



FUTURE FUELS STRATEGY: DISCUSSION PAPER

AUSTRALIAN TRUCKING ASSOCIATION SUBMISSION 8 APRIL 2021

1. About the Australian Trucking Association

The Australian Trucking Association and its member associations collectively represent 50,000 businesses and 200,000 people in the Australian trucking industry. Together we are committed to safety, professionalism and viability.

2. Summary of recommendations

Recommendation 1

The Future Fuels Strategy should include a Zero and Low Emission (ZLEV) Truck Strategy to address the barriers to the roll out of ZLEV trucks, invest in the early stages of these technologies and provide an early focus on commercial trucking fleets.

Recommendation 2

The ABS motor vehicle census and supporting data collected by state and territory governments should be updated to specifically report on hybrid and hydrogen vehicle numbers, in addition to continuing to specifically report on electric vehicles.

Recommendation 3

The ZLEV truck strategy should address vehicle design rules and implement additional mass and width for ZLEV and Euro VI trucks.

Recommendation 4

The Australian Government should implement a temporary Zero and Low Emission Truck Purchase Incentive, to encourage investment in early-stage ZLEV truck technologies and introduce these vehicles into the Australian market, to provide commercial choice to trucking operators for reducing emissions and to improve safety. The temporary purchase incentive should apply until ZLEV trucks make up 5 per cent of the heavy vehicle fleet.

Recommendation 5

Co-investment in hydrogen refuelling and electric recharging stations by the Future Fuels Fund should incorporate heavy vehicle access, strategic planning of refuelling on transport routes, and the consideration of co-location with existing truck driver rest facilities. Private commercial back to base sites should be eligible.

Recommendation 6

National Cabinet should establish a sustainable road user charging scheme for ZLEVs, including transparent calculation of charges and without cross subsidies from other road users. The consistent road user charge would be separate from the proposed ZLEV truck purchase incentive, which should be funded from general revenue.

Recommendation 7

The Australian Government should consider the impact of electric heavy vehicle recharging on the electricity grid.

3. Developing a road freight decarbonisation strategy

Reducing carbon emissions is a critical public policy objective. The Intergovernmental Panel on Climate Change (IPCC) has set out research showing that limiting global average temperature increase to 1.5°C reduces the potential of the worst impacts of climate change occurring.¹

IPCC also concludes that without increased and urgent mitigation, leading to a sharp decline in emissions by 2030, global warming will surpass 1.5°C in the following decades, leading to irreversible loss of ecosystems and increases in crisis.² This effect is likely to include increased weather extremes, drought and bushfires.³

Whilst there is uncertainty about climate modelling, it is possible to compare past projections with what has occurred. A 2019 study assessed 17 models published between the 1970s and 2007, finding that for 14 of the models what actually happened was within the model's range.⁴ There is a strong evidence base for developing policy to reduce carbon emissions.

The Australian Government has committed to meeting Australia's Kyoto-era and 2030 climate change targets.⁵ The Prime Minister has affirmed that Australia will move towards net zero emissions as soon as possible.⁶ Additionally, all states and territories have emissions reduction targets aiming for net zero by 2050.⁷

The ATA welcomes the release of the Future Fuels Strategy discussion paper and the intent to support the private sector to commercially deploy low emissions road transport technologies at scale. It builds on the release of the Technology Investment Roadmap discussion paper and the Low Emissions Technology Statement.

The ATA's Technology Investment Roadmap (Low Emissions) submission set the need for:

- Moving more freight with fewer vehicle movements and fewer emissions, by accelerating the use of high productivity freight vehicles
- Encouraging electrification of the delivery fleet
- Bringing forward development of hydrogen fuel cell vehicles
- Investment in new heavy vehicles
- Not using quotas or pricing to encourage modal shift, which would not be consistent with relying on a technology approach to reduce emissions.⁸

¹ IPCC. [Global Warming of 1.5°C](#). 2018.

² IPCC. 2018. vi.

³ IPCC. 2018. 7. 8.

⁴ The Economist. 30 April 2020. [How modelling articulates the science of climate change](#).

⁵ Australian Government. [Technology Investment Roadmap Discussion Paper: A framework to accelerate low emissions technologies](#). May 2020. 3.

⁶ Prime Minister of Australia, the Hon Scott Morrison MP. 9 March 2021. [Keynote Address, AFR Business Summit](#).

⁷ Austroads. [Issues Paper AP-C110-20: Decarbonisation of Road Transport Network Operations in Australia and New Zealand](#). May 2020. 7.

⁸ ATA, June 2020. [Technology Investment Roadmap \(Low Emissions\) submission](#).

More broadly, it is important that policy makers remain technology-agnostic, to enable the market to develop and commercialise the most efficient zero and low emissions technologies.

The Future Fuels Strategy discussion paper sets out three principles to guide the strategy:

1. Addressing barriers to the roll out of new vehicle technologies will increase consumer choice.
2. Government investment in early stage technologies can stimulate market and private sector investment.
3. Access to information can help people make informed choices.

The Government has also identified five priority initiatives:

1. Electric vehicle charging and hydrogen refuelling infrastructure where it is needed.
2. Early focus on commercial fleets.
3. Improving information for motorists and fleets.
4. Integrating battery electric vehicles into the electricity grid.
5. Supporting Australian innovation and manufacturing.⁹

The Government has announced a \$24.5 million Freight Energy Productivity Program. This program is expected to involve:

- Engagement with road freight sector businesses
- Competitive grants to support efficiency improvements for diesel fleets, vehicle modifications or new vehicle technologies
- Trialling more efficient heavy vehicle technologies and publicising the results (could include the impacts of biodiesel blends in conventional or hybrid trucks).

The Government should ensure that the Future Fuels Strategy delivers a specific strategy for accelerating the introduction of zero and low emissions trucks (ZLEV).

This would be consistent with existing principles and priority areas, including:

- Addressing barriers to the roll out of new vehicle technologies
- Investing in the early stages of technologies to stimulate the market
- Early focus on commercial fleets.

A recent global report on decarbonising road freight found that to meet the targets set out in the Paris Agreement, absolute emissions from road freight will need to decline almost 60 per cent by 2050 despite a possible doubling of road freight volume over the same period. This would require an emission intensity reduction of over 80 per cent in less than 30 years, which will not be met on the current trajectory.¹⁰

The survey of global industry reported that zero emission road freight technology is likely to evolve faster than expected. The report also found that most technologies to decarbonise road freight already exist, although not all are yet commercially viable. **Specifically, the global survey found that the road freight industry needs to move beyond planning and to commence deployment of alternative technologies to operations, so they can**

⁹ Australian Government, February 2021. [Future Fuels Strategy: Discussion Paper](#). 7.

¹⁰ Shell, 21 January 2021. [Decarbonising road freight: Getting into Gear](#). 6

be tested and refined. This is important to also getting increased scale of new technologies to lower costs and improve infrastructure.¹¹

Globally, industry expects hydrogen fuel cell electric vehicles (FCEV) to be the most viable alternative heavy vehicle technology, with battery electric vehicles (BEV) having a role in specific applications.¹² This aligns with the ATA submission on the Technology Investment Roadmap (Low Emissions), which focused on the need to bring forward FCEVs and to encourage BEVs for urban delivery and service vehicles.

To address the need to commence a transition to zero and low emissions technologies and ensure zero emission trucks are introduced into the Australian truck fleet, the Future Fuels Strategy should include a ZLEV truck strategy which addresses:

- Reforming vehicle design rules
- Refuelling and recharging infrastructure for trucks
- Implementing a temporary ZLEV truck purchase incentive.

This would be consistent with the intent of the Future Fuels Strategy. A ZLEV truck strategy would:

- Address the barriers to the roll out of new technologies
- Invest in early stage technologies
- Provide an early focus on commercial fleets.

Recommendation 1

The Future Fuels Strategy should include a Zero and Low Emission (ZLEV) Truck Strategy to address the barriers to the roll out of ZLEV trucks, invest in the early stages of these technologies and provide an early focus on commercial trucking fleets.

4. Delivering a ZLEV truck strategy

Electric heavy vehicles have entered the Australian market. Daimler Truck and Bus, an ATA member, is introducing an all-electric light truck in Australia.¹³ Volvo, also an ATA member, has brought the Volvo FL Electric truck to Australia for trials and evaluation in Australian logistics.¹⁴ The Prime Minister drove the Volvo FL Electric truck in a January 2021 visit to Volvo Group Australia's production facility at Wacol, Queensland.

Globally, Volvo Trucks have announced they will commence production of a complete range of heavy-duty electric trucks from 2022.¹⁵ Volvo project that 35 per cent of Volvo trucks will be utilising electric drivetrains by 2030.¹⁶

Hydrogen fuel cell heavy vehicles are under development and are entering the market internationally. The Hydrogen Transition Centre, established by Deakin University with \$2 million in Australian Government funding, will partner with truck manufacturer PACCAR

¹¹ Shell, 21 January 2021. 56.

¹² Shell, 21 January 2021. 33.

¹³ Prime Mover Magazine. 29 July 2020. [Fuso announces launch of all-electric eCenter in Australia.](#)

¹⁴ The Driven, 18 January 2021. [First Volvo FL electric truck reaches Australian shores.](#)

¹⁵ Trucksales, 25 February 2021. [Volvo outlines decarbonisation roadmap.](#)

¹⁶ ATN, 24 February 2021. [Volvo Australia looks ahead to a fossil-free future.](#)

(an ATA member) to further develop the potential of this technology.¹⁷ Internationally, Volvo and Daimler have signed a fuel-cell joint venture to develop, produce and commercialise fuel-cell systems for use in heavy vehicles.¹⁸

FCEV heavy vehicles have entered use in New Zealand and Europe.¹⁹ FCEV light vehicles have entered use in Australia, with the ACT Government deploying 20 FCEV into its government vehicle fleet and ActewAGL opening Australia's first hydrogen refuelling station in Canberra.²⁰ Additionally, Toyota is installing a hydrogen refuelling station in Victoria, with support from ARENA.²¹

The Future Fuels Strategy should deliver a ZLEV truck strategy to accelerate these technologies into the Australian truck fleet. Industry needs to move to deployment of ZLEV trucks to be able to refine the technologies and move to scale.

However, **ZLEV take up in the Australian truck fleet is almost non-existent.**

Table 1: Comparison of vehicle type by fuel type

Vehicle type	Diesel	Electric	Petrol	LPG/dual fuel	Other	Total
Passenger	1,948,299	12,650	12,469,949	162,516	85,835	14,679,246
Light commercial	2,340,494	192	983,049	81,225	2,063	3,407,014
Light rigid	168,381	21	6,710	1,332	240	176,677
Heavy rigid	347,490	35	9,907	875	522	358,835
Prime movers	104,009	0	886	132	106	105,139
Buses	80,821	34	16,307	3,235	67	100,470

Source: ABS Motor Vehicle Census, 2020.²²

As illustrated by the ABS motor vehicle census, while take up in electric passenger vehicles has begun (almost doubling from 2019)²³, take up in the truck fleet is almost non-existent. Take up of other alternatives is also low, and with no FCEV trucks currently on the Australian market, they are non-existent.

The ABS motor vehicle census also illustrates that the data collected currently by governments will not support effective, evidence-based policy decisions into the future. There is no specific count of hybrid or hydrogen vehicles.

¹⁷ Deakin University. [Warrnambool research centre tests trucks running on water](#). 16 December 2019.

¹⁸ Daimler, November 2019. [Fuel-cell joint venture](#).

¹⁹ See [Hiringa Energy](#) (NZ) and [Hyundai delivers world's first hydrogen-powered trucks](#) (Switzerland).

²⁰ The Driven, 26 March 2021. [ACT unveils Australia's first public hydrogen refuelling station](#).

²¹ Arenawire, 2 November 2020. [Melbourne's first hydrogen refuelling station takes shape](#).

²² ABS, May 2020. [Motor vehicle census](#).

²³ ABS, May 2020. [Electric vehicle registrations almost double](#).

Recommendation 2

The ABS motor vehicle census and supporting data collected by state and territory governments should be updated to specifically report on hybrid and hydrogen vehicle numbers, in addition to continuing to specifically report on electric vehicles.

Reforming vehicle design rules

The Australian Government should lead amendments to vehicle design standards to reduce barriers to uptake of ZLEV and cleaner trucks, and to offset productivity losses and incentivise the purchase of greener trucks.

These vehicle design changes should include:

- An additional 500kg axle mass for steer trucks, that can be shared between the front and rear axles (or be applied solely to one axle, or axle set)
- An additional 1000kg axle mass for twin steer trucks with load-share front suspension, to be applied to the steer axles
- Maximum vehicle width to be increased to 2.6m (or if governments do not accept this option, width should be increased to 2.55m with 2.6m for refrigerated vehicles).

The ATA has proposed these amendments in response to the Australian Government draft regulation impact statement on heavy vehicle emission standards.²⁴ These offsets should be applied to Euro VI emission standard heavy vehicles, which are cleaner than older models. However, as Euro VI does not have a large impact on greenhouse emissions, these offsets should also be applied for ZLEV heavy vehicles.

Recommendation 3

The ZLEV truck strategy should address vehicle design rules and implement additional mass and width for ZLEV and Euro VI trucks.

Implementing a Temporary Zero and Low Emission Truck Purchase Incentive

The discussion paper sets out the Government's priorities to invest in early-stage technologies and provide an early focus on commercial fleets. As set out in Table 1, ZLEV heavy vehicles are an early-stage technology with almost non-existent take up in the Australian market.

In California, the Hybrid and Zero Emission Truck and Bus Voucher Incentive Project (HVIP) provides incentives to purchase the cleanest medium and heavy duty trucks. The California HVIP has provided vouchers for fleets to purchase more than 7,500 zero emission and other clean trucks and buses. The scheme provides point of sale price reductions on ZLEV trucks and buses.²⁵ The scheme provides \$120,000 incentives for the purchase of electric prime movers, with new electric models available to industry from truck manufacturers including Volvo, PACCAR and Freightliner.²⁶

²⁴ ATA, 25 February 2021. [Submission on Heavy Vehicle Emission Standards Euro VI draft regulation impact statement](#), 7.

²⁵ Green Car Congress, 15 December 2020. [CARB approves \\$28M investment in clean trucks, cars](#).

²⁶ California HVIP, [Tractor catalogue](#). Accessed 29 March 2021.

The discussion paper rejects direct incentives as not representing value-for-money.²⁷ The ATA notes that the modelling did not consider heavy vehicles, and that the reality remains that the cost differential of ZLEVs to conventional internal combustion engines (ICE) vehicles is a considerable impediment to early adoption by commercial freight operators. Further, the case for incentivising newer vehicles and ZLEVs into the Australian fleet is broader than the cost of abatement. Incentivising new vehicles would have clear road safety benefits, as newer vehicles are fitted with the latest safety technologies and standards, such as the Government's proposed new rules on advanced emergency braking (AEBS), which have not been assessed by the modelling.

ZLEV trucks are unlikely to become a commercially viable option, with appropriate scale on an accelerated timeline, without purchase incentives. A temporary ZLEV truck purchase incentive would represent both an investment in an early stage technology, and an early focus on fleets (by incentivising trucking fleets). Failing to incentivise the purchase of ZLEV trucks will continue to delay these technologies becoming a commercially viable option for trucking operators.

The temporary ZLEV truck purchase incentive should be in place until ZLEV trucks make up 5 per cent of the Australian truck fleet. Implementing recommendation 2, to improve the ABS motor vehicle census data, would improve the ability of Government to measure when this threshold has been achieved.

The temporary ZLEV truck purchase incentive should be in addition to the Freight Energy Productivity Program.

Recommendation 4

The Australian Government should implement a temporary Zero and Low Emission Truck Purchase Incentive, to encourage investment in early-stage ZLEV truck technologies and introduce these vehicles into the Australian market, to provide commercial choice to trucking operators for reducing emissions and to improve safety. The temporary purchase incentive should apply until ZLEV trucks make up 5 per cent of the heavy vehicle fleet.

Refuelling / recharging infrastructure

The ATA welcomes the inclusion in the discussion paper of electric vehicle charging and hydrogen refuelling infrastructure as a priority initiative. Importantly, the paper recognises that commercial vehicles will have varying infrastructure needs and that rigid and long haul trucks will need dedicated charging infrastructure, due to their larger batteries. The paper also identifies that road freight will need charging stations on major transport routes as well as back to base private charging infrastructure, such as fleet vehicle depots.²⁸

The ATA welcomes the intent of the Future Fuels Fund to support commercial fleet projects which undertake electrical upgrades and installation. The details of this action are yet to be confirmed, and it is critical that the program is accessible for trucking fleets. Australian Government investment in recharging and refuelling infrastructure should ensure eligibility

²⁷ Australian Government, February 2021. [Future Fuels Strategy: Discussion Paper](#). 4.

²⁸ Australian Government, February 2021. 10.

for privately run and operated back to base sites. This infrastructure will be fundamental for early commercial trucking fleets, which will rely on back to base refuelling and recharging.

The Future Fuels Fund proposes to co-invest in demonstration hydrogen refuelling stations. This investment should:

- be designed to incorporate heavy vehicle access to refuelling stations
- strategically plan the need to invest in refuelling stations on transport routes
- consider partnerships with existing truck refuelling stations and rest stops.

The deployment of hydrogen trucks risks a situation where trucking operators are unable to invest in new technology as the refuelling stations do not exist, and the business case for investing in refuelling stations is undermined by the lack of FCEV trucks on the road.

Ultimately investing in a one-off demonstration projects will not solve this issue – there needs to be a focus on identifying applicable transport routes and investment in refuelling stations which enables FCEV trucks to operate on the corridor.

Existing truck rest stops and roadhouses are about more than refuelling. They provide an opportunity for truck drivers to manage fatigue and access food, drink, showers and toilets. Hydrogen refuelling on long-haul transport routes needs to be co-located with the services and rest areas that truck drivers need to use.

Recommendation 5

Co-investment in hydrogen refuelling and electric recharging stations by the Future Fuels Fund should incorporate heavy vehicle access, strategic planning of refuelling on transport routes, and the consideration of co-location with existing truck driver rest facilities. Private commercial back to base sites should be eligible.

5. Preparing for a zero emissions transport future

Sustainable road user charging

The ATA supports transparent, on-budget subsidies for zero and low emission vehicles which reflect the benefits to the wider Australian community of accelerating the purchase of cleaner vehicles. As recommended in this submission, this should include introducing a direct purchase incentive and implementing vehicle design offsets to increase the productivity of ZLEV and cleaner heavy vehicles.

However, subsidies for ZLEV purchases should not be excluded from budget transparency. They should not be cross subsidised by other road users, such as conventional internal combustion engine (ICE) commercial freight vehicles, which would build in social and market inequity (as road users who are unable to transition to ZLEVs would be subsidising those who are).

ZLEVs are currently excluded from paying road user charges, with the exception of proposals in Victoria and South Australia. This exclusion is not transparent as the forgone revenue is not considered in government budgets. Additionally, the system as it stands represents an unfunded tax cut which will be progressively implemented as take up of

ZLEVs increase. The cost of this incentive will grow the less the incentive is required (as ZLEV numbers increase).

Under the current heavy vehicle charges model, charges seek to recover the heavy vehicle cost base while ensuring each vehicle class, on average, pays the attributable costs allocated to the vehicle category.²⁹ Failure to collect the road user charge element from ZLEV heavy vehicles, or at least transparently account for it, will progressively undermine the charging model.

Additionally, not charging for road use will risk increased congestion through increasing demand for limited urban road space by light vehicles. The lack of ZLEV road user charging reduces the cost for ZLEV users thereby incentivising greater road use.

The Australian Government should lead reform to road user charging, or at the very least, ensure National Cabinet consistency. Ideally, private and commercial vehicle operators across Australia should be subject to a single, nationally consistent regime – especially given that the Commonwealth administers fuel duty and heavy vehicle charges. In the absence of this, it is critical that there is full inter-operability of regimes across state and territory jurisdictions.

Recommendation 6

National Cabinet should establish a sustainable road user charging scheme for ZLEVs, including transparent calculation of charges and without cross subsidies from other road users. The consistent road user charge would be separate from the proposed ZLEV truck purchase incentive, which should be funded from general revenue.

BEVs and the electricity grid

The ATA welcomes the inclusion of integrating BEVs into the electricity grid as a priority in the discussion paper. The paper projects that if 50 per cent of the light vehicle fleet were BEVs, this would add 9 per cent to annual demand in the National Energy Market and WA Wholesale Energy Market. Additionally, there will be issues to manage around potential network congestion, especially if charging increases demand in the daily peak periods.³⁰

The Government's work in this area needs to also consider heavy vehicles. The modelling around potential increased demand does not include heavy vehicles, and consideration around the potential demand for electricity by truck depots was not included.

Recommendation 7

The Australian Government should consider the impact of electric heavy vehicle recharging on the electricity grid.

²⁹ NTC. December 2019. [Heavy vehicle charges consultation report](#). 10.

³⁰ Australian Government, February 2021. 20.

6. ATA contact

The ATA contact for this submission is Samuel Marks, Transport and Infrastructure Adviser at samuel.marks@truck.net.au or on 02 6253 6923.