Submission

Productivity Commission Inquiry into the Impacts of Heavy Vehicle Reform

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THE CENTRE FOR CONNECTED AND AUTOMATED TRANSPORT (CCAT)

The Centre for Connected and Automated Transport (CCAT) is a government and industry collaboration providing national leadership to support the optimal deployment of connected and automated transport. Our vision is a future where connected and automated transport is safe, sustainable, productive and inclusive.

CCAT welcomes the Productivity Commission's Heavy Vehicle Productivity Reform Inquiry and strongly supports its objective of improving productivity, efficiency and sustainability across Australia's heavy vehicle sector. The inquiry represents an important opportunity to consider how national reform settings can better enable new technologies, strengthen system-wide performance, and deliver long-term economic and community benefits.

CCAT's submission contributes to this work by drawing attention to the potential of emerging connected and automated technologies in freight vehicles, to highlight the importance of planning for them in any reforms targeted at improving freight productivity.

CONTEXT

What are connected and automated heavy vehicles?

Heavy vehicles that are either connected and/or automated are currently deployed or being trialled in many parts of the world, including Australia. These vehicles either communicate digitally with other systems, or perform driving tasks with minimal or no human input. They are already being used in freight, construction and mining.

The freight sector is well positioned to benefit from this technology, as the sector contends with productivity challenges. This technology has the very real potential to address driver shortages, enable continuous long-haul movement, increase throughput on major corridors, reduce disruptions caused by crashes, and carry more load. Australia's long distances make this use case a logical transport solution.

National and international collaboration

CCAT's position on heavy vehicle productivity reform is informed by a combination of broad cross-sectoral engagement across Australian government and industry, and international insights.

In September 2025, CCAT spearheaded the National Future Transport Summit, which delivered a blueprint to maximise the benefits of connected and automated transport. Over 130 organisations agreed 14 recommendations for long-term national transport planning that embraces the potential of this technology to address critical challenges across productivity, sustainability, safety and other areas.

CCAT's *2023 International Outreach* took a delegation of Australian government and industry leaders to the United Kingdom, Sweden and Germany to examine how leading jurisdictions are preparing for connected and automated transport. Key learnings included:

- A clear and increasingly mature technology pipeline is already evident, spanning advanced driver assistance systems, automated heavy vehicles and early

commercial applications such as hub-to-hub automated freight and automated mass transit.

- There is a strong imperative to prepare for connected and automated transport in freight, driven by practical system pressures. Productivity outcomes are a central driver of trialling and deployment, with connectivity and automation being used to improve asset utilisation, reduce operating costs, address driver shortages and enhance reliability across freight systems.
- Automated heavy vehicles, particularly hub-to-hub freight applications, are consistently identified as one of the most advanced and commercially viable near-term use case for automation, given the commercial outcomes and lower complexity of the automation task.
- Progress depends on strong, coordinated ecosystems that bring together government, industry and research institutions – as well as planning across the supply chain – supported by aligned strategy, sustained investment and structured collaboration.

Together, these developments demonstrate that connected and automated heavy vehicles are no longer a speculative concept. Australia has a significant opportunity to position itself proactively by ensuring national planning, policy and reform processes are equipped to support the safe and effective deployment of these technologies.

CCAT'S RECOMMENDATION: FUTURE-PROOF THE REFORM PACKAGE AND IMPACT ASSESSMENT BY ACCOUNTING FOR EMERGING CONNECTED AND AUTOMATED TECHNOLOGIES IN FREIGHT VEHICLES.

CCAT recommends that the reform package and associated modelling account for the deployment of connected and automated heavy vehicle technologies to ensure reforms remain fit-for-purpose over the long term.

With regard to the specific package being examined, connected and automated heavy vehicles should be considered when assessing the impacts of the following reforms:

- *Increasing road access to reduce emissions and increase productivity*:

Reforms should not inadvertently inhibit access for heavy vehicles that are connected or automated. For example, these vehicles could require extra equipment such as the sensors that make up the automated driving system. This would make an automated heavy vehicle heavier than a conventional heavy vehicle in some instances, possibly impacting their ability to meet weight limits. This is more likely to be seen in the nearer term as existing vehicles are retrofitted with automated driving systems, rather than having bespoke automated heavy vehicles.

- *Heavy vehicle curfews*

The introduction of automated heavy vehicles could create greater opportunities to move more freight into overnight periods, with reduced reliance on driver fatigue management and rest break requirements. They may also support safer operation at night, while smoother driving behaviour could contribute to noise impacts for surrounding communities.

- *Accelerating implementation of reforms to the National Heavy Vehicle Driver Competency Framework*

Improvements to the National Heavy Vehicle Driver Competency Framework should consider the potentially altered role for a human driver in a partially automated heavy vehicle. The 'driver' might only be needed to take over the driving task for certain parts of the journey, and may have different responsibilities such as monitoring and responding to fallback requests.

As well as these specific considerations, there are broader significant productivity gains to be enabled by connected and automated heavy vehicles, and therefore, they must be accommodated in any reform package and modelling targeted at freight productivity.

In particular, while the interim report acknowledges technological progress as a driver of productivity in the heavy vehicle sector, it does not fully capture the role that connected and/or automated heavy vehicles can play in unlocking substantial productivity gains. International studies, real-world trials and expert analysis consistently demonstrate that automation can materially improve heavy vehicle performance and productivity through a range of factors, including:

- Higher asset utilisation: Vehicles can operate for longer periods and more consistently, unconstrained by human driving hours, fatigue limits, or mandatory rest breaks.
- Reduced fuel consumption and operating costs: Smoother acceleration, braking and speed control, combined with optimised routing, improves fuel efficiency and reduces wear and tear.
- Lower maintenance costs: More consistent and predictable driving behaviour reduces mechanical stress on vehicles, extending component life and lowering maintenance requirements.
- Improved network efficiency: Coordinated and data-enabled vehicle movements can reduce congestion impacts and improve freight flow reliability across the network.
- Mitigation of driver shortages: Automation can reduce reliance on human drivers in constrained labour markets, addressing current significant shortages in Australia and easing projected long-term workforce gaps.

Beyond vehicle performance and network productivity, automated and connected transport is expected to generate new workforce and industry opportunities. This includes growth in advanced manufacturing, automation systems, artificial intelligence, cybersecurity, data analytics and related technology services, alongside broader capability development across Australia's freight and logistics sectors. As well, with the right supporting settings, deployment of these technologies could expand Australia's home-grown technology and transport industries, strengthen domestic innovation ecosystems, and enhance the country's attractiveness for international investment in enabling infrastructure and services. In addition, by positioning Australian capability within emerging global supply chains for automated transport, this transition could facilitate export opportunities and technology exchange, delivering benefits for both Australian businesses and consumers.

For national planning frameworks to explicitly anticipate and enable the deployment and scaling of emerging transport technologies, CCAT recommends that governments and industry work together to define a clear, shared vision for the future freight system across sectors that more meaningfully considers emerging technologies, supported by aligned policy settings, regulatory frameworks and coordinated infrastructure investment. Without

this, there is a risk that reform efforts will optimise the current system rather than position Australia to capture the full benefits of emerging technologies.

CCAT encourages the Productivity Commission to place a strong emphasis in its final recommendations on the importance of anticipatory, technologically informed national planning across all levels of government to ensure Australia's freight system is resilient, future-ready and capable of supporting emerging transport technologies at scale.

CONCLUSION

CCAT welcomes the Productivity Commission's inquiry into heavy vehicle productivity reform, particularly its focus on increasing transport productivity, improving regulatory efficiency and supporting the uptake of heavy zero emissions vehicles.

CCAT's submission highlights that emerging transport technologies are a critical and accelerating driver of the very outcomes the inquiry seeks to assess. They are directly relevant to increasing heavy vehicle productivity through improved asset utilisation, reduced operating costs and network efficiency, while also underpinning reforms such as a National Automated Access System and more dynamic, data-enabled access decision-making.

Consistent with the Treasurer's request for robust analysis, modelling and sensitivity testing, CCAT emphasises that these technologies should be explicitly incorporated into the Commission's forward-looking assessment of economic and sectoral impacts. This includes recognising their potential to materially influence GDP, productivity, labour markets, industry structure and government revenues over time, as well as their broader distributional and consumer benefits.

CCAT supports the inquiry's objective of delivering a more productive and efficient heavy vehicle system and encourages the Commission to ensure its final advice fully accounts for the enabling role of automation and connected systems in achieving these outcomes.