



HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON CLIMATE CHANGE, ENERGY, ENVIRONMENT AND WATER

INQUIRY INTO THE TRANSITION TO ELECTRIC VEHICLES

AUSTRALIAN TRUCKING ASSOCIATION SUBMISSION 22 MARCH 2024

1. About the Australian Trucking Association

The Australian Trucking Association is a united voice for our members on trucking issues of national importance. Through our [ten member associations](#), we represent the 60,000 businesses and 200,000 people who make up the Australian trucking industry.

2. Introduction

In January 2024, the House of Representatives Standing Committee on Climate Change, Energy, Environment and Water commenced an inquiry into the transition to electric vehicles, following a referral from the Minister for Climate Change and Energy.¹

This submission reviews the use case for electric trucks before examining the regulatory barriers to their supply and purchase (page 3).

These barriers include Australia's truck width and mass limits. The submission argues that the Government should invest in a \$5 billion program over 10 years to upgrade key freight roads so they can be used by electric and other heavier trucks.

The submission proposes measures to support businesses to upgrade their truck fleets (page 6), and looks at how to support charging infrastructure (page 8).

In section 7 (page 9), the submission considers the impact of vehicle electrification on fuel tax revenue. It is not the right time to charge electric cars and trucks for their use of the road system. But the Government does need to make decisions about its existing road charging reforms so they can fairly accommodate electric trucks in the future.

The submission was developed with input from the ATA's low carbon working group and draws on the ATA's joint research report with the Electric Vehicle Council, *Electric trucks: keeping shelves stocked in a net zero world*.²

¹ House of Representatives Standing Committee on Climate Change, Energy, Environment and Water, [Inquiry into the transition to electric vehicles](#). Website viewed 21 March 2024.

² ATA and Electric Vehicle Council, [Electric trucks: keeping shelves stocked in a net zero world](#). January 2022.

3. The use case for electric trucks

Battery electric and hydrogen fuel cell electric trucks have the potential to play an important role in Australia's future trucking industry.

34 per cent of Australia's road freight task is carried out in capital city and other urban areas. 44 per cent of this task is carried out by light commercial vehicles and rigid trucks.³ This part of the freight task offers immediate opportunities for electrification.

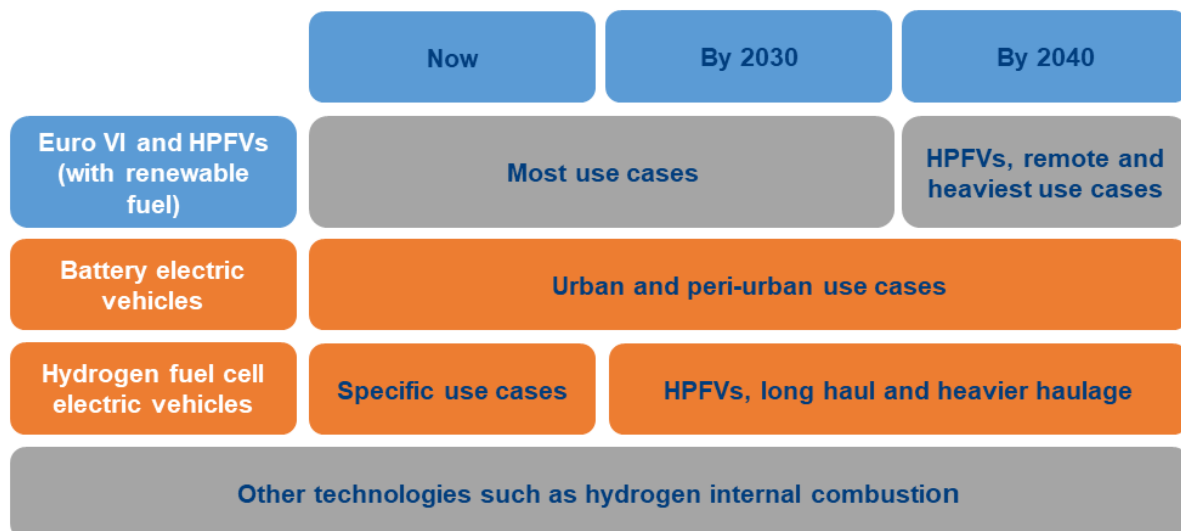
The 56 per cent of the urban freight task that is carried out in articulated trucks also has the potential for electrification, although Australia's vehicle mass limits are an issue.

Meanwhile, Deakin University's hydrogen program, Hycel, and PACCAR Australia are developing hydrogen solutions for long haul and heavier haulage based on the prototype Kenworth T680 fuel cell electric vehicle.⁴

Although these prospects are impressive, it should be emphasised that electric trucks are not suitable for every transport use case. No-one is suggesting that remote trucking or heavy haulage should be electrified.

Instead, figure 1 summarises the current and possible future power sources for Australia's road freight task. The Government will need to establish realistic pathways for these power sources as it develops its transport and infrastructure net zero roadmap and action plan.⁵

Figure 1: Current and future power sources for road freight transport



³ ABS, [Survey of motor vehicle use](#), 2020. Table 21.

⁴ Deakin University, [Deakin begins hydrogen truck research with PACCAR Australia](#). Media release, 18 May 2023.

⁵ DITRDCA, [Transport and infrastructure net zero roadmap and action plan](#). Website viewed 21 March 2024.

4. Regulatory barriers to the supply and purchase of electric trucks

The ATA/EVC report identified the need to reform the Australian Design Rules to accelerate the take up of electric trucks. These reforms need to comprise—

- aligning Australia’s truck width rules with international markets
- increasing the general mass limits for electric trucks.

Aligning truck widths with international markets

Until October 2023, trucks in Australia had a maximum width of 2.5 metres. Trucks in Europe are 2.55 metres wide (2.6 metres for refrigerated vehicles); trucks in the United States are 2.6 metres wide.⁶

Australia’s width rules meant that every European and North American truck model had to be redesigned for the Australian market. This reduced the availability of vehicle models and increased their cost.

Australian Design Rule 43/04 increased the maximum width of rigid trucks and prime movers to 2.55 metres, provided they comply with a package of additional safety rules.⁷

Over time, this design rule will improve the availability of new trucks in Australia, including electric trucks. But further reforms to truck width are needed.

Allowing 2.6 metre wide refrigerated trucks

The ATA has long argued that increasing the thermal efficiency of refrigerated trucks should be a priority, given the energy use involved in keeping freight cold in Australia’s warming climate.

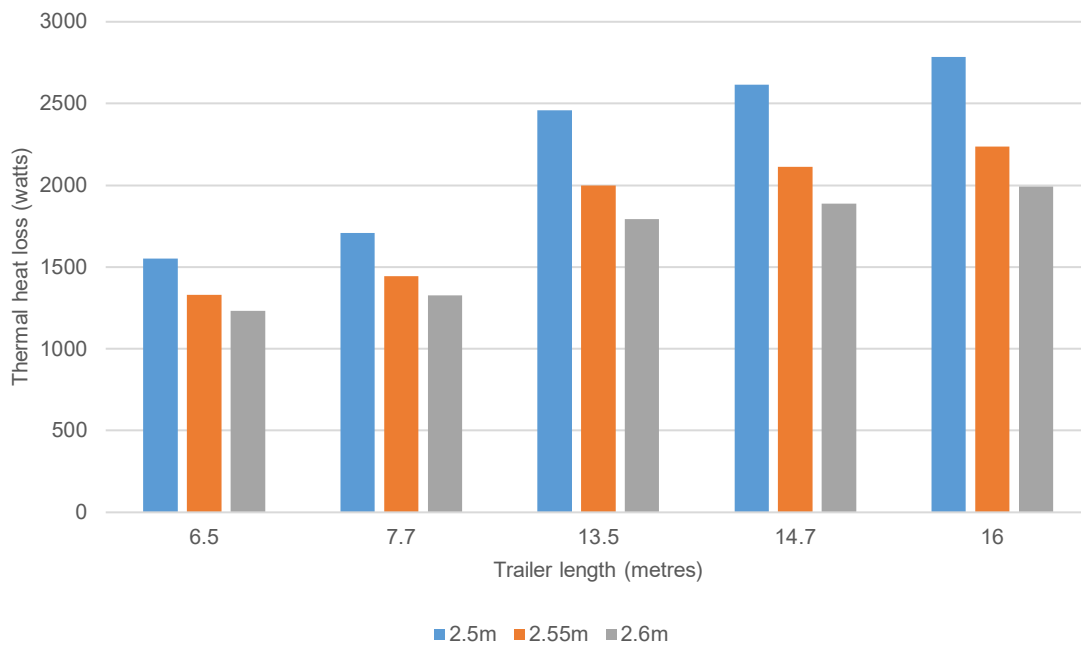
Extending the width of refrigerated trucks to 2.6 metres would deliver a considerable reduction in heat leakage (figure 2) because their side insulation could be thicker. This would reduce the fuel or other energy consumption needed to keep the freight compartment cold and expand the use case for battery electric refrigerated trucks.

It should be noted that a 2.55 metre wide truck already occupies a 2.6 metre wide envelope, since the ADRs allow equipment such as cross view mirrors, monitoring devices and tyre pressure gauges to extend up to 100 mm in total beyond the overall width of the vehicle.⁸

⁶ ATA and EVC, 14.

⁷ *Vehicle Standard (Australian Design Rule 43/04 – Vehicle Configuration and Dimensions) 2006*, s 6.1.5.2.

⁸ *Vehicle Standard (Australian Design Rule – Definitions and Vehicle Categories) 2005*, s 7 (definition of ‘overall width’).

Figure 2: Refrigerated truck and trailer heat leakage, 30°C differential⁹**Recommendation 1**

ADR 43/04 should be amended to allow refrigerated trucks to be 2.6 metres wide.

Extending the wider width to trailers

The increased width allowed under ADR 43/04 is only available for rigid trucks and prime movers, not trailers such as semitrailers.¹⁰ There is no safety or operational reason for this restriction.

The safer freight vehicles concept in ADR 43/04 should be extended to trailers, which should be subject to the same additional safety requirements, where relevant, as rigid trucks and prime movers.

Consistent with recommendation 1, refrigerated trailers should be allowed to be 2.6 metres wide. As figure 2 shows, the thermal heat loss associated with a refrigerated vehicle increases with its length.

Recommendation 2

ADR 43/04 should be amended to extend the safer freight vehicles concept to trailers. Refrigerated trailers should be allowed to be 2.6 metres wide.

⁹ ATA, [Safer freight vehicles discussion paper](#). Submission to DITRDCA, June 2021. 6.

¹⁰ ADR 43/04 provides that the 2.55 metre width option only applies to vehicle categories NB2 (a medium goods vehicle with a GVM over 4.5t and up to 12t) and NC (a heavy goods vehicle with a GVM exceeding 12t). Trailers are categorised separately.

Increasing the mass allowed for electric trucks

Batteries and fuel cells are heavy. Australia's truck mass limits, and particularly the 6.5 tonne steer axle mass limit, are holding back the deployment of larger electric truck models.¹¹

A number of states have recognised this issue and now allow heavier electric trucks to use selected roads. Some of these additional mass arrangements are in table 1.

Table 1: Additional mass arrangements for electric trucks, selected states

State	Mass arrangement
New South Wales	Two year access trial with up to 8t on a single steer axle and up to 18.5t on the drive axle ¹²
Victoria	Pre-approved arterial and municipal road network that can be used by the operators of Volvo semitrailer FM and FH models (7.5t steer and 44.0t) ¹³
Queensland	Access for zero emission heavy vehicles with a steer axle mass of up to 8 tonnes on selected routes in south east Queensland ¹⁴
South Australia	Trial scheme allowing eligible trucks to operate on a selected road network. Single steer prime movers limited to 7.5t. ¹⁵

While they are a good first step, these trials and road networks are necessarily restricted. They have inconsistent requirements and do not join up.

The steer axle mass limit for electric trucks should increase across Australia later this year, as part of the adoption of Australian Design Rule 80/04. ADR 80/04 primarily mandates the Euro VI and comparable US/Japanese noxious emissions standards for diesel trucks, but electric and hydrogen trucks will be considered to comply.¹⁶

The NTC has validated that a 500 kg increase in steer axle mass is justified to offset the weight of the emission controls needed to meet the Euro VI standard, as well as other recent and near future regulatory requirements.¹⁷ If adopted by governments, this increase – from 6.5 tonnes to 7 tonnes – would apply to electric and hydrogen trucks too.

But a 500 kg mass increase, while welcome, is still not sufficient to support the use of heavier electric trucks.

At present, an increase in single steer axle mass to 8 tonnes is needed so operators can move from conventional to electric equipment without compromising their vehicle's payload and productivity. The tandem drive rear axle limit should increase by 1.5 tonnes.

¹¹ ATA and EVC, 2022. 14.

¹² Transport for NSW, [Towards net zero emissions freight policy](#). Website viewed 19 March 2024.

¹³ VicRoads, [Low or zero emission heavy vehicles](#). Website viewed 18 March 2024.

¹⁴ Mellish, B (Queensland Minister for Transport and Main Roads). [Queensland embraces zero emission heavy vehicles](#). Media release, 8 March 2024.

¹⁵ Department for Infrastructure and Transport, [Low and zero emission heavy vehicle trial scheme](#). Website viewed 18 March 2024.

¹⁶ *Vehicle Standard (Australian Design Rule 80/04 – Emission Control for Heavy Vehicles) 2023*, s 5.

¹⁷ De Rozario, A. *Euro VI mass increases*. NTC presentation to TMC 23, 16 October 2023.

The allowed single steer axle mass for electric trucks should ultimately rise to 8.5 tonnes, with tandem drive rear axle mass increasing by 2 tonnes.

These increases in vehicle mass will require road and bridge upgrades.

In our 2024-25 pre-budget submission, we argued that the Government should invest in a new \$5 billion truck roads and rest areas program over the 10 year infrastructure pipeline.¹⁸

Funding under the program would be subject to assessment by an independent panel, including industry representatives and truck drivers. All projects would be linked to outcomes, including projects to upgrade roads and bridges to handle the higher mass needed for electric trucks.

Recommendation 3

The Government should amend the Australian Design Rules to deliver an 8 tonne single steer axle mass limit and a 1.5 tonne increase in the tandem drive rear axle mass limit for electric trucks.

In the longer term, the single steer axle mass limit should increase to 8.5 tonnes, with the tandem drive rear axle mass limit increasing by 2 tonnes.

Recommendation 4

The Government should invest an additional \$5 billion in truck roads and rest areas over the ten year infrastructure pipeline. The investment should include projects to upgrade roads and bridges to handle the mass requirements of electric trucks.

5. Supporting businesses to purchase electric trucks

Through the Australian Renewable Energy Agency (ARENA), the Government is funding a series of projects to roll out electric trucks. For example, ARENA is providing—

- \$15.8 million to WA freight provider Centurion for 30 battery electric trucks and 15 dual port chargers¹⁹
- \$20.1 million to Team Global Express for its Depot of the Future project, which will deploy 60 battery electric delivery vehicles.²⁰

The ATA welcomes these projects, but ARENA's project-by-project approach can, at best, demonstrate the value of new technologies. It cannot support their implementation at scale.

It is time for the Government to put in place incentives that would be easily available to smaller trucking businesses, as well as other businesses that operate trucks.

¹⁸ ATA, [2024-25 pre-budget submission](#). 25 January 2024.

¹⁹ ARENA, [Decarbonising transport across Western Australia](#). Media release, 7 March 2024.

²⁰ ARENA, [Depot of the future delivers Australia's largest electric vehicle logistics fleet](#). Media release, 6 December 2022. The depot was launched on 14 March 2024.

The state governments could also support the rollout of electric trucks by removing stamp duty on these and other new trucks.²¹

Reinstating full expensing

The Government should permanently reinstate temporary full expensing for trucks and trailers.

Under temporary full expensing, an eligible business could fully expense in its tax return the cost of an eligible new asset first held, used or installed ready for use between 6 October 2020 and 30 June 2023. Temporary full expensing was available to businesses with an aggregate turnover of less than \$5 billion.²²

During COVID, temporary full expensing proved to be highly effective at encouraging trucking businesses to invest in new trucks. For example, new truck sales in the December quarter 2020 were stronger than in the same period in 2019, despite the pandemic.²³

Reintroducing full expensing for trucks and trailers on a permanent basis would do more than support the purchase of electric trucks. It would support a broad refresh of Australia's ageing truck fleet, which now has an average age of 16.3 years for heavy rigid trucks and 12.5 years for articulated trucks.²⁴

No matter how they are powered, new vehicles are more efficient, have the latest safety technologies and meet more stringent noxious emissions standards.

Recommendation 5

The Australian Government should permanently reinstate full expensing for trucks and trailers.

Additional incentives for purchasing electric trucks

The higher upfront price of electric trucks is a key barrier to their take up in Australia.²⁵

This aligns with international experience. A US non-profit that accelerates clean transport, CALSTART, has reported that—

High incremental cost is cited by fleet purchases as the prime barrier preventing clean vehicle purchases. Incentives for the purchase of medium- and heavy-duty commercial vehicles are needed to help create a robust, sustainable market.²⁶

Globally, a range of purchase price incentives now exist, such as CALSTART's voucher incentive program (VIP) model.

²¹ ATA, 2024. 6.

²² ATO, [About temporary full expensing](#). Website viewed 16 March 2024.

²³ Truck Industry Council, [Truck market comment: fourth quarter, 2020](#). January 2021. 1.

²⁴ BITRE, [Road vehicles, Australia, January 2023](#). 9.

²⁵ ATA and EVC, 16.

²⁶ CALSTART, [Voucher incentive programs: a tool for clean commercial vehicle deployment](#). July 2019. ES-1.

Under this model, the Government provides a voucher to reduce the incremental cost between a conventionally fuelled vehicle and a ZLEV. Dealer networks help fleets navigate the voucher incentive program process and take on the financial responsibility of completing voucher redemptions.

Truck purchasers see a lower purchase cost. Dealers receive the full price for the vehicles and the program makes up the difference between the original price and the reduced voucher price.

The ATA supports this model, because it could be available at the point of sale without the need for purchasers to undertake a separate application process.

A purchase price incentive of 50 per cent of the price difference between electric and conventional trucks would split the extra cost of purchasing an electric truck between the community and the purchaser.

We know that electric truck technology will become more cost effective as production scales up.²⁷ As the cost of the technology falls, the cost of the subsidy will fall also.

Recommendation 6

The Australian Government should implement a purchase price incentive of 50 per cent of the price difference between comparable electric and conventional truck models.

6. Charging infrastructure

Providing truck charging infrastructure will be another key enabler of the transition to electric trucks.²⁸

The Australian Government is investing in charging through its Driving the Nation fund, but its investments are focused on passenger vehicle charging and depot-based chargers.

To support the purchase of battery electric trucks by time poor truck operators, the Government should increase its focus on building public rapid and ultra-fast recharging infrastructure for trucks.

As bp has pointed out, fleet managers across markets say they want to de-risk charging, which for charging during the day is likely to mean getting vehicles charged with certainty as quickly as possible.²⁹

The focus of building this charging infrastructure should be on key urban and freight locations, such as service stations in logistics precincts. The charging facilities should be designed so they can be easily used by trucks.

²⁷ ICCT. [A meta-study of purchase costs for zero-emission trucks](#). February 2022. 14, 15.

²⁸ ATA and EVC, 16.

²⁹ bp Australia, [bp Australia response to the National Electric Vehicle Strategy consultation paper](#). October 2022. 4.

The rollout will also require grid upgrades, including improvements in electricity network data sharing, support for second lines of supply to charging sites and service stations, and supportive tariff structures for charge point operators.

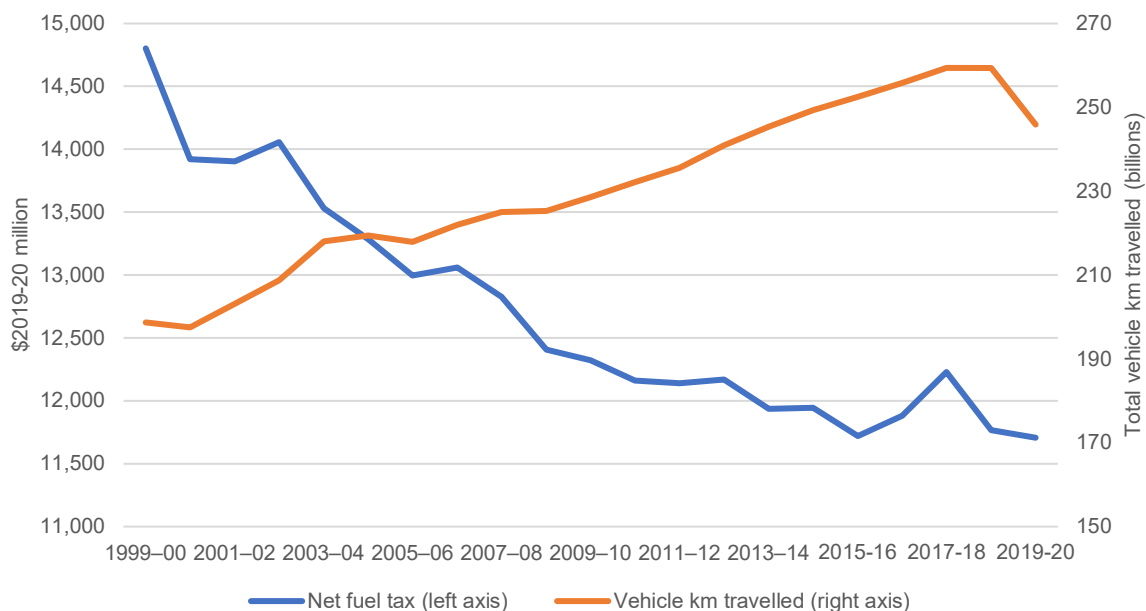
Recommendation 7

The Australian Government should increase its focus on rapid and ultra-fast charging infrastructure for trucks, including through supporting upgrades to the power grid and its operation.

7. Fuel excise loss and managing the transition to road user charging

The Commonwealth's net revenue from fuel tax has shown a downward trend in real terms for twenty years, despite the increasing number of kilometres that Australian vehicles travel (figure 3).

Figure 3: Net road-related fuel excise revenue and vehicle km travelled, 1999-00 to 2019-20³⁰



Fuel tax revenue can be expected to continue its trend decline, with electric vehicles now making up more than 8.4 per cent of total light vehicle sales.³¹

³⁰ Sourced from BITRE, [Australian infrastructure and transport statistics yearbook 2021](#), tables 3.3a and 6.3. 'Net road related fuel excise' is gross fuel excise revenue net of fuel tax credits and a small adjustment for the excise paid on off-road fuel use that is not claimed back as credits.

³¹ Electric Vehicle Council, [Australian electric vehicle industry recap 2023](#). March 2024. 3.

Road user charging for electric cars and light trucks

In 2021, Victoria became the first state to establish a road user charging scheme for light zero and low emission vehicles. The scheme imposed a per kilometre charge on non-excluded electric, hydrogen and plug-in hybrid electric vehicles registered in Victoria with a gross vehicle mass of 4.5 tonnes or less.³²

Two electric car owners challenged the constitutionality of the Victorian scheme in the High Court, on the grounds that it impermissibly imposed a duty of excise within the meaning of s 90 of the Constitution.³³

The ATA sought and was granted leave to make submissions *amicus curiae*, because of our concern about the impact of multiple, inconsistent road user charging systems.³⁴

The High Court ruled that the Victorian ZLEV charge was a tax on goods – zero and low emission vehicles – and was therefore a duty of excise. Only the Commonwealth Parliament can impose excise duties.³⁵

The Electric Vehicle Council has convincingly argued that road user charges should not be imposed on ZLEVs until they are more established.

The ATA agrees, but we consider that the Government should consult broadly now to develop the legislative and administrative framework for a future road user charge.

Without careful consideration, it is likely that a future charge would be introduced in haste – perhaps in response to a budget shortfall – and have issues with its administration, like the Victorian ZLEV charge.³⁶

Recommendation 8

The Australian Government should start work now on developing a road user charging framework for zero and low emission vehicles, with the framework to be implemented once ZLEVs are better established in the market.

Road user charges for electric trucks

It is not appropriate for the Government to introduce road user charges for electric trucks either. They are not established well enough in the market.

There are, however, existing work programs relating to truck charges that will need to be adjusted to accommodate their future extension to electric trucks fairly. First, though, it is useful to consider how truck charges are set now.

³² *Zero and Low Emission Vehicle Distance-based Charge Act 2021* (Vic). s 3 (definition of 'ZLEV').

³³ *Vanderstock v Victoria* [2023] HCA 30. [3].

³⁴ ATA, 'Proposed submissions of the Australian Trucking Association', Submission in *Vanderstock & Anor v. The State of Victoria*, M61/2021, 4 October 2022.

³⁵ *Vanderstock*, [198].

³⁶ Victorian Ombudsman, [Ombudsman finds Victoria's electric and plug-in hybrid vehicle charges administered unfairly](#). Media release, 27 September 2023.

How road user charging for trucks works now

The operators of trucks and buses pay for their use of the road system through a mix of very high registration charges and a road user charge on fuel.

Table 2 sets out the national registration charges for a range of common truck combinations. These figures include the registration component that funds the National Heavy Vehicle Regulator, but do not include additional state charges or compulsory third party insurance.

Table 2: National registration charges for typical truck combinations, 2023-24³⁷

	2023-24 (\$)
2 axle rigid truck, no trailer, GVM to 12 tonnes	653
6 axle prime mover and semitrailer	6,872
9 axle B-double	16,302
Double road train	16,358

The road user charge on diesel is imposed indirectly on truck and bus operators as a reduction in the fuel tax credits they claim on their monthly or quarterly business activity statements. Table 3 shows the current fuel tax, road user charge and fuel tax credit rates.

Table 3: Fuel tax, road user charge and on-road fuel tax credit rates, 5 February 2024

	Cents per litre
Fuel tax on diesel ³⁸	49.6
Road user charge ³⁹	28.8
Fuel tax credit rate for on-road heavy trucks and buses	20.8

These charges are set with the aspiration of recovering the annual cost of road construction and maintenance attributable to trucks and buses.

The NTC is responsible for calculating this cost base, as well as the registration charges and the road user charge on fuel needed to recover it, using a mathematical model known as PAYGO.

There is widespread agreement that PAYGO is at the end of its life, principally because it seeks to recover the full allocated cost of governments' capital expenditure on roads rather than amortising the cost over the life of the asset.

³⁷ NTC, [Heavy vehicle charges consultation report](#). December 2022. Table 7. 20-21.

³⁸ Poulakis, T. "Notice of substituted rates of excise duty" in Commonwealth of Australia, *Government Notices Gazette*, No C2024G00102, 1 February 2024, item 10.10.

³⁹ *Fuel Tax (Road User Charge) Determination 2023* (Cth).

Because capital expenditure is lumpy – a single large project can have a significant effect on total expenditure – heavy vehicle charges are more volatile than they would be if the capital expenditure was recovered over time.⁴⁰

Until 2023-24, heavy vehicle charges were adjusted annually, which made it harder for businesses on tight margins to make multi-year pricing decisions. It also imposed a significant administrative burden on both governments and industry.⁴¹

Ministers have now addressed this problem by setting a defined trajectory for the road user charge and registration charges for the 2023-24 to 2025-26 period.⁴² The next pricing period should run from 2026-27 to 2028-29.

Policy work on direct charging for heavy vehicles

The Government is conducting a National Heavy Vehicle Charging Pilot, which is testing different ways to directly invoice the operators of heavy vehicles for their road use based on the weight of the vehicle and the distance travelled.⁴³

The current phase of trial, phase 3, is testing a road user charging model based on mass, distance and location, with data collected via telematics.⁴⁴

The trials are based on the working assumption that the invoice based system would replace the current charging system, although no policy decisions have been made.

The implementation and ongoing costs associated with transferring Australia's 507,000 trucks to a new charging system would be enormous, because—

- older trucks are not fitted with telematics
- the invoicing system would add another layer of paperwork
- it would create a cashflow gap for trucking businesses. They would pay for their road use through fuel tax and again through the invoicing system. The businesses would receive fuel tax credits for the tax they paid, but they would have to cover the gap in the meantime.

As a pragmatic way forward, the ATA considers that the Government should rule out imposing invoice based charging on conventionally powered trucks.

The Government should instead develop a framework for an invoice based road user charging system for electric trucks. It should not be implemented yet.

Businesses should be able to transfer conventionally powered trucks to the invoiced based system on an opt-in basis. This might, in the future, particularly suit operators with mixed fleets of electric and diesel vehicles.

⁴⁰ NTC, [Heavy vehicle charges determination: consultation regulation impact statement](#), June 2021, 21.

⁴¹ *ibid*, 81-82.

⁴² Infrastructure and Transport Ministers' Meetings, [Communiqué](#). 8 May 2023.

⁴³ DITRDCA, [National heavy vehicle charging pilot](#). Website viewed 19 March 2024.

⁴⁴ DITRDCA, [Phase 3 – the telematics phase](#). Website viewed 19 March 2024.

Recommendation 9

The Government should rule out imposing an invoice based road user charging system on conventionally powered trucks, although it should be available on an opt-in basis.

Recommendation 10

The Government should include electric trucks in its road user charging framework, and well as conventionally powered trucks on an opt-in basis.

A replacement charging model for PAYGO

In consultation with industry, the NTC is working on a replacement for PAYGO, known internally as the forward looking cost base (FLCB).

The FLCB is to be based on the well-understood principles of the building block approach used for utility regulation. This approach will fix the capital expenditure problems with PAYGO, because the cost of capital in a building block model is amortised over time.

Building block models generate an annual revenue requirement for the regulated entity, which can then be recovered from customers through a range of pricing approaches.

Given recommendations 9 and 10 in this submission, the FLCB for heavy vehicle charges should have the same modularity. It should be able to generate an annual revenue requirement and separate prices for—

- conventionally powered truck operators paying under the current system of registration charges and the fuel-based road user charge
- electric truck operators paying an invoice based road user charge, and
- an invoice based charge for the operators of conventionally powered trucks who choose to opt in.

Recommendation 11

The NTC's forward looking cost base should be designed to support a range of road user charging models, including the current system and an invoice based system for electric trucks and operators that choose to opt in.

An effective subsidy for electric trucks in the FLCB

Under the PAYGO and future FLCB models, the amount to be recovered from truck and bus operators depends, in part, on the number of vehicles on the road and the kilometres they travel.

Electric trucks and buses do not use fuel and do not pay the fuel-based road user charge. Given that it is not appropriate to impose a road user charge on electric vehicles now, there are two options for handling them in the model—

- set the fuel based road user charge to fully recover the share of the annual revenue requirement that needs to come from road use, as opposed to registration. The operators of conventionally powered vehicles would cross subsidise the road use of electric vehicles, or
- set the road user charge on the basis that the Government would, effectively, pay for the road use for electric vehicles as an implicit subsidy.

At present, the difference between the two approaches is negligible. But as the number of electric vehicles increases, the question will become more important.

Since the FLCB model is being designed now, the ATA considers that the NTC should build the model to recognise an effective subsidy for electric vehicles.

Recommendation 12

The FLCB model should be constructed to include an effective subsidy for electric vehicles, rather than cross subsidising their road use.