POWERING AUSTRALIA

Productivity Commission
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Re: Impacts of Heavy Vehicle Reform

We welcome the opportunity to provide input to the Productivity Commission to support their analysis and modelling on the impacts of a heavy vehicle productivity reform package, under the National Competition Policy. Australia faces challenges in shaping a coordinated national approach to facilitate the adoption of low and zero emissions heavy vehicles whilst delivering productivity improvements. We wish to share our perspective on how the Productivity Commission can inform the national processes to accelerate practical, sustainable, and high-impact outcomes.

Powering Australia is a Federally funded Industry Growth Centre with a mission to grow Australia's clean-tech manufacturing industries and deliver better outcomes for First Nations communities.

Our submission outlines how the Australian Government can address key opportunities and barriers, such as road network access, axle mass limits, productivity impacts, and safety. We provide guidance on suitable policy and regulatory levers, productivity opportunities, technology evolution, and investment approaches.

The heavy vehicle sector is a critical enabler of efficient supply chains within Australia. It will also become Australia's largest contributor to CO_2 emissions as other sectors decarbonise. The transition to low and zero emissions heavy vehicles will take time as industry seeks to find suitable alternatives to diesel-based options to ensure they maintain existing supply chain operations and efficiencies. The development of a nationally coordinated approach to provide industry with investment certainty in a dynamic and evolving environment will be crucial to facilitate the transition and support productivity benefits. Powering Australia supports solutions that work to achieve national coordination and enable growth of the sector in Australia.

We welcome further engagement and look forward to contributing to the next stage of this work.

Kind regards,

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Introduction

The transition to low and zero emissions heavy vehicles over 18 tonnes GVM remains limited, and current uptake has typically occurred with significant ARENA support directed primarily toward large fleet operators. Across the broader industry, a range of policy, regulatory, operational and infrastructure constraints continue to inhibit adoption and reduce freight productivity for low and zero emissions heavy vehicles.

Powering Australia recommends low and zero emissions vehicles are included in the Productivity Commission's consideration. The transition to zero emissions by 2050 in the road freight transport sector will require the uptake of several different technologies. Developing tailored decarbonisation options suited to specific sector duty cycles will allow time for specific technologies to evolve to the point where broader application occurs. Federal government policy regarding electrification, hydrogen and low carbon liquid fuels, acknowledges this requirement.

Low and zero emissions vehicles are heavier and typically offer shorter range than diesel vehicles. This results in payload and operational penalties that affect commercial viability. Heavier vehicle configurations also create challenges in axle mass distribution which may result in increased wear on road pavements and bridges, further limiting the ability of operators to gain consistent access across the road network. Without reform, uptake will remain constrained and fragmented.

Short Term Incentives to Improve Productivity and Support Early Adoption

To lift productivity and support earlier adoption of zero emissions trucks across all operational requirements, a suite of short-term measures is required. Establishing a national integrated network for low and zero emissions trucks with consistent vehicle mass limits, built around the principal freight network and key freight corridors and precincts, is essential. Access should be provided as of right under the permit system except where there are clearly defined and extreme infrastructure risks. In parallel, road managers and the Australian Government should jointly agree on the infrastructure improvements and a funding program required to bring the overall network up to standard.

All low and zero emissions vehicles seeking access to increased mass limits should be required to have on board mass monitoring. This data should feed into a national data sharing platform that captures mandated operational data and provides location based information to road managers to inform network access, maintenance planning and upgrade decisions. The platform should also provide aggregated data by vehicle class and duty cycle to industry and transport agencies to support decisions on road-user charges, access, permits and appropriate vehicle configurations.

An online permit approval system should be established for ADR compliant, low and zero emissions vehicles. Axle mass limits should be made consistent nationally to reduce complexity for fleet buyers and operators that travel across jurisdictional borders.

A capital incentive is also required to address the cost premium associated with low and zero emissions trucks, or retrofitting existing, ICE vehicles. A capital incentive linked to the vehicle class fuel rebate scheme will enable all levels of fleet owners to access the incentive and immediately rewards operators for purchasing low and zero emissions trucks. Operators would receive the fuel rebate value associated with the relevant vehicle class,

aggregated over a defined period, such as ten years, and provided upfront to support the purchase of a low or zero emissions vehicle. For example, if a 22.5 tonne GVM vehicle receives approximately $4,000 per year in fuel rebates, this could translate to a $40,000 incentive per vehicle.

Long Term Incentives to Drive Innovation and Improve Network Productivity

Longer term, the road user charge should be redesigned to incentivise innovation that improves productivity and reduces pavement wear. A reformed charge should be linked to vehicle class, on board mass monitoring, overall payload and axle mass performance. This would enable price signals that reward lower tare weights, reduced pavement impact and more efficient vehicle designs.

Operators of volume constrained trucks should be able to select either a flat rate road user charge or a variable pricing option aligned to their duty cycle. The charge should be structured to advantage low and zero emissions vehicles relative to diesel vehicles and should be used to support early adopters as they transition to newer, more productive and pavement friendly models over time.

The following section provides responses specific to the questions put forward by the Productivity Commission in their paper.

Questions

1. Which reforms should be assessed under the proposal to increase heavy vehicle road access (e.g., increases in general mass limits under the HVNL)?

    a) Accelerating the establishment of the National Automated Access System (NAAS) or equivalent with an emphasis on identifying and allocating approved road networks for low and zero emissions heavy vehicles.

    b) Where road managers have approved a particular low and zero emissions heavy vehicle configuration to operate on a road corridor, that corridor should be included in the NAAS.

    c) Reviewing noise related curfews for low and zero emissions heavy vehicles.

    d) Assessing the capacity of the road network along key freight corridors to carry low and zero emissions heavy vehicles and developing a targeted infrastructure upgrade program to maximise productivity and economic benefit.

    e) Increasing General Mass Limits (GML) under the Heavy Vehicle National Law (HVNL) should be a longer term option for consideration. We are seeing the first wave of low and zero emissions heavy vehicle technology. The next wave of low and zero emissions heavy vehicle technologies are already claiming reduced road pavement impact and improved axle mass limits. Future battery technologies and the development of powered trailers will further redefine the pavement impact of low and zero emissions heavy vehicle. Having a flexible and adaptive interim regulatory and access system is paramount to support the rapid evolution of low and zero emissions heavy vehicle technology and to develop a solution that is suited to our road network. Any permit based increases to the GML should be reviewed

following technological improvements and realigned closer to current levels pending the advancement of battery technology.

2. What is the additional cost of road wear and infrastructure maintenance consequent to increased access?

   Austroads is currently leading several research projects to help inform the discussion on the relationship between the operation of low and zero emissions heavy vehicles and the impact on road pavement, maintenance, and access.

   - Zero Emission Heavy Vehicles and Road Pavements: Comparing Australia and New Zealand to Europe and North America.
   - Decarbonising Road Freight: Balancing Infrastructure, Environment, and Economy.

3. What are the intersections with other infrastructure barriers necessary to take up the reformed regulation?

   The transition to low and zero emissions heavy vehicle and off-road transport intersects with several critical infrastructure barriers that will determine whether reformed regulation can be effectively implemented. These sectors account for a significant portion of Australia's annual 56 billion litres of liquid fuel use. Shifting to Battery Electric and Low Carbon Liquid Fuel pathways will require major decisions about electricity generation and grid capacity, depot level charging, and new domestic fuel production and distribution systems. With AEMO projecting that electricity consumption will almost double to over 310 TWh by 2050, driven by 100 TWh from transport electrification, Australia needs a clear, evidence based framework to guide when, where and how to invest.

   Without coordinated planning tools and defined investment pathways, regulatory changes will outpace the infrastructure needed to make them viable. Reformed regulation must therefore be supported by analysis that identifies priority upgrades, clarifies the most effective technology mixes, and ensures productivity, asset integrity and fuel security are maintained throughout the transition. A national study using decision support tools and scenario modelling would map these intersections, highlight system bottlenecks, and ensure regulation is backed by timely, fit for purpose infrastructure planning.

4. How should governments apportion any increased road infrastructure costs between levels of government?

   NIL

5. How can imported vehicles comply with both international and domestic standards to allow vehicles (including heavy zero-emissions vehicles) to be imported without being re-purposed?

   The Australian Design Rules (ADRs) typically manage vehicle approvals entering the Australian market. ADRs are mostly aligned with the United Nations Economic Commission for Europe (UNECE) heavy vehicle technical standards. OEM vehicles that comply with UNECE standards typically comply with ADRs and can be imported and operated on Australian roads as of right (subject to mass limits). Where OEM vehicles deviate from UNECE regulations, they need to demonstrate compliance to specific ADRs prior to those vehicles gaining approval to

operate on the Australian road network as of right. In lieu of an ADR approval, jurisdictions have the ability, and have done so, to approve under permit the operation of heavy low and zero emissions vehicles on their road network subject to permit conditions.

6. What data is available on road use, the structure of the road network, and different heavy vehicle users (and user industries)?

   Austroads, the National Heavy Vehicle Regulator, Roads Australia, Private Road Owners, the National Transport Commission, and the National Freight Data Hub (Department of Infrastructure, Transport, Regional Development, Communication, Sport and the Arts) are holders of relevant road and heavy vehicle user data.

7. What are the future coordination and alignment issues between the states and territories for a National Automated Access System (NAAS)?

   Jurisdictional alignment for a NAAS would face similar issues experienced with the current vehicle access approval systems:

   a) Vehicles approved in one jurisdiction at a particular set of axle mass limits may not be approved at those levels by another jurisdiction.
   b) Road network access conditions may be different.
   c) Vehicle permit conditions may be different.
   d) Vehicle monitoring equipment may be required on vehicles by different jurisdictions.
   e) Assessment timeframes and costs for unassessed road corridors vary considerably. Local government is typically under resourced in this area and typically takes the longest to respond to access requests.

8. How best to determine which roads might be eligible for automatic access (initially and ongoing)?

   For heavy vehicle freight, as a starting point, define the existing principal freight network as the base low and zero emission heavy vehicle approved network. After this, for access requests beyond this network, agree a set of access assessment criteria for all road managers, local, state, territory, and private, supported by an agreed reporting timeframe. Then set an agreed process to review and update NAAS as new applications are received, and corridors assessed.

9. What are the technical and administrative practicalities of scaling Tasmania's HVAMS (Heavy Vehicle Access Management System) model to the whole of Australia?

   The Australian Local Government Association (ALGA) made a detailed submission to the NTC 2023 C-RIS Reforms to Heavy Vehicle National Law (HVNL) in which they highlighted the technical, administrative and financial implications of introducing HVAMS or similar system for local governments: ALGA-Submission-National-Transport-Commission-Consultation-Regulatory-Impact-Statement.pdf

10. What are the costs and benefits of the current access permit system borne by heavy vehicle operators?

    There have been several investigations and regulatory impact statements undertaken at state and national levels by government assessing this matter. The NTC and the NHVR, along with state-based road agencies and

departments would have information that can be furnished to the Productivity Commission to inform this discussion. Below are some submissions available online responding to the consultation processes on this matter.

- Freight Australia - Victorian Heavy Vehicle Roadmap
- ATA - Economic benefits of improved regulation in the Australian trucking industry
- NatRoads - Time for bold action: eliminate 90% of heavy vehicle access permits by 2028.
- Australian Logistics Council Submission - Heavy Vehicle Productivity Plan 2024-2029

11. What data is available on road use, the structure of the road network, and different heavy vehicle users (and user industries) for the NAAS proposal?

    Refer to response to Question 6.

12. What are the largest hurdles for timely or accelerated implementation of the National Heavy Vehicle Driver Competency Framework reforms?

    The NHVDCF has not been adopted by all jurisdictions; to make it an effective tool to facilitate productivity improvement, it requires national uniformity. Even in jurisdictions that have implemented the framework, there is still variation in its application [1].

    There will be additional cost to industry to implement the proposed NHVDCF reforms due to the increased post-licence supervision requirements. This has the potential to exacerbate existing driver shortages due to the increased costs and approvals[2] and discourage new drivers entering the industry.

    There is still no agreement across all stakeholder groups on the best way to measure and approve the progression pathway requirements.

    Preparing appropriate materials to support the implementation of the NHVDCF will take time. Industry Skills Australia has recently set up a project to work with government, RTOs and industry to review and update heavy vehicle licensing competency standards within vocational training products[3].

13. Which federal, state & territory or private bodies are expected to handle the various stages and aspects of implementation of the driver competency reforms?

    Austroads is the agency charged with delivering the NHVDCF reforms and managing stakeholder engagement with all key federal, state and industry bodies. The Austroads website link below provides project information, updates, and links to key material.

    - National Heavy Vehicle Driver Competency Framework.

[1] https://www.natroad.com.au/consultation-ris-national-heavy-vehicle-competency-framework/
[2] https://acrs.org.au/wp-content/uploads/ACRS-submission-on-heavy-vehicle-driver-competency-RIS.pdf
[3] https://www.industryskillsaustralia.org.au/Transport-and-Logistics-Skilling-Heavy-Vehicle-Drivers-and-Licensing-Update/?tab=commencement#project-tabs-2858

14. What timeframes are sensible for accelerated implementation of the driver competency reforms?

    Austroads are managing the implementation of the NHVDCF. They would be in the best position to provide an accurate response to this question. Refer to link in Q13.

15. What data are relevant to quantitative estimates of productivity impacts of the driver competency reforms?

    Refer to the Consultation Regulatory Impact Statement[4] and Decision Regulatory Impact Statement[5] by Austroads.

16. How best to quantify the impact of the driver competency reforms?

    Austroads have been charged with developing an evaluation framework covering:

    a) Process Evaluation – this would evaluate which elements of the reform have been implemented as intended, as well as assess any practical issues that have been encountered in implementation (measured through independent review as well as participant and training provider input)
    b) Impact Evaluation – this would assess the change impact of the reform and would cover elements such as:
        i. Improvement in knowledge and attitudes of licence applicants (measured through online participant surveys)
        ii. Number of drivers taking new progression pathways and impacts on accelerated movement to more productive vehicles (measured through analysis of licensing pathway data)
    c) Outcomes Evaluation – this would be a longer term evaluation assessing the impact of the reform on safety outcomes measured through crash and infringement rates. This evaluation would be expected to involve engagement of a recognised road safety research entity.

    The following metrics were articulated in the D-RIS NHVDCF:

    a) Safety outcomes can be measured by metrics that reflect the incidence of heavy vehicle crashes at different levels of severity. For example, for a given year, the number of heavy vehicle crashes per kilometre travelled occasioning death, or serious injury, or property damage only.
    b) Supporting driver progression through the licence classes to allow driving of higher productivity vehicles, which carry greater freight, will enable an overall productivity benefit. Availability can be measured by metrics that relate to the number of heavy vehicle drivers at each licence class relative to the fleet, or more specifically to the demand for drivers of particular classes of heavy vehicle.

17. What are the principal regulatory and administrative barriers to improving the availability of EV truck (heavy zero-emissions vehicle) charging infrastructure?

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[4] https://oia.pmc.gov.au/sites/default/files/posts/2022/08/Publish%20Version%20-%20NHVDCF_Consultation-RIS_August2022.pdf
[5] https://austroads.gov.au/__data/assets/pdf_file/0032/616964/NHVDCF_Decision_RIS.pdf

Refer to Introduction response of this submission and response to Question 1.

18. How significant are installations and operations regulatory regimes for charging infrastructure that might be constraining availability?

    Based on Powering Australia engagement with different stakeholder groups within the heavy vehicle sector, the key issue constraining the availability of charging infrastructure is the lack of "offtake" agreements between infrastructure delivery proponents and industry. ARENA funding programs are shifting from providing grant funding to EV Truck owner operators to facilitating the development of common user charging facilities. This will help reduce some of the initial capital investment requirements, however commercial investors are seeking confirmed offtake agreements with transport operators. The lack of EV Truck uptake at this time is making this a challenging ask.

19. What other practical barriers limit the installation and operation of charging infrastructure for heavy zero-emissions vehicles?

    Other key practical barriers include:

    - Site location (proximity to arterial road network and logistics hubs to reduce dead running).
    - Site dimensions – enable movement of semi trailer vehicles.
    - Requirement of increased number of charging units compared to diesel bowsers due to the longer charging time compared to refuelling.
    - Driver rest break requirements under the HVNL.
    - Grid connectivity and draw down power requirements – i.e. having multiple fast chargers for trucks charging at the same time may require additional infrastructure investment (i.e. BESS) to help manage energy demand during peak charging requirements.

20. What are the comparative noise levels of electric heavy vehicles and internal combustion engine heavy vehicles?

    Europe is requiring all electric vehicles to emit a certain sound level when traveling at speeds below 20km/h to warn pedestrians and bike riders of their proximity. This will result in these vehicles operating at similar noise ranges as diesel heavy vehicles at low end speeds.

    Volvo, which has sold most EV trucks in Australia, has introduced an acoustic alert system for its electric truck models[6] which, at 20km/h, should be at least 56 dBA. There are few tests from OEMs with published information online. MAN claims that there is a 5.8 dBA reduction (54.7 dBA down to 48.9 dBA) in noise when travelling at

[6] https://www.volvotrucks.com/en-en/news-stories/press-releases/2021/may/volvo-trucks-adds-unique-sounds-to-its-electric-trucks.html

20kmh and a 4 dBA reduction (56 down to 52 dBA) at 30km/h[7]. Volvo claim a noise reduction of 10 dB[8] from 79 dBA to 69 dBA, however there is no reference to travelling speed.

21. How significantly does any noise reduction (from EV trucks) ameliorate the negative impacts of night-time heavy vehicle travel?

    As per above, noise amelioration will be of benefit on key transport corridors where vehicles operate at speeds above 30km/h. Reduced noise will not only be associated with driving, but also accelerating and braking activities. Further noise investigations along specific road corridors will be needed to appropriately address the question.

22. What are the implementation considerations for curfews (or their reduction/removal) for EV trucks, given different levels of government have responsibility (especially local governments)?

    This is a location-by-location issue to be addressed based on input from key stakeholders and utilising reliable data. It would be a local and state government situation to negotiate and address, and actively involve industry, to ensure no adverse outcomes for industry and the community.

23. How could the effects of curfew-reform for EV trucks be quantified (including required data/modelling)?

    Refer to response to Question 22.

[7] https://www.man.eu/corporate/en/newsroom/stories/quieter-than-youve-ever-heard-before-126656.html
[8] https://thedriven.io/2022/09/26/sounds-of-silence-how-quiet-are-heavy-duty-electric-trucks/#:~:text=Quieter%20for%20communities%2C%20and%20for%20drivers%20According,per%20cent%20(Decibels%20are%20a%20non%2Dlinear%20measurement).