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Barry Sterland and Martin Stokie (Commissioners)
Productivity Commission
4 National Circuit
Barton ACT 2600

19 December 2025

To the Commissioners,

RE: Tesla's Response to the Productivity Commission's call for submissions on the Impacts of Heavy Vehicle Reform.

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide a submission on regulatory reforms supporting the uptake of heavy zero emissions vehicles in Australia. Tesla's mission is to accelerate the transition to sustainable abundance. To accomplish this, Tesla designs, develops, and manufactures energy storage systems and high-performance fully electric vehicles including the Tesla Semi heavy electric truck[1].

Australia's road freight emissions are on a concerning trajectory, projected to constitute 9% of the nation's total emissions by 2040 without decisive policy intervention[2]. Addressing this is critical for achieving national climate targets and requires a proven, scalable, and efficient solution. While various technologies like hydrogen fuel cells and low-carbon liquid fuels have been proposed, **battery electric heavy vehicles are best positioned to lead freight decarbonisation this decade**. Unlike emerging alternatives that face significant efficiency and scaling challenges, long-haul battery electric freight is a proven reality, with vehicles already demonstrating their capabilities in commercial operation. Rapid advancements in heavy-duty electrification technology have overcome the unique engineering challenges of heavy mass and long-range requirements, while ongoing battery cell price decreases allow for increasing production scalability.

The Tesla Semi is already operating in commercial fleets in the US, and is entering mass production (targeting 50,000 units/year) in 2026 at the new Giga Semi factory Nevada. Its capabilities highlight a strong use-case for electrified heavy freight:

- **High efficiency and long range**: Up to 800 km on a single charge, consuming less than 1.2 kWh per km at highway speeds, or less than 1 kWh per km on a combined cycle, even when loaded to a GVM of 37,200 kg. This firmly places it in the "heavy vehicle", long-haul category with suitability for inter-city freight in Australia.
- **Ultra-fast charging**: Ability to regain up to 70% of its range in 30 minutes using "Megachargers" in excess of 1200 kW DC, allowing efficient recharge in standard operating driver rest periods.

[1] Tesla, *Tesla Semi*, https://www.tesla.com/semi
[2] DCCEEW, *Australia's Emissions Projections 2025*, https://www.dcceew.gov.au/climate-change/publications/australias-emissions-projections-2025

- **Economic benefit**: Offers estimated fuel savings of up to $200,000 over three years compared to a diesel equivalent.

Despite these capabilities, the barriers to deploying vehicles like the Tesla Semi in Australia is through a lack of supportive policy and regulatory reforms to ensure that the total cost of ownership (TCO) benefits of heavy EVs over diesel can be realised by operators. The current National Heavy Vehicle Law (HVNL) and its associated regulations were designed around the operational characteristics of 20th-century diesel technology. This framework inadvertently penalises the adoption of cleaner, quieter, and more efficient electric powertrains, which have different weight distributions and operational profiles. To modernise Australia's freight system and unlock significant productivity and environmental gains, we advise the Commission to recommend targeted reforms in several key areas outlined below.

Tesla looks forward to continued engagement with the Productivity Commission on this key topic.

Kind regards,

Tesla Energy Policy Team

Summary of Recommendations

1. **As-of-Right Access**: Reclassify battery-electric trucks as 'General Access Vehicles' to provide as-of-right access to the national road network, reversing the current limited-by-default model.
2. **Mass Exemptions**: Implement a nationally consistent GVM exemption and axle mass exemption scheme for heavy EVs to ensure payload parity with diesel, including streamlined access for "last mile" routes managed by local councils.
3. **Curfew Exemptions**: Exempt heavy electric vehicles from noise-based curfews to unlock productivity gains through off-peak deliveries, reducing congestion and improving supply chain efficiency.
4. **Public Charging Investment**: Establish targeted government investment programs to act as a catalyst for private sector investment in public heavy vehicle charging infrastructure.
5. **Grid Connection Reform**: Streamline grid connections by ensuring DNSPs are adequately resourced and mandated to provide transparent, standardised quotes for charging projects.
6. **Road Infrastructure Funding**: Defer road user charges for heavy EVs and fund infrastructure needs by progressively phasing out the Fuel Tax Credit for diesel.

As of Right Access

Under the HVNL, the increased weight of battery technology results in many prime mover electric trucks being classified as 'Restricted Access Vehicles', limiting access to the national road network. This penalises operators for adopting cleaner technology by requiring them to navigate a complex, costly, and fragmented system of concessions and permits. According to the Electric Vehicle Council, operators must negotiate with a patchwork of over 450 different road managers across national, state, and local jurisdictions. This process is prohibitively expensive and slow, creating a significant barrier to the mass uptake of electric trucks.

For the few electric trucks already on the road, access restrictions force inefficient routing, compounding existing range limitations and undermining the business case for electrification. Tesla therefore advocates for as-of-right access to the Australian road network for all electric vehicles, reversing the current model from "limited by default" to "permitted by default." This can be achieved by reclassifying battery-electric trucks as 'General Access Vehicles', subject to clear technical and safety standards, such as a 100% battery-electric drivetrain, defined axle mass limits, and compliance with ADRs.

This approach empowers road managers to restrict access to specific, genuinely unsuitable assets (like a structurally deficient bridge) without stifling the productivity of electric trucks across a majority of the road network.

Mass Exemptions

While presumed access is the optimal solution, heavy EV mass exemptions are an alternative method in facilitating payload parity with diesel trucks. However, current inconsistencies between state-based concessions create logistical headaches for operators and undermines investment confidence. A patchwork of temporary "trials" and differing rules fragments the national freight market. Any concessionary scheme must be nationally consistent in its eligibility, vehicle specifications, and duration.

International precedent demonstrates that harmonised, national-level concessions work. In 2019, the EU's revised dimensions limits permitted a 2 tonne increase in GVM for zero-emission heavy trucks across the continent[3], with a further increase to 4 tonnes proposed in December 2025[4]. These concessions a paired with Europe's higher steer axle mass limit of 11.5 tonnes – 77% heavier than Australia's limit – accommodating the different weight distribution of EVs. Given a heavy EV is typically 1 to 3 tonnes heavier than a diesel equivalent, these concessions allow operators to achieve payload parity and equal access, providing improved investment certainty.

Similarly, state and federal reforms are rendered ineffective if the "last mile" on local council roads remains inaccessible. Heavy vehicles must be able to travel from depots to customers, and a system requiring operators to negotiate access with hundreds of individual LGAs is also not scalable. Therefore, any viable national access framework must streamline approvals for key freight routes managed by local councils.

[3] European Union, *Regulation 2019/1242*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R1242

[4] Council of the EU, *Council sets position on maximum weights and dimensions for road vehicles,* Dec 2025. https://www.consilium.europa.eu/en/press/press-releases/2025/12/04/council-sets-position-on-maximum-weights-and-dimensions-for-road-vehicles/

Curfew exemptions

Current heavy vehicle curfews are a significant barrier to productivity, predicated on the acoustic profile of legacy diesel engines. These rules, which apply equally to much quieter EVs, do not recognise modern technology and prevent operators from realising the full value of their zero-emission fleets.

Unlike diesel trucks, which generate significant noise from engines, gear changes, hydraulic steering, engine breaking and idling during loading, electric trucks operate near silently at urban speeds, drawing auxiliary power from their batteries without an engine, employing silent power steering, and utilising regenerative breaking. This distinction is important at the local government level, where planning permits often impose strict operating curfews on commercial premises to mitigate diesel noise.

Tesla encourages the Commission to model the economy-wide impacts of exempting heavy EVs from noise-based curfews, to unlock immediate productivity gains at little to no cost. Key benefits include:

- Extended operating windows: Allowing deliveries in off-peak and evening hours to increase asset utilisation, directly improving TCO and shortening the payback period for EV investments.
- Reduced congestion & improved safety: Shifting freight movements to less busy periods would reduce traffic congestion on major routes, improving safety and travel times for all road users.
- Supply chain efficiency: More flexible delivery windows would enhance route optimisation, increase the throughput of loading docks, and reduce the risk of failed deliveries.

Public Charging Rollout

The rollout of a national heavy vehicle charging network is stalled by an investment deadlock: charge point operators (CPOs) are hesitant to invest without a critical mass of electric trucks on the road, while fleet operators will not commit to electric trucks without reliable public charging. This interdependency trap requires decisive government intervention to break the impasse, de-risking initial investments through targeted co-investment and grant programs. Tesla therefore recommends governments institute enhanced funding mechanisms, similar to state and federal schemes already supporting light vehicle public charging rollout[5], to stimulate private sector investment in heavy EV public charging infrastructure.

Beyond funding, regulatory and administrative barriers must be addressed, particularly concerning grid connection. Distribution Network Service Providers (DNSPs), as regulated monopolies, often lack the commercial urgency and resources to process complex connection applications in a timely manner. This is compounded by a lack of transparent, standardised quoting for grid upgrades, which makes it difficult for CPOs to build a viable business case and secure financing. Tesla strongly encourages the Commission investigate adequate resourcing of DNSPs including establishing dedicated heavy EV charging teams, subject to clear service level obligations, to fast-track assessments and approvals for charging projects. Furthermore, the Commission should recommend the mandate of clear and consistent quoting standards for grid connections to provide the investment certainty needed by CPOs.

Apportioning Road Infrastructure Costs

In response to the Commission's request on apportioning infrastructure costs, it is important to first contextualise the scale of the issue. As of the most recent census, the Australian heavy electric vehicle fleet consists of just 305 rigid trucks and 28 articulated trucks, representing a mere 0.08% and 0.02% of

[5] Minister for Climate Change and Energy, *Electric vehicle charging network to connect all of Australia*, April 2023. https://minister.dcceew.gov.au/bowen/media-releases/electric-vehicle-charging-network-connect-all-australia

their respective segments[6]. Consequently, their current contribution to road wear is statistically negligible and will remain so for the foreseeable future. Expanding the road user charge scheme to heavy EVs at this stage would raise virtually no revenue while actively delaying the transport sector's transition to zero-emission technology.

Furthermore, enabling payload parity through mass concessions creates a net benefit for the road network. By allowing an electric truck to carry the same freight as a diesel equivalent, these concessions prevent the need for more truck trips. This reduction in overall vehicle kilometres travelled provides a productivity offset, reducing both traffic congestion and the total burden on our road infrastructure.

Accordingly, Tesla invites the Commission to consider funding any long-term infrastructure needs through broader, climate-aligned fiscal reforms, rather than imposing charges that would stifle the nascent EV market. A progressive phase-out of the Fuel Tax Credit (FTC) for diesel is a logical choice, as recommended by the Commission in its Net Zero Inquiry Report[7]. Redirecting this revenue would link the legacy fossil fuel system to the infrastructure required for its zero-emission replacement, securing a funding stream for road maintenance while removing a market distortion that currently favours diesel. This approach serves as a sensible bridge towards a future, technology-neutral and emissions-based road user charging mechanism, aligning national transport, energy and climate objectives.

[6] BITRE, *Road Vehicles Australia*, January 2025. https://www.bitre.gov.au/sites/default/files/documents/BITRE-Road-vehicles-Australia-January-2025.pdf

[7] Productivity Commission, *Investing in cheaper, cleaner energy and the net zero transformation inquiry report*, Dec 2025. https://assets.pc.gov.au/2025-12/net-zero.pdf?VersionId=24kY9x7Ou_YqHvzl0z25kQO11I298byU