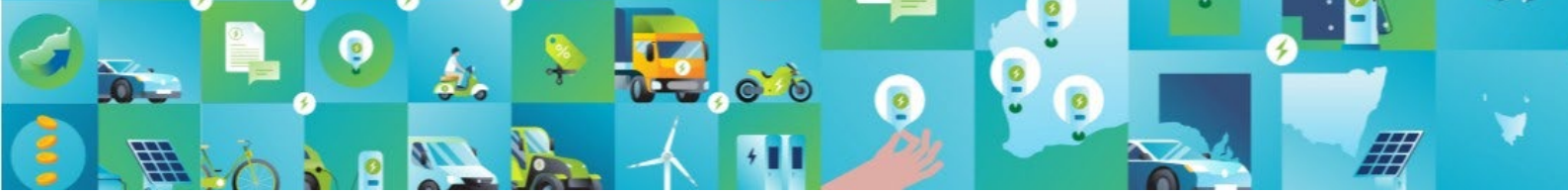


Productivity Commission: Impacts of Heavy Vehicle Reform

Submission by Electric Vehicle Council

Introduction

The Electric Vehicle Council (EVC) welcomes the opportunity to respond to the Productivity Commission's call for submissions on the impacts of heavy vehicle reform. We welcome the Commission's efforts in promoting the Government's National Competition Policy reforms, including the explicit goal of supporting the uptake of heavy zero emissions vehicles.

The EVC is the national peak body for the electric vehicle (EV) industry in Australia. Our mission is to accelerate the electrification of transport for a sustainable and prosperous future. We represent more than 76 businesses across the EV value chain, including car, bus and truck manufacturers, importers, operators, charging infrastructure suppliers financiers and energy networks.

Transport is the only industry sector in Australia whose emissions are increasing and is on track to be the greatest contributor to climate change in the Australian economy as early as 2030. Accounting for over 20% of transport emissions, road freight may be one of the most stubborn sectors to decarbonise but it is also critical to achieving the Government's legislated targets of net zero by 2050.

As the voice of Australia's EV industry, the EVC is ambitious: electric vehicles can be the engine of Australia's decarbonising economy. To realise their full benefits, however, policy must be carefully designed and timed to maximise benefits for all Australians.

Purpose of submission

Australia's heavy vehicle settings have long held back adoption of electric trucks and vans, with broader consequences for national productivity and the net zero transition. For many years, the EVC has been calling for government intervention on policy and regulatory settings that are either actively obstructing the transition to heavy EVs or failing to realise their true potential in lifting living standards for all Australians.

Further to the Commission's scope, we have confined our comments to on-road freight vehicles above 4.5 tonnes.[1] Each of the five information requests are addressed chronologically below. We also provide an appendix of further reference documents to inform the Commission's analysis and modelling work.

Should you wish to discuss this submission, further kindly contact Cameron Rimington, Senior Policy Officer – Heavy Vehicles.

[1] This definition covers multiple sub-segments e.g. "light commercial" (vans/trucks, 4.5-8t); "medium duty" (typically rigid trucks, 8-17t GVM); "heavy duty" (rigid/prime mover combinations, over 17t GVM).

Increasing heavy vehicle road access to reduce emissions and increase productivity

EVs remain Restricted from Using Australian Roads

The Commission correctly notes that the higher weight of some heavy electric vehicles exceeds certain mass and dimension provisions of the Heavy Vehicle National Law. In practice, this means that most electric prime movers (and some heavy electric rigids) are classified as 'Restricted Access Vehicles' and cannot freely use Australian roads.

This *de facto* ban puts the onus on operators to negotiate permits, mass concessions and other ad-hoc access arrangements, compounding the additional costs of transitioning to electric trucks. On some estimations, it costs $91 in compliance costs for a single permit for a single electric truck per delivery address; this can easily scale to $3,000 over a basic 3-day delivery schedule.[2] The compounding effect of this extra red tape is passed on through national supply chains, ultimately manifesting itself as higher prices for Australian consumers.

These restrictions frustrate the uptake of heavy EVs in Australia (together with their broader benefits) but they also damage the productivity of those electric trucks that *are* on the roads. Truck routing for EVs is already range-constrained due to current battery designs and vehicle technology — when access restrictions demand rerouting of delivery runs, viable operating envelopes shrink further still.

As-of-Right Access for Heavy EVs

Currently, electric heavy vehicles face an impossible patchwork of national, state, territory and local government access rules. Many of these require laborious permit applications or months of negotiations with individual road managers. As of 2025, the EVC estimates there are more than 550 different road access decision-makers that restrict how and where electric trucks can be used, including:

- The National Heavy Vehicle Regulator
- All states/territories under the Heavy Vehicle National Law
- Western Australian road authorities
- Northern Territory road authorities
- Local government authorities
- Rail asset owners
- Electrical and utility infrastructure owners

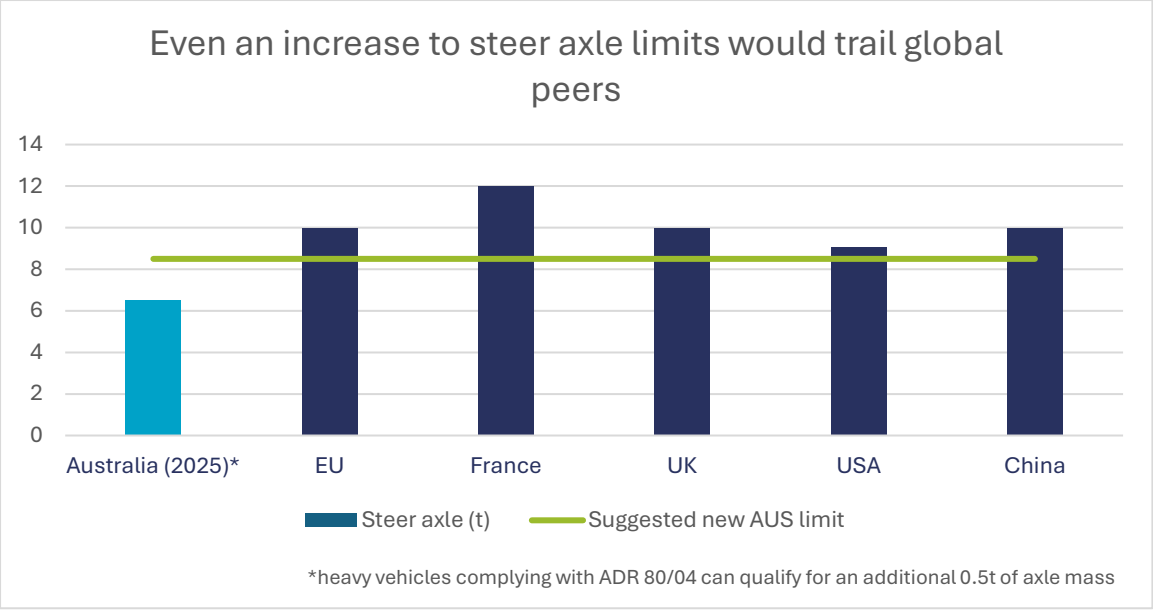
This patchwork approach multiplies red tape and damages national productivity. So long as the onus is on individual operators to negotiate individual access arrangements with all affected road managers, the mass-uptake of heavy EVs is extremely difficult.

[2] Toll Group, *Lessons Learnt Report: Milestone 2*, 2025, p.8.

The EVC recommends reversing the onus of justifying road restrictions by giving all EVs as-of-right access to the Australian road network. Concretely, this would entail reclassifying heavy electric vehicles as 'General Access Vehicles' under the Heavy Vehicle National Law provided they:

- Are 100 percent powered by a battery electric drivetrain
- Do not exceed 8–8.5 tonnes on the front steer axle[3]
- Do not exceed 18.5–19 tonnes on the rear (tandem drive) axle
- Otherwise comply with the Australian Design Rules (ADRs).

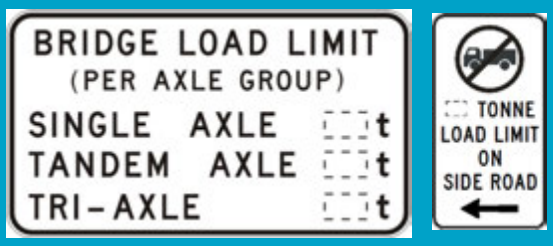
Internationally, Australia has an overly risk-averse approach to mass limits, particularly on front/steer axles. A recent report by Austroads[4] found that even at the 8.5 tonne limit proposed above, Australia's regulations would still remain more restrictive than most comparable markets (e.g. USA, UK):



The EVC recognises there are legitimate asset management reasons to restrict such vehicles from using specific infrastructure assets (see Box A below). However, by restricting EV access *by exception* (instead of as-a-rule), road managers will remain empowered to protect those assets that are truly unsuitable for heavy EVs, without suffocating their broader productivity benefits. By switching the burden of proof from the private operator (i.e. "banned everywhere unless…") to the road asset manager (i.e. "allowed everywhere except…"), Government can immediately cut red tape and enable general access provisions for the vast majority of road infrastructure that will be largely unaffected by heavier EVs. This would single-handedly remove one of the biggest barriers to mass uptake of electric trucks.

[3] Such tonnage limits need not be introduced immediately; a staged reform may prove more practical for fleets and road managers alike.
[4] Austroads (2025), Zero Emission Heavy Vehicles and Road Pavements: Comparing Australia and New Zealand to Europe and North America.

BOX A: MITIGATING INFRASTRUCTURE IMPACTS



Australia already has a well-developed system of managing the infrastructure impacts of heavy vehicles, with dedicated laws, regulations, signage and routes that restrict access to certain trucks *by exception*. Even still, banning access is usually the bluntest instrument for mitigating impact. Many road managers already allow over-mass access in recognition that improved suspension systems, wider tyres and other next generation technology can offset adverse infrastructure impacts, even where axle masses exceed nominal limits. Where limits *have* been increased abroad, subsequent studies have not found appreciable infrastructure damage; for example after California introduced higher limits, the University of California published a peer reviewed paper in 2020 entitled "*Heavier alternative fuel trucks are not expected to cause significant additional pavement damage*". In all cases, a blanket ban on vehicle access is rarely the most productive or necessary regulatory response for governments seeking to minimise road infrastructure impacts.

Consistent Concessions for Heavy EVs

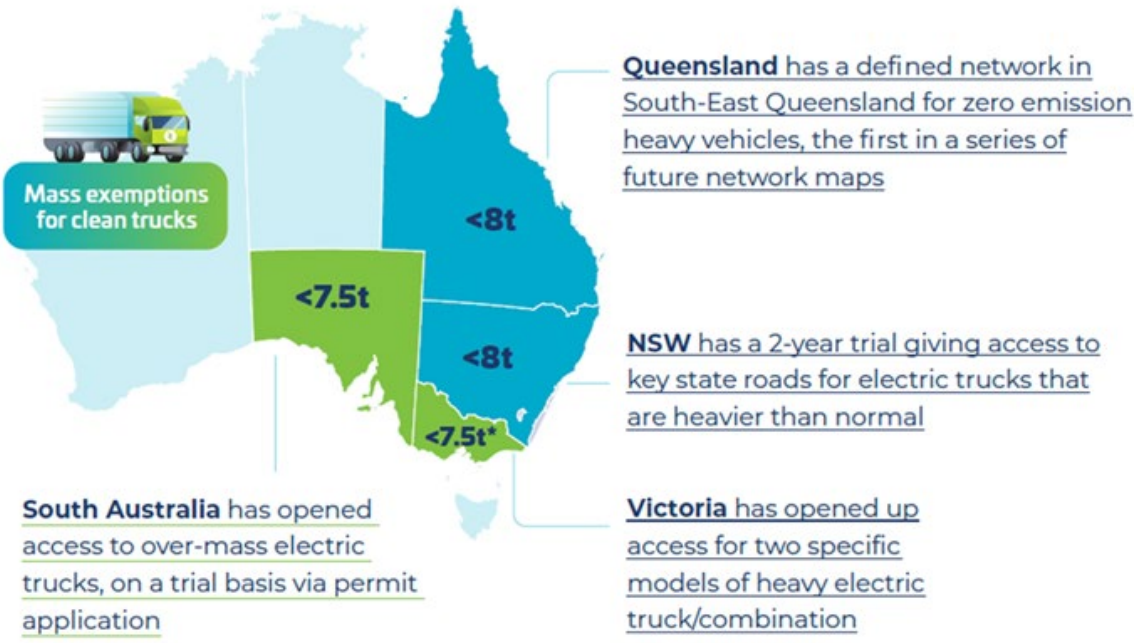
International best practice from the USA and Europe has been to allow zero emission heavy vehicles an additional mass allowance (often for a defined time period), in recognition of the broader whole-of-economy benefits these vehicles provide (e.g. productivity, health, fuel efficiency, carbon reduction etc.).[5] For example:

- European Union – 4 tonne GCM concession
- UK – flat 2 tonne concession
- USA – 2,000 pound concession

Some states have attempted to facilitate similar arrangements but with unintended consequences. Each jurisdiction has introduced different eligibility criteria for heavy EVs seeking greater access to the state road network. Despite all jurisdictions falling under the Heavy Vehicle National Law, a single electric prime mover in Australia today would need to comply with five separate state-based rules:

- NSW, Towards Net Zero Emissions Freight Policy
- VIC, Low or Zero Emission Network Map
- QLD, Zero Emission Heavy Vehicle Network Map
- SA, Low and Zero Emission Heavy Vehicle Trial Scheme
- Tasmania (no concession)

[5] The EVC is contributing to work to quantify these wider economic benefits for the Australian context. Findings can be shared with the Productivity Commission in early 2026.



This has fragmented the alleged *national* heavy vehicle market, undermining the wider economic benefits of free cross-border trade in Australia:

"The freight and logistics industry by its very nature is not bound by borders or boundaries, but as a result of the differing regulations between the jurisdictions unfortunately we are creating them." – EVC Member

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"It would be beneficial to align across all states at 8 tonnes (as per QLD and also NSW trials, and/or introduce law to overwrite states or certain LGA limitations)." – EVC Member

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Additionally, such concessionary arrangements are often "trials" or only temporary measures that undermine business confidence. Many rigid truck bodies (including for battery electric trucks) are specifically built to match legislated mass limits; "pilot" mass concessions only add uncertainty to a fleet's long-term operating environment.

While as-of-right access is by far the most productive reform, any concessionary arrangements in the interim must be aligned across state borders to ensure consistency in eligibility, vehicle specification, application processes and duration. Continuing the current fragmented approach will deter EV uptake and undermine the decades of productivity progress under the Heavy Vehicle National Law.

Integration with Council Roads

Managing roughly half of Australia's public roads, Local Government Authorities (LGAs) have a significant impact on where and how heavy EVs can contribute to national productivity. After all, unless an operator's depot and every one of their customers are located on major state routes, *all* heavy EVs will need to travel on an LGA asset.

To date, heavy EV deployments have required individual private operators to negotiate lengthy access agreements with one or more of Australia's 530 LGAs. While Councils may be disproportionately affected by increased road maintenance spend, one early adopter of heavy EVs has noted:

> *"For most local governments, engineers are not allowing higher axle limits, and this is proving as a major deterrent and barrier…Waiting for permit approvals by each individual local council and road owner is proving not to have the urgency and buy-in required for change."* – EVC Member

Navigating bespoke access arrangements with individual LGA stakeholders – often across protracted negotiation periods – is not a feasible avenue for scaling the productivity benefits of heavy EVs (see below). Where concessions as temporary workarounds cannot be avoided, these access arrangements must include key freight routes or infrastructure managed by LGA road managers. Without them, any stop-gap measures are unusable for the industry.

National Automated Access System

In Principle Support

The EVC welcomes the significant work undertaken by Government to develop the National Automated Access System (NAAS). We support the productivity benefits of government efforts to reduce red tape, cut trucking permit applications by 90% and reduce the regulatory burden on Australia's road freight businesses.

However, at best the NAAS will streamline *applications* for access regimes that already exist; it will not actually expand access – for heavy EVs or any other vehicles. Unless as-of-right access is established nationally, heavy EVs will effectively remain banned from much of the road network and any new access routes will be determined on a case-by-case basis by state and LGA road managers. Even if fully implemented, the NAAS is unlikely to improve national productivity in this regard.

One-Touch Permitting

As EVs scale across more freight applications there will inevitably be new arrangements that must be struck with road authorities. However, as noted in a recent knowledge-sharing report, one EVC member found:

> *"Multi-jurisdictional access rules require repetitive assessments for identical vehicle types, increasing deployment cost and creating friction unaligned with actual safety risk."* – EVC Member

By way of example, one heavy EV was approved to access a Queensland council's road network at a higher mass (7.5 tonnes) but then a subsequent application for the very same permit at a *lower* mass (7.1 tonnes) was denied by the same LGA. Another access regime reportedly took one full year to negotiate (with relevant *state* authorities) then a further year to extend access onto key private toll roads.

This duplication in red tape not only damages national productivity but hampers the uptake of heavy EVs more broadly. A useful metric for the Commission's modelling would be to source average decision times taken for road managers (NHVR, state, LGA, others) to assess a request for greater road access, for electric and non-electric vehicles alike. The EVC understands a typical application decision can take anywhere from 30 days to 3 months.[6]

Anecdotally, however, road managers at the LGA level are denying general access to heavy EVs, even where they are compliant with state-based concession schemes. These refusals necessitate early-adopter fleets and OEMs to negotiate access on a road-by-road basis with council engineers. The application alone can consume significant resources, with no guarantee of ultimate approval:

> *"Where specific access is required and we are applying road by road, it can take a full day and requires experience and understanding of truck specifications to complete – we have an early career qualified engineer completing these."* – EVC Member

To reduce compliance costs, cut red tape and boost the productivity of the broader road freight system, the EVC is proposing a 'one-touch' principle for decision-makers. This could take the form of:

- Investigating a single 'window' or contact channel for assessment of new access applications, as standard across all infrastructure owners (e.g. at Councils, State road authorities etc.)

[6] Toll Group, *Lessons Learnt Report: Milestone 2*, 2025, p.7.

- Standardising access requests and vehicle information across all decision-makers (e.g. pro-formas specifying relevant technical vehicle information needed for a basic assessment)
- Shortening maximum consideration period for deemed approvals (e.g. new access is automatically granted if no objections are received after X days).

The NAAS is a welcome initiative to streamline permitting under existing access regimes. However, where *new* access arrangements must be negotiated and permitting is unavoidable, it will be increasingly important for operators to have clear, expedient decision-making on where they can use heavy EVs. If not, red tape delays will continue to frustrate the broader productivity benefits of these vehicles.

National Heavy Vehicle Driver Competency Framework

Skilling Up for Electric Trucks

The EVC supports the National Heavy Vehicle Driver Competency Framework (the Framework). We whole-heartedly applaud the efforts of all stakeholders aiming to harmonise Australia's licence training and assessment framework to produce safe and competent heavy vehicle drivers.

However, to fully "*reflect the current and future needs of heavy vehicle operators and the future freight task*", it will be critical that key competencies under the Framework are regularly updated to align with the shift towards heavy electric vehicles.

Even though electric vans and trucks are comparatively easy to operate, all truck drivers still need training and heavy EVs are not immune to the industry's broader challenges with skills and competency. Early deployments of heavy EVs do suggest drivers will need additional training to realise the full capability of heavy EVs. Driver training and familiarisation are increasingly essential to optimising operations in early-adopter fleets and, therefore, to driving uptake:

"Driver behaviour and EV-specific training (regen braking, energy management) materially influence (EV) range and performance — reinforcing the need for a modernised competency framework." – EVC Member

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The EVC recommends introducing explicit competency requirements for electric operations in future iterations of the Framework.

Addressing the 'Payload Penalty' through licensing reform

While this call for submissions concentrates on the Framework specifically, there is merit in the Commission taking a broader view on licensing reform to boost national

productivity. In particular, a mass concession for driving heavy EVs on a car licence could materially cut red tape, boost industry uptake and deregulate supply chains.

Currently, vehicles above 4.5 tonnes cannot be driven on a standard car licence. This impacts light commercial EVs disproportionately as the vehicles themselves are heavier, leaving less allocation to carry goods. Today's battery packs add 400-700kg to the tare weight of a vehicle; this is 400-700kg of revenue the operator must forego. This so-called 'payload penalty' means operators of electric vans and light trucks are effectively losing money on every delivery.

Licensing constraints have major flow on impacts to national productivity. Early EV adopters have found the payload penalty yields poor delivery optimisation:

- Individual EVs are often "weighted out" without being "cubed out" (i.e. the vehicle reaches its *mass* limit even though there is ample *volumetric space* for additional goods)
- In one recent trial, most EVs used only 50% of their cubic capacity before reaching the legal 4.5t mass limit
- In another early adopter fleet, the 'payload penalty' proved so commercially damaging that the operator had to re-procure larger e-trucks (above the 4.5t car licence threshold) and then recruit specialist licenced heavy vehicle drivers, further undermining investment productivity.
- In turn, the EV payload penalty means more vehicle movements to distribute the same amount of freight, with obvious implications for congestion, supply chain efficiency and national productivity.

Training and driver competency is notoriously fraught and revising licensing rules would not be without controversy. The above productivity benefits should be weighed carefully against the ongoing need for drivers to be competent in managing the mass and configuration specific to their vehicle, both within the Framework and in broad terms.

Internationally, however, jurisdictions have granted a payload concession to *electric* light commercial vehicles to equalise their competitiveness with equivalent diesel vehicles. The UK offers commercial EVs an additional 750kg concession to offset the payload penalty. In New Zealand, recent amendments allow car-licence holders to drive EVs up to 7.5 tonnes.

Anecdotally, such measures have helped boost the uptake of EVs in the light commercial fleet. If similar measures were adopted under state laws, EV operators could access a greater pool of delivery drivers (i.e. all holders of a car licence) and offer similar payloads to equivalent diesel vehicles. This would not only help EV uptake but also improve workforce resilience and potentially lower staffing costs.

The EVC recommends the Commission evaluate the potential costs and benefits of raising the car licence weight limit to 6 tonnes, for electric vehicles only. The evaluation

would ideally weigh the productivity benefits of increased driver supply with the safety implications of operating a heavier (though less complex) vehicle. At a minimum, the EVC urges the Commission to consider international best practice case studies (such as the UK Government's recent study) as a model for unlocking the productivity benefits of increased workforce participation in Australia's freight task.

Workforce Retention with Quiet EVs

Almost universally, drivers prefer the experience of driving an *electric* heavy vehicle. After a period of adjustment, drivers typically praise heavy EVs for being quieter, more comfortable and less tiring than an equivalent diesel vehicle. In contrast, diesel driving inherently risks acoustic damage and potential industrial deafness, vibration fatigue, noxious emissions health impacts and respiratory disease.

In the context of ongoing driver shortages, an ageing workforce and efforts to attract/retain younger employees, the appeal of EVs as a superior working environment for Australia's truck drivers must not be overlooked. Future national driver and licensing strategies (including the Framework) should acknowledge the inherent disincentives that legacy diesel operations pose for workforce retention and consider electric operations as a mitigation strategy.

Barriers to availability of EV truck charging infrastructure

At-Base Charging Headaches

At face value, charging a truck "at-base" (e.g. a driver's home, an operator's depot) should be the equivalent of home charging for passenger EVs. In reality, at-base charging remains complex and slow to deploy. This can be due to:

At Home	At Depot
• Unsuitable driver dwelling types – strata, rentals, on-street parking, narrow driveways etc. • Residential 7kW charging is often insufficient for commercial duty cycles. • Delays in charger installations for residential installs – single-phase supply, landlord consent, and grid constraints cause 30–40% of attempts to stall.	• Complex and inconsistent approval pathways for charger installations add significant cost and time. • Where heavy EV charging hubs seek to connect in areas with limited network capacity, proponents may be required to contribute to the cost of any necessary augmentation works. • Additional grid loads; large depots may require as much energy as a 15-storey apartment block, or 1–5 MW of electricity capacity • Secondary lines of supply; some grid operators (e.g. SA) limit sites to no more than one grid connection • The need for landlord approval for charger installation. • Lack of uniform funding mechanisms for depot electrification.

> *"Charging infrastructure posed logistical challenges, especially for larger vehicles and depot-based solutions. Obtaining grid upgrades, landlord approvals, and managing vehicle size limitations hindered the deployment of charging infrastructure."* – EVC Member

On the one hand, evolving technology is starting to depress prices for the chargers themselves; hardware costs have fallen dramatically (from ~$1,200/kW in 2021 to ~$200/kW today). On the other hand, total project cost is still driven by switchboards, trenching, protection systems, civil works, and DNSP7 upgrade charges (see below). These represent 70–80% of total capital cost, often exceeding the value of the vehicles themselves by as much as 150%.

> *"It is worth noting that transport companies with heavy diesel commercial fleets are unlikely to have adequate electrical infrastructure at their deports that will be required to charge vehicles in the future."* – EVC Member

Government support for such expenses has been limited for heavy EVs and has typically excluded any site upgrade costs. Looking forward, Commonwealth and State Governments can accelerate truck charging infrastructure by building in additional funding support to existing fast-charger grant programs, with a specific focus on commercial truck/van fleets. To create predictable upgrade-cost frameworks across DNSPs, funding programs should extend beyond charger hardware to include site electrical works (e.g. switchboards, trenching, transformers), grid upgrades and even stationary battery storage systems, where appropriate.

BOX B: DESTINATION CHARGING AT RETAIL/CUSTOMER SITES

Some major retailers are already helping their subcontractors to charge at their retail sites – but here too there are productivity barriers. For example, because drivers will typically drive their *own* car to the retail site to start work, they must be issued with a parking permit and parking space for the duration of their shift. In commercial centres and shopping malls, this can require additional permitting and delays. Such 'destination' charging can also trigger LGA approvals resulting in further productivity drains, particularly where a council's sustainability and DA functions are not aligned.

Retail-based charging also requires better futureproofing of infrastructure. Whereas chargers are currently installed for specific EVs in a specific fleet, the needs of the retailer's customers will ebb and flow over the duration of the retail tenancy. Ensuring that installed charging equipment is flexible enough to evolve with a retailer's changing freight demands would avoid productivity penalties like sunk assets or costly retrofits.

[7] Distribution Network Service Providers, also known as 'energy networks' or 'supply authorities'.

Expanding Grid Access for Electric Depots

Where electrical upgrades *are* required, there is currently an inherent dilemma between the additional deployment demands of electrifying truck fleets and the current regulatory framework for additional grid connections.

On the depot side, some operators and charging providers are reporting lengthy wait times in accessing additional electrical capacity from the grid:

> *"A key challenge has been securing sufficient electricity capacity at these Distribution Centres, not only to power existing facilities, but also to meet the additional demands of a growing electric fleet." – EVC Member*

> *"Grid-connection delays are the single largest barrier to heavy-vehicle electrification" – EVC Member*

Ideally, fleets installing charging on-site assess the desired locations carefully, allow plenty of time and factor in additional budget for queueing, assessments, upgrades, connections, administration and contingency for cost overruns. In reality, current DNSP assessment frameworks (designed more for incremental customer loads) are struggling to process applications in timeframes compatible with fleet transition cycles. Some charging providers frequently experience 18–36-month delays – or longer where upstream augmentation is needed.

The recent Distribution System Plan from NSW's DNSPs confirms that substantial latent distribution network capacity exists but cannot be unlocked under current planning and regulatory settings. This is partly due to a framework that is inherently reactive (by design) triggering cascading productivity problems.

At present DNSPs are not able to invest in anticipation of demand. The regulatory cycle limits DNSPs' ability to invest to meet demand (e.g. for heavy EV charging) that was not originally anticipated. Networks must demonstrate to their regulator with a degree of confidence when and where demand for heavy EV charging is likely to eventuate, which is challenging given current market uncertainty. Absent a significant regulatory change or direction from governments, DNSPs can only *respond* to customer proposals as they are brought forward.

The requirement stems from a regulatory framework requiring DNSPs to invest prudently and efficiently, which prevents overbuilding network infrastructure for speculative future demand (i.e. 'gold-plating'). Any over-investment risks exclusion from the regulatory asset base, meaning these costs cannot be recovered from customers.

The intent is to safeguard consumers from unnecessary costs and reduce the risk of stranded assets, ensuring network upgrades align with actual demand.

Most DNSPs *are* able to supply to a heavy vehicle facility without delay, provided they are engaged early. Unfortunately, most operators cannot engage with DNSPs until they have a firm customer commitment (e.g. a contract providing a return on their EV investments). Thereafter, operators themselves can be reactive, seeking to progress their project/grid upgrade very urgently. Engaging directly with the DNSP early can avoid delays but without confirmed customers, many operators are unable to justify doing so.

The Commission should consider policy/regulatory reforms that enable more proactive investment, smoothing the introduction of charging hubs for heavy EV operators. Whatever the reform model, a regulatory system that prevents long-term anticipation of charging needs and actively *enforces* reactivity is a clear handbrake on national productivity.

Need for dedicated public charging

Irrespective of 'at-base' charging solutions, most fleets will still require some level of public-access fast-charging. A typical last-mile EV truck's range may be sufficient for most daily tasks, but approximately 10–20% of shifts require additional charging, making access to reliable fast-charging essential. The design of this charging infrastructure is critical:

- Heavy commercial vehicles typically have larger and more batteries than cars, therefore usually require a greater energy charge. In the main this will mean high-power DC charging (>20kW) and/or megawatt charging (MCS) in the near future.
- Reliability of electric throughput is particularly important. Today's public DC chargers often deliver half the rated output during real-world operations, creating high downtime for commercial vehicles.
- Pricing must be competitive. Rising average kWh prices (~70c/kWh) materially widen the TCO gap[8] for EV trucks, especially on high-kilometre delivery rounds.
- Availability is also a live issue; peak-time congestion and "emergency top-up" behaviours can compound, forcing commercial fleets to queue or re-route delivery runs, reducing productivity overall.

[8] Total Cost of Ownership gap is the difference between electric and diesel operations over a vehicle's entire lifetime, including capital expenditure, fuel, maintenance, insurance etc.

Fit-for-purpose charging for heavy EVs will require significant space[9], access to high-capacity electricity and good site-location, be it on major freight routes or in strategic industrial precincts. The design of the hubs themselves will need careful consideration:

> *"Any depot or multi-user charging hubs need to be included in spatial planning to account for practicalities of charging cables and heavy truck charging sockets to avoid trucks needing to reverse out of parking bays or needing to use more cumbersome pivoting gantry arms, creating over-head hazards. Preferably design…to allow for LH or RH access to truck charging sockets and allow for one way movement of trucks & pull-in and pull-out lanes."* – EVC Member

Truck charging also requires a greater degree of scheduling order than light vehicles to accommodate drivers on tight timelines. Ultimately, this may require the ability to book charging sessions in advance, possibly integrated with telematics data from heavy EVs. This could include information such as state of charge, required charge, and estimated arrival times, enabling better allocation of chargers and optimisation of available capacity. AI-enabled charging capability may prove beneficial in this regard.

BOX C: THE NEED FOR TEMPORARY INTERVENTION

Irrespective of the charging model or grid connection, one of the biggest barriers to EV truck charging infrastructure is the 'chicken-and-egg' conundrum: fleet operators won't switch to electric until they see the charging infrastructure but charging companies won't invest in the infrastructure until they see the electric fleet. The productivity impacts of this enduring stand-off are difficult to quantify but may constitute a market failure.

Furthermore, truck-charging hubs that *are* deployed in the near term will be underutilised until fleets scale. Without intervention, investment will remain sub-economic. In fact, both ARENA and the CEFC have previously acknowledged that heavy EV charging is likely to be underutilised in the short term (pending mass e-truck uptake), necessitating some level of government intervention as a circuit breaker. Government should consider availability payments, capital co-investment, or anchor-tenant models to bridge early utilisation gaps—consistent with approaches used internationally for hydrogen and heavy transport infrastructure.

[9] https://kempower.com/examining-the-challenges-and-opportunities-of-high-power-truck-charging/

Image: NewVolt concept design

In the medium-term, co-locating truck charging with large renewable energy generation and storage is also another potential pathway, on remote or regional sites. This would have the benefit of avoiding DNSP regulatory constraints, as well as avoiding high electricity costs at peak times. For urban charging hubs or sites that are otherwise constrained, Virtual Power Plants or new energy sharing arrangements could be a workable solution, instead of powering commercial sites completely off-grid.

Planning Rules creating Red Tape

Whether they be depot upgrades, public charging hubs or high-capacity grid connections, heavy EV charging intersects with state planning systems, DNSP investment rules and local government processes that operate independently and often in conflict with one another. Across Australia, many depot upgrades fall into different (and often unclear) planning categories requiring bespoke LGA approvals.

This can add months of delay with little risk justification, extending project timelines, and duplicating assessment requirements all while missing opportunities to utilise existing distribution-network capacity:

"Some complex depot charging installation requires navigating varying LGA planning frameworks, slowing down commercial high-power deployment."
– EVC Member

Current planning and regulatory frameworks were arguably not designed for the scale or speed of electrification required in the heavy-vehicle sector. Without a harmonised framework that aligns planning, network investment and heavy-vehicle charging needs, deployment will continue to lag demand, constraining productivity benefits and delaying the shift to zero-emissions freight.

As highlighted in the DNSP Opportunities Report, there is significant potential to unlock hosting capacity and establish local energy precincts, but this requires coordinated planning and clear national guidance.

Reform opportunities could include:

- Introducing streamlined or exempt development pathways for commercial EV-charging works on industrial land
- Including charging facilities in State planning policy instruments (e.g. environmental planning policy) to streamline approvals
- Enabling LGAs to facilitate depot electrification via by-laws (where required) should be considered "in the overriding public interest".[10]
- Integrating heavy-vehicle load into distribution-level planning
- Supporting development of Generation-Rich Zones and Local Energy Precincts for co-located heavy vehicle charging, solar and storage
- A national code for depot electrification.[11]

"Charging Equity" at Public Charge Points

Arguably the most productive means of deploying charging infrastructure for trucks is to ensure they can use charging infrastructure for *cars*, wherever possible. While headline figures around the rollout of EV chargers continue to grow, almost all have deployed infrastructure that is not fit-for-purpose for larger vehicles.

And yet, the majority of heavy EV deployments to date have been in the light commercial segment (i.e. electric vans and small electric rigid trucks). These vehicle types *are* well suited to the chargers rolling out for passenger EVs Australia-wide (e.g. battery size, maximum charging speeds) but cannot physically use these assets due to poor accessibility:

> *"While passenger EVs and small vans can typically access public fast chargers in shopping centres or commercial precincts, larger format vehicles often face physical access limitations, including insufficient clearance, narrow bays, or restricted turning circles. These constraints diminish the viability of public charging for a key segment of [our] operational fleet."*
> – EVC Member

> *"The operational reality is that many chargers cannot physically accommodate medium/heavy EVs — cabling length, bollards, and angled bays are unsuitable for commercial trucks."* – EVC Member

[10] Basma, H. and Schmidt, J. (2025); *Charging infrastructure needs for battery electric trucks in the European Union by 2030*; International Council on Clean Transportation.
[11] The EVC itself has undertaken some initial work on a 'Guideline for Depot-Based Charging', that can be shared with the Commission upon publication.

"When designing EV chargers for heavy vehicles, the below items should be considered…Adequate space manoeuvring, entry and exit of heavy vehicles (turning circles have to be considered); vehicle height and dimensions (underground chargers for example are normally not accessible with heavy vehicles)." – EVC Member

In turn, this has led to creative (but undesirable) efforts to charge heavy EVs using infrastructure that has not been future-proofed for broader charging needs:



Nominally, the revised Minimum Operating Standards for EV Charging Infrastructure acknowledge this issue with accessibility provisions for CPOs[12] to "*enable EV charging bays to have sufficient length and width to allow for larger EVs which have front, side or rear charging points*". Such requirements are not binding, however, and fall short of mandating a minimum level of charging bays that electric vans/trucks can feasibly use.

It is difficult to quantify the productivity penalty posed by this mismatch in infrastructure rollout. While Australia will undoubtedly need dedicated charging hubs for larger EVs (see above), it is fundamentally unproductive to fully duplicate the passenger charging infrastructure that is already being built.

Small tweaks in design dimensions could allow the majority of urban, last mile delivery vehicles already on the road to use existing passenger charge points. Not every charging site will be able to accommodate increased design dimensions, but many will. There is merit in the Commission assessing the cost/benefits of CPOs offering a minimum number of van/truck bays, either across a defined geographical area, as a percentage of public charge points or as a precondition for receiving public funds.

Publicly funded infrastructure should include dedicated heavy-vehicle-accessible bays and be planned in coordination with DNSPs along major freight corridors. Mandate minimum heavy-vehicle accessible charging bays in publicly funded networks and enable bookable charging for predictable commercial operations. – EVC Member

[12] Charge Point Operators.

The EVC is currently developing strategies for a national rollout of EV charging infrastructure – including vans and trucks – in consultation with our CPO, DNSP, trucking and retail members. Further input can be provided to the Commission as this work evolves.

Curfews for EV trucks

Regulations Unfit for Silent Drivetrains

Apart from their broader efficiency, safety, health and environmental benefits, heavy EVs are also remarkably quiet. Whereas diesel vehicles necessarily emit noise from air brakes and their engines, electric drivetrains are largely silent.[13] EVs stop/start without gear changes, contrasting with diesel vehicles which may need repeated, noisy gear changes in low-speed environments.

Loading bay operations are also far quieter. Industry practice is for drivers to often 'idle' their engine while unloading, contributing to noise pollution. In particular, a refrigerated goods vehicle would typically power its auxiliary/refrigeration units from the diesel motor, leading to extended periods of idling and persistent low-level engine noise. In contrast, heavy EVs draw auxiliary power directly from the on-board batteries, silently.

Australia's curfew regulations fail to acknowledge today's EV technology. While individual curfews on specific roads are relatively rare, most freight movements are impacted under each council's planning scheme. Specifically, individual facilities or commercial premises are typically subject to noise/acoustic conditions under the original planning permit.

For example, many LGAs restrict loading/unloading during the early morning/evening. These limits narrow the commercial delivery window such that trucks are loaded and out for delivery in the peak periods of the morning, returning to depots at peak periods in the evening. As such, curfews damage national productivity by inadvertently incentivising freight movements during the busiest periods on our roads.

In the main, curfew rules have evolved over decades as a way of protecting surrounding communities from the noise of late-night *diesel* operations. Today, those same restrictions are already preventing first-mover EV fleets from realising the full value of their low-noise vehicles:

> *"Several LGAs restrict loading/unloading after 6pm, preventing [us] from shifting ZEV (Zero Emission Vehicle) deliveries into low-impact night windows — despite no tailpipe or acoustic emissions."* – EVC Member

[13] As of November 2025, all EVs in Australia need to make an artificial noise when travelling at low speeds, consistent with Australian Design Rule 113/00 on Acoustic Vehicle Alerting Systems.

In contrast, allowing curfew exemptions for heavy EVs would act as an efficiency multiplier and immediately unlock the productivity benefits of after-hours deliveries, all without undermining the original amenity that curfews were introduced to protect.

BOX D: MISSING EDUCATION ON EV NOISE BENEFITS

Despite the above, some early adopter fleets have experienced permit rejections at the LGA level that appear nonsensical, on face value. One Melbourne council rejected an access application because the heavy EV was "too noisy". Another was deemed "unsafe" when driving through a school zone, notwithstanding its quiet operations, Acoustic Vehicle Alerting Systems, latest safety equipment and total lack of tailpipe emissions. These live examples highlight how spuriously an EV's productivity benefits can be obstructed. Where there is continued uncertainty, unjustified red tape and duplicative decision-making sometimes involving hundreds of state/LGA departments, the easiest path is to simply say "no".

Extending Operating Windows

Even without a full exemption from LGA curfews, enhanced access for heavy EVs outside typical delivery windows would boost productivity. For example, even a small extension of 6 hours (e.g. 3 in the early morning, 3 in the late evening) would effectively increase a typical 12-hour operating window by 50%.

In turn, this could have sizeable productivity benefits to both the individual operator and the broader Australian economy:

"The removal of operating time curfews for zero emission and low noise vehicles is another action the governments could take, at zero/low cost to help accelerate the uptake of zero emission vehicles. This would help operators increase productivity for their vehicles and in-turn reduce the payback period of their capital investment. In addition to increased productivity, reducing the number of trucks on the roads during peak hours would also positively increase road safety as well." – EVC Member

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One possible measure of the potential productivity gain for a given operator could be:

avg deliveries per hour	**X**	**avg delivery value**	**X**	**no. hours exempted of curfew**	**=**	**productivity improvement (per freight operator)**

For example:

avg deliveries per hour	X	avg delivery value	X	no. hours exempted of curfew	=	productivity improvement (per freight operator)
2.5 (e.g. 30 drops per 12-hour shift)	X	$100 (e.g. de minimis/FMCG)	X	12 hours (e.g. 7pm-7am)	=	$3,000 per operator, per day
1.25 (e.g. 15 drops per 12-hour shift)	X	$350 (e.g. commercial /bulky goods)	X	4 hours (e.g. 6pm-10pm)	=	$1,750 per operator, per day

Extrapolated across even a subset of all the retailers, distribution centres, commercial/industrial premises subject to an LGA noise restriction, the whole-of-economy impacts would be transformational.

Further to these wider benefits, the Commission could also consider the impacts of:

- Extended customer delivery windows on supply chain efficiency, route optimisation and (avoided) delivery failures
- 'Sweating the asset' on the overall affordability and TCO of heavy EVs (e.g. nominally accelerating payback by 50%; halving it under 24/7 operations)
- Traffic congestion benefits derived from 'off-peak' deliveries (e.g. X% improvement on major routes), both as reduced travel times for freight movements and broader economic output
- Increased utilisation of loading docks and higher freight throughput, as a function of decreased curfews/increased operations; flow-on effects across Australia's supply chains
- Energy demand management and heavy EVs as more flexible load shifting on the grid (i.e. daytime charging during excess solar generation, more night-time operations)
- Workforce participation from more flexible shifts/greater operating hours
- Avoided acoustic treatment (development costs/building design) at individual facility sites and at macro precinct level.

Pandemic Precedent

Removing delivery curfews is not without precedent. During the COVID-19 supply chain crisis, restocking supermarket shelves and resupplying other critical goods became a national priority that could not be safely achieved within conventional operating windows.

While each jurisdiction pursued a slightly different response, the pandemic emergency proves that curfew exemptions/reductions can be implemented swiftly:

- National Heavy Vehicle Regulator
- NSW: State Environmental Planning Policy – COVID Response
- QLD: Amendments to the Planning Act
- SA: Changes to *Development Regulations 2008*
- VIC: Amendment VC181 to the Planning & Environment Act

A survey by the Australian Logistics Council found majority support for the continued relaxation of curfew rules; indeed just 6% of respondents were even aware that curfew rules had changed.

These COVID-era responses provide a case study of how to implement curfew exemptions for heavy EVs and unlock the substantial associated benefits to the whole economy.

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