HEAVY VEHICLE
INDUSTRY AUSTRALIA

HVIA Submission

Climate Change Authority

Issues Paper: Targets, Pathways and Progress

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Contents

Background

Heavy Vehicle Industry Australia (HVIA) is the peak industry association for Australian manufacturers of trucks and trailers (collectively referred to as heavy vehicles), as well as the dealerships, repairers, suppliers, and service providers that support the entire industry. We represent almost every major truck manufacturer/importer, all of Australia's major trailer manufacturers, and an ever-growing list of their component, equipment and technology providers.

Our 300-plus corporate members collectively employ a local workforce of over 70,000 staff. Our member's interests cover an extensive range of vehicles, starting with 3.5-tonne light commercial trucks, and extending all the way up to Australia's unique 50-metre long, 100-tonne road trains.

Our industry provides some of the world's most efficient, safe, innovative, and technologically advanced vehicles. HVIA seeks to work with government and industry stakeholders to promote an innovative and prosperous industry that supports a safe and productive heavy vehicle fleet operating for the benefit of all Australians.

Supporting the transition to net zero

HVIA is supporting the industry on its decarbonisation journey and is harnessing the experience of its members and stakeholders to resolve issues across regulation, policy, skills and training, and infrastructure. HVIA recommends that when considering policy and regulation as it relates to low and zero emission (LZE) vehicles[1] that this includes all vehicles, and whilst we are in a transition phase, all potential technologies and fuels are explored for different applications – e.g. last mile delivery technology solutions may be different to long-haul road freight solutions.

What is a heavy vehicle?

The National Heavy Vehicle Regulator (NHVR) defines a heavy vehicle as follows:

A heavy vehicle is defined in the Heavy Vehicle National Law (HVNL) as a vehicle that has a Gross Vehicle Mass (GVM) or Aggregate Trailer Mass (ATM) of more than 4.5 tonnes. The GVM/ATM of a vehicle is the maximum it can weigh when fully loaded, as specified by the manufacturer.[2]

AGE AND MAKE-UP OF AUSTRALIA'S TRUCKS

*The approximate average age of a truck in Australia is **15 years**. An ageing fleet has negative effects on human health and the environment. Newer vehicles are safer than older vehicles as they have more safety features, and they tend to be better maintained and therefore have less defects.*

Of the approximately 600,000 trucks in Australia, roughly 20% (100,000) are articulated, whilst 80% (500,000) are rigid trucks. Regarding emissions, the percentages are roughly reversed: articulated trucks are responsible for approximately 60% of emissions output, whilst rigid trucks are responsible for approximately 40% of emissions output.

[1] When referring to low and zero emission vehicles, we are referring to tailpipe emissions, rather than the manufacturing or charging/refuelling process.

[2] Whilst the definition includes 4.5 tonnes, we also represent vehicles starting from 3.5 tonnes.

Why are heavy vehicles a crucial part of decarbonisation?

In 2022 the transport sector made up just under 20% of Australia's emissions. When considering Australia's total transport emissions by origin, cars account for 42%, light commercial vehicles 18%, and articulated trucks and rigid trucks approximately 22% (see Figure 1, and see Figure 2 for the projected growth in truck emissions.). While cars and light commercial vehicles present the majority of transport emissions, failing to properly support heavy vehicles in emission abatement activities represents a significant missed opportunity, one that will undoubtedly create large-scale problems in the future.

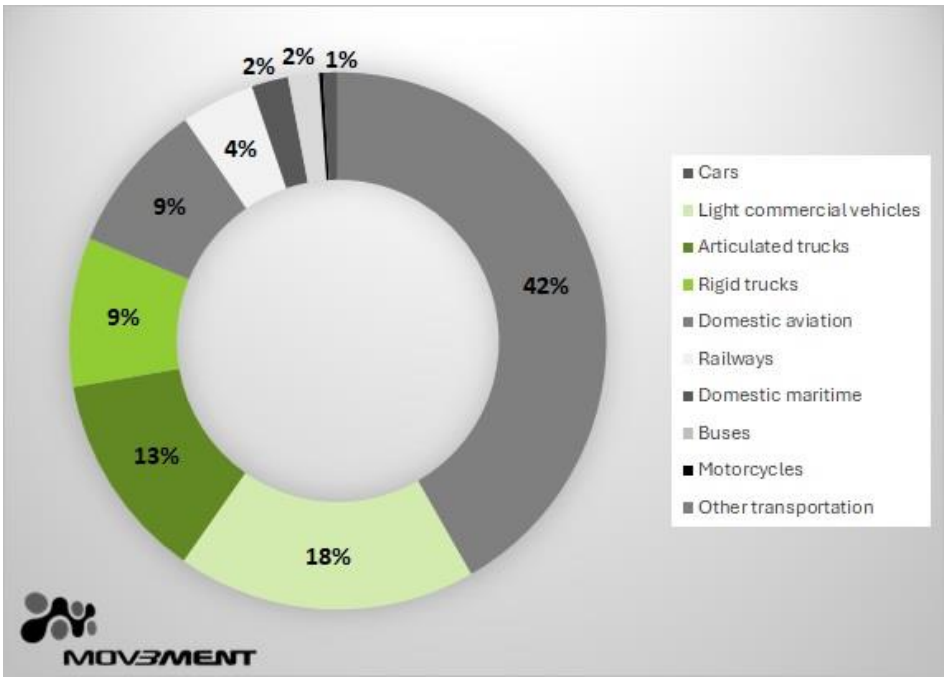

Figure 1: Transport emissions by origin (source: Mov3ment)

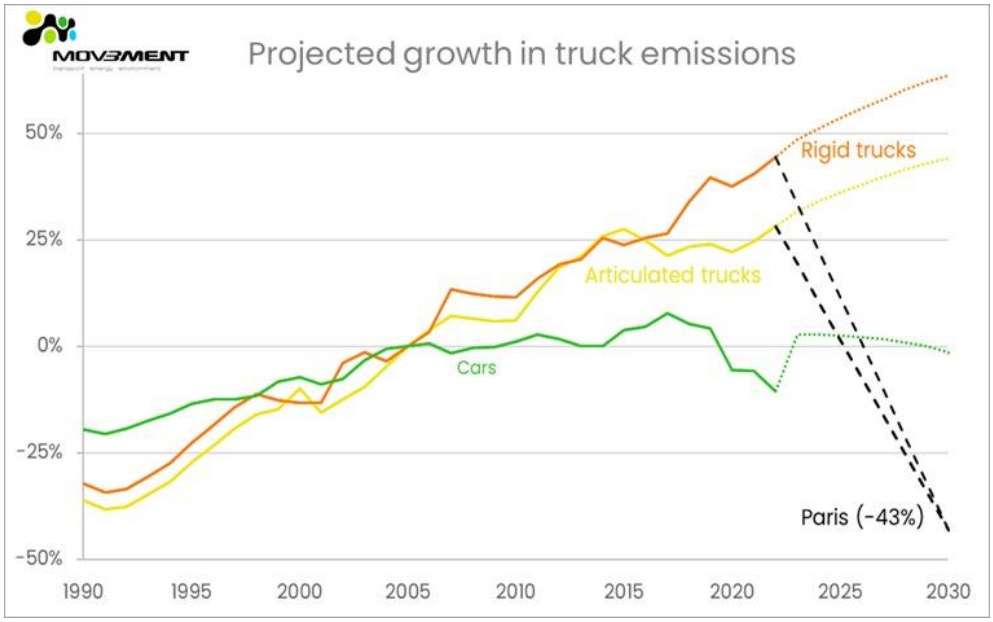

Figure 2: Project growth in truck emissions (source: Mov3ment)

Furthermore, the urgency in supporting the transition of the heavy vehicle fleet is apparent when considering the future domestic freight task. Between 2020 – 2050, road freight is projected to grow by 77%, whereas rail, air, and shipping may not grow as rapidly. The total freight task is predicted to reach 964 billion tonne-kilometres (btkm) by 2050 from its current level of 765 btkm (see Figure 3).

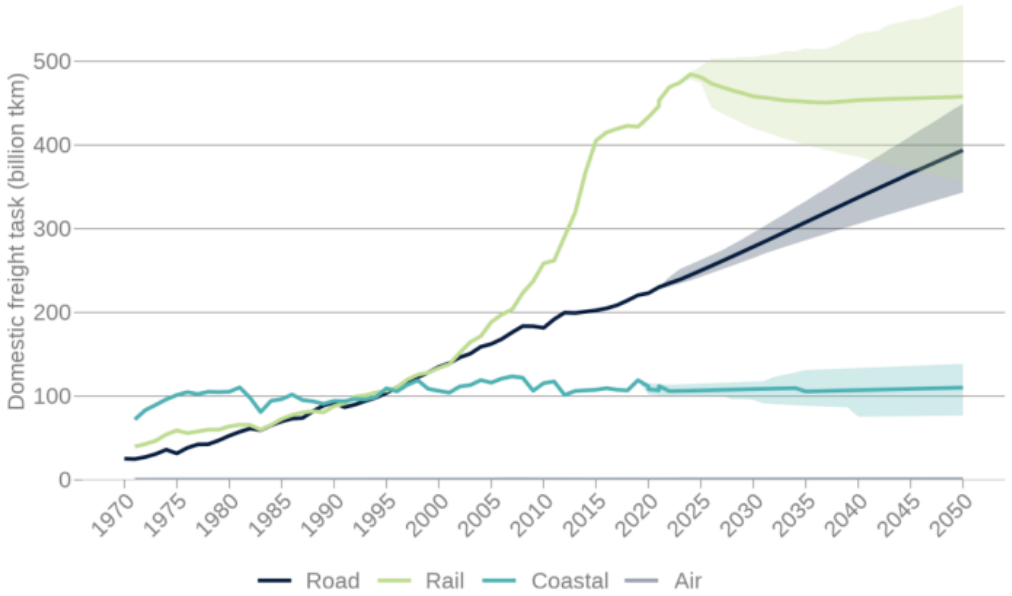

Figure 3: Actual and projected future freight task by major transport mode (source: BITRE, 2020)

Support and acknowledgement of the role of heavy vehicles in the transition to net zero is vital – we have the opportunity to get the policy, regulatory, and strategic settings correct from the outset, rather than scrambling to incorporate heavy vehicles into a future designed with only LZE light vehicles in mind.

General Comments

In preparing the below feedback, HVIA consulted with members who are actively working on LZE heavy vehicles (LZEHVs), their necessary infrastructure, and other related initiatives.

HVIA acknowledges that the Department of Infrastructure, Transport, Regional Development, Communications, and the Arts (DITRCA) is developing a Transport and Infrastructure Net Zero Roadmap and Action Plan (the Roadmap). HVIA has provided feedback on the Roadmap and has stressed the importance of including heavy vehicles in the net zero transition to the Net Zero Unit within DITRCA. We look forward to reviewing the Roadmap when it is released later this year.

We have also contributed submissions to the following consultations related to broader net zero efforts:

- *House of Representatives Standing Committee on Climate Change, Energy, Environment and Water inquiry on the transition to electric vehicles*
- *Renewable Diesel*, Department of Climate Change, Energy, the Environment and Water, Fuel Quality Section
- *Minimum operating standards for government-supported public electric vehicle charging infrastructure*, Department of Climate Change, Energy, the Environment and Water (DCCEEW), Energy and Climate Ministerial Council

Our industry's transition to net zero will take time, but more than anything it will take a coordinated and determined effort across industry, governments, and relevant stakeholders.

Unique Australian operating environment

It is important to note the unique nature of Australia's heavy vehicles, as well as the extreme weather fluctuations we face. This means Australia does not have an international precedent for many aspects of the transition, particularly for long ranges over harsh terrain.

Australia will need multiple solutions to decarbonise road transport, with application of different technologies for different freight tasks. This will include exploring the whole range of options (electric, hydrogen, battery swap, renewable diesel) for their feasibility and potential applications. At present, internal combustion engine (ICE) vehicles still compose the majority of heavy vehicles. Implementing LZEHVs in Australia will require a huge transition, one comparable to when the industry transitioned from horse drawn carriages to ICE vehicles. We do not want the scale of change required for our sector to transition to be misunderstood.

Compounding the issue of Australia's ageing truck fleet is the make-up of operators in Australia (see Figure 3 below). Only 0.5% of trucking operators have over 100 trucks – these are typically companies that have larger capital expenditure budgets and are able to make investments in their fleets. The remainder of operators have much smaller fleets and less access to capital. They also tend not to have a dedicated ESG resource to understand the complex new environment of LZEHVs and their related infrastructure requirements.

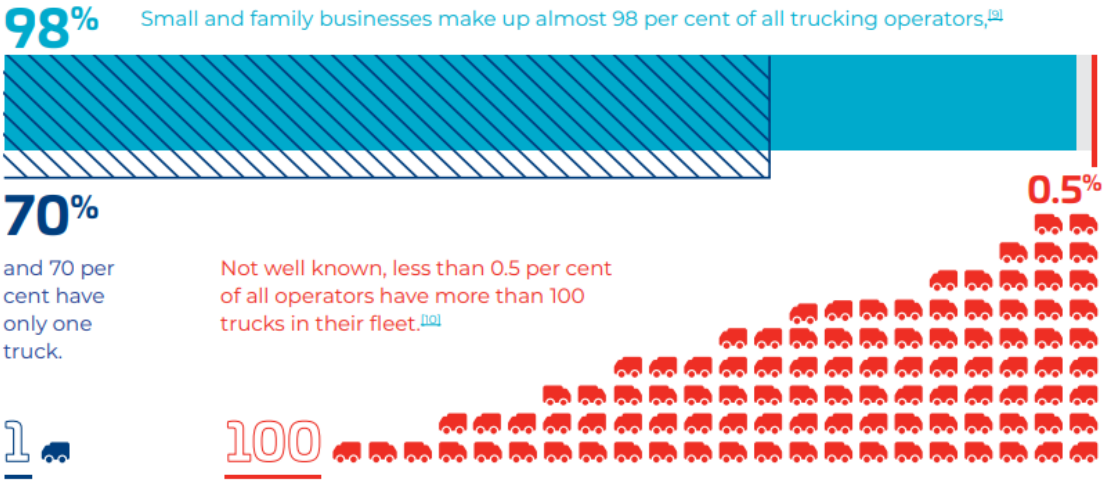

Figure 4: ATA and EVC Electric Trucks: Keeping Shelves Stocked in a net zero world

Supply chain costs and volatile economic environment

As Australia, and the world, face ongoing supply chain pressures, the business case for truck operators to invest in LZEHVs compounds existing economic realities. Alongside the cost-of-living crisis, there are a range of barriers facing truck operators in switching to LZEHVs:

- Low margin businesses
- LZE vehicles cost considerably more than ICE vehicles (for battery electric trucks this is typically 2-3x, and for fuel cell electric trucks this can be 3-4x)
    - New charging/refuelling infrastructure may also be needed, presenting yet another cost
- LZEHVs have less guaranteed access (weight restrictions differ across states, territories and local roads)
- LZEHVs have a technical pay-load penalty

    - i.e. where it took four trucks to complete the freight task for an operator, it may take five with heavier truck weights (due to the batteries or fuel cell technologies) reducing each truck's carrying capacity unless increased axle mass concessions are introduced nationally.
- Range anxiety
    - Electric vehicle charging stations/hydrogen refuelling stations often only cater to passenger vehicles, or are not practically located to support existing high-volume freight routes
    - Aligning charging with statutory driving hours – drivers must manage fatigue, safety, and logbook requirements

We urge the CCA to consider the incentives and levers (noting these will be across federal, state/territory, and local government levels) that can be pulled to support the industry's transition. We list these further below in our submission. An important note on incentives is that the spending/program/rebate must be targeted from the outset, and particularly should focus on encouraging early movers.

Harmonisation is key to the transition

Our industry needs a harmonised approach from the states and territories, supported by national leadership. Uniform policy positions and regulations will support the acceleration of the transition, creating certainty and allowing for seamless operation across borders. HVIA believes the Infrastructure and Transport Minister's Meeting (ITMM) provides a useful venue for decisions to be made, with implementation then directed by each relevant Minister in their home state. It is vital that local government be included in the decision-making process as they too have responsibility for roads and bridges.

Access to critical infrastructure will also need to be guaranteed – if toll roads, tunnels, or bridges are inaccessible to LZEHVs, this will disrupt Australia's supply chain, an experience not fondly remembered by most Australians from the COVID-19 lockdowns.

A final general comment is around the importance of demonstrating to the international community (including OEMs and investors) that Australia is a market open to LZEHVs, thereby increasing options for trucking operators, and potentially bringing the cost of LZEHVs down.

Although the barriers facing the industry on its path to net zero emissions are real and will take collaboration to overcome, the cost of not reducing emissions is more daunting. We note the House of Representatives Standing Committee on Regional Development, Infrastructure and Transport's recent Inquiry into the implications of severe weather events on the national regional, rural, and remote road network. The experiences relayed in that inquiry show the consequences of delays and damage to Australia's delicate supply chain.

The remainder of HVIA's submission addresses themes drawn out from the questions posed by CCA, and offers recommendations. As our membership encompasses a wide range of LZE technologies, we have included references to the broad net zero ecosystem, including (but not limited to) battery electric, hydrogen, and renewable diesel, all of which have a role to play. HVIA looks forward to working cooperatively with the CCA to assist the transition of the heavy vehicle industry to a net zero future.

Technology

Electric Heavy Vehicles

EV Charging Stations

There is an urgent need for the creation of infrastructure to encourage take-up of battery electric vehicles. This is an area that will require government support and leadership. We note the efforts from DCCEEW in creating standards for electric vehicle charging stations.

For the CCA's benefit, below we provide our main points provided to the DCCEEW in creating the *Minimum operating standards for government-supported public electric vehicle charging infrastructure*. Overall, we were disappointed to see heavy vehicles not included in the initial draft standards – especially considering the essential task our members' vehicles perform and support – and urged for their charging considerations to be included on key and strategic freight corridors.

Electric Vehicle Charging Stations

- **Number of charging ports** – mandating a set minimum uniformly applied regardless of the characteristics of the route is not strategic. HVIA strongly recommends:
    - The minimum number of charging ports be calculated based on road traffic capacity, forecast usage (e.g. annual average daily traffic), or another metric that incorporates usage.
    - The addition of a requirement for dedicated heavy vehicle charging facilities on high-volume and/or strategic freight routes, as is the case with high-flow diesel fuel pumps.
    - Ensuring charging station capacity (and grid capacity) is sufficient to meet the demand of the heavy vehicles that are expected to access them.
- **Minimum availability** – whilst both planned and unplanned network outages are a reality of large-scale power distribution networks, the minimum availability metrics should encourage their impacts on vehicle charging to be minimised. Separate metrics including/excluding unplanned network outages should be developed.
- **Accessibility** – HVIA suggests:
    - A requirement for dedicated heavy vehicle chargers on high-volume freight routes (as above).
    - Allowing drive through bays with sufficient entry and exit clearance for the heavy vehicles that will be expected to access them, including their trailers, larger turning circles, and consideration of possible queuing issues outside charging stations.
    - Road design sufficient to accommodate heavy vehicle axle loads and forces developed when turning and manoeuvring at low speeds.
- **Definition of 'larger vehicles'** – it is not clear what is meant by this term. It should be revised in-line with the above comments regarding heavy vehicles.

In addition to the above, HVIA stresses the importance of a national focus in enabling charging facilities on key and strategic freight corridors. Though charging will often occur at transport depots or receiving locations, options will be required for charging away from base.

HVIA RECOMMENDS

Support, both financial and regulatory, be provided to create a reliable, accessible, and suitable heavy vehicle charging infrastructure for low and zero emission vehicles.

How:

- The minimum operating standards for government-supported public electric vehicle charging infrastructure include heavy vehicle requirements for key and strategic freight corridors.
- Funding be made available by the Federal Government through a joint effort from DITRCA and DCCEEW to support projects aiming to create EV charging corridors on major freight routes.

Hydrogen

Hydrogen

Our members are currently operating and trialling trucks with a variety of different hydrogen formats (e.g. liquid H2, gaseous, H2 ICE). An important note regarding H2 ICE is that it be recognised as a zero-emission technology as it is by the European Union (EU). This technology promises a 99.5% CO2 reduction and is a potential transition technology to fuel cell. It may have heavier and "dirty" applications – it doesn't need medical grade H2 for example, so it may be better suited to the resources sector.

Into the later part of 2024 there will be a number of hydrogen fuel cell electric vehicles (FCEV) in commercial operation on Australian roads. What is starting to emerge from data obtained from several initial trials is that FCEV heavy vehicles have some advantages in certain fleet operations. Reduced refuelling times, cyclic battery recharging, and weight advantages make FCEV vehicles a compelling case for 24-hour trucking operations and high energy systems like garbage and waste vehicles.

However there remains significant challenges on the ability for trucking operators to transition their fleets to FCEV:

- Blockers
  - Widespread interest in Australia's trucking industry for FCEV adoption is hindered by the high cost of new technology and hydrogen prices.
- Infrastructure
  - Limited hydrogen refuelling infrastructure allows a few providers to maintain high H2 pricing.
- Expense
  - FCEV vehicles like BEV's are approximately three times the price of diesel equivalents due to low-volume production, news technology, developing supply chain.

The role of Government

Government has role to play in encouraging adoption and reducing risk for operations wanting to transition. Rather than long-term vehicle subsidies, fleet packages encouraging larger fleet adoption that will then put pressure on retailers to speed up H2 refuelling role out in Australia.

HVIA notes there is a Hydrogen Highway project underway, as well as funding in the most recent Federal Budget, but understands little about the practical roll-out. We acknowledge the nascent work being done by HVIA members and others in the hydrogen space, but without government support it will be difficult for the industry to thrive. We note the recent opening of a green hydrogen network on the north island of New Zealand, servicing the major freight routes. This shows the viability of hydrogen projects that support the freight task.

HVIA RECOMMENDS

Government supports the heavy vehicle sector in the operation and trial of hydrogen heavy vehicles.

How:

- Funding be made available by the Federal Government through a joint effort from DITRCA and DCCEEW to support projects aiming to create hydrogen corridors on major freight routes.
- Support liquid hydrogen projects.
- Explore fleet packages to encourage larger fleet adoption.
- Recognise H2 ICE as a zero-emission technology.
- Ensure that any government supported projects for H2 truck refuelling supports 700bar.

Renewable Fuels

HVIA strongly disagrees with the CCA's position in excluding renewable fuels as a viable option for decarbonisation in the transport sector. We seek further details as to why it has been excluded.

HVIA supports efforts to explore the viability of renewable fuels in a manner that upholds quality standards whilst allowing for no-changes to the effective and efficient operation of a vehicle. This "drop-in" option should not be discounted and offers an important immediate means of reducing emissions in the transport sector, particularly for the long-haul freight task. It is possible that not all transport applications will be able to be electrified or run on hydrogen i.e. heavy transport and heavy construction applications with high energy draw and/all long range (see Figure 5). Also, in some locations it is not feasible to set up charging or refuelling infrastructure.

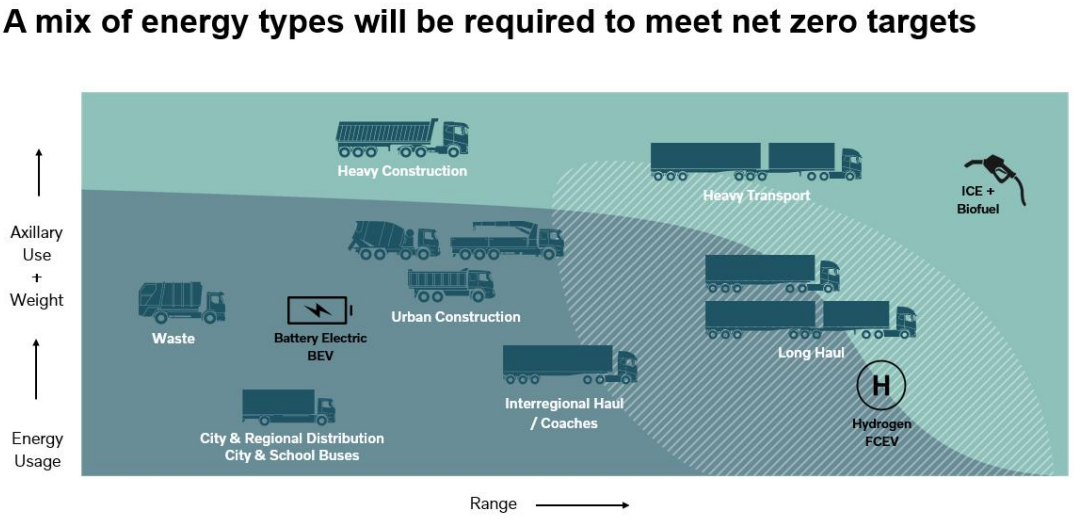

Figure 5: Mix of energy types by application, range, energy usage, weight + axillary use

Renewable diesel is a crucial part of the transition to net zero for the transport sector. It is important that the transport industry can access renewable diesel without time-limited approvals slowing down the process, and removing barriers will assist with further development of a renewable diesel market in Australia. This will allow for immediate reductions in emissions, particularly for long-haul trucking.

In particular, Hydrotreated Vegetable Oil (HV) and Renewable Natural Gas (RNG) stand as very important transitional fuels moving to a more sustainable energy future. HVO can serve as a realistic bridge from current fossil fuel ICE to the prospective broad adoption of alternatives particularly considering the long range, high load factor, applications of many trucks in the Australian market.

To help establish a viable market for renewable fuels, we believe a demand side lever is needed (i.e. Sustainable Aviation Mandate or low-carbon fuel standard) and to compete with international policies, a mechanism like the H2 Headstart Program will help establish domestic production. We acknowledge the recent announcements in the Federal Budget which go some way towards progressing a viable renewable fuel market in Australia.

Prioritise road freight

Australia's overwhelming focus in renewable fuels to date has been on Sustainable Aviation Fuel (SAF), much of which directly competes with renewable diesel for trucks, both for feedstock and refining capacity.

Consistent with the government's science-aligned approach, it is imperative that investment in renewable biofuels be directed to those sectors capable of delivering the largest and fastest emissions cuts. This is not aviation. Even total decarbonisation of air travel would deliver less than two-fifths of the potential emissions reduction that road freight could deliver. Aviation may be an obvious source of emissions and a hard-to-abate sector, but it is not capable of achieving the level of abatement required by 2035.

By contrast, renewable diesel that is affordable and readily available could immediately reduce the 22% share of transport emissions attributable to trucks (plus a portion of light vehicle emissions as well). HVIA understands there are important chemical synergies between developing renewable diesel (e.g. HVO) and developing SAF; we urge the government to ensure that future investments in SAF maximise supply of renewable fuels to the road freight sector, which has 2.5 times more emission reduction potential than SAF does.

We recommend that supply of renewable diesel to the road freight sector forms an explicit policy goal in future strategies and investments for SAF and other biofuels.

HVIA RECOMMENDS

Government supports the development of renewable fuels for domestic road freight use.

How:

- Establish domestic production and demand side levers to help establish an Australian market for renewable fuels.
- Prioritise the domestic road freight sector over other industries in future policy, strategies and investment.

Fuel efficiency information and technology

In the trucking sector, fuel efficiency must be part of the transition to net zero. Versions of diesel will likely be around will into the 2040's unless technology can advance sufficiently to handle the heaviest applications. It will be difficult to adapt new technologies to replace diesel in many of the heavier road train type applications.

Sales of new electric trucks alone will not meet the Government's emissions reduction targets, which is why nearly all markets with strong zero emission truck targets have also focussed on improving vehicle efficiency. Modelling from HVIA's member, MOV3MENT, indicates that unsupported adoption of zero emission trucks will not offset emissions growth from the growing freight task. Even a zero-emission sales mandate would not achieve the government's 2030 targets to be 43% below 2005 emissions:

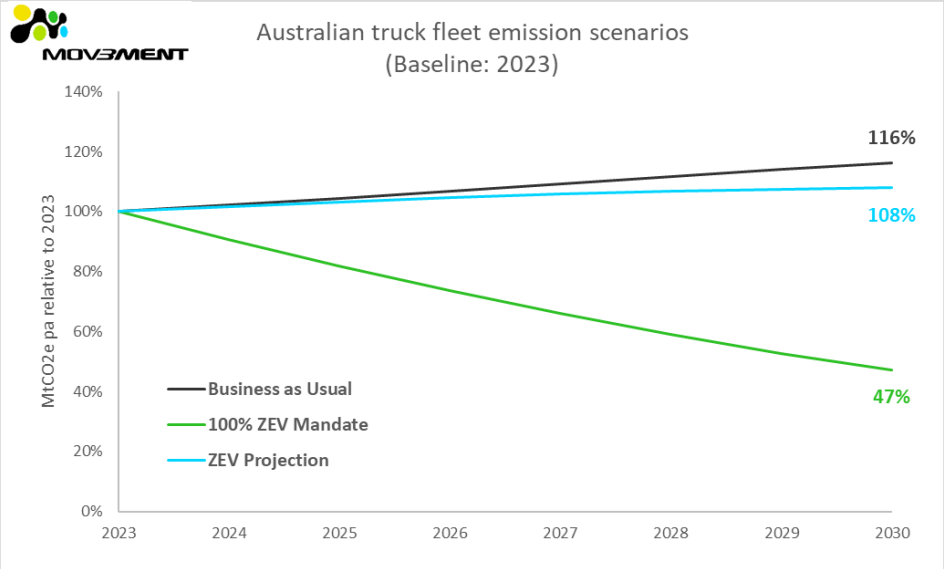

Figure 6: Emissions reduction scenarios (NB: Paris targets are based on 2005 emissions, not 2023)

The Federal Government has a responsibility not just to promote sales of LZEHVs but to reduce emissions from the on-road vehicle fleet – improving fuel efficiency is the only realistic way to do this. The Government committed to a doubling of energy efficiency in 2023, but so far there has been no support for achieving this in Australia's critical freight and trucking sector.

There is a dearth of practical information available to help truck fleet operators improve their fuel efficiency, even though this would save emissions in the short-term. Practical information and real-world case studies can help time-poor truck operators understand the benefits to their business in driving down emissions *and* saving fuel, while the industry transitions to EVs.

Overseas, governments have co-funded pilot and demonstration programs focused on scaling fuel efficiency improvements in the on-road fleet, such as improved aerodynamic technologies, low rolling resistance tyres, and even eco-driving training. These are proven, readily available technologies that have been widely adopted in the US but lag here in Australia. Wider adoption could also support manufacturing and employment in the local truck industry.

HVIA RECOMMENDS

Government supports efforts to reduce emissions of the on-road vehicle fleet.

How:

- Standalone funding program supporting fuel efficiency education and technology adoption, in line with the Government's commitment to double energy efficiency.
- Improve data collection on truck/freight sector CO_2 or energy efficiency.
- Regulatory amendments to allow use of powered trailer axles.
- NRF and IGP funding be directed to fuel efficiency measures.

Performance Based Standards

Performance-Based Standards (PBS) vehicles have been at the forefront of innovation, providing incentives for operators to adopt higher productivity combinations that move more with less. The National Heavy Vehicle Regulator (NHVR) runs the PBS scheme, which allows heavy vehicle operators the opportunity to

improve productivity, sustainability and safety through innovative and optimised vehicle design. PBS aims to match the right vehicle to the right freight task. PBS vehicles are specifically designed to have a high level of performance and meet strict safety and infrastructure standards to ensure they are suited to the road network.[3]

The benefit of the PBS scheme is greater vehicle safety, increased freight productivity, and fewer impacts on road infrastructure. In the NHVR's *Heavy Vehicle Productivity Plan 2020-2025,* they state that from 2007 to 2019, compared to the vehicles that would have been otherwise been required to complete the same task, PBS vehicles have:

- reduced CO_2 emissions by over 2.2 billion kilograms
- reduced fuel consumption by over 800 million litres
- removed over 2,700 trucks from the road
- reduced truck distance travelled by over 1.6 billion kilometres
- reduced major crashes per kilometre by 46 per cent.[4]

By harnessing locally produced electric trailers and hybrid diesel-electric powertrains, we can de-risk and speed up the introduction of low-emission high-productivity vehicles. Coupled with renewable diesel, this approach provides a promising, low-risk transition pathway for Australia's bulk transport industries, particularly in mining, agriculture, and construction.

HVIA is happy to discuss PBS recommendations in further detail with the CCA if required, but they could broadly include changes to:

- Axle Group Mass Limit Concessions
- Bridge Assessments
- Increase speed limits for reduced emission vehicles
- Concessions for Multi-Axle Groups
- Length Limit Adjustments
- Eligibility Criteria
- Improved Performance and Higher Standards
- Improved Safety Conditions

HVIA RECOMMENDS

Strengthening the PBS Vehicle Approval and Access Framework.

How:

- Offer key concessions and adjustments to ensure a smoother adoption of low-emissions PBS combinations.

[3] National Heavy Vehicle Regulator, Performance Based Standards, https://www.nhvr.gov.au/road-access/performance-based-standards.

[4] National Heavy Vehicle Regulator, *Heavy Vehicle Productivity Plan 2020-2025,* 202008-1171-heavy-vehicle-productivity-plan-2020-2025.pdf (nhvr.gov.au).

Powered Trailers

Regenerative and motive axles in trailers can offer a useful opportunity for the decarbonisation of freight transport sectors that are not able to make best use of current low and zero emission technologies. They may also offer an easier pathway to decarbonisation, as their capital and operating costs may be lower than others.

Technical terms

An axle capable of producing ***regenerative energy*** means that it includes a physical mechanism to recover the kinetic energy from a rotating axle, and transform it into electrical energy, either for immediate use or storage in a battery.

An axle capable of providing ***motive power*** means that it can use an on-board power source to drive one or more of the trailer's axles and assist its motion. Typically, motive power axles also include regenerative energy and storage capabilities.

However, there are barriers to further adoption of motive power axles. Broadly, existing legislation (at both national and state levels) defines all trailers as *unpowered* vehicles, as the definitions assume that trailers are towed vehicles only, and class self-powered vehicles separately as 'motor vehicles'. If the CCA would like to further understand the barriers, HVIA is willing to explain these, as well as offer potential solutions.

HVIA RECOMMENDS

Priority funding and regulatory amendments be made for powered trailer projects and policies.

How:

- Regulatory amendments to allow use of powered trailer axles.
- NRF and IGP funding be directed to powered trailer projects.

Resources

Incentives

Financial incentives, or waiving of additional costs/charges/taxes, will be required to encourage the purchase of net zero vehicles. We have seen in the solar panel transition, and in the NABERS Commercial Building Disclosure Program for office buildings, that early adopters were provided with incentives and rebates, leading to the success of those two programs.

Potential strategies for heavy vehicles include:

- Instant asset write-off for LZA heavy vehicles
- Discount debt facility (e.g. through a bank) or aggregated facility/co-financing options through the Clean Energy Finance Corporation (CEFC)
- Rebate / Cash-back at point-of-sale on purchase of LZEHVs
    - Government to cover gap between ICE and LZEHVs
- Waive Fringe Benefits Tax for LZEHVs
- Waive curfew for LZEHVs
- Reduce toll / port access fees for LZEHVs

- Reduce registration costs
- Stamp duty changes at state government level

Trucks generally have long life cycles and Australia's ageing fleet is one of the oldest in the developed world. Because of their typically fine margins, truck operators need a compelling business case to justify investment in new vehicles, particularly as next-gen vehicles are significantly more expensive and may require additional units given the technical pay-load penalty. Importantly, newer Euro 6 trucks also help reduce pollutants emitted by diesel and petrol engines.

We also recommend that support for research and development and commercialisation of projects be provided. We acknowledge that ARENA has already provided significant funding towards decarbonisation in transport, and we would like to see the National Reconstruction Fund (NRF) and the Industry Growth Program (IGP) also support projects in our sector.

Further compounding the difficulties for investment in LZEHVs are depreciation concerns, which provide yet another barrier to operators making the switch.

HVIA RECOMMENDS

Create a compelling business case to justify investment in LZEHVs through funding, incentives, R&D support, and investment.

How:

- Bring in exclusive depreciation incentives for LZEHVs.
- Repurpose the Instant Asset Write-off to have a separate LZEHVs element and provide certainty by setting it in place for five years.
- Create a separate funding pool for rebates on the purchase of LZEHVs.
- Create a specialised debt facility through the CEFC.
- Run an awareness campaign on the total cost of ownership benefits of LZEHVs.
- Invest in charging / refuelling infrastructure to quash range anxiety.
- Provide support for OEMs seeking to manufacture LZEHVs in Australia.
- Encourage the purchasing of new Euro 6 vehicles through incentives, which also helps reduce emissions.
- Ensure approved projects under the renewables stream for the NRF and IGP include a minimum of 20% transport decarbonisation projects, to reflect the broader industry's emissions output.
- Guarantee a 2024 funding round for transport within ARENA, with a minimum 22% of the funding dedicated to all types of heavy vehicles, to reflect their emissions output within Australia's total transport emissions.

Data

At present, reliable and regular reporting of data related to LZE vehicles is limited. The Bureau of Infrastructure and Transport Research Economics (BITRE) Road Vehicle Entry and Recall monthly statistics of vehicles do not currently include motive type (i.e. LPG, electric, fuel-cell).

HVIA RECOMMENDS

Make data available to better understand LZE vehicles in Australia.

How:

- Include "vehicle motive power source" in the BITRE RAV data.

Manufacturing and Circularity

Electric Vehicle and subsystem manufacturing

To promote retention of local heavy vehicle manufacturing it is important to consider the ecosystem and support structures in place. Australian has in-country manufacturing capability, and there is an opportunity to increase production. This could be done through incentivising heavy vehicle OEMs to manufacture LZEHVs in Australia.

Battery Recycling

In respect of the automotive value chain – specifically motor vehicle repairers (either as the result of a crash or for a general service) – we want to highlight the need for 'sensible' legislation that is harmonised across states and territories around the writing-off of or decommissioning of vehicles and their batteries.

To date there has been good proactive education by manufacturers in how to handle batteries, along with proactively working with the likes of TAFE. Particularly for LZEHVs, batteries will need to be treated differently to car batteries, so it is vital to have harmonised legislation stipulating minimum accreditations. The current Written-Off Vehicle Register (WOVR) legislation does not reflect LZEHVs adequately, and the approach should be harmonised across states and territories and reflect the nature and construction of LZEHVs and decisions made post-accident.

Our industry is already handling the removal of bus batteries from accident vehicles and repurposing them into a second life as a portable power unit (replacing diesel generators). It is vital that the industry is supported in initiatives like this and is consulted on the necessary parameters for a minimum accreditation scheme to ensure quality and safety are uniformly maintained in these processes.

HVIA RECOMMENDS

Establish a sensible scheme on minimum accreditation to determine how to handle the decommissioning or repurposing of LZEHVs, particularly as it relates it EV batteries.

How:

- Complete an industry consultation around the definition of both statutory write-offs and economic write-offs for LZEHVs.

Role for Government

Government leadership

National Roadmap

DITRCA's Roadmap will be important in providing national leadership on the transition. As previously mentioned, harmonisation is needed across Australia to ensure that the states, territories, local and federal government are working together. There is value in creating differentiation on what segments can be transitioned faster than others, e.g. consideration of market segments – refuse vehicles, lighter metro delivery vehicles, should each have different support and strategies. We suggest differentiating the technical and regulatory barriers unique across different segments and target solutions accordingly.

The National Transport Commission's Forward-Looking Cost Base

As the number of LZE vehicles increases on Australian roads, new road charging mechanisms are being considered. The National Transport Commission (NTC) is developing a forward-looking cost base model that could be used to set heavy vehicle charges after 2025-26. The purpose is to provide an alternative approach to the current methodology (known as Pay-As-You-Go) for setting heavy vehicle charges, and to test possible policy settings and evaluate the advantages and disadvantages of this approach. HVIA is part of this group's work and will provide a view on this in the future.

Weight Limitations

Revising weight limitations to allow LZEHVs on Australian roads is a key part of the transition.
At present, there is a lack of consistency in approaches from the states and territories which acts as a barrier to the transition. Trials from different road managers (of differing weight limits) across SA and NSW, and more recently new access maps for LZEHVs for VIC and QLD, don't give operators or OEMs confidence to invest in new vehicles. Consistency in approach and in weight allowances is needed to encourage heavy vehicle operators to transition to LZEHVs.

Relatedly, payload and productivity of LZEHVs is often the most stubborn barrier to overcome when operators are considering a transition away from fossil fuels. The limited upper mass of the smallest trucks mean that a heavier chassis will squeeze the payload down, often to a commercially unviable number. LZEHVs weigh around 300 to 800kg more than an equivalent ICE truck.

The up to 4.5t gross vehicle mass (GVM) class of truck is the most populous segment of trucks in the market (see Figure 7) and relied upon for home and local delivery activity across Australia. This cohort is also the most likely to transition quickly; there are several models available and coming into the market. Several major companies operating in Australia have already committed to a transition (IKEA has committed to all EVs by 2030, Woolworths all EV home deliveries by 2030) and payload is the major identified focus and barrier.

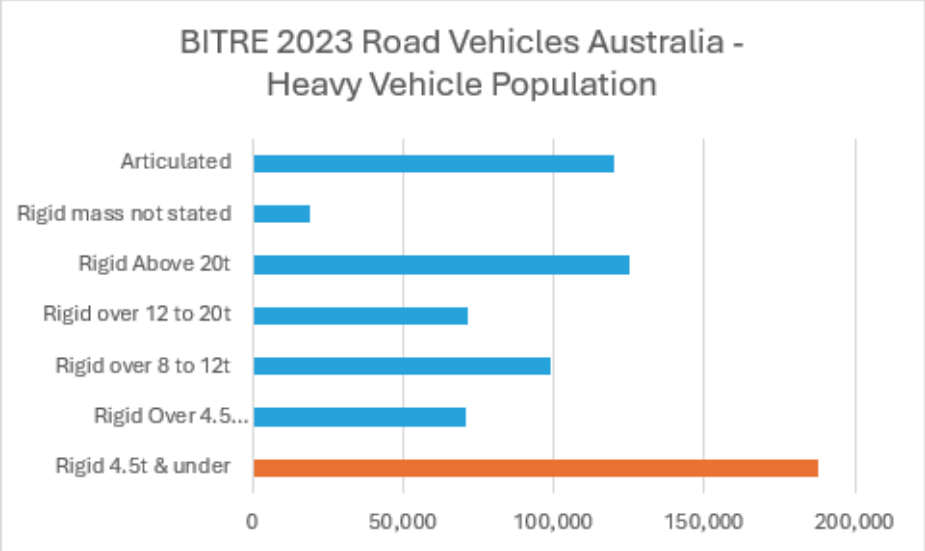

Figure 7: ABS / BITRE Heavy Vehicle Population

If LZE trucks were afforded a GVM concession in the early years of adoption the uptake rate would likely increase. This segment of trucks is most suited to an early transition phase (e.g. local delivery, short urban runs). The additional road wear is negligible as these are relatively low axle mass vehicles compared with other heavy vehicles and even some passenger vehicles (e.g. a 4.5t GVM Landcruiser spreads load over four tyres while all light trucks have six tyres).

HVIA RECOMMENDS

Adopt a uniform approach across Australia to the decarbonisation of road transport, with agreed upon weight limitations for LZEHVs, as well as concessions on GVM.

How:

- Utilise the *Infrastructure and Transport Minister's Meeting* as an avenue for making decisions related to decarbonisation of road transport.
- Offer a GVM concession through the regulatory system to operate above the maximum limit to offset the payload impact of the LZEHVs heavier powertrain.

Funding

We urge the committee to look at the example in the United States (US) regarding funding for EV and hydrogen infrastructure to support an accelerated uptake of LZEHVs. The Biden-Harris Administration, through the U.S. Department of Energy (DOE), recently announced funding to accelerate the creation of zero-emission vehicle corridors. The DOE has awarded $7.4 million to seven projects to develop medium- and heavy-duty EV charging and hydrogen corridor infrastructure plans across 23 states. The DOE-funded projects will focus on electrification plans for essential and heavily trafficked domestic freight corridors. These announcements align with the recently published minimum standards developed by the Department of Transport (DOT) with DOE input for federally funded EV infrastructure and support $2.5 billion in competitive grants to build alternative fuelling infrastructure across the US.

Additionally, in coordination with DOT through the Joint Office of Energy and Transportation, the DOE announced its intent to release funding to address barriers to a cleaner, safer, more affordable, and more reliable EV charging network. In the DOT/DOE's minimum standards for EV charging infrastructure the Federal Highway Administration specifically encourages the inclusion of pull-through EV charging parking stalls in the design of EV charging stations. Pull-through EV charging parking stalls are acknowledged as better suited to the needs of heavy vehicles.

Supply of Energy

Impact on electricity consumption and demand

It is paramount that government put in efforts to ensure the grid can cope with large fleets charging their trucks in depots overnight. HVIA has yet to see strategies to allay concerns for fleet operators in this regard. We have heard anecdotal information of overseas EV owners being asked to not charge their cars at night due to capacity concerns. If EV trucks roll out in large numbers at a rapid pace, the energy demand will be significant.

Other key considerations include:

- Guarantee of supply for key transport hubs (i.e. ports)
    - Similar to hospitals and other critical infrastructure – i.e. in outages how will essential infrastructure hubs be supported?
- State Governments have a role in supply – how can increased earnings from state stamp duty on sales of LZEHVs be utilised to support the LZE heavy vehicle network? i.e. guaranteed supply for essential services

HVIA RECOMMENDS

Consider how best to support transport as an essential service to ensure grid supply to charging infrastructure.

How:

- Establish a consistent approach from the States and Territories regarding supply.

Training and skills

Education is required, not just for tradespeople, but also for the broader industry on what will be required for the net zero transition. Different rules across the states and territories have led to different approaches from the OEMs (original equipment manufacturers), meaning there is a lack of consistency.

We acknowledge the recent announcement of funding for the Canberra Institute of Technology's Electric Vehicle Centre of Excellence as well as the extension and expansion of the New Energy Apprentice scheme. These are measures which will support the net zero transition in transport.

HVIA RECOMMENDS

Develop skills within the workforce to support LZEHVs.

How:

- Place courses related to the Certificate 3 in Automotive Electric Vehicle Technology on the subsidy list for priority skills, and more generally promote skills development related to maintenance and production of EVs.
- Develop and promote a corresponding set of courses to cover skills related to hydrogen fuel cell technologies.
- Provide funding to RTOs that deliver heavy vehicle training to cover capital investment in training products to support the delivery of electric and hybrid vehicle training.