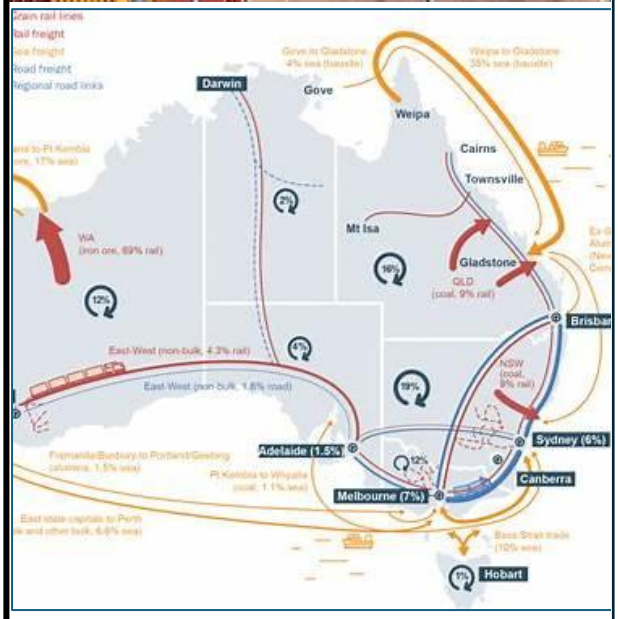

TRUCK INDUSTRY COUNCIL
SAFER GREENER ESSENTIAL

Australia's Ageing Truck Fleet

Redressing the age of the national truck fleet is in the economic interests of every Australian.

Discussion Paper Two

(November 2025)

Modernising the national truck fleet is a national economic imperative.

Synopsis

Every product on a supermarket shelf, the majority of inputs delivered to a farm or factory and a significant portion of coal, iron ore and wheat leaving a port has, at some point, travelled by road freight.

The efficiency of this movement is not simply a transport issue — it is a national strategic imperative that is critical to the future strength of the Australian economy, sovereign capability and the living standards of all Australians.

1. The ageing fleet challenge

1.1 The Hard Numbers

The most pressing issue in Australia's road freight sector today is not the rate of adoption of new truck technologies, nor the regulatory frameworks. While both are important, the growing age of the national truck fleet is the most pressing concern.

As referenced in the Truck Industry Council's National Truck Plan 2025 according to the BITRE Motor Vehicle Census 2024 Australia's truck fleet has a median age of 14.8 years. This is significantly older than comparable OECD countries:

- **Europe (Western):** 8.5 years
- **United States**: 9 years
- **Japan**: 7.5 years

The TIC projects that under a business-as-usual (BAU) scenario, the trend will worsen. By 2030:

- 1 in 5 trucks will be over 27 years old.
- A further 13 per cent will be between 23 - 27 years old.

In other words, by 2030, one-third of the national fleet, some 273,000 trucks, will be more than 23 years old.

This is not just an abstract statistic. It means that in 2030, tens of thousands of trucks on Australian roads will predate the introduction of basic safety features like Anti-Lock Brake Systems (ABS).

Many will also fall short of Euro V or Euro VI noxious emission standards.

1.2 Why Fleet Age Matters

Fleet age matters because it directly determines:

1. **Capacity for productivity:** New vehicle combinations can safely carry higher loads and participate in high-productivity schemes.
2. **Reliability and uptime:** New vehicles are less prone to breakdowns and costly downtime.
3. **Safety performance:** New vehicles employ the most advanced safety technologies available including advanced driver-assist systems and crash-avoidance technology.

4. **Environmental performance:** New diesel vehicles emit fewer noxious and greenhouse emissions, while battery electric vehicles emit no emissions.

When the national fleet is old, all these dimensions of truck fleet performance are compromised.

1.3 Structural Drivers of Fleet Age

Why is Australia's fleet so old? Several factors interact:

- **High capital costs**: Trucks are expensive, with new prime movers often costing upwards of $250,000–$600,000. For many small operators - who make up the bulk of the industry - this is prohibitive.
- **Fragmented industry structure**: The road freight industry is dominated by small and medium operators. Eighty-five percent of the national fleet comprises small fleets (fewer than five trucks) and have limited access to capital or leasing arrangements.
- **Weak incentives for renewal**: Unlike in Europe or Japan, there are few government incentives for retiring older vehicles. Registration charges are relatively flat and do not incentivise or reward newer, less polluting, safer trucks.
- **Cultural inertia**: Many operators are accustomed to keeping trucks running for decades, where mechanical skills extend vehicle life far beyond international norms.
- **Market Failure:** In addition to these factors Australia does not have a 'third market' to sell old trucks into like other nations. Developed European countries, for example, can sell into Central and Eastern Europe and Africa. Together this represents a market failure resulting in the Australian truck fleet remaining old.

These factors combine to keep older trucks on the road by creating weak economic signals for old truck replacement.

1.4 The International Comparison

The contrast with international practice is stark:

- **Japan**: Enforces rigorous vehicle inspections every two years for heavy vehicles, effectively making it uneconomical to keep older trucks in service. Fleet renewal is rapid as a result (JAMA, 2021).
- **European Union**: Operates low-emission zones (LEZs) in many major cities, banning or penalising older trucks from entering. This creates strong incentives for operators to upgrade.
- **United States**: Federal and state-level programs, such as California's truck retirement incentives, provide financial support for operators to

scrap older trucks in favour of newer, cleaner ones.

Australia has few comparable mechanisms. The result is a fleet that lags international benchmarks and imposes hidden costs on the broader economy.

1.5 The BAU Trajectory

If current trends continue, the consequences will compound:

- **Productivity drag** will worsen as older vehicles dominate freight corridors in urban areas.
- **Safety outcomes** will stagnate, with crash rates linked to vehicle age remaining higher than necessary.
- **Environmental performance** will fall further behind, undermining national emission-reduction commitments.

The TIC warns that the BAU trajectory is unsustainable: *"Without targeted policy intervention, Australia's road freight fleet will continue to age, constraining productivity growth and jeopardising the safety and environmental performance of the sector"* (TIC, 2025).

2. Three dimensions of productivity drag

The ageing of the national truck fleet imposes a productivity drag on the Australian economy in three interconnected ways.

1. **Load constraints** — Older trucks are less able to participate in larger, more productive vehicle combinations.
2. **Mechanical unreliability** — Older trucks are more prone to breakdown, reducing vehicle uptime and slowing supply chains.
3. **Safety deficits** — Older trucks lack modern safety features, leading to higher crash rates, and driver injuries.

Each of these dimensions has real economic consequences.

2.1 Load Constraints

Modern trucks are designed to handle greater loads more safely. They are equipped with stronger drivelines, better braking systems, and stability controls that make high-productivity combinations feasible.

Older trucks, by contrast, often cannot be legally or practically used in these configurations. A 25-year-old prime mover may be limited to pulling a single trailer or possibly a B-Double combination, while a modern equivalent can safely operate as part of the High Productivity Scheme for example, PBS.

This creates a two-fold productivity penalty:

- **More trips required**: An older vehicle may need two or three trips to move the same amount of freight as a modern high-productivity vehicle could carry in one.

- **Network inefficiency**: More trips mean more vehicles on the road, greater congestion, and more wear on infrastructure.

International studies have quantified these differences. The OECD (2019) found that modern high-productivity vehicles can reduce freight costs per tonne-kilometre by up to 30 per cent compared to conventional configurations.

In Australia, however, widespread adoption is held back by both regulatory barriers and the impracticality of older trucks to participate in such configurations.

2.2 Mechanical Unreliability

The second dimension of productivity drag is vehicle reliability.

Older trucks are more prone to mechanical breakdown. Components such as engines, gearboxes, and braking systems wear out, even with diligent maintenance. While some operators take pride in extending vehicle life, the reality is that older vehicles spend more time off the road than newer vehicles.

This reduces the availability of the freight fleet — a hidden but significant cost. Every day a truck is in the workshop is a day it cannot generate revenue or move freight. For freight customers, this translates into:

- **Delivery delays**, especially for time-sensitive freight such as food, medical supplies, or e-commerce.
- **Reduced supply chain reliability**, undermining just-in-time production systems.
- **Higher business and household costs**, as operators pass on the expense of increased maintenance.

Analysis of the results of research conducted in North America suggests that the annual maintenance costs of trucks more than 15 years old are up to double trucks less than five years old (ATRI, 2020). Similar dynamics are likely in Australia, though local data is largely anecdotal.

The knock-on effect is that an ageing fleet not only drags productivity through reduced payloads but also through reduced uptime.

2.3 Safety Deficits

The third and arguably most critical dimension of productivity drag is safety.

Older trucks lack the advanced driver-assist and crash-avoidance technologies that are available in modern heavy vehicles. Features such as:

- Electronic Stability Control (ESC)
- Advanced Emergency Braking Systems (AEBS)
- Lane Departure Warning Systems
- Blind Spot Monitoring
- Adaptive Cruise Control

have been widely taken up on new vehicles in Europe, North America, and Japan. These features significantly

reduce the likelihood of crashes, particularly in high-risk scenarios such as rollovers, sudden braking, or driver fatigue events.

In Australia, however, the continued dominance of older trucks means much of the fleet does not have these technologies. For example, the European introduction of ESC for heavy vehicles took effect in 2014 - the same requirement was only mandated in Australia in 2025.

2.3.1 Crash Risk and Vehicle Age

Evidence is clear that crash rates increase with vehicle age. Data from the Monash University Accident Research Centre (MUARC, 2018) shows:

- Trucks more than 20 years old are involved in crashes at rates 2–3 times higher than those less than 10 years old.
- Older trucks are overly represented in serious injury and fatal crashes.

This is not simply due to mechanical failure - it is the absence of modern safety systems that could prevent crashes.

2.3.2 Workforce Implications

The safety dimension intersects with workforce challenges. Heavy vehicle drivers are a scarce national resource.

The National Skills Commission has consistently listed heavy truck drivers as an occupation in chronic shortage (NSC, 2023). Recruitment is difficult, training pipelines are limited, and retention is hampered by perceptions of risk and poor working conditions.

When older trucks increase crash risks, the human cost is magnified:

- The potential for fatalities and injured drivers further reduces the available workforce.
- Safety concerns deter new entrants, particularly younger workers, from joining the industry.
- Insurance costs rise, increasing operator expenses and further eroding productivity.

The result is a vicious cycle: an ageing fleet contributes to higher crash rates, which exacerbate workforce shortages, which in turn undermine the productive capacity of the freight sector.

2.3.3 Safety as Productivity

It is important to stress that safety is not simply a social or ethical imperative — it is a productivity issue. Every crash represents lost freight, lost driver capacity, and higher costs borne by the entire supply chain.

Research from the OECD's International Transport Forum (2020) found that reducing heavy vehicle crash rates through fleet renewal can yield significant economic benefits, not only in avoided health and insurance costs but also in improved freight reliability.

Thus, investing in a younger, safer fleet is a direct pathway to unlocking a productivity dividend.

3. The future freight task

3.1 Freight Demand Trajectories

Looking ahead, the challenge becomes even more stark. The Australian freight task is projected to grow dramatically.

According to the Bureau of Infrastructure, Transport and Regional Economics (BITRE, 2022):

- The total road freight task is expected to increase by 35% over the next decade.
- Growth will be driven by population increases, urbanisation, and export demand.
- By 2040, road freight volumes will exceed 1,000 billion tonne-kilometres per year.

This is not a distant issue — it is already visible. The surge in e-commerce and customer driven delivery timelines, the expansion of agricultural exports, and the continued reliance on just-in-time supply chains have all accelerated freight demand.

3.2 The Cost of Inaction

If the fleet continues to age on a BAU trajectory with the freight task increasing by over a third in the next decade, the consequences are clear:

- **Congestion will worsen** as more, smaller-capacity trips are required.
- **Breakdowns will multiply**, reducing reliability for time-sensitive industries like agriculture, mining, and retail.
- **Safety risks will escalate**, further straining an already tight driver workforce.
- **Costs will rise**, feeding into higher consumer prices and services inflation.

In short, without intervention, the road freight sector will become a bottleneck on the Australian economy.

3.3 Freight and Services Inflation

The Reserve Bank of Australia has drawn attention to the role of logistics costs in fuelling services inflation (RBA, 2023). As fuel, labour, and maintenance costs rise, freight charges increase, and these increases ripple through the entire economy.

With freight demand set to grow dramatically to 2040 and beyond, even modest inefficiencies in the truck fleet will translate into significant inflationary pressures. Policymakers concerned about cost-of-living pressures cannot ignore the role of fleet renewal in controlling inflation.

3.4 Supply Chain Resilience

The COVID-19 pandemic underscored the fragility of global and domestic supply chains. Border closures and port congestion all highlighted how critical freight is to economic resilience.

In Australia, domestic supply chains are particularly vulnerable to disruption:

- Long distances mean few alternatives when a corridor is blocked.
- Natural disasters frequently damage infrastructure, as seen in the 2022 floods in Queensland and New South Wales.
- Workforce shortages limit the ability to surge capacity in emergencies.

An ageing fleet compounds these vulnerabilities. Breakdowns during crisis periods reduce flexibility. Older vehicles lacking telematics or digital connectivity make real-time supply chain management more difficult.

In a world where resilience is increasingly valued, fleet modernisation is an essential policy lever.

3.5 Environmental and Global Trade Implications

Finally, the future freight task intersects with Australia's commitments to reduce greenhouse gas emissions. Transport is responsible for nearly 19 per cent of Australia's total emissions, with heavy vehicles a growing share (DCCEEW, 2023).

New trucks are more fuel-efficient and emit significantly lower noxious emissions than older ones. The difference between a Euro VI truck and a pre-Euro IV truck can be dramatic:

- **Particulate matter emissions** reduced by more than 95 per cent.
- **NOx emissions** reduced by more than 80 per cent
- **Fuel efficiency** gains of up to 7 per cent.
- For **Battery Electric and Hydrogen trucks** tail pipe emissions are zero.

If Australia allows its fleet to age while the freight task significantly increases, emissions will balloon. This will undermine international trade competitiveness, as global buyers increasingly demand low-carbon supply chains.

Fleet renewal is therefore not just about domestic productivity — it is also about maintaining access to global markets where carbon credentials are becoming critical.

4. Summary

The majority of freight in Australia, from supermarket goods to exports, depends on road transport. Yet the trucks that carry this load are old. With a median age of 14.8 years, Australia's truck fleet is among the oldest in the developed world — far behind Japan (7.5 years) and the U.S. (9 years).

By 2030, one-third of Australian trucks will be more than 23 years old, many lacking basic safety systems such as Anti-Lock Brake Systems (ABS).

An ageing fleet means lower productivity, more breakdowns, higher emissions and greater safety risks.

Older trucks carry smaller loads compared to PBS vehicles, spend more time in workshops, and are involved in more crashes. The Truck Industry Council warns that without policy intervention the problem will worsen, constraining freight capacity just as demand is set to significantly increase over the next decade.

The reasons are structural: high capital costs, a fragmented industry dominated by small operators, weak incentives for fleet renewal and flat registration charges all fail to address the deficiencies of older trucks that is, more polluting and less safe vehicles. Meanwhile, other countries use inspection regimes, retirement programs, and low-emission zones to drive modernisation.

The cost of inaction is steep: slower freight, higher prices, and weaker supply chain resilience. Modernising the national truck fleet would deliver a powerful productivity dividend, improve safety, reduce emissions, and protect Australia's economic competitiveness. In short, fleet renewal is not just transport reform - it's a national economic imperative.

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