehicle Strategy.8.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce light vehicle emissions?  
Not answered
- 29 8.2 How would these actions address the identified challenges and opportunities to reduce light vehicle emissions?  
Not answered
- 30 9. Do you agree with the proposed net zero pathway for heavy road vehicles?  
Not answered
- 31 9.1 Please add details to your response  
Not answered
- 32 10. The proposed pathway for heavy road vehicles relies on a mix of battery electric, hydrogen fuel-cell and low carbon liquid fuels.Rank from 1 to 3, the order in which these should be prioritised for emissions reduction.  
Not answered
- 33 10.1 Please add details to your response. Why did you rank them in that order?  
Not answered
- 34 11. What role should low carbon liquid fuels play in the heavy vehicle

decarbonisation?

Not answered

- 35 12. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce heavy vehicle emissions?

Not answered

- 36 13. Do you agree with the proposed net zero pathway for rail?

Not answered

- 37 13.1 Please add details to your response.

Not answered

- 38 14. The proposed pathway for rail relies on a mix of battery electric, hydrogen fuel-cell and low carbon liquid fuels. Rank from 1 to 3, the order in which these should be prioritised for emissions reduction.

Not answered

- 39 14.1 Please add details to your response. Why did you rank them in that order?

Not answered

- 40 15. What role should low carbon liquid fuels play in rail decarbonisation?

Not answered

- 41 16. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce rail emissions?

Not answered

- 42 16.1 How would these actions address the identified challenges and

opportunities to reduce rail emissions?

Not answered

43 17. Do you agree with the proposed net zero pathway for maritime?

Not answered

44 17.1 Please add details to your response.

Not answered

45 18. The Australian Government is engaging in consultation as part of the development of the Maritime Emissions Reduction National Action Plan and those consultations will also inform the final Roadmap and Action Plan. 18.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce maritime emissions?

Not answered

46 18.2 How would these actions address the identified challenges and opportunities to reduce maritime emissions?

Not answered

47 19. Do you agree with the proposed net zero pathway for aviation?

Not answered

48 19.1 Please add details to your response.

Not answered

49 20. The Australian Government has already engaged in consultation on aviation decarbonisation through the development of the Aviation White Paper and those consultations will also inform final Roadmap and Action Plan.

Not answered

- 50 20.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce aviation emissions?  
Not answered
- 51 21. Do you agree with the proposed net zero pathway for transport infrastructure?  
Not answered
- 52 21.1 Please add details to your response.  
Not answered
- 53 22. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce transport infrastructure emissions and ensure that transport infrastructure is ready for and enables low-emission transport modes?  
Not answered
- 54 22.1 How would these actions address the identified challenges and opportunities to reduce transport infrastructure emissions?  
Not answered
- 55 23. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure the energy mix is ready to support transport emissions reduction?  
Not answered
- 56 24. How should the use of low carbon liquid fuels (LCLFs) be prioritised across different transport modes over time to achieve maximum abatement?  
Not answered

- 57 25. What are the best ways for the Australian Government to work collaboratively with industry, business, governments and communities to implement the proposed pathways?  
Not answered
- 58 25.1 What are good domestic or international examples of partnership and collaboration on transport and transport infrastructure emissions reduction that could inform the final Roadmap and Action Plan?  
Not answered
- 59 25.2 What opportunities can Government leverage to show leadership in Australia and internationally?  
Not answered
- 60 26. What measures and metrics should be used to evaluate the final Transport and Infrastructure Net Zero Roadmap and Action Plan?  
Not answered
- 61 26.1 What other data and evidence could governments use and how could this offer further insights on the pace, scale and location of transport emissions reduction pathways?  
Not answered
- 62 27. Do you have any feedback on the proposed review process?  
Not answered
- 63 28. Do you have any further feedback on the Consultation Roadmap and proposed pathways?  
Not answered
- 64 28.1 Is there anything missing? Are the sections appropriately integrated? Is the Roadmap appropriately ambitious?  
Not answered

65 29. Is there any further information or documentation that you wish to be considered with your submission?

Not answered

66 Would you like to upload a document?

Yes

67 Have you removed any identifying information from your submission?

Yes

68 Upload a submission

20240801 ATA submission Road to Net Zero Final.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered



## CONSULTATION – TRANSPORT AND INFRASTRUCTURE NET ZERO ROADMAP

### AUSTRALIAN TRUCKING ASSOCIATION SUBMISSION 1 AUGUST 2024

#### 1. About the Australian Trucking Association

The Australian Trucking Association (ATA) is a united voice for our members on trucking issues of national importance. Through our ten member associations, we represent the 60,000 businesses and 200,000 people who make up the Australian trucking industry.

#### 2. Introduction

The Australian Government has issued their Transport and Infrastructure Net Zero Consultation Roadmap. The paper seeks input on potential pathways for achieving economy-wide net zero emissions in the transport and transport infrastructure sectors. The Government is seeking industry input on the necessary actions and policies that must be implemented to support these pathways.

Responses to the questions posed throughout this Consultation Roadmap will inform the development of the final Transport and Infrastructure Net Zero Roadmap and Action Plan, which will be released later this year.

#### 3. Summary of recommendations

The recommendations throughout this submission can be summarised as follows.

1. The Government should cap carbon emissions from heavy vehicles at their current levels and work closely with industry to establish emission reduction targets.
2. The Government should consider hydrogen-based technology as a potential pathway to reducing carbon emissions in the heavy vehicle industry.
3. The Government should create an environment that facilitates maximum innovation in alternative fuels to secure the development of stable and mature carbon emission reduction technologies.
4. The Government should amend ADR 43/04 to allow refrigerated trucks to be 2.6 metres wide.
5. The Government should Amend ADR 43/04 to extend the safer freight vehicles concept to trailers.
6. The Government should amend the Australian Design Rules to deliver an 8-tonne single steer axle mass limit and a 1.5 tonne increase in the tandem drive rear axle mass limit for low or zero carbon trucks.

7. The Government should invest an additional \$5 billion in truck roads and rest areas over the ten-year infrastructure pipeline.
8. The Government should permanently reinstate full expensing for trucks and trailers.
9. The Government should incentivise the purchase of low or zero carbon trucks.
10. The Government should increase its focus on rapid and ultra-fast charging infrastructure for trucks.
11. The Government should promote safer and more productive heavy vehicles.
12. The Government should assess and understand the upgrade capacity of key freight roads and structures.

#### 4. Industry overview

The key facts and figures for the heavy vehicle industry are as follows:

##### a. Current industry

If current policy and technology trends continue, global energy consumption and energy-related carbon dioxide emissions will increase through 2050 due to population and economic growth.<sup>1</sup> This is pertinent as hard-to-electrify transportation sectors such as long-haul trucking have very limited mature low-carbon technology options.<sup>2</sup> Even with aggressive reductions in travel growth, shifts to mass modes of transport, efficiency improvements and deep market penetration by vehicles running on electricity and hydrogen, there remains a large demand for dense liquid fuels up to 2075.<sup>3</sup> Currently, 94% of Australia's total energy consumption is derived from fossil-based sources. This makes Australia the highest emitter of greenhouse gases per capita of any nation globally.<sup>4</sup>

##### b. Challenges

Heavy vehicles are major contributors to greenhouse gas emissions and air pollution.<sup>5</sup> Forecasts suggest that without a policy to cause the diesel fleet to retire early, diesel will remain at around 55 per cent of the total heavy vehicle fleet in 2050, locking in emissions from diesel combustion well past 2050.<sup>6</sup>

The heavy vehicle fleet is a hard to abate sector and a complete transition to zero carbon vehicles is currently not feasible. This is due to several technological, economic, and infrastructural challenges. The industry faces significant hurdles in transitioning to zero-

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<sup>1</sup> US Energy Information Administration, *International Energy Outlook 2021* (IEO2021), Centre for Strategic and International Studies (October 2021).

<sup>2</sup> Lewis Fulton *et al*, 'The need for biofuels as part of a low carbon energy future' (2015) 9(5) *Biofuels, Bioproducts and Biorefining* 476.

<sup>3</sup> *Ibid*.

<sup>4</sup> Hong Li *et al*, 'A review on renewable energy transition in Australia: An updated depiction' (2020) 242(1) *Journal of Cleaner Production* 6.

<sup>5</sup> Luisa Franchina, 'Thinking green: The role of smart technologies in transforming cities' waste and supply Chain's flow' (2021) 2 *Cleaner Engineering and Technology* 1.

<sup>6</sup> Department of Primary Industries and Regional Development, *Renewable Diesel Factsheet* (2023) <[https://www.agric.wa.gov.au/sites/gateway/files/Renewable Diesel Factsheet.pdf](https://www.agric.wa.gov.au/sites/gateway/files/Renewable_Diesel_Factsheet.pdf)>.

emission technologies, which are not yet sufficiently advanced or widely available to meet the demanding requirements of heavy freight operations. Furthermore, the Government cannot accurately predict the exact timelines and duty cycles of competing low emissions technologies. “Decarbonisation can be a difficult concept for operators to get their minds across, but it’s important that they do because the low and no carbon future is already upon us. We have targets from governments, but we have little assistance and no definitive direction that can be implemented based upon current expectations around cost reductions”.<sup>7</sup>

In the interim, we propose a pragmatic target that aligns with the Government’s environmental objectives and industry’s capability. This approach acknowledges the growing freight task and aims to mitigate potential negative environmental impacts.

By adopting a balanced approach that caps emissions at current levels and working with industry to set realistic targets, supported by the comprehensive recommendations throughout this submission, we can promote a stable reduction of carbon emissions in the heavy vehicle sector.

**Recommendation: Cap carbon emissions from heavy vehicles at their current levels and work closely with industry to establish realistic and achievable carbon emission reduction targets.**

Hydrogen has emerged as a potential solution to reducing carbon emissions in the long-haul freight sector due to faster refuelling speeds and longer ranges. The development of a hydrogen fuelling solution is still in its infancy, and the Government should focus on this in the medium-term as part of a holistic view to reducing emissions.<sup>8</sup> It should be noted that the productivity and infrastructure recommendations in this submission benefit hydrogen fuelled trucks also.

**Recommendation: The Government should consider hydrogen-based technology as a potential pathway to reducing carbon emissions in the heavy vehicle industry.**

The evolution pathways of alternative fuel heavy vehicle technologies are currently unclear. The ATA submits that the Government remains fuel agnostic and open to a mixture of alternative fuels and technologies including combustible and hydrogen fuel cell options that will reduce carbon emissions in the heavy vehicle sector.

**Recommendation: The Government should create an environment that facilitates maximum innovation in alternative fuels to secure the development of stable and mature carbon emission reduction technologies.**

Work undertaken by the International Council on Clean Transportation in their white paper ‘Total Cost of Ownership of Alternative Powertrain Technologies for Class 8 Long-Haul Trucks in the United States’<sup>9</sup> provides detailed insight into low and zero carbon technologies (battery electric, hydrogen fuel-cell and hydrogen ICE) against current diesel-powered trucks. Some of the key issues affecting operators are summarised below.

<sup>7</sup> Samson Kwok Yu Fu, ‘Metropolitan Freight Efficiency and Emissions Project Review and Closure Report’ (2024) Western Roads Federation & Curtin University, 10.

<sup>8</sup> Ibid.

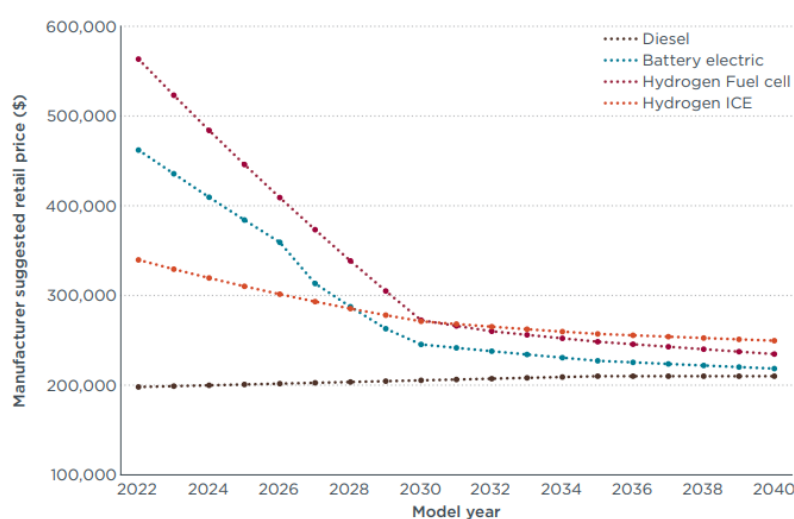
<sup>9</sup> International Council on Clean Transportation, ‘Total Cost of Ownership of Alternative Powertrain Technologies for Class 8 Long-Haul Trucks in the United States’ <<https://theicct.org/wp-content/uploads/2023/04/tco-alt-powertrain-long-haul-trucks-us-apr23.pdf>>.

### Upfront costs:

**Diesel:** Generally, diesel trucks have the lowest upfront cost compared to zero-emission vehicles. They are well-established in the market and benefit from economies of scale.

**Battery electric:** These have a significantly higher upfront cost, primarily due to the cost of the battery. In 2020, the upfront cost for a battery-electric truck was estimated between USD\$200,000 and USD\$800,000, depending on the range and battery size.

**Hydrogen fuel cell:** These typically have even higher upfront costs than battery electric trucks. The cost is driven by the hydrogen fuel cell technology and storage requirements, which are currently more expensive than battery technology due to their infancy.



### Operating costs:

**Diesel:** Operating costs are primarily influenced by fuel prices, maintenance, and emissions-related expenses. Diesel fuel costs are generally higher compared to electricity but lower than hydrogen.

**Battery electric:** These have lower operating costs due to cheaper electricity prices and reduced maintenance needs, as they have fewer moving parts and no emissions-related equipment.

**Hydrogen fuel cell:** Operating costs are higher than battery electric trucks because hydrogen fuel is currently more expensive than electricity, and the technology requires specialised maintenance.

### Payload capacity:

**Diesel:** Generally diesel trucks have a high payload capacity due to their established technology and efficiency in weight distribution.

**Battery electric:** The payload capacity can be limited by the weight of the battery. Larger batteries needed for extended range can reduce the payload capacity unless regulatory adjustments allow for higher vehicle weights.

**Hydrogen fuel cell:** These trucks can offer better payload capacity than battery electric trucks because hydrogen storage systems are lighter than equivalent battery systems, allowing for more cargo weight.

## 5. The Road to Net Zero – Modernising Australia’s truck fleet

The ATA is working in collaboration with other key industry bodies to support the Government’s Net Zero initiative. We are advising the Government on measures that are commensurate with their targets and that mature quickly, seeing measurable progress toward carbon reduction goals.

We have a four-pillar approach to modernising the Australian truck fleet, addressing and supporting the targets set by the Government.

- Drop in fuels
- Removing the barriers to the use of low or zero carbon vehicles
- Incentivising the purchase of low or zero carbon vehicles
- Higher productivity vehicles

There are also numerous routes to navigate in the medium to long term. Some of these policies and actions will take much longer to mature than the following advice but must form part of the ongoing conversation.

## 6. Drop in fuels

Australia imports most of its oil. In 2021, 91 per cent of all refined product consumed in Australia was imported. This includes imported refined oil and imported crude and condensate that is refined domestically.<sup>10</sup> Australia remains heavily reliant upon fossil fuels and has some of the highest reliance on fossil fuels for power generation in the world.<sup>11</sup> This dependence on imported fossil fuels makes the trucking industry vulnerable to supply disruptions and price volatility in global oil markets.

Encouraging the adoption of alternative fuels like renewable diesel reduces reliance on finite fossil fuel resources and enhances energy security and resilience. These fuels can be produced domestically from renewable sources<sup>12</sup>, reducing dependence on imported oil and strengthening Australia’s energy independence.

Alternative fuels like renewable diesel offer significant reductions in greenhouse gas emissions compared to conventional fossil fuels. Renewable diesel, produced from renewable feedstocks such as oilseed crops can reduce greenhouse gas emissions by 63%-77% compared to petroleum diesel.<sup>13</sup>

Alternative fuels offer environmental benefits beyond greenhouse gas emissions reduction. Renewable diesel and hydrogen produce fewer harmful air pollutants like carbon monoxide (CO) and nitrous oxide (N<sub>2</sub>O)<sup>14</sup> and less particulate matter like sulphur oxides (SO<sub>x</sub>) compared to conventional diesel fuel. Renewable fuels have higher cetene

<sup>10</sup> Department of Industry, Science, Energy and Resources (June 2021) *Australian Petroleum Statistics – Issue 299*.

<sup>11</sup> Hong Li *et al*, ‘A review on renewable energy transition in Australia: An updated depiction’ (2020) 242(1) *Journal of Cleaner Production* 6.

<sup>12</sup> Department of Climate Change, Energy, the Environment and Water, *Enabling supply of renewable diesel in Australia: A consultation paper on establishing a paraffinic diesel fuel standard for Australia* (November 2023) 4.

<sup>13</sup> Hui Xu *et al*, ‘Life Cycle Greenhouse Gas Emissions of Biodiesel and Renewable Diesel Production in the United States’ (2022) 56(12) *Environmental Science and Technology* 7512.

<sup>14</sup> Kwangsam Na, ‘Impact of biodiesel and renewable diesel on emissions of regulated pollutants and greenhouse gases on a 2000 heavy duty diesel truck’ (2015) 107 *Atmospheric Environment* 307.

number paraffinic hydrocarbons.<sup>15</sup> These are free of aromatics and sulphur and produce less particulate emissions enabling longer regeneration frequency in the engine and, consequently, lower fuel consumption. By reducing emissions of air pollutants, the adoption of alternative fuels can improve air quality, protect public health, and support sustainable development in communities across Australia, particularly in urban areas with high traffic volumes.

The ATA and the Truck Industry Council (TIC) prepared a submission for the Low Carbon Liquid Fuels – A Future Made in Australia consultation. This submission is attached to support the information detailed above.

## **7. Removing barriers to the use of low or zero carbon vehicles**

This section deals with the potential of battery electric and hydrogen trucks. Battery electric and hydrogen trucks have the potential to play an important role in Australia's future trucking industry. The disparity between the maturity of these two technologies is broad, and in some instances, it is appropriate to refer to electric vehicle technologies only. Some of the upcoming recommendations recognise this disparity and refers to electric vehicles (EVs) specifically. References to low and zero carbon vehicles include both battery electric and hydrogen technologies.

34 per cent of Australia's road freight task is carried out in capital cities and other urban areas. 44 per cent of this task is carried out by light commercial vehicles and rigid trucks.<sup>16</sup> This part of the freight task offers immediate opportunities for electrification.

The 56 per cent of the urban freight task that is carried out in articulated trucks also has the potential for electrification, although Australia's vehicle mass limits are an issue.

Although these prospects are impressive, it should be emphasised that low and zero carbon trucks are not suitable for every transport use case. For example, it is unlikely that remote or heavy haulage trucking will be electrified soon.

The ATA advises reform of mass and dimension regulations to accommodate the additional weight and size of low and zero carbon vehicles. Current standards will have to be reviewed to allow heavier low and zero carbon vehicles on roads. Battery technology will have to evolve further to impact the current weights substantially. Reviewing current regulations and aligning them to allow the uptake of electric vehicles will create immediate impact for the uptake of low and zero carbon trucks.

The Australian Government must work with state and territory authorities to eliminate regulatory constraints, such as width and mass limits, to facilitate compliance with Euro VI standards. The implementation of Euro VI entails manufacturers integrating advanced safety and fuel-saving technologies into Australian models, aligning them with counterparts in other countries.

However, while adjustments to mass limits are aimed at supporting Euro VI, they alone cannot fully mitigate the productivity setback faced by electric trucks due to their heavy batteries. For example, the current steer axle mass limit in Australia, set at 6.5 tonnes, will continue to hinder the deployment of larger battery electric truck models. Although battery

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<sup>15</sup> A cetene number is a measure of a fuel's ignition delay which is the time period between the start of injection and the first identifiable pressure increase during combustion of the fuel.

<sup>16</sup> ABS, Survey of motor vehicle use, 2020. Table 21.

technology may evolve to become lighter over time, further revisions to mass limits will be imperative to eliminate this productivity bottleneck and expand the range of low and zero carbon trucks available in Australia.

The substantial upfront costs associated with transitioning to low and zero carbon heavy vehicles will persist as significant challenges even after regulatory barriers are lifted. The Government must develop solutions to guarantee the supply, adoption, and operation of low and zero carbon heavy vehicles. Further reforms to mass limits will be necessary to overcome the productivity penalty that low and zero carbon trucks face because of their heavy batteries and to increase the supply of low and zero carbon trucks in Australia.

### **Regulatory barriers to the supply and purchase of electric trucks**

The ATA/EVC report identified the need to reform the Australian Design Rules to accelerate the take up of electric trucks. These reforms need to comprise -

- aligning Australia's truck width rules with international markets
- increasing the general mass limits for electric trucks.

### **Aligning truck widths with international markets**

Until October 2023, trucks in Australia had a maximum width of 2.5 metres. Trucks in Europe are 2.55 metres wide (2.6 metres for refrigerated vehicles); trucks in the United States are 2.6 metres wide.<sup>17</sup>

Australia's width rules meant that every European and North American truck model had to be redesigned for the Australian market. This has reduced the availability of vehicle models and increased their cost.

Australian Design Rule 43/04 increased the maximum width of rigid trucks and prime movers to 2.55 metres, provided they comply with a package of additional safety rules.<sup>18</sup>

Over time, this design rule will improve the availability of new trucks in Australia, including electric trucks. But further reforms to truck width are needed.

### **Allowing 2.6-metre-wide refrigerated trucks**

The ATA has long argued that increasing the thermal efficiency of refrigerated trucks should be a priority, given the energy use involved in keeping freight cold in Australia's warming climate.

Extending the width of refrigerated trucks to 2.6 metres would deliver a considerable reduction in heat leakage because their side insulation could be thicker. This would reduce the fuel or other energy consumption needed to keep the freight compartment cold and expand the use case for battery electric refrigerated trucks.

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<sup>17</sup> ATA and Electric Vehicle Council, Electric trucks: keeping shelves stocked in a net zero world. January 2022, 14.

<sup>18</sup> *Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006*, s 6.1.5.2.

It should be noted that a 2.55-metre-wide truck already occupies a 2.6 metre wide envelope, since the ADRs allow equipment such as cross view mirrors, monitoring devices and tyre pressure gauges to extend up to 100 mm in total beyond the overall width of the vehicle.<sup>19</sup>

**Recommendation: Amend ADR 43/04 to allow refrigerated trucks to be 2.6 metres wide.**

### Extending the wider width to trailers

The increased width allowed under ADR 43/04 is only available for rigid trucks and prime movers, not trailers such as semitrailers.<sup>20</sup> There is no safety or operational reason for this restriction.

The safer freight vehicles concept in ADR 43/04 should be extended to trailers, which should be subject to the same additional safety requirements, where relevant, as rigid trucks and prime movers.

Consistent with the above recommendation, refrigerated trailers should be allowed to be 2.6 metres wide. Thermal heat loss associated with a refrigerated vehicle increases with its length.

Flat-sided fridge trailers are considered relatively safe due to their lack of protrusions, which can reduce the risk of injuries in collisions with pedestrians and other road users. The smooth surfaces of these trailers enhance vehicle stability and aerodynamics, contributing to overall road safety. Increased aerodynamic properties can lead to less fuel use.

**Recommendation: Amend ADR 43/04 to extend the safer freight vehicles concept to trailers. Refrigerated trailers should be allowed to 2.6 metres wide.**

### Increasing the mass allowed for low and zero carbon trucks

Batteries and fuel cells are heavy. Australia's truck mass limits, and particularly the 6.5 tonne steer axle mass limit, are holding back the deployment of larger electric truck models.<sup>21</sup>

Several states have recognised this issue and now allow heavier electric trucks to use selected roads. Some of these additional mass arrangements are in table 1.

**Table 1: Additional mass arrangements for electric trucks, selected states**

State	Mass arrangement
<b>New South Wales</b>	Two-year access trial with up to 8t on a single steer axle and up to 18.5t on the drive axle <sup>22</sup>

<sup>19</sup> *Vehicle Standard (Australian Design Rule – Definitions and Vehicle Categories) 2005*, s 7 (definition of 'overall width').

<sup>20</sup> ADR 43/04 provides that the 2.55 metre width option only applies to vehicle categories NB2 (a medium goods vehicle with a GVM over 4.5t and up to 12t) and NC (a heavy goods vehicle with a GVM exceeding 12t). Trailers are categorised separately.

<sup>21</sup> ATA and EVC, 2022. 14.

<sup>22</sup> Transport for NSW, [Towards net zero emissions freight policy](#). Website viewed 19 March 2024.

<b>Victoria</b>	Pre-approved arterial and municipal road network that can be used by the operators of Volvo semitrailer FM and FH models (7.5t steer and 44.0t) <sup>23</sup>
<b>Queensland</b>	Access for zero emission heavy vehicles with a steer axle mass of up to 8 tonnes on selected routes in southeast Queensland <sup>24</sup>
<b>South Australia</b>	Trial scheme allowing eligible trucks to operate on a selected road network. Single steer prime movers limited to 7.5t. <sup>25</sup>

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While they are a good first step, these trials and road networks are necessarily restricted. They have inconsistent requirements and do not join up.

The steer axle mass limit for low or zero carbon trucks should increase across Australia later this year, as part of the adoption of Australian Design Rule 80/04. ADR 80/04 primarily mandates the Euro VI and comparable US/Japanese noxious emissions standards for diesel trucks, but electric and hydrogen trucks will be considered to comply.<sup>26</sup>

The NTC has validated that a 500 kg increase in steer axle mass is justified to offset the weight of the emission controls needed to meet the Euro VI standard, as well as other recent and near future regulatory requirements.<sup>27</sup> If adopted by governments, this increase – from 6.5 tonnes to 7 tonnes – would apply to electric and hydrogen trucks too.

But a 500 kg mass increase, while welcome, is still not sufficient to support the use of heavier electric trucks.

At present, an increase in single steer axle mass to 8 tonnes is needed so operators can move from conventional to electric equipment without compromising their vehicle's payload and productivity. The tandem drive rear axle limit should increase by 1.5 tonnes.

The allowed single steer axle mass for electric trucks should ultimately rise to 8.5 tonnes, with tandem drive rear axle mass increasing by 2 tonnes.

These increases in vehicle mass will require road and bridge upgrades.

In our 2024-25 pre-budget submission, we argued that the Government should invest in a new \$5 billion truck roads and rest areas program over the 10-year infrastructure pipeline.<sup>28</sup>

Funding under the program would be subject to assessment by an independent panel, including industry representatives and truck drivers. All projects would be linked to outcomes, including projects to upgrade roads and bridges to handle the higher mass needed for low and zero carbon trucks.

<sup>23</sup> VicRoads, [Low or zero emission heavy vehicles](#). Website viewed 18 March 2024.

<sup>24</sup> Mellish, B (Queensland Minister for Transport and Main Roads). [Queensland embraces zero emission heavy vehicles](#). Media release, 8 March 2024.

<sup>25</sup> Department for Infrastructure and Transport, [Low and zero emission heavy vehicle trial scheme](#). Website viewed 18 March 2024.

<sup>26</sup> *Vehicle Standard (Australian Design Rule 80/04 – Emission Control for Heavy Vehicles) 2023*, s 5.

<sup>27</sup> De Rozario, A. *Euro VI mass increases*. NTC presentation to TMC 23, 16 October 2023.

<sup>28</sup> ATA, [2024-25 pre-budget submission](#). 25 January 2024.

**Recommendation: The Government should amend the Australian Design Rules to deliver an 8-tonne single steer axle mass limit and a 1.5 tonne increase in the tandem drive rear axle mass limit for low or zero carbon trucks.**

**In the longer term, the single steer axle mass limit should increase to 8.5 tonnes, with the tandem drive rear axle mass limit increasing by 2 tonnes.**

**Recommendation: The Government should invest an additional \$5 billion in truck roads and rest areas over the ten-year infrastructure pipeline. The investment should include projects to upgrade roads and bridges to handle the mass requirements of electric trucks.**

## **8. Incentivising the purchase of low or zero carbon vehicles**

### **Supporting businesses to purchase electric trucks**

Through the Australian Renewable Energy Agency (ARENA), the Government is funding a series of projects to roll out electric trucks. For example, ARENA is providing—

- \$15.8 million to WA freight provider Centurion for 30 battery electric trucks and 15 dual port chargers<sup>29</sup>
- \$20.1 million to Team Global Express for its Depot of the Future project, which will deploy 60 battery electric delivery vehicles.<sup>30</sup>

The ATA welcomes these projects, but ARENA’s project-by-project approach can, at best, demonstrate the value of new technologies. It cannot support their implementation at scale.

It is time for the Government to put in place incentives that would be easily available to smaller trucking businesses, as well as other businesses that operate trucks.

The state governments could also support the rollout of electric trucks by removing stamp duty on these and other new trucks.<sup>31</sup>

### **Reinstating full expensing**

The Government should permanently reinstate temporary full expensing for trucks and trailers.

Under temporary full expensing, an eligible business could fully expense in its tax return the cost of an eligible new asset first held, used or installed ready for use between 6 October 2020 and 30 June 2023. Temporary full expensing was available to businesses with an aggregate turnover of less than \$5 billion.<sup>32</sup>

<sup>29</sup> ARENA, [Decarbonising transport across Western Australia](#). Media release, 7 March 2024.

<sup>30</sup> ARENA, [Depot of the future delivers Australia’s largest electric vehicle logistics fleet](#). Media release, 6 December 2022. The depot was launched on 14 March 2024.

<sup>31</sup> ATA, 2024. 6.

<sup>32</sup> ATO, [About temporary full expensing](#). Website viewed 16 March 2024.

During COVID, temporary full expensing proved to be highly effective at encouraging trucking businesses to invest in new trucks. For example, new truck sales in the December quarter 2020 were stronger than in the same period in 2019, despite the pandemic.<sup>33</sup>

Reintroducing full expensing for trucks and trailers on a permanent basis would do more than support the purchase of electric trucks. It would support a broad refresh of Australia's ageing truck fleet, which now has an average age of 16.3 years for heavy rigid trucks and 12.5 years for articulated trucks.<sup>34</sup>

No matter how they are powered, new vehicles are more efficient, have the latest safety technologies and meet more stringent noxious emissions standards.

**Recommendation: The Australian Government should permanently reinstate full expensing for trucks and trailers.**

### **Additional incentives for purchasing electric trucks**

The higher upfront price of electric trucks is a key barrier to their take up in Australia.<sup>35</sup>

This aligns with international experience. A US non-profit that accelerates clean transport, CALSTART, has reported that—

High incremental cost is cited by fleet purchases as the prime barrier preventing clean vehicle purchases. Incentives for the purchase of medium- and heavy-duty commercial vehicles are needed to help create a robust, sustainable market.<sup>36</sup>

Globally, a range of purchase price incentives now exist, such as CALSTART's voucher incentive program (VIP) model.

Under this model, the Government provides a voucher to reduce the incremental cost between a conventionally fuelled vehicle and a ZLEV. Dealer networks help fleets navigate the voucher incentive program process and take on the financial responsibility of completing voucher redemptions.

Truck purchasers see a lower purchase cost. Dealers receive the full price for the vehicles and the program makes up the difference between the original price and the reduced voucher price.

The ATA supports this model, because it could be available at the point of sale without the need for purchasers to undertake a separate application process.

A purchase price incentive of 50 per cent of the price difference between electric and conventional trucks would split the extra cost of purchasing an electric truck between the community and the purchaser.

<sup>33</sup> Truck Industry Council, Truck market comment: fourth quarter, 2020. January 2021. 1.

<sup>34</sup> BITRE, Road vehicles, Australia, January 2023. 9.

<sup>35</sup> ATA and EVC, 16.

<sup>36</sup> CALSTART, Voucher incentive programs: a tool for clean commercial vehicle deployment. July 2019. ES-1.

We know that electric truck technology will become more cost effective as production scales up.<sup>37</sup> As the cost of the technology falls, the cost of the subsidy will fall also.

**Recommendation: The Australian Government should implement a purchase price incentive of 50 per cent of the price difference between comparable electric and conventional truck models.**

The above recommendations consider electric trucks but upon the commercial maturity of hydrogen technologies, such measures could be extended to facilitate the uptake of hydrogen powered trucks too.

### **Charging infrastructure**

Providing truck charging infrastructure will be another key enabler of the transition to electric trucks.<sup>38</sup>

The Australian Government is investing in charging through its Driving the Nation fund. The fund intends to establish a national EV charging network and support an expansion of the Hydrogen Highways program. We support the fund's initial approach and would like to see the charging network upgrades rolled out as appropriate, but there is a missed opportunity for charging heavy vehicles.

We note that the fund's investments are focused on passenger vehicle charging and depot-based chargers. To support the purchase of battery electric trucks by time poor truck operators, the Government should increase its focus on building public rapid and ultra-fast recharging infrastructure for trucks.

As bp has pointed out, fleet managers across markets say they want to de-risk charging, which for charging during the day is likely to mean getting vehicles charged with certainty as quickly as possible.<sup>39</sup>

The focus of building this charging infrastructure should be on key urban and freight locations, such as service stations in logistics precincts. The charging facilities should be designed so they can be easily used by trucks.

The rollout will also require grid upgrades, including improvements in electricity network data sharing, support for second lines of supply to charging sites and service stations, and supportive tariff structures for charge point operators.

**Recommendation: The Australian Government should increase its focus on rapid and ultra-fast charging infrastructure for trucks, including through supporting upgrades to the power grid and its operation.**

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<sup>37</sup> ICCT. [A meta-study of purchase costs for zero-emission trucks](#). February 2022. 14, 15.

<sup>38</sup> ATA and EVC, 16.

<sup>39</sup> bp Australia, [bp Australia response to the National Electric Vehicle Strategy consultation paper](#). October 2022. 4.

## 9. Higher productivity vehicles

Higher productivity vehicles are also safer vehicles. Many productivity measures are supported by comprehensive safety features with a view to continually improving the safety of the fleet. Safer vehicles on our roads protect the public interest while contributing to a low carbon future.

The key benefit of reducing barriers for the use of low and zero carbon trucks is that the safety and productivity benefits can be enjoyed by the current fleet, allowing for even greater carbon emissions reduction across the heavy vehicle sector.

High productivity vehicles can carry more load per trip, meaning less trucks are required to transport the same load. This leads to lower fuel consumption on a per tonne-kilometre basis. With fewer trucks making fewer trips, operating costs such as fuel, maintenance and labour are reduced, resulting in overall cost savings for operators.

These fewer trips produce less tailpipe emissions and carbon emissions, supporting the government's environmental targets, and fewer trucks means less wear and tear on infrastructure, leading to lower average maintenance costs.

In terms of safety, higher productivity vehicles incorporate advanced technology such as improved braking systems, stability control, and better load distribution, all of which enhance road safety. Fewer trips can also mean less traffic congestion, lowering the risks of accidents on the road.

Productive vehicles are efficient vehicles, contributing to increased productivity for businesses who rely on the timely delivery of goods. This same efficiency can benefit regional and remote areas by providing a better supply chain with better access to markets and reduced transportation costs.

### Key configuration comparison

	Comparison of key road freight delivery configurations		
	Semi Trailer	B-double	A-double
GCM (tonne) GML	43.0	63.0	79.5
Maximum Combination Length (metres)	19.0	26.0	36.5
Payload (tonne)	24.0	38.8	48.7
Trips per 1,000 tonnes of payload moved	42	26	21
ESA's per 1,000 tonnes of payload moved	304	224	225
Fuel required per 1,000 km lead	100%	82%	72%
Driver requirement	100%	62%	50%

The relative merits of higher productivity vehicles are demonstrated above.

A B-double combination has approximately 74% of the road impact, uses 82% of the fuel, and requires only 62% of the trips to move the same amount of payload (1,000 tonnes) as a semi-trailer.

An A-double combination has about 74% of the road impact, uses 72% of the fuel, and requires only half the number of trips to move the same amount of payload (1,000 tonnes) compared to a semi-trailer.

For higher productivity vehicles, reductions in carbon emissions (CO<sub>2</sub>-e) are achieved by moving more payload with fewer trucks. As a result, there is a reduction of both noxious and carbon emissions because of a direct reduction in diesel consumed.

### Emissions standards comparison

The following table compares carbon emissions from different emissions standards. It is based on data from Australian National Greenhouse Accounts Factors. Scope 1 emissions are a significant contributor to the overall carbon footprint of the heavy vehicle sector.

The table below quantifies the emissions reductions achievable through the use of different fuel types and emissions standards, illustrating the impact of cleaner fuels and technologies.

SCOPE 1 Emissions for Transport involving Heavy Vehicles							
Diesel (litres)	t CO <sub>2</sub> -e						
	Liquified Natural Gas (LNG)	Diesel Oil			Renewable Diesel		
		ADR80/02 (Euro IV) or higher	ADR80/00 (Euro III)	ADR70/00 (Euro I)	ADR80/02 (Euro IV) or higher	ADR80/00 (Euro III)	ADR70/00 (Euro I)
10.0	13.79	27.16	27.17	27.21	0.18	0.19	0.23
20.0	27.58	54.33	54.35	54.43	0.36	0.39	0.46
30.0	41.37	81.49	81.52	81.64	0.54	0.58	0.69
40.0	55.15	108.65	108.70	108.85	0.73	0.77	0.93
50.0	68.94	135.81	135.87	136.07	0.91	0.97	1.16
60.0	82.73	162.98	163.05	163.28	1.09	1.16	1.39
70.0	96.52	190.14	190.22	190.49	1.27	1.35	1.62
80.0	110.31	217.30	217.40	217.70	1.45	1.54	1.85
90.0	124.10	244.47	244.57	244.92	1.63	1.74	2.08
100	137.89	271.63	271.74	272.13	1.81	1.93	2.32

Scope 1 emissions or direct emissions are produced from sources within the boundary of an organisation and as a result of that organisation's activities. They are calculated at the point of emission release. These emissions include those from the following activities:

- Generation of energy, heat, steam and electricity, such as fuel combustion in generators;
- Manufacturing processes which produce emissions such as cement, aluminium and ammonia production;
- Transportation of materials, products, waste and people; such as the use of vehicles owned and operated by the reporting organisation;
- Intentional or unintentional GHG releases (fugitive emissions) such as methane emissions from coal mines, natural gas leaks from joints and seals; and
- Solid waste disposal and wastewater treatment including on-site waste management

In the case of transport, Scope 1 emissions are tail pipe emissions. The table shows the substantial emissions reductions that can be achieved through newer, stricter emissions standards and alternative fuels. This supports our recommendations for regulatory reforms to accelerate the uptake of low carbon liquid fuels (see attached submission). The table demonstrates the potential for reduced fuel consumption which if realised, would provide economic benefit to operators. The table also provides empirical evidence supporting the alignment with international emissions standards. As stated previously, the Australian Government must work with state and territory authorities to eliminate regulatory constraints, such as width and mass limits, to facilitate compliance with Euro VI standards.

Generally, a truck's fuel consumption increases at a slower rate than the increase in the truck combination's payload. However, as payload increases, the combination's ability to accelerate is reduced (i.e., keeping up with traffic), hill climbing ability is diminished, and

manoeuvrability around roads is compromised, limiting the physical road network options available for the combination.

### Productive trucks are safer trucks

The report 'Review of Major Crash Rates for Australian Higher Productivity Vehicles: 2015 – 2019' shows an overall improvement in safety outcomes of 60% compared to the conventional fleet on a distance travelled basis. This marks a significant increase over a 2017 report, which found a 46% improvement.

When comparing conventional rigid trucks (with or without trailers) to their Performance-Based Standards (PBS) equivalents, the improvement in safety is slightly less pronounced but still notable at 47.3% on a distance travelled basis. PBS articulated combinations had the lowest rate of crashes per distance travelled, with 5.4 crashes per 100 million kilometres travelled, which is almost 70% lower than the rate for their conventional counterparts.

The table below reflects the benefits of using High Productivity Freight Vehicles (HPFV) as published by Austroads.<sup>40</sup>

Accident type by severity Rate per 100 km		Minor	Moderate	Serious	Major	Total accidents	Total serious & major accidents
Conventional Trucks	Articulated (69%)	21	22	16	13	72	29
	Rigid Truck (31%)	42	34	19	7	102	26
Conventional incident weight , total		27.5	25.7	16.9	11.1	81.3	28
HPFVs	Articulated (69%)	8	2	2	5	18	7
	Rigid Truck (31%)	20	26	4	2	53	6
Observed HPFVs incident weighted total		11.7	9.4	2.6	4.1	27.9	6.7
Total HPFVs incident savings (rate per 100 km)		15.8	16.3	14.3	7.1	53.5	21.4
Observed HPFVs weight incident savings (%)		57%	63%	85%	63%	66%	76%

Promoting cleaner and safer options for freight will not only benefit the environment but also improve the overall efficiency and safety of our transport network.

1. Enhanced safety: Safer heavy vehicles equipped with advanced safety features, such as automated braking systems, lane-keeping assistance, and improved visibility, will significantly reduce the risk of accidents. This will lead to fewer injuries and fatalities, enhancing the well-being of all road users.

<sup>40</sup> Austroads report FS1805 – Quantifications of the benefits resulting from the use of HPFVs.

2. Environmental benefits: Cleaner heavy vehicles, including those using alternative fuels will reduce greenhouse gas emissions and air pollution. This is crucial for meeting Australia's environmental targets and improving air quality in urban areas.
3. Increased productivity: More productive heavy vehicles, designed for higher payloads and better fuel efficiency, will reduce the number of trips required to transport goods. This will lower operational costs, decrease road congestion, and enhance the overall efficiency of the freight industry.
4. Compliance with regulations: Promoting safer and cleaner heavy vehicles aligns with national and international regulatory standards. Ensuring that the fleet complies with evolving safety and environmental regulations will mitigate the risk of penalties and enhance the industry's reputation.

**Recommendation: Promote safer and more productive heavy vehicles – cleaner and safer options for freight**

The trucking industry is pivotal to our nation's economy, ensuring the movement of goods across vast distances. As we transition towards a more sustainable and efficient future, it is essential to enhance access and productivity for both the existing fleet, electric trucks, and emerging low and zero carbon trucks. A critical component of this transition is understanding and upgrading the capacity of key freight roads and structures.

1. Enhanced efficiency and reduced delays: Upgrading the capacity of key freight routes and structures will streamline transportation, reducing bottlenecks and improving delivery times. This will enhance the efficiency of the entire logistics network, providing economic benefits through cost savings and increased productivity.
2. Support for electric vehicles: We are witnessing a gradual shift in the supply and choice of electric vehicles, which offer significant environmental benefits. Upgrading infrastructure to support these vehicles, including charging stations and weight-bearing structures, is crucial to facilitate their integration into the fleet and ensure their operational viability.
3. Safety and compliance: Understanding and upgrading key freight roads and structures will also enhance safety for all road users. Improved infrastructure can reduce the risk of accidents, ensure compliance with safety standards, and support the heavy vehicle industry in meeting regulatory requirements.

**Recommendation: Facilitate access and productivity measures for the existing fleet and electric vehicles by understanding and upgrading capacity of key freight roads and structures**



## **CONSULTATION – LOW CARBON LIQUID FUELS – A FUTURE MADE IN AUSTRALIA: UNLOCKING AUSTRALIA'S LOW CARBON LIQUID FUEL OPPORTUNITY**

### **AUSTRALIAN TRUCKING ASSOCIATION AND TRUCK INDUSTRY COUNCIL SUBMISSION 25 JULY 2024**

#### **1. About the Australian Trucking Association**

The Australian Trucking Association (ATA) is a united voice for our members on trucking issues of national importance. Through our [ten member associations](#), we represent the 60,000 businesses and 200,000 people who make up the Australian trucking industry.

#### **2. About the Truck Industry Council**

The Truck Industry Council (TIC) is an independent, not-for-profit peak industry organisation representing the united views of truck manufacturers, truck importers, heavy vehicle engine companies and major component suppliers to the Federal Government, State and Territory Governments, Local Government, Industry and Business associations and the general public.

#### **3. Introduction**

The Australian Government has announced a new *Made in Australia Act* to coordinate a package of reforms and initiatives which will support the growth of new industries and benefit communities and workers. The low carbon liquid fuels (LCLF) industries have been identified as a key element of the package.

The Government is seeking informed views from industry to understand how a LCLF industry can support Australia's net zero transformation, leverage competitive advantage in Australian domestic LCLF production, and align economic incentives with national interest. We believe in a holistic approach to modernising Australia's truck fleet to reach net zero targets, supported by realistic transition arrangements. LCLFs are an important element of achieving this goal.

Throughout this submission, the term 'alternative/transitional fuels' will be used interchangeably with LCLF to refer to renewable diesel, green diesel, Fisher-Tropsch diesel, HEFA diesel, and biodiesel. The name of a particular advanced transitional fuel will be used when referred to specifically. Diesel will be referred to as a traditional fuel due to its almost exclusive application in the heavy vehicle industry.

Trucking is a hard-to-abate sector for carbon reduction due to its reliance on diesel engines, limited alternative fuel options, and high transition costs. Instead of aiming for net zero, focusing on lowering emissions through productivity measures, fuel efficiency improvements,

and hybrid technologies is more practical for the immediate future. This approach allows for significant emission reductions while accommodating current technological and infrastructural limitations, ensuring effective progress without disrupting the industry. The Australian trucking sector has shown improvements in reducing emissions per tonne-kilometre over time. Advancements in vehicle technology, stricter standards, and higher productivity measures have contributed to a downward trend. We aim to continue this trend and work with the government to reduce emissions across our sector.

Table 1<sup>1</sup>

Year	Emission Standard	PM		NOx	
		Test Limit (g/kWh)	Multiple	Test Limit (g/kWh)	Multiple
Pre-1996	None (Euro 0)	1.2	x120	16	x40
Pre-2003	ADR70/00 (Euro 1)	0.4	x36	7.6	x28
Pre-2008	ADR80/00 (Euro 3)	0.1	x10	5	x13
Pre-2011	ADR80/02 (Euro 4)	0.02	x2	3.5	x9
2011 - 2024	ADR80/03 (Euro 5)	0.02	x2	2	x5
Nov 2024	ADR80/04 (Euro 6)	0.01	x1	0.4	x1

*The above table shows the exhaust emission levels in g/kWh (grams per kilowatt hour). The data for pre-1996 vehicles is an average, and in many cases would be much higher. The data for other years assumes that the engine is built to the applicable "EURO" standard, and not one of the acceptable equivalent standards from the USA or Japan.*

#### 4. Summary of recommendations

The recommendations throughout this submission can be summarised as follows.

1. The Australian Government should recognise that heavy road transport is a hard to abate sector and focus on achieving sensible emissions reduction targets by a variety of means, rather than mandating net zero emissions by an arbitrary date.
2. The Australian Government should facilitate the rapid establishment of a domestic LCLF industry in Australia.
3. The Australian Government should invest in supply-side LCLF measures that place significant weight on factors such as bowser cost, quality, and the reliability of supply. The ATA and TIC are open to various mechanisms including contract for difference schemes, fixed-grant amount incentives, or production tax incentives to achieve this goal.
4. The Australian Government should recognise that any 'green premium' applied to transport fuel costs will be passed to customers, resulting in increased costs to business and living.
5. The Australian Government should not introduce burdensome measuring and reporting requirements on transport operators, particularly smaller operators.
6. The Australian Government should introduce blending mandates and increase these by the end of 2028 and 2030.

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<sup>1</sup> Truck Industry Council.

7. The Australian Government should introduce a renewable diesel fuel standard and certification scheme for LCLFs.
8. The Australian Government should retain the existing fuel tax credits (FTC) system for conventional diesel to ensure that transport costs are affordable.
9. The Australian Government should adjust net taxes and charges applied to LCLFs (either produced domestically or imported) via the RUC and FTC system to ensure at least price parity with traditional diesel.
10. The Australian Government should recognise LCLFs as a crucial transitional step in reducing heavy transport carbon emissions in the short to medium term. The ATA and TIC assert that the contrary views of the Climate Change Authority are unrealistic.
11. The Australian Government should continue to work with industry to map a realistic transition pathway to LCLFs.

## 5. Industry overview

The average age of the Australian truck is 15 years<sup>2</sup> which poses risks for health and environment. Newer vehicles have greater safety features than older ones and tend to be better maintained. No matter how they are powered, new vehicles are more efficient, have the latest safety technologies and meet more stringent noxious emissions standards.

Trucks will continue to play a critical role in the delivery of the freight task to 2050 and beyond as it grows by approximately 26%. As a result, we must take appropriate action to begin modernising Australia's truck fleet now, including –

- Encouraging the take up of alternative fuel vehicles such as battery electric or hydrogen;
- Reducing noxious emissions by supporting the upgrade of the diesel fleet to ADR 80/04 (Euro VI equivalents) and beyond; and
- Supporting renewable diesel as a transitional fuel.

The ATA's and TIC's individual submissions on the Transport and Infrastructure Net Zero Roadmap will further explore the required steps in modernising Australia's truck fleet.

The key facts and figures for the heavy vehicle industry are as follows:

### a. Make-up of Australia's trucks

Of the approximately 600,000 trucks in Australia above 4.5t GVM, roughly 20% (100,000) are articulated, whilst 80% (500,000) are rigid trucks. When it comes to emissions, articulated trucks are responsible for approximately 60% of emissions output, whilst rigid trucks account for around 40%.<sup>3</sup>

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<sup>2</sup> Truck Industry Council/BITRE.

<sup>3</sup> Heavy Vehicle Industry Australia, 'HVIA Submission – CCA: Targets, Pathways and Progress' (2024) 3.

## **b. Current fuel usage**

Australian Petroleum Statistics estimated that 32,574 million litres of diesel were sold in 2023. This figure includes automotive diesel, industrial and marine diesel fuel. The road freight sector is a major user of diesel, and diesel accounted for 99.8% of fuel consumption by trucks. This represents a huge opportunity to reduce carbon emissions across the road freight sector and beyond with the uptake of transitional fuels.

## **c. Challenges**

Heavy vehicles are major contributors to greenhouse gas emissions and air pollution.<sup>4</sup> Forecasts suggest that without a policy to cause the diesel fleet to retire early, diesel heavy vehicles in Australia will remain at around 55 per cent of the total heavy vehicle fleet in 2050, locking in emissions from diesel combustion well past 2050.<sup>5</sup>

The Australian trucking industry faces some challenges in the uptake of alternative fuel vehicles generally, which may impact attitudes towards reducing carbon emissions overall.

### **i. Readiness of electric vehicles**

Electrification of transport is currently limited to passenger transport and short-haul transport. Application in trucking is limited by long and unpredictable routes, stringent driving time regulations, and substantial payloads. As it stands, heavy batteries, slow charging speeds and lack of charging facilities means the Government should be exploring drop in fuels as part of the emission reduction strategy.<sup>6</sup>

### **ii. Readiness of hydrogen vehicles**

Hydrogen has emerged as a potential solution to reducing carbon emissions in the long-haul freight sector due to faster refuelling speeds and longer range. The development of a hydrogen fuelling solution is still in its infancy, and the Government should focus on this in the medium-term as part of a holistic view to reducing emissions.<sup>7</sup>

### **iii. Lack of operator's confidence**

The trucking industry is made of small businesses. In June 2022, almost 58,000 of the industry's 59,100 businesses had fewer than twenty employees. 31,600 trucking businesses had no employees at all.<sup>8</sup> Without a clear roadmap and range of solutions, small and medium operators will struggle to back the alternative fuel vehicle movement.

"Decarbonisation can be a difficult concept for operators to get their minds across, but its important that they do because the low and no carbon future is already upon us. We have targets from governments, but we have little assistance and no definitive direction that can be implemented based upon current expectations around cost reductions".<sup>9</sup>

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<sup>4</sup> Luisa Franchina, 'Thinking green: The role of smart technologies in transforming cities' waste and supply Chain's flow' (2021) 2 *Cleaner Engineering and Technology* 1.

<sup>5</sup> Department of Primary Industries and Regional Development, *Renewable Diesel Factsheet* (2023) <[https://www.agric.wa.gov.au/sites/gateway/files/Renewable Diesel Factsheet.pdf](https://www.agric.wa.gov.au/sites/gateway/files/Renewable_Diesel_Factsheet.pdf)>.

<sup>6</sup> Samson Kwok Yu Fu, 'Metropolitan Freight Efficiency and Emissions Project Review and Closure Report' (2024) Western Roads Federation & Curtin University, 9.

<sup>7</sup> Ibid.

<sup>8</sup> Australian Trucking Association, *Trucking Australia – The Report* (March 2023) 12.

<sup>9</sup> Samson Kwok Yu Fu, 'Metropolitan Freight Efficiency and Emissions Project Review and Closure Report' (2024) Western Roads Federation & Curtin University, 10.

**Recommendation: The Australian Government should recognise that heavy road transport is a hard to abate sector and focus on achieving sensible emissions reduction targets by a variety of means, rather than mandating net zero emissions by an arbitrary date.**

## **6. The low carbon liquid fuels opportunity**

Given the challenges outlined above, renewable diesel has clear potential benefits as a drop in solution to bring emissions down quicker, and as a potential decarbonisation pathway for harder to abate parts of the heavy vehicle fleet.<sup>10</sup> There is a clear and pressing need to increase the supply and lower the cost of low carbon fuel options in Australia.<sup>11</sup>

### **Fundamental: Emphasising the supply-side approach**

We strongly support a supply-side approach and the creation of a domestic market for low-carbon fuels. This should be a cornerstone of the LCLF strategy. Ensuring a reliable and affordable supply of LCLFs is crucial for the sustainability and effectiveness of this transition. We are open to various mechanisms, such as contract for difference schemes, fixed-grant amount incentives, or production tax incentives, to achieve this goal.

**Recommendation: The Australian Government should facilitate the rapid establishment of a domestic LCLF industry in Australia.**

In evaluating these options, the government must place significant weight on factors such as bowser cost, quality, and the reliability of supply.

**Recommendation: The Australian Government should invest in supply-side LCLF measures that place significant weight on factors such as bowser cost, quality, and the reliability of supply. The ATA and TIC are open to various mechanisms including contract for difference schemes, fixed-grant amount incentives, or production tax incentives to achieve this goal.**

### **Fundamental: Ensuring demand-side cost neutrality**

Subject to the success of the supply-side measures, the government must ensure the transition to LCLF is cost-neutral for trucking operators. Fuel taxation is a critical instrument. We support retaining the Fuel Tax Credits (FTC) for conventional diesel and recommend adjusting taxes or the Road User Charge (RUC) for LCLF components to achieve price parity.

The Californian and Swedish approach detailed later in this submission supports the types of supply and demand-side measures we are suggesting.

#### **Pricing and green premium data:**

The average retail price of diesel in Australia for the week ending 30 June 2024 was \$1.93 per litre.

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<sup>10</sup> NatRoad, 'Australian road freight transport decarbonisation' (2023) 9.

<sup>11</sup> Ibid.

The issue with calculating precise costs for renewable diesel is there is no domestic supply industry, and the cost of renewable diesel is subject to international import and export factors. The price fluctuations of feedstock are also a consideration.

We can look to the Sustainable Aviation Fuel (SAF) discussion for perspective. SAF costs are 120%-700% higher than fossil-fuel based jet fuels and can reduce CO2 emissions by between 27%-87%.<sup>12</sup> Internationally, SAF costs two to four times more than conventional fuel. There is a large gap between the demand for SAF and net-zero by 2050 projections. Without a mechanism to manage the green premium associated with renewable diesel, this effect may be replicated in the heavy vehicle industry.

The point is the price of renewable diesel will be higher than regular diesel at least until a domestic industry is established. As such, without policy, there will be no incentive to produce or use renewable diesel.

### **Impact of increased charges on trucking:**

Freight is a significant input cost for all businesses. Trucking is a high capital, high turnover, and low-margin industry. Any increase in costs, including a green premium for LCLF, will be passed on to customers, raising the cost of business and living.

Australian Bureau of Statistics data has shown that freight costs directly impact the price of goods in a household basket.<sup>13</sup> Additionally, rising freight costs have led some businesses to relocate outside of Australia<sup>14</sup>, reducing the country's competitiveness.

In assessing all options for both demand and supply-side measures, the government must strive to achieve at least a cost-neutral outcome for trucking operators, considering factors such as fuel costs, engine efficiency, maintenance, and administrative burdens. This is especially crucial during the transitional period to ensure the viability of the industry and prevent negative economic impacts.

**Recommendation: The Australian Government should recognise that any 'green premium' applied to transport fuel costs will be passed to customers, resulting in increased costs to business and living.**

### **Current and future demand:**

Australia is focusing on developing its LCLF industry with significant government support. The Federal Budget 2024-25 includes measures to support the industry, such as \$22.7 billion for renewable initiatives and \$18.5 million over four years for developing a certification scheme for these fuels.

### **Market acceptance:**

If alternative fuels have a premium price, the demand must be generated. Regulatory pressures can begin the transition, but widespread uptake requires economic feasibility and

<sup>12</sup> Madelynn Watson *et al*, 'Sustainable aviation fuel technologies, costs, emissions, policies, and markets: A critical review' (2024) 449 *Journal of Cleaner Production*.

<sup>13</sup> Australian Bureau of Statistics, 'Spotlight on recent trends in Freight costs' (2023) <<https://www.abs.gov.au/articles/spotlight-recent-trends-freight-costs>>.

<sup>14</sup> Forbes, 'What challenges does the logistics industry face in 2023?' (2023) <<https://www.forbes.com.au/news/leadership/what-challenges-does-the-logistics-industry-face-in-2023/>>.

competitive pricing with traditional diesel. Without demand incentives, supply incentives will have little effect.

### **Production volumes:**

The potential production volumes for renewable diesel in Australia are highly dependent on the level of government support. High support could enable rapid scaling and significant production capacity, making Australia a major producer of renewable diesel. Moderate support would result in steady but slower growth, while low support would lead to limited production and reliance on imports. For a successful transition to renewable diesel, comprehensive government policies, funding, and supportive regulatory frameworks are essential.

### **Industry size and maturity:**

Currently there is no commercial renewable diesel production or supply in Australia, but the domestic production of low carbon liquid fuels could provide opportunities for regional development and new jobs, alongside liquid fuels security benefits.<sup>15</sup>

There is no mature low-carbon technology to slash emissions from heavy vehicles that travel long distances or haul heavy loads. This is why drop in fuels are essential while we continue to find other ways to reduce carbon emissions from the fleet, including by supporting the uptake of battery electric trucks in Australian cities.

The ATA's submission to the House of Representatives Standing Committee on Climate Change, Energy, Environment and Water's inquiry into the transition to electric vehicles sets out recommendations for increasing the use of battery electric trucks.<sup>16</sup>

Several companies are looking to develop domestic LCLF production. Three groups are progressing proposals in Western Australia with two based in the Wheatbelt region and one in Perth.<sup>17</sup> The Government believes that domestic production of low carbon liquid fuels could provide opportunities for regional development and new jobs, alongside liquid fuels security benefits.<sup>18</sup>

Part of the effort by industry is being undertaken by bp. They plan to transform its Kwinana oil refinery in Western Australia into a multi-use energy hub, focusing on renewable energy production and storage. The key elements of the Kwinana Energy Hub plan include:

- a) **Green Hydrogen Production:** bp intends to produce green hydrogen using renewable energy sources, contributing to the decarbonisation of industrial processes and transportation.
- b) **Renewable Fuels:** The hub will produce sustainable fuels, including sustainable aviation fuel (SAF) and renewable fuels for mining and heavy transport, supporting the transition to lower-carbon transportation fuels.
- c) **Integrated Energy Solutions:** The site will host renewable energy generation and storage facilities, to support the hub's operations and supply energy to the grid.

<sup>15</sup> Australian Government, Transport and Infrastructure Net Zero Consultation Roadmap, May 2024, 6.

<sup>16</sup> ATA, [Inquiry into the transition to electric vehicles](#). Submission to the House of Representatives Standing Committee on Climate Change, Energy, Environment and Water. 22 March 2024.

<sup>17</sup> Department of Primary Industries and Regional Development, *Renewable Diesel Factsheet (2023)* <[https://www.agric.wa.gov.au/sites/gateway/files/Renewable Diesel Factsheet.pdf](https://www.agric.wa.gov.au/sites/gateway/files/Renewable_Diesel_Factsheet.pdf)>.

<sup>18</sup> Australian Government, Transport and Infrastructure Net Zero Consultation Roadmap, May 2024, 6.

- d) **Innovation and Technology:** bp plans to invest in advanced technologies to enhance the efficiency and sustainability of the hub's operations.

Overall, the Kwinana Energy Hub aims to leverage bp's existing infrastructure to support Australia's energy transition and contribute to achieving net-zero emissions goals.

As part of the Future Made in Australia plan, the Australian Government will fast-track support for a low carbon liquid fuel industry, with an initial focus on renewable diesel fuel to reduce emissions in the heavy vehicle sector.<sup>19</sup> The ATA and TIC look forward to the development of the renewable diesel fuel quality standard and the emergence of a domestic supply industry.

#### **Reporting requirements:**

Small trucking operators often lack the resources to collect data, assess impacts, and report carbon outcomes to government or supply chain entities. These tasks are resource-intensive and require investments in data management systems and staff which small operators can't afford due to tight margins.

Imposing reporting requirements on small operators can be overly burdensome. Instead, these responsibilities should fall on larger entities within the supply chain, who have the capacity to manage these tasks effectively. This approach ensures that environmental goals are met without overwhelming smaller operators.

**Recommendation: The Australian Government should not introduce burdensome measuring and reporting requirements on transport operators, particularly smaller operators.**

#### **Comparative advantages:**

More than half of Australia's canola crop is exported to the European Union. At least 60% of that amount is used in biodiesel production. This ownership of the raw feedstocks means Australia is already well positioned to sell domestically if a domestic renewable fuel industry can be created.

#### **Reliance on imports vs. domestic production (energy security):**

Australia imports most of its oil. In 2021, 91% of all refined product consumed in Australia was imported. This includes imported refined oil and imported crude and condensate that is refined domestically.<sup>20</sup> Australia remains heavily reliant upon fossil fuels and has some of the highest reliance on fossil fuels for power generation in the world.<sup>21</sup> This dependence on imported fossil fuels makes the trucking industry vulnerable to supply disruptions and price volatility in global oil markets. Encouraging the adoption of alternative fuels reduces reliance on finite fossil fuel resources and enhances energy security and resilience. These fuels can be produced domestically from renewable sources<sup>22</sup>, reducing dependence on imported oil

<sup>19</sup> Australian Government, Transport and Infrastructure Net Zero Consultation Roadmap, May 2024, 6.

<sup>20</sup> Department of Industry, Science, Energy and Resources (June 2021) *Australian Petroleum Statistics – Issue 299*.

<sup>21</sup> Hong Li *et al*, 'A review on renewable energy transition in Australia: An updated depiction' (2020) 242(1) *Journal of Cleaner Production* 6.

<sup>22</sup> Department of Climate Change, Energy, the Environment and Water, *Enabling supply of renewable diesel in Australia: A consultation paper on establishing a paraffinic diesel fuel standard for Australia* (November 2023) 4.

and strengthening Australia's energy independence.

## 7. Demand mechanisms

### Mandates and targets:

In 2023, one per cent of new truck sales were zero or low emission vehicles, which represents an increase of almost 400 per cent on 2022 figures. Of those sales, 50 per cent were zero emission and 50 percent were hybrid. At the start of 2024, there were approximately 200-250 zero emission trucks on Australian roads.

Forecasts from the Truck Industry Council suggest by 2030, 1 in 4 new truck sales will be zero emission and there will be 20,000 zero emission trucks on the road. This only represents 2-3 per cent of the truck fleet. A blending mandate will provide the road transport industry with a carbon abatement opportunity that works across the entire existing fleet.

A blending mandate creates a stable demand for renewable diesel, encouraging investment in its production and distribution infrastructure. This can lead to economies of scale, reducing costs over time to a point where subsidies are not necessary. A clear blending mandate also provides regulatory certainty for businesses, allowing them to plan long-term investments.

We note that the recommended targets could be progressively increased to ensure continuous improvement and sustained momentum in reducing emissions. This approach would provide clear, long-term signals to the market, encouraging investment in low-carbon technologies and infrastructure.

Incremental increases in targets can also help mitigate the potential shock to the industry, allowing businesses to adapt and innovate in a manageable way. This would align with the broader goals of the LCLF initiative. A similar approach has been adopted successfully in California, discussed on the next page.

Research undertaken by TIC has forecast current and projected production capabilities:

#### Bio-diesel production facilities (3 currently in operation):

Current capacity: 100 million litres/year

Current production: 5 million litres/year (primarily for mining and marine use)

Potential capacity by 2026: 100 million litres/year

Based on recent transport diesel oil sales figures and under current production capacity, a lower blend is quickly achievable.

$30,000,000,000 \text{ litres/year} \times 0.003 = 90,000,000 \text{ litres/year}$  (10 per cent under current capacity).

#### Proposed renewable diesel refineries (Ampol and BP):

Combined projected volume by 2030: 2,550 million litres/year (renewable diesel and SAF combined)

Both refineries use the HEFA process that produces 55% renewable diesel and 45% SAF  
Renewable Diesel Production (55% of total): 1,403 million litres/year

Total Renewable Diesel Production by 2030 (including bio-diesel from refineries currently operating): 1,500 million litres/year

$30,000,000,000 \text{ litres/year} \times 0.05 = 1,500,000,000 \text{ litres/year}$  (forecast post-2030 capacity).

The introduction of blending mandates for bio and renewable diesel is a pivotal move towards a sustainable transport sector. To achieve this effectively, the Australian Government should adopt a book and claim system. This system allows for accurate tracking and certification of bio and renewable diesel volumes within the overall diesel supply chain, facilitating seamless integration, supporting incremental increases in mandates, and enhancing transparency and credibility. A book and claim system would also remove the cost of complexity of requiring every single diesel purchase to meet the mandated proportion of renewable and biodiesel.

A book and claim system allows for the meeting of mandates by separating fuel certification from the physical fuel. This separation reduces the need for physical blending and complex storage and transport, making it easier to integrate renewable diesel into the supply chain.

Fuel producers receive certificates for producing the mandated fuel blends. Suppliers buy these certificates to ensure they are meeting the mandated amount. Suppliers don't need to physically blend the mandated amounts at the point of sale, they simply ensure they have the right certificates to cover the mandated blend amount of their diesel sales.

The system supports increases in renewable diesel production and blending mandates as capacities grow, ensuring a smooth transition over time, and applies uniformly across all diesel usage in Australia, avoiding complications in differentiating between various uses (heavy vehicles vs passenger vehicles, off-road vs on-road).

The focus should be on the total amount used across the country. A book and claim system ensures that every litre of renewable diesel produced collectively contributes towards carbon reduction targets, rather than focusing on where or by whom the fuel is consumed.

By mandating blending with current production capacity and planning for higher mandates as capacity increases, Australia can start realising substantial carbon abatement from diesel vehicles.

**Recommendation: The Australian Government should adopt a book and claim system to introduce blending mandates and increase these by the end of 2028 and 2030.**

**Recommendation:**

**Bio-diesel mandates pre-2030:**

- **Aspire to introduce a 0.3% biodiesel mandate by the end of 2026.**
- **Aspire to introduce a 0.6% biodiesel mandate by the end of 2028.**

**Bio/renewable diesel mandate post-2030:**

- **Aspire to introduce an R5 mandate by the end of 2030.**
- **Aspire to reduce the carbon intensity of diesel (compared to mineral diesel) by 2035.**

**Recommendation: The Australian Government should embark on a renewable fuels information/education campaign outlining the environmental benefits of low carbon liquid fuels and their compatibility with existing and new diesel engines.**

### **Renewable diesel fuel standard:**

A renewable diesel fuel standard will bring several environmental, economic and social benefits.

- Renewable diesel produces significantly lower lifecycle greenhouse gas emissions compared to conventional fossil diesel.
- Renewable diesel burns cleaner than conventional diesel, resulting in lower emissions of pollutants such as particulate matter (PM) and sulphur oxides (SO<sub>x</sub>). This leads to better air quality, particularly in urban areas.
- The renewable element of processing promotes the use of sustainable resources and reduces reliance on finite fossil fuels.
- Establishing a renewable diesel standard can stimulate investment in renewable diesel production facilities and infrastructure. This can create jobs and drive economic growth in the renewable energy sector.
- By diversifying the fuel supply with domestically produced renewable diesel, Australia can enhance its energy security and reduce vulnerability to global oil price fluctuations and supply disruptions.
- A renewable diesel standard can be used to dictate carbon intensity. The government should develop measures to assess and progressively reduce the carbon intensity of low carbon liquid fuels, as demonstrated in the Californian case study below.

### **Case studies**

#### **a) California's Low Carbon Fuel Standard**

California's Low Carbon Fuel Standard is a key policy aimed at reducing greenhouse gas (GHG) emissions in the transportation sector. Using market-based incentives, it encourages the use of cleaner, low-carbon fuels. It has had some notable impact since its introduction -

- Since inception, the LCFS has reduced carbon intensity by more than 10%.
- Reduced GHG emissions from the transport sector and improved air quality via the reduction of pollutants associated with fossil fuel combustion.
- The LCFS credit system has encouraged technical innovations in fuel production and efficiency.

It has done this by –

- Setting decreasing annual targets for carbon intensity, encouraging continuous improvement.
- Utilising a credit and deficit system to create a market-driven approach to emissions reductions.
- Using lifecycle analysis to assess the intensity of fuels, ensuring emissions are considered from production to combustion.

There are lessons to be learned from the Californian experience. These are that –

- Market-based incentives can effectively drive the adoption of low-carbon fuels.
- Lifecycle analysis promotes full account of emissions from across the supply chain.
- Periodic reviews can maintain the relevance and effectiveness of policy.
- A renewable fuel standard can drive economic growth, investment and innovation. It can significantly reduce carbon emissions, GHGs and air quality generally.

It is essential to remember that the success in California was built on their support for technological innovation, ability to manage the indirect costs associated with the promotion of a standard and infrastructure that can produce, distribute and use renewable fuels.

The LCFS's market-based incentives effectively promote the uptake of renewable fuels by creating a financial mechanism that rewards low-carbon fuel production and penalises high-carbon fuels. The credit and deficit system, coupled with lifecycle analysis and flexible compliance options, provides a robust framework that drives innovation and investment in renewable fuel technologies. By leveraging these market-based incentives, the LCFS has successfully reduced GHG emissions in California's transportation sector and serves as a model for similar policies globally.

**Recommendation: The Australian Government should introduce a renewable diesel fuel standard and certification scheme for LCLFs.**

### **b) Sweden's Tax Exemptions**

Sweden grants tax exemption of energy and CO<sub>2</sub> taxes to sustainable non-food-based biogas and bio-propane used as motor fuel or in heat generation. This approach has significantly increased the market share of renewable fuels, contributing to targets in climate agendas. These exemptions make renewable fuels much more economically competitive with fossil fuel alternatives and overcomes the 'green premium' associated with renewable fuel options. This provides significant financial incentive for business and consumers to choose low-carbon alternatives. This approach has –

- Made renewable fuels financially attractive by reducing the end-user cost via the elimination or significant reduction of the energy and carbon taxes traditionally applied to fossil fuels.
- Driven market share of renewable fuels through heightened awareness and regulatory support.
- Promoted reinvestment of capital generated into the renewable fuel sector, allowing for more production facilities and refuelling stations.

The policy mechanisms utilised in Sweden include –

- Energy tax exemptions – Models predict that exemptions reduce the retail price by 20-30%.
- Carbon tax exemptions – Exemption from carbon tax reduces the costs by an additional 10-15%.
- Blending mandates – These have been essential in maintaining a baseline market for renewable fuels, providing stability and encouraging investment.
- Additional mechanisms such as renewable fuel certificates and tradable credits have provided further incentive for uptake.

There are lessons to be learned from the Swedish experience. These are that –

- The economic incentives have been effective in increasing renewable fuel uptake.
- Australia could implement similar measures to support the uptake domestically.
- Stimulating investment in renewable fuel technologies and infrastructure could create jobs and drive economic growth.

Sweden's tax exemptions for renewable fuels demonstrate the effectiveness of economic incentives in promoting clean energy. By adopting a similar approach, Australia can achieve significant environmental and economic benefits, drive technological innovation, and support

a sustainable transition in the transportation sector. The detailed analysis of Sweden’s policy highlights the importance of financial incentives, infrastructure support, and regular policy reviews in ensuring the success of renewable fuel policies. This framework can serve as a model for Australia to develop a robust renewable fuel standard that effectively reduces GHG emissions and promotes sustainable energy use.

**Recommendation: The Government must establish a domestic market for renewable diesel to stimulate supply and demand. Mechanisms discussed above are options, but without the demand for renewable diesel, there will be no uptake.**

## 8. Impact on the fuel tax credits system:

The operators of trucks and buses pay for their use of the road system through very high registration charges and a road user charge on diesel. This charge is imposed indirectly on truck and bus operators as a reduction in the fuel tax credits they claim on their monthly or quarterly business activity statements.

Table 1 shows the current fuel tax, road user charge and fuel tax credit rates.

**Table 1: Fuel tax, road user charge and on-road fuel tax credit rates, 8 July 2024**

	Cents per litre
Fuel tax on diesel <sup>23</sup>	49.6
Road user charge <sup>24</sup>	30.5
Fuel tax credit rate for on-road heavy trucks and buses	19.1

These charges are set with the aspiration of recovering the annual cost of road construction and maintenance attributable to trucks and buses.

Until 2023-24, heavy vehicle charges were adjusted annually, which made it harder for businesses on tight margins to make multi-year pricing decisions. It also imposed a significant administrative burden on both governments and industry.

Ministers have now set a defined trajectory for the road user charge and registration charges for the 2023-24 to 2025-26 period.<sup>25</sup>

The next pricing period should run from 2026-27 to 2028-29. The ATA and TIC consider that charges for this period should be calculated using the building block model that is currently being co-developed by the NTC and industry. There is widespread agreement that the existing model, PAYGO, needs to be replaced.

ATA modelling shows that the current charging model for diesel trucks will be functional until the early 2040s. The model helps keep the cost of transport down for both domestic users and Australia’s exporters, while still recognising the impact of heavy vehicles on the road system.

<sup>23</sup> Poulakis, T. “Notice of substituted rates of excise duty’ in Commonwealth of Australia, *Government Notices Gazette*, No C2024G00102, 1 February 2024, item 10.10.

<sup>24</sup> *Fuel Tax (Road User Charge) Determination 2023* (Cth).

<sup>25</sup> Infrastructure and Transport Ministers’ Meetings, [Communiqué](#). 8 May 2023.

In our view, the current charging system is well able to handle the introduction of low carbon fuels.

**Recommendation: The Australian Government should retain the existing Fuel Tax Credits (FTC) system for conventional diesel to ensure that transport costs are affordable.**

As stated at the outset, we support retaining the Fuel Tax Credits (FTC) for conventional diesel and recommend adjusting taxes or the Road User Charge (RUC) for LCLF components to achieve price parity. This approach could:

- Encourage higher use of LCLF blends.
- Apply to imported LCLF if necessary.
- Act as a failsafe if supply-side measures fall short.

Additionally, establishing a baseline reference price for diesel, as proposed by the Australasian Convenience and Petroleum Marketers Association, could provide substantial financial relief to operators, making the transition more manageable.

To implement this approach, the *Excise Tariff Act 1921* would need to be amended to include a separate definition for renewable diesel. At present, renewable diesel has the same tax treatment as conventional diesel because it falls outside of the definition of biodiesel.

**Recommendation: The Australian Government should adjust net taxes and charges applied to LCLFs (either produced domestically or imported) via the RUC and FTC system to ensure at least price parity with traditional diesel.**

## 9. Fragmented government positions on the potential of renewable fuels:

We submit that the Climate Change Authority's (CCA) position to exclude renewable fuels as a viable option for decarbonisation in the transport sector is unsuitable. Great emphasis is placed on electricity by the CCA as the solution to decarbonising transport, but this view is unrealistic.

For this to be a viable solution, huge infrastructure and personal investments would have to be made in the immediate future to upgrade the trucking fleet. This solution does not account for the trucks travelling long distances in rural and remote environments. While they are available now, the use case for battery electric trucks is urban and peri-urban operations. Drop in fuels are a potential avenue to reduce emissions from the existing long-haul fleet as fuel production ramps up.

**Recommendation: The Australian Government should recognise LCLFs as a crucial transitional step in reducing heavy transport carbon emissions in the short to medium term. The ATA and TIC assert that the contrary views of the Climate change Authority are unrealistic.**

## 10. Federal budget measures to support LCLFs

We support the measures announced in the federal budget including \$18.5m over four years to develop a certification scheme for low-carbon fuels, and another \$1.5m over two years for a study on the costs and benefits of potential support measures.

The certification scheme investment will provide a standardised framework for verifying the environmental benefits of LCLFs. This certification will enhance market transparency and consumer confidence, encouraging wider adoption of these fuels.

The additional \$1.5 million study allocation will help map the transition to LCLFs. We look forward to this study identifying effective incentives and support mechanisms, ensuring that resources are allocated efficiently to maximize impact. We hope that the findings will guide policy development and help remove barriers to the uptake of LCLFs.

**Recommendation: The Australian Government should continue to work with industry to map a realistic transition pathway to LCLFs.**