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1. INTRODUCTION

Team Global Express (TGE) appreciates the opportunity provided by the Productivity Commission to provide feedback on the *Impacts of Heavy Vehicle Reform* and provides the following submission.

2. BACKGROUND

TGE is one of Australia's largest and most significant transport and logistics operators with networks spanning road, rail, air, and sea.

From couriers and small trucks to prime movers, planes, rail and ships, TGE's diverse fleet can provide road freight transport and solutions for everything from bulky parcels and documents to oversized machinery and bulk commodities. Our dedicated heavy fleet road services offer a wide variety of transport solutions, including scheduled daily runs to move regular volumes of freight, or dedicated project teams to manage all aspects of bespoke freight requirements. We move metro, intrastate, interstate, regional, and remote options in:

- Retail
- Mining
- Government & defence
- Chemicals & agribusiness
- Automotive & industrial
- Steel & materials
- ICT
- Consumer and beverage

Australia's freight sector is at a critical juncture. Heavy vehicle productivity reforms - covering road access, automated permitting, driver competency, charging infrastructure, and curfew adjustments - offer a unique opportunity to lift national productivity, accelerate decarbonisation, and improve consumer outcomes.

As one of the country's largest intermodal transport operators, we strongly support this reform package and our analysis indicates:

- **Economic growth**: When combined, the reforms could contribute to GDP growth over the medium term, with the freight-intensive states seeing the greatest gains.
- **Household benefits**: Lower freight costs translate directly into the reduction of retail prices for consumers, improved delivery reliability, and expanded service choices. This means that lower income households and regional communities' benefit, while First Nations Australians will also gain opportunities through training and infrastructure development.
- **Industry impacts**: Road freight productivity will rise and will also likely have positive benefits into retail, wholesale, agriculture, and mining services. It is likely that employment will expand, most particularly when supported by accelerated driver training pathways.

- **Government revenue**: Net positive fiscal impacts will accrue to all levels of government through higher tax receipts, reduced permit administration costs and red tape, and precinct development around electric vehicle charging hubs.

TGE believes that these reforms would directly address operational bottlenecks and position Australia's freight system for higher reliability, lower emissions, and stronger competitiveness in a net zero economy.

3. INCREASING HEAVY VEHICLE ROAD ACCESS AND LCLFS

There are currently restrictions on which roads heavy vehicles are allowed to operate. This directly disadvantages Heavy Zero Emission Vehicles (HZEVs) along with higher productivity freight vehicles due to the additional weight on the roads (specifically over the steer axle) and reduces potential payload and productivity compared to their Internal Combustion Engine (ICE) vehicles.

TGE believes that actions to get more road freight carried by both HZEVs and higher productivity freight vehicles would help to reduce emissions and boost productivity. This could include increasing axle mass limits under the Heavy Vehicle National Law (HVNL), expanding road access networks for certain vehicles, and targeted road infrastructure upgrades.

Reforming access rules would unlock significant gains such as:

- **Economic impacts**: Payload uplifts on key corridors would reduce trips per tonne and boost GDP.
- **Emissions**: Higher productivity vehicles and greater uptake of HZEVs will result in fewer trips and reduce emissions per tonne kilometre.
- **Costs**: Road wear will increase with heavier loads but this could be managed through targeted infrastructure upgrades and shared funding between different levels of government.

Households would directly benefit through a lowering of freight costs and reduced retail prices, particularly for basics and essentials. Regional and First Nations communities gain from improved service reliability and employment opportunities linked to expanded freight corridors.

TGE also highlights however that the lowest cost option is using Low Carbon Liquid Fuels (LCLFs) such as renewable diesel would immediately reduce emissions whilst allowing for little if any changes to weights or road access networks and would not require infrastructure modifications.

TGE notes that reform must incorporate many different topics as pulling one lever may result in a failure somewhere else in the supply chain. As per the direct questions of the PC, TGE notes the following data and evidence that would be necessary to analyse and model these regulatory reforms and then drive the reform from an operational perspective:

- **GML Increases**: An increase to general mass limits (GML) would require modelling of at least +5% and +10% increases to axle group limits for the most common configurations (such as 6x2 rigids, B Double articulated vehicles, PBS A-doubles and B-triples), with sensitivity analysis of pavement and bridge classes.
- **Network expansions**: A targeted addition of Tier 2 and Tier 3 roads to approved networks for HPVs and HZEVs, with conditional speed limits and route-specific axle constraints.

- **Bridge classes**: Introduce bridge-specific conditional permits based on current capacity ratings, with speed and lane-position conditions to manage dynamic loads and HZEV specifications to encourage uptake.
- **Template approvals**: Pre-approved PBS templates for common HPV and HZEV configurations to reduce per-vehicle assessment time.
- **Pavement strengthening**: Segment-level upgrades on freight arterials to lift axle mass limits where possible and economically feasible.
- **Bridge strengthening/retrofitting**: Prioritise bridges with high detour costs and include deck overlays and bearing upgrades.
- **Industrial precinct access maps**: Expand access for HPVs/HZEVs to key logistics precincts (such as ports, intermodals, DCs), with turning radius and clearance upgrades.
- **Local road exemptions**: Conditional exemptions on local roads adjacent to freight hubs with mitigating measures (noise, speed, lowering of emissions).
- **Payload uplift and fleet mix shift**: Estimate tonne per km gains per configuration and compare ICE vs HZEV payload viability under higher mass limits.
- **Trip reductions and backhaul utilisation**: Model fewer trips per task and improved backhaul match rates, again with an emphasis on HPVs and HVEVs.
- **Emissions**: Quantify well-to-wheel emissions reductions from HZEV uptake and fewer ICE trips, including marginal emissions from electricity generation mixes and low carbon liquid fuels.
- **Critical assets**: Identify those bridges where increased loads trigger non-linear cost jumps (for example, the need for strengthening rather than routine maintenance).
- **Geometric design**: Turning paths, intersection channelisation, lane widths, and vertical/horizontal clearances can negate access gains as well as map constraints at industrial last-mile pinch points.
- **Rest areas and staging**: Adequacy of heavy vehicle rest areas along with the queuing capacity at ports/depots. Night-time access is able to ease daytime congestion, but it also needs safe staging capacity.
- **Charging sites for HZEVs**: there are many different things that need to be considered in this category such as substation capacity, transformer upgrades, land zoning, and driveway geometry – all these influence feasible routes and potential uptake.
- **Phasing**: Prioritisation of those corridors where access increases and small civil works unlock large productivity gains with minimal wear costs.
- **Mass-distance-location charges**: Introduce or refine heavy vehicle road user charging to reflect axle loads and route choice and then earmark revenues for corridor maintenance.
- **Australian Design Rules (ADRs):** Confirm compliance pathways for braking, lighting, stability, mass limits, and dimensions, with specific consideration for HPVs and HZEV drivetrain and battery safety.

The intent behind these recommendations is to look at real reforms that genuinely lift productivity and accelerate the shift to quieter, cleaner heavy vehicles, while being honest about the engineering and fiscal trade-offs.

With robust asset data, corridor-level cost sharing, and standards pathways that welcome HZEVs without costly repurposing, the benefits can be realised quickly and fairly. It is noted here again that the cheapest, easiest and fastest reform would be to encourage the uptake of LCLFs such as renewable diesel.

4. ESTABLISHING A NATIONAL AUTOMATED ACCESS SYSTEM

Heavy vehicle operators are currently required to apply for road access permits to use some roads and other road assets (such as bridges), due to the potential for damage to the infrastructure.

The continuous applying for these permits places an unreasonable administrative burden on heavy vehicle operators and the time taken to obtain permits could unnecessarily delay or divert services.

TGE is strongly supportive of the establishment of a National Automated Access System (NAAS) in order that such a system could provide instant, automated decisions on network access tailored to each individual vehicle's type, configuration and load and thereby remove the need for most permits.

Taking the Tasmanian HVAMS model and building this into a NAAS would transform access management for all operators:

- **Efficiency**: a NAAS would result in Instant, tailored access decisions and reduce permit requirements, enhancing the efficiency of transport operators.
- **Productivity**: Operators would be able to plan routes more flexibly, which would thereby reduce detours and congestion.
- **Compliance**: An automated and auditable process would improve safety and reduce inadvertent breaches.

TGE believes that such a system would substantially uplift the productivity and efficiency of road freight while at the same time, governments would be able to save on permit administration costs while gaining additional tax revenue from greater freight activity.

TGE notes that there needs to be a focus on practical coordination, asset eligibility, scale-up of Tasmania's model, operator cost-benefit, and the datasets needed to make NAAS work and be trusted. TGE responds to the PC's direction questions that the following should be included:

- **Lead governance**: Establish a standing NAAS Council chaired by the Commonwealth with entities such as the NHVR, HVNL, FIRP, HVIA, ATA and all state/territory road authorities, which is empowered to set binding technical standards and change management.
- **Single rules, local inputs**: A national technical rulebook is desperately needed as a decision making tool, with jurisdiction-specific asset data feeds (bridge ratings, local conditions, curfews, seasonal limits) to preserve the local control of local constraints.
- **Legal harmonisation**: Updated HVNL instruments and state instruments to recognise NAAS decisions as the primary access instrument and first 'go to', with a defined scope for residual local variations (for example, temporary works and emergencies).
- **Operational service-level agreements** (SLAs): Time-bound SLAs for asset data updates, outage management, and incident response across jurisdictions.
- **Dispute resolution capacity**: Develop a fast-track pathway for councils and operators by which they can challenge or request overrides, with transparent criteria and auditability of decision making.
- **National asset registry**: A unified, versioned GIS with authoritative layers for pavements, bridges, clearances, posted limits, curfews, and temporary controls and APIs for jurisdictional systems to publish changes.
- **Data integrity and stewardship**: Develop a database of named asset owners per segment/bridge responsible for ratings and update and escalation paths for missing data.

- **Progressive cutover**: Corridor-by-corridor migration, starting with freight priority networks.
- **Capability uplift**: Training for authority staff / operators and helpdesk / change champions in each jurisdiction.
- **Costs and benefits**: The cost of the current permit system is borne by operators who cannot afford the administrative burden and overhead. Time is required to prepare applications, obtain engineering reports, and coordinate multi-jurisdiction permits which results in delays and uncertainty
- **Lost productivity**: At every corner there are delays from waiting periods, detours, and missed windows (for example at ports or for delivery slots), plus high working capital needs. This may also lead to compliance risk with inadvertent non-compliance due to inconsistent conditions, which leads to fines, reputational damage, or forced reroutes.
- **Safety and environmental outcomes**: Fewer ad hoc detours through unsuitable roads; reduced fuel use from optimal routing and lower driver stress from certainty. Telematics would contribute to aggregated trip data by configuration, axle loads, speeds, time-of-day and still be privacy-preserving.

All of the above recommendations will contribute towards the success of a NAAS. TGE recommends adopting a corridor-first rollout where data quality is high and freight benefits are immediate. In addition, a focus on safety conditions (in particular speed, lanes and time-of-day) would increase eligible roads while protecting assets and communities.

If NAAS KPIs are measured and regularly published (for example, monthly) a reduction in permits would be seen with asset incident rates, operator time saved and would likely lead to a lowering of community complaints. Maintaining a regular engagement or operator feedback loop inside an app to flag mismatches (for example, signage conflicts or unrecorded works) would rapidly correct the map using AI tools.

5. ACCELERATING THE HEAVY VEHICLE DRIVER COMPETENCY FRAMEWORK

Australia continues to face driver shortages and inconsistent licensing standards across each state. Accelerating the implementation of the National Heavy Vehicle Driver Competency Framework would address these challenges:

- **Labour supply**: As a foremost issue for our industry, TGE believes that faster licence progression combined with improved training quality would go a long way to reducing vacancies.
- **Safety**: Stronger governance and training along with nationally consistent standards will lower incident rates.
- **Productivity**: the improved matching of driver skills to vehicle types will reduce downtime and increase efficiency.

The proposed improvements will boost GDP by improving labour utilisation across the country. Employment opportunities will expand, particularly for younger workers and those without tertiary qualifications, while First Nations communities could benefit from targeted training programs.

TGE responds to the following direct questions of the PC:

- **The largest hurdles to timely or accelerated implementation will be:**
    - **Curriculum and assessment redevelopment**: Aligning learning content with risk-focused competencies and experience-based progression whilst at the same time standardising assessment instruments.

- Ensuring national consistency while accommodating jurisdictional variations and avoiding gaps during transition.
- **Trainer and assessor capacity**: Ensuring the upskilling of Registered Training Organisations (RTOs), accrediting assessors, and assuring quality while at the same time overcoming limited assessor availability, variable training quality, and uneven regional coverage.
- **Licensing authority systems and processes**: IT challenges and changes for new licence classes/options, data standards, applicant tracking, and evidence management whilst integration with legacy systems, RTO reporting, and change control across multiple jurisdictions.
- **Experience-based progression design and safeguards**: Defining logbook requirements, supervision standards, telematics evidence, and boundary conditions (vehicle classes, tasks, routes) with existing hesitations around electronic workbooks, avoiding incentives with unintended outcomes, ensuring genuine skill acquisition and preventing shortcutting.
- **Governance and consistency**: Ensuring uniform adoption of the framework and compliance audits whilst inconsistent interpretation and roll-out sequencing between states/territories is highly possible and risky.
- **Industry uptake and scheduling**: Ensuring operator readiness to support supervised hours, release drivers for training, and adjust rostering all at the same time as tight labour markets, peak-season constraints, and small operator capacity.
- **Data and evaluation readiness**: Ensuring baselines for throughput, safety, and productivity along with ongoing performance monitoring in an environment of fragmented data across RTOs, licensing authorities, and operators (ie a lack of standardised telemetry/records).

- **TGE suggests the following roles to be spread across federal, state, territory and private bodies:**
  - **Commonwealth (DITRDCSA):** Lead a national coordination and funding envelopes with a focus on change governance, national data standards and dashboards. Support focus for communications, an evaluation framework, and intergovernmental agreements.
  - **Austroads or similar entity:** Lead the informed technical content for competencies and assessments; provide national guidance and assessor accreditation standards whilst providing consistency audits and updates.
  - **State/territory transport departments and licensing authorities**: Lead regulatory adoption, licensing rules, IT system changes and compliance oversight whilst supporting local implementation, quality assurance, and data reporting.
  - **NHVR (where relevant):** Ensure alignment with safety programs, industry communications, and data sharing for enforcement/incident trends.
  - **Registered Training Organisations (RTOs) and assessors**: Delivery of training and assessments, trainer accreditation and reporting outcomes but also support and ensure industry liaison and continuous improvement.
  - **Industry (operators, peak bodies, unions):** Provision of supervised experience opportunities, rostering and mentoring, feedback loops on practical competency whilst sharing operational data in a world of privacy conservation and the co-design of progression pathways.
  - **Insurers and auditors:** Incorporate risk pricing and independent quality checks, incentives for training quality and telematics-based supervision evidence.
- **TGE suggests the following timeframes would be achievable for an accelerated implementation:**

  - **0 - 3 months**: Finalise the national rulebook, prepare the intergovernmental agreements, provide funding for capacity uplift, prepare baseline data collection, select pilot sites and prepare a robust communications plan.
  - **3 - 6 months**: Launch pilots for redesigned learning/assessments and experience based progression in 3 or 4 jurisdictions (or one per state), stand up assessor accreditation and begin IT changes in licensing systems while defining KPIs and instrumentation and establish feedback loops.
  - **6 - 12 months**: Expand the pilots to national coverage where possible with mandatory adoption of standardised assessment instruments, full trainer/assessor accreditation in those nominated as priority regions, integrate RTO reporting with licensing systems and iterate based on pilot findings whilst strengthening safeguards.
  - **12 - 18 months**: Complete the regulatory adoption in all jurisdictions, retire legacy assessments as required, embed a continuous improvement cycle and publish national KPIs quarterly whilst addressing residual gaps (such as regional access and specialty vehicle classes).
- **TGE acknowledges that data as a whole is scant for much of the industry, and there is still a complete reticence to use electronic work diaries. Nevertheless the following would assist in making quantitative estimates of productivity impacts:**
  - **Licensing metrics**, application volumes, pass rates, time to license issue by class (LR/MR/HR/HC/MC).
  - **Progression** could be provided by time between classes, supervised hours logged, failure/retake rates.
  - **Training and assessment quality** and delivery would show RTO capacity, trainer/assessor ratios, session hours and cancellations of licensees.
  - **Assessment scores** by competency, moderation/verification results, audit findings.
  - **Safety indicators** such as incident rates per million km by licence class/experience band, near-miss and infringement rates and insurance claims.
  - **Vehicle configurations**, load types, route classes, time-of-day usage.
  - **Driver vacancy rates**, churn/retention, wages by class/region.
  - **Hours worked**, idling/waiting times, supervised/unsupervised split.
  - **Telematics** would provide evidence of trip counts, kms travelled, conditions (weather/time), task types (urban, linehaul, dangerous goods), supervision flags. Telematics should also support compliance with speeding, harsh events, fatigue compliance indicators.
  - **Individual company information** can provide KPIs such as task completion times, DIFOT, truck utilisation, empty loads, backhaul rates and fuel/energy intensity (per tonne-km) however it is appreciated that internal company information may be proprietary and therefor entities may be hesitant to provide.
- **TGE provides the following practical recommendations to enable acceleration of the competency mechanism:**
  - **Pilot early, standardise fast**: As highlighted earlier in this response, launch multi jurisdiction pilots with common instruments and publishing the interim findings at 6 months and lock standards at 12 months.
  - **Build assessor capacity**: Fund accreditation pathways, moderation networks, and remote assessment support whilst always prioritising regional gaps.
  - **Instrument supervision**: Use privacy preserving telematics and logbook standards to verify experience progression, which will reduce administrative problems.

- **Integrate systems**: Mandate a national data schema such as linking RTOs and licensing authorities, automate result ingestion and licence issuance.
- **Govern quality**: Independent moderation panels with randomised audits and publicly accessible dashboards of KPIs (throughput, pass rates, incident trends).
- **Support operators**: Grants or tax offsets for supervised hours and backfill costs, providing templates for mentoring programs and peak-season scheduling guidance.

6. REMOVING BARRIERS TO HZEV CHARGING INFRASTRUCTURE

The uptake of heavy zero-emission vehicles will continue to depend on reliable charging infrastructure, whether this be in depot or public infrastructure. The current regulatory and planning barriers slow deployment and reform is essential:

- **Planning and zoning**: The pre-approval of freight corridor charging precincts will accelerate the rollout of public infrastructure.
- **Grid connections**: Streamlined approvals and cost-sharing for high-capacity connections will be critical and this will assist in driving depot infrastructure through the use of existing spare capacity.
- **Tariff design**: Off-peak pricing and demand charge reform will make charging economically viable. In addition, the use of load management software solutions will ensure that depot charging is at the lowest possible times.

The economic impacts of the focus on infrastructure will include reduced energy cost volatility, higher fleet utilisation, and new jobs in construction and energy services.

The ability to appropriately manage loads at the cheapest times will mean that households would benefit from lower freight costs and progress toward net zero emissions.

Governments would of course gain revenue from precinct development and energy sector growth.

TGE has one of the largest fleet of electric trucks anywhere in the world at this point in time and so is well based to provide information relating to the barriers for ZHEVs and the necessary infrastructure. These include the following responses to the questions of the PC:

- **Regulatory barriers**
  - **Planning and zoning constraints**: Industrial land near freight corridors is scarce and proposed charging hubs often face discretionary approvals, traffic impact studies, noise limits, and limited permitted uses.
  - TGE proposes the development of a nationally consistent "as-of-right" use class for heavy-vehicle charging in industrial/commercial zones, with codified design and traffic standards.
  - **Grid connection approvals and timelines**: Larger size ie 1–5 MW connections (and future 10–20 MW sites) face long lead times for distribution upgrades, environmental protection studies, and substation capacity, with inconsistent processes between DNSPs.
  - TGE suggests fast-track queueing for freight-critical sites and publishing standard connection packs (for example, protection settings, metering, resilience), and enable provisional energisation for staged capacity.
  - **Standards and certification uncertainty**: Whilst still early days, there is regularly a fragmented application of electrical, fire, and safety codes for high-power

DC equipment (for example, earthing, battery energy storage integration, emergency access, high bay lighting, cabling).
    - TGE recommends issuing consolidated guidance which is specific to heavy-vehicle depots and public truck hubs, standardising signage, bay layout, emergency shutoff procedures and fire brigade interfaces.
    - **Pricing and licensing of public charging**: There is ambiguity around retailing electricity vs service provision, on-selling rules, and local tariffs and road authorities often lack frameworks for concessions/leases on public land.
    - TGE recommends clarifing charging as a regulated service with consumer protections whilst standardising land access and licensing templates for highway sites.
    - **Road access and curbside rules**: Heavy vehicle movement and parking restrictions (curfews, loading zone rules, oversize access) can block the practical operation of truck chargers.
    - TGE suggests create charger-adjacent access maps and exemptions (for example, speed/time-of-day conditions) aligned with HVNL/NHVR maps.
- **Practical barriers limiting installation and operation**
    - **Site geometry and vehicle flow**: It has been common to find insufficient planning at infrastructure for things such as turning radii/circles, narrow aisles, and short bays, all which make it unsafe or impossible for B-doubles/A-doubles and PBS combinations to use.
    - TGE suggests that industry work together to provide minimum geometric standards (turning templates, drive-through bays, 30–40 m bay length, 5 m clearance), with independent design certification rather than using inexperienced traffic management designers.
    - **Power availability and resilience**: Peak demand requires high-capacity feeders and single-feed sites risk outages. In addition, transformer lead times can exceed 12 and sometimes 24 months.
    - TGE strongly encourages dual feeds and on-site storage (1–5 MWh BESS) for peak-shaving and backup with standard transformer specifications and bulk procurement.
    - **Dwell/Idle time and throughput management**: Heavy trucks are likely to need predictable 20–60 minute sessions but queueing degrades productivity.
    - TGE recommends a booking system of reservation APIs, idle fees, dynamic load allocation, and minimum charger count per site (for example, 6–12 dispensers at freight nodes).
    - **Amenities and safety**: There tends to always be a lack of driver facilities, poor lighting, and security deterrents against night use.
    - TGE suggests that certain amenities be mandated such as toilets, lighting, CCTV, shelter, and hazard separation from general traffic.
    - **Interoperability and payments**: Oftentimes connectors will be proprietary with closed networks, and fleet cards will not be accepted, all leading to stranded assets for heavy fleet.
    - TGE recommends each site have open protocols with multi-payment options (fleet cards, retail cards, invoicing), and published uptime SLAs will lead to greater use.
    - **Maintenance and uptime**: History has shown that both low power AC and higher power DC equipment have both trivial and non-trivial failure rates and remote regions lack service coverage altogether.
    - TGE strongly recommends uptime obligations (for example, 97–99%), SLAs, remote monitoring, load management, spare parts stocking, and regional technician programs.

- **Policy issues for long-term, publicly accessible network and infrastructure**
    - **Corridor-based planning and funding**: Sites under a certain size will be likely to underperform or become stranded assets - freight demands clusters on defined corridors and hubs which have been established over many decades.
    - TGE suggests designating national heavy-vehicle charging corridors (Tier 1/2), with co-funded anchor sites at 100–150 km distance from ports, intermodal hubs and highway roadhouses.
    - **Grid-aware capacity roadmaps**: Uncoordinated truck charging is likely to stress local networks.
    - TGE recommends a working group of joint DNSPs and transport operators to undertake transport planning and publish substation capacity maps, planned augmentations, and planned capacity to priority freight sites.
    - **Stable revenue support mechanisms**: Early-phase utilisation is likely to be low, which risking under-investment where it is most needed.
    - TGE suggests targeted but declining support (for example, capital grants, operational grants, availability payments, or capacity credits) which are tied to corridor KPIs, open-access conditions and SLAs while avoiding permanent subsidies.
    - **Land access and tenure certainty**: Long leases and clear rights are an absolute must and are essential for the necessary large investment in civil and electrical works.
    - TGE proposes standard long-term concessions on public land with step-in rights and performance clauses which can then be integrated with highway service centre policies.
    - **Data transparency and performance reporting**: Operators must have confidence in uptime and power levels and all parties - including governments - need evidence for their ROI.
    - TGE suggests that this will require public APIs for real-time availability, power rating, prices, queue lengths and published corridor KPIs (uptime, sessions, energy dispensed, heavy vehicle share etc).
    - **Interoperable technical standards roadmap**: Connector and charging standards for heavy vehicles (e.g., MCS vs CCS) are evolving and need to be aligned with other countries around the world.
    - TGE suggests that there needs to be a compatible standard mix with retrofit funding to avoid stranded assets.
    - **Integration with road access reforms**: Charging sites must be reachable by the vehicles that need them.
    - TGE proposes that charger siting with NAAS access decisions and last-mile upgrades be developed which embed site access conditions (such as speed, lane, curfew exemptions) into regulatory maps.
- **Data required to plan and evaluate an effective network**
    - **Freight demand and routes**: Origin and destination matrices should be mapped, by commodity, configuration (HR/HC/MC, PBS), time-of-day and tonne-km intensity per corridor by using site spacing, capacity sizing, and peak scheduling.
    - **Vehicle and charging characteristics**: data is required of battery capacities, realistic consumption data (kWh/100 km) under various loads and grades, connector types, charge curves, typical dwell times, power sizing, number of dispensers and energy storage needs.

    - **Grid capacity and upgrade timelines**: Substation capacity along with feeder constraints, planned augmentations, connection queue times in order to allow for prioritisation, phasing and resilience planning.
    - **Operational performance**: SLAs and uptime is critical along with delivered power vs rated, session counts, queue durations, cancellations, payment failures. SLAs must be enforce to ensure network optimisation.
    - **Safety and community impacts**: Core data will be required such as incident reports, near-misses, noise complaints, local traffic interference, lighting adequacy to allow for design corrections and the maximising of operating conditions.
- **Quantifying impacts for the Commission's modelling**
    - **Cost–benefit analysis by corridor**: Capex (civil/electrical), O&M, grid upgrades, operator time saved, fuel/energy cost changes, reliability gains, emissions reductions all of which will be sensitive to utilisation ramps, electricity prices and battery improvements.
    - **Productivity modelling**: Simulation of fleet tasks comparing ICE vs HZEV with and without public charging availability, measuring changes in empty running, on-time performance, and depot dwell. This will lead to task cost per tonne kilometre, utilisation rates and service windows being met.
    - **Grid impact and resilience**: Load flow and peak-demand modelling with BESS scenarios in order to quantify avoided network costs from peak-shaving and smart charging. This will then guide connection timelines, deferred capex and outage risk metrics.
    - **Distributional analysis**: It would be helpful to disaggregate benefits/costs by region (metro/remote), industry (linehaul, construction, waste), and firm size and include effects such as on roadhouse businesses and local councils. This should then guide targeted support recommendations to ensure equitable access.
- **Practical recommendations to unlock delivery in 12–18 months**
    - Create a series of working groups for "freight fast-track" for planning and grid connections with defined timelines, standard designs, and corridor priority lists.
    - Co-fund 30–50 anchor heavy-duty sites on Tier 1 corridors with minimum 3–6 MW capability, drive-through bays, and BESS for resilience.
    - Mandate open data and interoperability with 97–99% uptime SLAs and transparent performance dashboards.
    - Publish a connector roadmap and require civil conduits and transformer sizing to avoid stranded civil works.
    - Embed charger access into NAAS/HVNL maps and grant targeted curfew exemptions for charger approaches where community impacts are mitigated.
    - Fund local government design toolkits and micro-upgrades (geometry, signage, lighting) at freight hubs to make last-mile access safe and legal.

7. REDUCING OR REMOVING CURFEWS FOR HZEVS

There are a series of curfews particularly in metro areas that restrict heavy vehicle movements irrespective of propulsion type. Given that battery propelled HZEVs are substantially quieter that diesel alternatives, a substantial reform of curfews would offer significant benefits:

- **Operational efficiency**: Night-time movements would reduce congestion and improve delivery times, particularly to households who prefer deliveries in afterhours periods (for example, between 5pm and 9pm).

- **Service quality**: Consumers would gain from more flexible delivery windows and better availability of goods, including refrigerated items that are time sensitive.
- **Safety**: It would be important that risks from fatigue and reduced visibility be managed through technology, training, and ongoing monitoring.

The economic impact of this option particularly includes smoother freight flows, reduced daytime congestion, and modest GDP gains.

TGE strongly believes that households would benefit from improved service reliability, while governments can balance community noise concerns with economic benefits and TGE provides the following relating to information request 5:

- **Comparative noise levels: HZEVs vs ICE heavy vehicles**
  - **Low-speed urban operation (0–30 km/h):** ICE trucks generate prominent engine and exhaust noise under acceleration and during low-gear operations. The advantage of HZEVs is that they remove the engine/exhaust sources and so the remaining noise is primarily tyres on the road and ancillary systems. A pragmatic planning assumption shown with several OEMs is a 3–5 dB(A) reduction for comparable heavy vehicles at low speeds and utilising a light throttle. This is perceptible and can reduce sleep disturbances of communities at a comparable distance.
  - **Mid-speed (30–60 km/h) and high-speed (≥60 km/h):** At higher speeds and heavier loads, tyre-road interaction and airflow dominate both a ZHEV and a ICE noise profile. At these speeds, the advantage of the ZHEV narrows to ~0–2 dB(A) which is negligible in receptor terms once shielding and distance attenuation are considered. Brakes and retarder use can still create transient peaks for both.
  - **Operational nuances**: Heavily loaded climbs increase ICE engine noise more than ZHEV drivetrain noise. Ancillary equipment such as refrigeration units, compressors and hydraulic lifts can offset ZHEV noise gains unless specified to be low-noise. So the benefits are likely to be proportional to the share of HZEVs on the night-time task and their duty cycle (depending on the number of accelerations and/or stops).
- **How noise reduction ameliorates negative impacts of night-time travel**
  - **Sleep disturbance risk**: Fewer awakenings and lower annoyance scores are likely when accelerations and gear changes are removed.
  - **Annoyance and complaint rates**: Lower tonal components (for example from engines or exhausts) can reduce perceived harshness even when absolute levels are similar. This is likely to reduce complaint propensity, particularly along stop-start delivery routes.
  - **Community tolerance for off-peak freight**: If curfew exemptions are controlled and conditioned (for example with speed caps, smooth driving, no compression braking, low-noise reefers), ZHEV noise reductions can enable acceptable off-peak operations near residential areas, especially on collector and arterial roads with good setbacks. However on high-speed corridors, the EV noise advantage is marginal; night operations may still require barriers, setbacks, and scheduling conditions to keep receptor levels within night criteria.
- **Implementation considerations across government levels**
  - **Legislative alignment**: For HVNL/NHVR and maps, definition would need to be given for an HZEV-specific access layer with time-of-day conditions (for example, zones which permit between 22:00–06:00) and operational constraints (speed ≤ 40–50 km/h near receptors, no engine braking).

- **Local laws**: Councils would still retain local traffic powers and so it would be preferred if model local laws could be develop for HZEV exemptions with standard conditions and audit rights.
- **State policy frameworks**: Individual state transport departments should issue guidance on how councils assess HZEV curfew exemptions, including noise, safety and amenity criteria.
- **Council enablement**: It would be advantageous for templates to be provided for route assessments, receptor mapping, and condition-setting so that Councils can fund micro-upgrades (signage, lighting, turning geometry).
- **Enforcement**: Use telematics-based compliance (speed, route, time-window adherence) and visible placarding to differentiate HZEVs from ICE trucks.
- **Operational conditions**: Speed caps at night on local links would be required with no compression braking, smooth acceleration and specified low-noise reefers.
- **Route selection**: Preference should be given to arterials/collectors with setbacks and of course avoid sensitive frontages (schools, hospitals) during sensitive hours.
- **Mitigations**: Quiet pavements near receptors would also assist, along with shielding/barriers, and intersection signalling that reduces stop-start events.
- **Phasing**: It has been suggested previously that a program with pilot corridors and logistics precincts should start where receptor density is low and benefits (congestion relief, port flows) are high – these can then be expanded, based on measured outcomes and community feedback.

8. CONCLUSIONS

TGE believes that this reform package would directly address the operational constraints faced by Australia's freight sector in several different ways.

By easing road access, automating permits, improving driver competency, enabling appropriate infrastructure, and reforming curfews, Australia would be able to achieve higher productivity, lower emissions, and better consumer outcomes.

We strongly support the Commission's work and look forward to continuing to contribute operational data, pilot projects, and industry expertise to ensure successful implementation of these reforms.