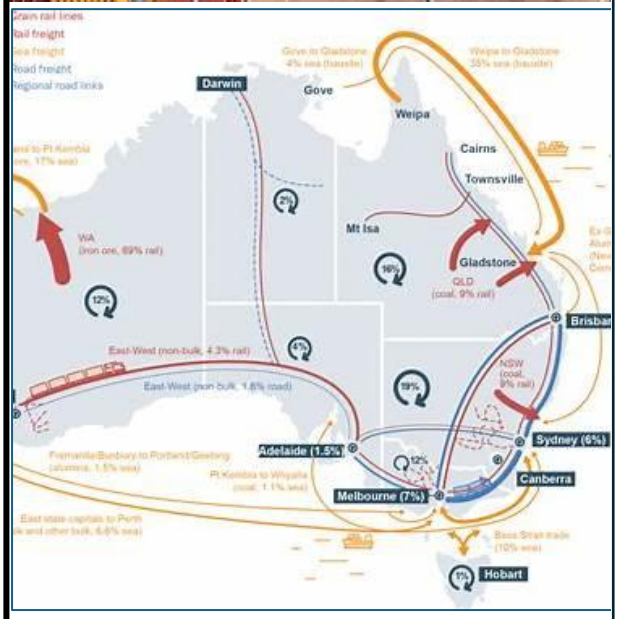

TRUCK INDUSTRY COUNCIL
SAFER GREENER ESSENTIAL

Australia's Ageing Truck Fleet

Road Freight productivity is critical to the economy, but has stagnated.

Discussion Paper One

(October 2025)

Road Freight Productivity is essential but has stagnated

Synopsis

Road freight is the lifeblood of Australia's economy. Nearly 80 per cent of non-bulk freight moves by road, connecting producers, manufacturers, retailers, and exporters across vast distances. Yet despite its centrality, Australia's road freight productivity has stagnated over the past two decades, and the national truck fleet has aged to levels that are among the highest in the OECD.

This discussion paper examines the critical role of road freight in the Australian economy, explores historical gains in productivity, and analyses why recent reforms — including the Performance-Based Standards (PBS) scheme — have delivered only modest improvements. Drawing these lines of enquiry together the paper concludes that urgent policy action is needed to renew Australia's fleet, improve access for high-productivity vehicles, and unlock a substantial productivity dividend for the economy.

1. Freight as an Input Cost to the Australian Economy

1.1 The Central Role of Road Freight

Road freight is not merely a transport sub-sector; it is the backbone of the domestic economy. Almost every Australian business relies on trucks — from bakeries sourcing flour from regional suppliers to mining companies exporting minerals through ports, and logistics firms delivering e-commerce parcels to homes and businesses.

The implications of this dependence are clear: inefficiencies in road freight are not confined to the transport industry. Congestion, breakdowns, regulatory bottlenecks of an ageing fleet increase transport costs, which ripple through supply chains. Higher transport costs raise input prices for businesses, reduce competitiveness, and ultimately feed into higher prices for consumers.

In other words, the health and productivity of the national truck fleet are whole-of-economy concerns, influencing the competitiveness of manufacturing, agriculture, mining, and service industries alike.

1.2 Freight Costs and Competitiveness

The Productivity Commission has repeatedly highlighted the link between logistics efficiency and national productivity. In a country with vast distances and low population density, efficient road freight is essential to maintaining competitiveness (Productivity Commission, 2017).

International experience supports this. The OECD notes that countries with efficient freight systems enjoy measurable gains across manufacturing and agriculture (OECD, 2021). In Australia, inefficient freight not only drives up domestic costs but also erodes export competitiveness by increasing the cost of delivering goods to international markets.

Fleet age compounds this problem. Older trucks are less reliable, less fuel-efficient, and less capable of carrying

high-productivity loads. Freight operators incur higher costs, which are inevitably passed on to the businesses and consumers they serve, creating a drag on economic performance.

1.3 Road Freight and Inflation

Recent macroeconomic analysis has emphasised the role of road freight in price stability. The Reserve Bank of Australia (RBA) has identified freight cost increases and supply chain disruptions as notable contributors to services inflation (RBA, 2023).

An ageing truck fleet exacerbates this problem. Older vehicles require more maintenance, are prone to breakdowns, and have higher fuel consumption. This raises operational costs for freight providers, which are then reflected in consumer prices, demonstrating that fleet renewal is not simply an industry-level concern but a macroeconomic stability issue.

1.4 Australia in a Global Context

Though ageing fleets are a global challenge, Australia is an outlier. While Europe and Japan actively modernise their fleets, Australia's median heavy truck age is around 15 years, with many vehicles exceeding 25 years (Truck Industry Council 2025).

This compares with counties like Austria (6.6 yrs) and Denmark (7.5 yrs) in Europe (ACEA 2022). Japan has set the benchmark in the SE Asia Region with a median age of less than 8 years, supported by strict vehicle retirement and inspection regimes (JAMA, 2021).

As a consequence, Australia's truck fleet is one of the oldest of all OECD countries, which translates into a measurable productivity penalty - relative to international competitors - alongside higher safety and environmental risks.

1.5 Freight as a Policy Lever for Productivity Growth

While policy discussions often emphasise innovation, digital transformation, and workforce skills, road freight efficiency — particularly fleet renewal — represents an under-utilised lever for productivity growth. Modern trucks offer multiple benefits:

- **Safety:** Newer vehicles utilise the most advanced safety technologies available thereby reducing on road and workplace injuries and fatalities.
- **Productivity:** Access to higher productivity schemes allow higher payloads per trip, reduce overall vehicle movements and congestion.
- **Reliability:** Modern trucks experience fewer breakdowns, ensuring time-sensitive supply chains operate smoothly.
- **Efficiency:** Fuel savings and reduced maintenance translate directly into lower transport costs.

Unlocking this productivity potential requires a coherent policy framework, political will, and regulatory alignment to support fleet renewal and maximise the economic contribution of road freight.

2. Past Gains and Recent Stagnation in Road Freight Productivity

2.1 Freight Productivity in the Late 20th Century

Australia has historically been a global leader in road freight productivity. Infrastructure investment, particularly the development of the National Highway System from the 1970s onwards, dramatically improved connectivity between regions. Regulatory innovation, including the introduction of B-doubles and later triple road trains, allowed for higher productivity vehicles.

These actions delivered measurable gains:

- **Higher load factors:** More freight per trip reduced transport costs.
- **Improved safety:** New vehicle designs are equipped with the latest advanced safety technologies.
- **Global reputation:** By the early 2000s, Australia was considered a global innovator in high-productivity vehicles.

BITRE (2019) estimated that the introduction of B-doubles alone increased freight efficiency by over 20 per cent relative to conventional semi-trailers, with even higher gains in regional areas.

2.2 The Plateau of the Last Two Decades

Since the early 2000s, however, productivity improvements have largely stalled. Freight volumes have grown steadily, but the efficiency of moving that freight has not kept pace. Key contributing factors include:

1. **Deteriorating road infrastructure:** Natural disasters, including floods, bushfires, and cyclones, have damaged local and arterial roads. Maintenance funding has often lagged behind need, leaving corridors in poor condition, particularly outside metropolitan areas.
2. **Regulatory conservatism:** Rather than compensating for declining infrastructure with innovation, regulators have often imposed restrictive access conditions, limiting the ability to deploy high-productivity vehicles on critical routes.
3. **Stalled fleet renewal:** While other economies actively modernised fleets with safer, more capable trucks, Australia's fleet has aged, reducing operational efficiency.

BITRE's Road Freight Estimates (2022) underscore the plateau: between 2000 and 2020, freight volumes increased by over 50 per cent, yet productivity (measured in tonnes per kilometre per vehicle) remained largely flat.

2.3 The Cost of Standing Still

Stagnation has tangible consequences. Other economies have continued to improve fleet efficiency through technology and regulatory reform, while Australia relies on its aged heavy vehicle fleet. The results are evident:

- **Congestion:** Older, less productive vehicles require more trips to move the same freight.
- **Higher costs:** Maintenance, downtime, and fuel inefficiency increase operational expenses.
- **Fragile supply chains:** Serious weather events, international shocks, and domestic disruptions have amplified effects on distribution, translating quickly into shortages and price pressures.

The country's once-innovative reputation in freight has diminished. Policymakers and industry leaders now face the pressing need to reinvigorate productivity reforms to restore Australia's competitive advantage.

3. The Performance-Based Standards (PBS) Scheme: Promise and Limitations

3.1 The Original Vision

Introduced in 2007, the PBS scheme was designed to transform road freight. Moving beyond rigid prescriptive regulations, PBS evaluates trucks on safety and infrastructure performance (resulting in reduced levels of road network access), allowing innovative designs that could enhance both productivity and safety.

The scheme promised to:

- Unlock design innovation outside conventional limits.
- Enable higher productivity vehicles to operate efficiently.
- Improve safety through performance-based testing rather than solely prescriptive measures.

Despite the National Transport Commission projecting a "step change" in productivity - potentially doubling the proportion of freight moved by higher productivity vehicles within two decades (NTC, 2007) - this goal was not achieved.

3.2 Implementation by the NHVR

The National Heavy Vehicle Regulator (NHVR) has overseen PBS implementation, approving hundreds of vehicle designs. Evidence suggests PBS vehicles deliver substantial benefits:

- PBS-approved B-doubles can carry 15–30 per cent more freight per trip than non-PBS equivalents.
- Crash rates for PBS vehicles are reported to be nearly 50 per cent lower than the industry average (NHVR, 2020).

These outcomes demonstrate the scheme's potential when applied effectively.

3.3 Access: The Bottleneck

Despite technical success, PBS adoption has been limited by access constraints:

- Operators face complex, case-by-case approval processes from state and local road managers.
- Liability concerns and infrastructure impacts often lead to restricted or refused access.
- Consequently, PBS vehicles operate at a fraction of their potential scale.

Industry groups have highlighted these challenges. The Australian Trucking Association described PBS access as a "bureaucratic maze" (ATA, 2021), while the Truck Industry Council noted that PBS delivered only partial fleet transformation (TIC, 2022).

3.4 Modest Net Gains

PBS has achieved only modest national productivity gains. BITRE (2022) estimates that PBS vehicles account for less than 10 per cent of total freight kilometres, far below original projections. Key barriers include:

- Fragmented regulation across jurisdictions.
- Lack of incentives for road managers to permit access.
- Slow approval timelines discouraging uptake.

Thus, while PBS has proven what is technically possible, it has not translated into widespread economic benefits.

3.5 Lessons for Policy

PBS underscores a critical lesson: technical innovation alone cannot drive productivity gains. Without enabling regulation, incentives, and national coordination, even highly capable vehicles remain underutilised.

For Australia's road freight sector, this highlights a path forward:

- Renewing the old truck fleet as modern, safer, and more efficient trucks are available.
- Regulatory barriers must be addressed to enable widespread adoption.
- Without urgent reform, the ageing fleet will continue to drag on productivity, competitiveness, and economic resilience.

4. Summary

Road freight is indispensable to Australia's economy, yet the sector faces a growing productivity challenge. Past gains, driven by infrastructure investment, regulatory innovation, and fleet modernisation, have plateaued. Today, an ageing truck fleet limits efficiency, increases costs, contributes to inflation, and threatens safety.

While reforms such as the Performance-Based Standards scheme demonstrate the potential for higher productivity, access restrictions and fragmented regulation have prevented widespread impact. Without coordinated policy action to renew the fleet, streamline approvals, and

maintain infrastructure, Australia risks falling further behind international peers, with consequences that reverberate across the entire economy.

The opportunity is clear: by treating road freight productivity as a national economic priority — not merely an industry concern — Australia can unlock significant gains in efficiency, competitiveness, and economic resilience. The cost of inaction, however, is equally clear: stagnation, higher input costs, and a national fleet increasingly unfit for the demands of a modern economy.

References

- ACEA (2022). *Vehicles in Use Report*. European Automobile Manufacturers' Association.
- ATA (2021). *Submission on the Performance-Based Standards Scheme*. Australian Trucking Association.
- BITRE (2019). *Road Freight Productivity in Australia*. Bureau of Infrastructure, Transport and Regional Economics.
- BITRE (2022). *Australian Freight Estimates and Projections*. Bureau of Infrastructure, Transport and Regional Economics.
- DCCEEW (2023). *National Greenhouse Gas Inventory*. Department of Climate Change, Energy, the Environment and Water.
- EPA (2020). *Diesel Emissions Reduction Act: Program Evaluation*. United States Environmental Protection Agency.
- JAMA (2021). *Motor Vehicle Statistics of Japan*. Japan Automobile Manufacturers Association.
- MUARC (2018). *Heavy Vehicle Crash Risk and Vehicle Age*. Monash University Accident Research Centre.
- NHVR (2020). *PBS Vehicle Safety Performance Report*. National Heavy Vehicle Regulator.
- NTC (2007). *Performance-Based Standards Scheme: Regulatory Impact Statement*. National Transport Commission.
- OECD (2019). *Freight Efficiency and Productivity Report*. Organisation for Economic Co-operation and Development.
- OECD (2021). *Transport and Competitiveness Study*. Organisation for Economic Co-operation and Development.
- Productivity Commission (2017). *Shifting the Dial: 5-Year Productivity Review*.
- RBA (2023). *Statement on Monetary Policy*. Reserve Bank of Australia.
- TIC (2022). *Truck Industry Council: Submission on Fleet Age and Safety*.
- TIC (2025). *National Truck Plan*. Truck Industry Council.