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Submission: National EV Strategy

Australia's National Electric Vehicle Strategy is an opportunity to increase the supply of affordable electric vehicles for Australians and phase out the sale of internal combustion engine vehicles. It should be accompanied by a broader transport decarbonisation strategy, include the introduction of strong fuel efficiency standards and targeted subsidies for electric vehicles, e-bikes and micromobility options, and remove incentives for fossil fuelled vehicles.

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Contents

Introduction

The Australia Institute welcomes the introduction of the National Electric Vehicle (EV) Strategy and the opportunity to comment on the proposed goals, objectives and actions.

Combatting and avoiding the worst impacts of climate change requires steep and immediate reductions in global greenhouse gas emissions. Transport is a major source of emissions both globally and in Australia and must therefore be at the forefront of strategies to decarbonise our economy. Transport is Australia's third highest emitting sector, and the sector where emissions have increased most since 1990. The vast majority of Australia's transport emissions (85%) come from road transport and just under half (44%) from private passenger vehicles alone.[1]

Significantly reducing transport emissions is technically and economically feasible. While some sectors of the Australian economy will be harder to abate, solutions and technologies necessary to decarbonise transport have been successfully adopted across the world. With rapid policy intervention and Government support, the transport sector could reach near zero emissions by 2050.

For too long, Australia has had no nationally co-ordinated plan to reduce transport emissions. To achieve legislated emissions reductions targets, major changes, supported by Government action, will be necessary. These include reducing or avoiding transport by improving the efficiency of the transport system as a whole, shifting from energy intensive and highly polluting transport modes (privately owned cars) towards more environmentally friendly options (public transport, bicycles, micro mobility and walking), and improving vehicle and fuel efficiency. Not only will these changes results in emissions reductions, they could reduce the cost of living for many Australians, improve health outcomes and public spaces, and create new industries and high-quality jobs.

A national EV strategy is a necessary step towards realising this new transport system. EVs are described by the International Council for Clean Transportation as 'the single most important technology for decarbonizing the transport sector'.[2] Yet current policy settings have failed to secure supply of affordable EVs for Australians. Federal Government leadership, policy and funding is needed to fast track the uptake of EVs and phase out the sale of internal combustion engine (ICE) vehicles.

[1] Australian Government (2020) National Inventory Report, https://www.industry.gov.au/data-andpublications/national-inventory-reports

[2] ICCT (2020) *A Strategy to Decarbonize the Global Transport Sector by Mid-Century,* https://theicct.org/sites/default/files/publications/ICCT_Vision2050_sept2020.pdf

However, the development of Australia's National EV Strategy should sit within a broader clean transport plan. Australian's love affair with large vehicles, compounded with slow fleet turn over, constrain efforts to reduce emissions, even as EV sales increase. Efforts to electrify passenger vehicles will need to be accompanied by efforts to reduce car dependency and stop incentives and loopholes that favour large sports utility vehicles (SUVs) and utes.

Being a late-mover to EV technology, Australia has the benefit of hindsight. Australia's EV strategy should be informed by international experience, modelled on successful international policies, and learn from their pitfalls. Fuel efficiency standards have been adopted in approximately 80% of the global light vehicle market[3] and would significantly reduce transport emissions, while encouraging manufactures to bring affordable EV models to Australia and reduce fuel cost for Australian motorists. The introduction of mandatory fuel efficiency standards is a pivotal part of the national EV strategy, and can be modelled on successful overseas standards.

The Australia Institute's Climate of the Nation 2022 report shows that many of the policies needed to decarbonise transport and increase EV uptake are supported by the vast majority of Australians. (see separate attachment)

The Australia's Institute's main recommendations and responses to the consultation questions are below.

MAIN RECOMMENDATIONS

- **Introduce fuel efficiency standards**: These should be implemented as soon as possible – aiming for 100% of vehicle sales being electric by 2030 or 2035 at the latest and have integrity – be informed by independent emissions data with no loopholes for heavy vehicles or particular manufacturers.
- **Implement a transport decarbonisation strategy**: Alongside the EV strategy, Australia should have a national transport decarbonisation policy – including freight transport, active transport, etc. This should include a transport decarbonisation target, which could form part of Australia's Nationally Determined Contribution (NDC) under the Paris Agreement.
- **Regularly review and update the EV Strategy and targets:** Transport technology is developing at a rapid pace, as is the understanding of how best to reduce transport emissions. In particular, vehicle automation, V2X technology, and battery recycling, are

[3] Department of Infrastructure, Transport, Regional Development, Communications and the Arts (2021) *Fuel Efficiency Standards*, https://www.infrastructure.gov.au/infrastructure-transport-vehicles/vehicles/fuel-efficiency-standards

constantly progressing. As such, Australia's EV strategy should be flexible and responsive to these changes by providing for review periods of at least 5 years. Additionally, targets, such as fuel efficiency standards, should be regularly assessed and updated.

- **Conduct an audit of transport regulation and data collection by 2024:** Currently, Australia's transport policy straddles multiple federal departments and offices. An audit would identify the existing responsibilities and capacities of different departments and identify where closer collaboration or additional funding is necessary in order to streamline transport regulation and data collection.

- **Put equity front and centre:** Monitor the equity impacts of EV policy and the resulting distribution of EV uptake. Structure policies to ensure that low-income households and individuals can access EVs, eg. targeting subsidies at low-income households and making subsidies available at point of sale rather, than as post-sale rebates. Consider the establishment of a regional EV strategy, to ensure than regional areas are not left behind, and to address the obstacles to EV adoption that are unique to the regional context.

- **Provide targeted subsidies for EVs:** Provide temporary and targeted subsidies for EVs, targeted at low-income households.

- **Provide subsidies for e-bikes:** Provide subsidies for micro mobility options such as e-bikes. Consider a car scrapping program similar to those in Finland and France, where older, high-emitting vehicles could be traded-in, in exchange for a discounted EV or e-bike, or for free public transportation.

- **Stop incentives for fossil fuelled vehicles**: Remove the instant asset write-off provisions for commercial vehicles that subsidise heavy vehicles and utes for small business owners. Modify the Fuel Tax Credit scheme to remove or cap large incentives for diesel use, particularly in the mining industry.

- **Propose new funding for electric bus procurement:** All State bus fleets should be zero emissions buses by 2030. To assist, the Federal Government should propose new funding models for electric bus procurement and depot/charging infrastructure to address high upfront costs and risks associated with procurement.

- **Consider a feebate system:** If designed carefully, feebate systems can be a cost-neutral method of disincentivising higher emitting vehicles and incentivising lower emitting vehicles, thereby reducing passenger vehicle emissions. Consider the introduction of a feebate system similar to France's Bonus Malus and New Zealand's Clean Car Discount.

- **Change the Luxury Car Tax (LCT) definition of 'fuel efficient' vehicles:** Change the definition of a fuel-efficient vehicle under the LCT from 7L/100km to 0L/100km.

- **Expand the Commonwealth fleet target:** This should be expanded from the current target of 75% of Commonwealth vehicles being EVs by 2025 to 100% by 2030. Plug-in Hybrid EVs (PHEVs) should be excluded from this target.

- **Explore further revenue options:** Explore policy changes that increase government revenue while decreasing transport emissions. For example, the Australia Institute has proposed changes to the Safeguard Mechanism that introduce a voluntary, fixed-price polluter-payment of $25 a tonne. This would raise billions for the Commonwealth to direct to industry policy to build climate solutions including battery or electric bus manufacturing. Additionally, consider the changes to the LCT, a cost-neutral feebate system, and the removal of tax incentives for utes outlined above.

- **National charging infrastructure network integrated with the electricity grid:** Continue to invest in national charging infrastructure while expanding the capacity of the electricity grid and increasing the supply of renewable electricity.

- **Integrate EV and transport policy into Australia's liquid fuel security framework:** Demand side solutions to Australia's liquid fuel security, including fuel efficiency standards, EV uptake and mode shifting should be considered as part of the national response to fuel security. The Final Liquid Fuel Security Review should consider these measures and be released by as soon as possible.

- **Develop a tripartite council of government, unions and industry to accelerate domestic manufacturing**: As recommended by AMWU National Secretary Steve Murphy at the National EV Summit, a National Innovation Council would accelerate the uptake of EVs and co-ordinate industry policy, jobs, skills and training.

- **Leapfrog hybrids:** Emissions associated with PHEVs are highly dependent how they are charged and driven. PHEVs only reduce emissions if charged enough to be predominantly driven using the battery alone. For this reason, they should not receive public funding. PHEVs should be removed from the Clean Car Discount policy. The Commonwealth fleet should target 'zero emissions vehicles' instead of 'low emissions vehicles', excluding PHEVs. If fuel efficiency standards are introduced, hybrids should not receive any super credits or additional support.

Responses to consultation questions:

STRATEGY FRAMEWORK

Core objectives and goals

1. **Do you agree with the objectives and do you think they will achieve our proposed goals? Are there other objectives we should consider?**

The Australia Institute broadly supports the five core goals – making EVs more affordable, expanding EV uptake and choice, reducing emissions, saving Australians money on fuel, and increasing local manufacturing – and the three objectives to meet them – encourage rapid increase in demand for EVs, increase supply of affordable and accessible EVs to meet demand across all segments, establish the systems and infrastructure to enable the rapid uptake of EVs.

However, there is no goal to ensure an equitable transition to EVs, and it is unclear how the objectives would help meet the goal of increasing local manufacturing. Consider adding:

- 'Ensure that disadvantaged communities participate and benefit from the transition to EVs' as a core goal,
- 'Develop a coordinated industry policy for EV manufacturing' as an objective,
- a reference to 'powered by 100% renewable energy' to the final objective,
- and a reference to 'increasing fuel security' in addition to saving Australians money on fuel.

Additionally, only three barriers are identified – limited availability of affordable EVs, range anxiety and information. Another barrier to EV adoption in Australia is the current tax incentives that encourage the purchase of SUVs and utes.

In addition to the EV Strategy, a transport decarbonisation strategy should be developed. This would create an overarching framework for decarbonising the whole transport sector, including freight transport, and promote alternatives to private vehicle travel, including active transport and a national regulatory framework for Mobility-as-a-service.[4] It should include a transport decarbonisation target, that could form part of Australia's NDC under the Paris Agreement.

- The Australia Institute's Climate of the Nation 2022 shows:

[4] Quicke (2021) *Finland's Mobility as a Service Legislation, https://d3n8a8pro7vhmx.cloudfront.net/theausinstitute/pages/3938/attachments/original/1642042201/NPC_Factsheet_MaaS__WEB_.pdf?1642042201*

- 69% of Australians support the introduction of a transport decarbonisation strategy.
- 75% agree that the Australian Government should set industry-specific (i.e. transportation, agriculture, etc.) targets for reducing emissions.[5]

Implications of a delayed EV transition

2. What are the implications if other countries accelerate EV uptake faster than Australia?

Australia has become a dumping ground for inefficient vehicles due to the lack of fuel efficiency standards, and now has access to fewer EV models compared to other jurisdictions. If this continues, it will hamper efforts to bring affordable EV models to the Australian market.

Additionally, if Australia does not accelerate EV uptake, it will be difficult to achieve national emissions reductions targets. Transport sector emissions could be reduced to near zero with limited use of offsets for unavoidable transport emissions, if strong policy action is taken.[6]

Suitable indicators to measure progress

3. What are suitable indicators to measure if we are on track to achieve our goals and objectives?

Transport emissions: Set emission reductions targets for the whole transport sector and consider including these targets as part of Australia's NDC. Currently, 98% of country NDC's mention transport, but only 18% set transport CO_2 reduction targets.[7]

Electrification of public transport and passenger EVs: Target 100% of Australia's public bus fleets being electric by 2030, and target 100% of new passenger vehicle sales being electric by 2030 or 2035 at the latest.

EV affordability: Set targets for the number of EVs under particular price points, e.g., $40,000, and monitor the price parity of EVs and ICE vehicles in the Australian market.

[5] Quicke and Venketasubramanian (2022) *Climate of the Nation 2022,* https://australiainstitute.org.au/report/climate-of-the-nation-2022/

[6] Whitehead et al (2022) *FACTS: A Framework for an Australian Clean Transport Strategy,* https://transportfacts.org/wp-content/uploads/2022/06/FACTS-a-Framework-for-an-Australian-Clean-Transport-Strategy-2022.pdf

[7] International Transport Forum (n.d) *How serious are countries about decarbonising transport?*, https://www.itf-oecd.org/ndc-tracker/en

Charging infrastructure: Set national targets for the number of fast charging stations per kilometre on arterial routes and in urban areas, similar to targets set in Norway[8] and NSW[9], and ensure households in areas with limited off-street parking have close access to fast charging stations.

Commonwealth fleet electrification: Increase the Commonwealth fleet target to 100% EVs by 2030. This should only include zero emissions vehicles, not 'low emissions vehicles'.

Fleet turn over: Noting that fleet electrification is constrained by slow fleet turn over, monitor the dynamics of the whole fleet, including the percentage of vehicle kilometres travelled by EVs.

Domestic manufacturing: Set a target for the percentage of new vehicles sales that are domestically manufactured.

Equity: Measure the distribution of public subsidies for EVs and consider accessibility indicators to assess equity impacts.

Measures to increase affordability and accessibility

4. Are there other measures by governments and industry that could increase affordability and accessibility of EVs to help drive demand?

Direct financial incentives or subsidies are one of the most effective policies to drive EV uptake. According to the Bloomberg Policy Scorecard, "Policies lowering the upfront costs have been the most effective tool for driving early-stage adoption of passenger EVs and are offered in most G20 countries."[10] Government should consider targeted and temporary subsidies to assist with the purchase of an EV, e-motorbike or e-bike, helping bridge the price gap with ICE vehicles.

Additionally, a vehicle replacement program should be considered, to increase EV and e-bike uptake and accelerate the retirement of inefficient ICE vehicles.[11] Vehicle replacement programs achieve the biggest environmental benefit if they are limited to battery electric

[8] Quicke and Armistead (2020) *Ending the ICE age, Norway's plan to end internal combustion engine vehicles sales by 2025,* https://australiainstitute.org.au/wp-content/uploads/2020/12/P975-Norway-Australia-EV-policies-WEB.pdf

[9] NSW Government (2022) *NSW Electric Vehicle Strategy*, https://www.energy.nsw.gov.au/sites/default/files/2022-09/nsw-electric-vehicle-strategy-210225.pdf

[10] Bloomberg New Energy Finance (2021) G20 Zero-Carbon Policy Scoreboard, p 24. https://assets.bbhub.io/professional/sites/24/BNEF-G20-Zero-Carbon-Policy-Scoreboard-EXEC-SUM.pdf

[11] Naumov, Keith & Sterman (2022) *Accelerating vehicle fleet turnover to achieve sustainable mobility goals*, https://onlinelibrary.wiley.com/doi/10.1002/joom.1173

vehicles only (as opposed to 'low emissions vehicles').[12] Both Finland and France have used car scrapping schemes to incentivise mode shift, buy providing grants for motorists switching to electric vehicles, e-bikes or – in the case of Finland – public transport.[13]

Financial support from the Federal Government is also needed to transition to electric bus fleets by 2030. Electric buses are economically viable and operating internationally, yet just 0.1% of Australia's buses are electric.[14] The Government should propose new funding models to address higher upfront costs and risk associated with procurement of electric buses and establishment of electric depots and charging infrastructure.

The introduction of a Feebate system, similar to those in France and New Zealand, should be considered. A properly designed feebate system would be cost neutral, as the buyers of the dirtiest vehicles subsidise the buyers of the cleanest. The fee or rebate is benchmarked against a standard, so the cleaner the vehicle the higher the rebate, and the dirtier the vehicle the higher the fee (described in further below).

Vehicle replacement programs achieve the biggest environmental benefit if they are limited to battery EVs only.[15]

- The Australia Institute's Climate of the Nation 2022 shows:
    - 75% of Australians support Government subsidies to reduce electric vehicle purchase cost.
    - 75% support electrifying state bus fleets by 2030.
    - 74% support state governments buying or leasing only electric buses from 2025.

[12] Bieker and Mock (2020) *Green vehicle replacement programs as a response to the COVID-19 crisis: Lessons learnt from past programs and guidelines for the future*, https://theicct.org/sites/default/files/publications/Vehicle-replacement-programs-COVID-Jun2020.pdf

[13] Finland Ministry of Transport and Communications (2021) *Roadmap to fossil-free transport*, https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/163260/LVM_2021_19.pdf?sequence=1&isAllowed=y;
Reuters (2021) *Trading clunkers for electric bikes: France moves to offer financial incentive*, https://www.reuters.com/technology/trading-clunkers-electric-bikes-france-moves-offer-financial-incentive-2021-04-11/

[14] Thomson (2022) *'Low-hanging fruit': States lack ambition in energy transition, bus industry says*, https://www.smh.com.au/business/entrepreneurship/low-hanging-fruit-states-lack-ambition-in-energy-transition-bus-industry-says-20221007-p5bny5.html

[15] Bieker and Mock (2020) *Green vehicle replacement programs as a response to the COVID-19 crisis: Lessons learnt from past programs and guidelines for the future*, https://theicct.org/sites/default/files/publications/Vehicle-replacement-programs-COVID-Jun2020.pdf

- 79% support having the Australian Government provide funding to help bus drivers and mechanics transition to use electric buses.[16]

Low emissions vehicles

5. Over what timeframe should we be incentivising low emission vehicles as we transition to zero emission vehicles?

The Australian Government should focus incentives on zero emissions vehicles, excluding low emissions vehicles.

Emissions associated with PHEVs are highly dependent how the vehicle is charged and driven. PHEVs only reduce emissions compared to an ICE if charged enough to be predominantly driven using the battery alone, resulting in considerable gaps between real-world emissions values and reported emissions values for PHEVs.[17]

PHEVs should be removed from the Clean Car Discount policy. The Commonwealth fleet should target 'zero emissions vehicles' instead of 'low emissions vehicles', excluding PHEVs. If fuel efficiency standards are introduced, hybrids should not receive any super credits or additional support.

Lessons can be learnt from countries including Germany that are currently cutting subsidies for PHEVs on the basis that they no longer require public financing,[18] and jurisdictions that are phasing out the sale of new cars with internal combustion engines (including PHEVs), such as the ACT[19] and the European Union.[20]

Access to information

6. What information could help increase demand and is Government or industry best placed to inform Australians about EVs?

[16] Quicke and Venketasubramania (2022) *Climate of the Nation 2022,* https://australiainstitute.org.au/report/climate-of-the-nation-2022/

[17] Plotz et al (2020) *Real-world usage of plug-in hybrid electric vehicles: fuel consumption, electric driving, and CO2 emissions,* https://theicct.org/publication/real-world-usage-of-plug-in-hybrid-electric-vehicles-fuel-consumption-electric-driving-and-co2-emissions/

[18] Meza (2022) *Germany to end subsidies for plug-in hybrids earlier than planned,* https://thedriven.io/2022/04/20/germany-to-end-subsidies-for-plug-in-hybrids-earlier-than-planned/

[19] Lindell (2022) New internal combustion engine cars, light trucks will be banned in ACT from 2035 as part of electric transition, https://www.canberratimes.com.au/story/7822512/act-sets-date-forban-on-new-fossil-fuel-cars/

[20] France24 (2022) *EU strikes deal to ban consumption-engine cars by 2035,* https://www.france24.com/en/live-news/20221028-eu-strikes-deal-to-ban-combustion-engine-cars-by-2035

Currently, Australia's transport policy straddles multiple federal departments and offices. The Government should consider conducting an audit of transport regulation and data to establish the delineated responsibilities and capacities of different departments and identify where closer collaboration or additional funding is necessary in order to streamline transport regulation and data collection.

As EV policy develops, co-ordination of different state, territory and federal policy will become increasing important. The National Transport Commission (NTC) are tasked with interjurisdictional coordination of transport policy and as such, increased funding to the NTC should be considered.

Additionally, Government should provide data on EV sales and emissions independent from industry.

FUEL EFFICIENCY STANDARDS

Impact of fuel efficiency standards

7. Are vehicle fuel efficiency standards an effective mechanism to reduce passenger and light commercial fleet emissions?

Fuel efficiency standards are an effective mechanism to reduce fleet emissions. Mandatory fuel efficiency standards for new vehicles in the Australian market would also provide substantial benefits to consumers by way of lower fuel costs and increased access to EV models. Standards would reduce greenhouse gas emissions from the light motor vehicle fleet and improve Australia's fuel security by decreasing the transport sector's reliance on imported oil.

Australia Institute research finds that if fuel efficiency standards had been introduced in 2016:

- 9 million tonnes of CO_2 would have been prevented – similar to one year's worth of emissions from domestic aviation,
- $5.9 billion in fuel costs would have been saved, and
- 4000 megalitres of imported fuel could have been avoided.[21]

Rising transport emissions have been addressed in other jurisdictions through fuel efficiency standards or other efficiency measures such as feebate schemes, where fees are levied on inefficient vehicles to fund rebates on efficient vehicles.

[21] Quicke (2022) *Fuelling Efficiency,* https://australiainstitute.org.au/report/fuelling-efficiency/

According to the 2022 International Energy Efficiency Scorecard, which ranks 25 of the world's largest energy users on efficiency metrics,[22] Australia ranks third last in the transport category, in part due to lack of fuel efficiency standards. France scores highest on transport efficiency and has had a feebate system in place for over 14 years to regulate vehicle efficiency.

In 2014, the Australian Climate Change Authority (CCA) recommended the introduction of fuel efficiency standards to reduce the emission intensity of the Australian light vehicle fleet from 192gCO_2/km in 2013 to 105gCO_2/km in 2025. Modelling later undertaken by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) as part of the Ministerial Forum into Vehicle Emissions found these standards would have a net benefit to the economy of $13.9 billion by 2040 and save Australia $48.70 for every tonne of CO_2 avoided.[23]

- The Australia Institute's Climate of the Nation 2022 shows:
    - 68% of Australians support the introduction of national fuel efficiency standards in line with those in Europe.
    - 64% support requiring all new car sales in Australia to be zero emissions vehicles by 2035.[24]

Incentivising manufactures to bring EVs to the Australian market

8. Would vehicle fuel efficiency standards incentivise global manufacturers to send EVs and lower emission vehicles to Australia?

Fuel efficiency standards create an incentive to bring more efficient and electric models to market.

Currently, Australia is facing an EV supply problem. Waiting lists for EVs are long, driving second hand EV prices up. While this supply problem is not confined to Australia (internationally, supply chains are struggling due to lack of critical minerals and the COVID-19 pandemic) it is exacerbated in Australia due to the lack of standards. The limited number of EV models that are available globally will likely be placed in markets with fuel efficiency

[22] ACEEE (2022) International Energy Efficiency Scorecard, https://www.aceee.org/international-scorecard

[23] Australian Government (2016) Improving the efficiency of new light vehicles, https://www.infrastructure.gov.au/sites/default/files/migrated/vehicles/environment/forum/files/Vehicle_Fuel_Efficiency_RIS.pdf

[24] Quicke and Venketasubramanian (2022) *Climate of the Nation 2022,* https://australiainstitute.org.au/report/climate-of-the-nation-2022/

standards in place, to help manufacturers avoid facing fines. This has been made clear through calls from industry to introduce standards.[25]

The International Energy Agency (IEA) recommends ambitious fuel efficiency standards to accelerate the uptake of EVs worldwide, stating that 'Stringent [fuel] efficiency and/or CO_2 standards have promoted EV adoption in most leading EV markets and should be adopted by all countries seeking to hasten the transition to electromobility.'[26]

Fuel efficiency standards for heavy vehicles

9. In addition to vehicle fuel efficiency standards for passenger and light commercial vehicles, would vehicle fuel efficiency standards be an appropriate mechanism to increase the supply of heavy vehicle classes to Australia?

The recent Federal Government announcement slating the introduction of Euro VI standards for heavy vehicles (new trucks and buses) from 2024 is welcome and may increase access to electric trucks and heavy vehicles in Australia. Consultation with industry and experts is needed to determine whether fuel efficiency standards should be extended to heavy vehicles, in addition to the introduction of Euro VI emissions standards.

Design features

10. What design features should the Government consider in more detail for vehicle fuel efficiency standards, including level of ambition, who they should apply to, commencement date, penalties and enforcement?

In designing fuel efficiency standards for Australia, Government should consult with international experts on best practice principles, as well as using previous work undertaken by Government – including the Ministerial Forum on Vehicle Emissions Standards' *Draft Regulation Impact Statement on Fuel Efficiency Measures.*[27]

The principles of good regulatory design for fuel efficiency standards, laid out by the CCA, should be followed: environmental effectiveness, administrative and regulatory burden, equity, policy stability and credibility.[28]

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[25] Mercer and Mackintosh (2022) Electric vehicles are racing ahead overseas, so why isn't that happening in Australia? https://www.abc.net.au/news/2022-06-17/electric-vehicles-in-australia/101155228

[26] IEA (2022) Global EV Outlook, https://www.iea.org/reports/global-ev-outlook-2022

[27] Australian Government (2016) Improving the efficiency of new light vehicles, https://www.infrastructure.gov.au/sites/default/files/migrated/vehicles/environment/forum/files/Vehicle_Fuel_Efficiency_RIS.pdf

[28] Climate Change Authority (2020) *Designing an emissions standard for Australia*, https://www.climatechangeauthority.gov.au/sites/default/files/2020-06/Light%20Vehicle%20Report/CCA_TransportReport_Chapter5.WEB.pdf

The Australia Institute has previously recommended that fuel efficiency standards be:

- Strong and aligned with Australia's emissions reductions commitments, eventually leading to a ban on new fossil fuelled vehicle sales by 2030 or 2035 at the latest,
- implemented as soon as practicable,
- have integrity – standards should be mandatory, independent from industry, and based on independent and publicly accessible data.[29]

Australia is already behind other countries in vehicle efficiency. Australian fuel efficiency standards should be designed to put Australia on track to align with comparable nations like the United Kingdom, New Zealand and the United States.

The national average target should become stronger over time, and be aligned with Australia's broader emissions reductions targets, including Australia's commitments under the Paris Agreement. This should include regular reviews of the targets to ensure they are ratcheted down.

Several international forecasts show that, in order to achieve net zero emissions by 2050, new car sales must be 100% zero emissions vehicles by the early 2030s and by 2035 at the very latest.[30] Australian standards should therefore reduce to zero gCO_2/km by 2030 or 2035 at the latest– effectively banning the sale of new fossil fuelled vehicles.

Standards should be implemented as soon as practicable. While a phase in period may be necessary, this should not be used as a delay tactic. To expedite the process, standards could be designed using existing resources. Considerable work has already been done for modelling and designing fuel efficiency standards for Australia (discussed further below). Much of this work could inform the design of new standards, particularly the work of the CCA and the Ministerial Forum into Vehicle Emissions.

Fuel efficiency standards should have integrity. They should be implemented and enforced independently from industry. The CCA are set to be reinstated as a central advisory body to Government and would be well placed to implement these standards.

Standards should be mandatory with significant penalties for noncompliance. Current voluntary standards are set too low, and the lack of penalties for non-compliance means there is no incentive for vehicle manufacturers to meet the voluntary standards, which are industry-led and suffer from loopholes. Penalties should be set significantly higher than the cost of complying with the standard.

[29] Quicke (2022) *Fuelling Efficiency,* https://australiainstitute.org.au/report/fuelling-efficiency/

[30] IEA (2021) Global EV Outlook, P 55 https://www.iea.org/reports/global-ev-outlook-2021 Transport & Environment (2018) How to decarbonise European transport by 2050, https://www.transportenvironment.org/wpcontent/uploads/2021/07/2018_11_2050_synthesis_report_transport_decarbonisation.pdf

The World Light Vehicle Harmonised Testing Procedure (WLTP) should be used to measure vehicle emissions, as the preferred method over the New European Driving Cycle (NEDC) procedure.[31]

Additionally, super credits and off-cycle credits are not necessary to the functioning of a fuel efficiency standards system, but if included should be robust, transparent and limited to technologies with strong evidence of emissions reductions benefits.

The use of multipliers or super credits should be carefully considered. These are used to provide favourable accounting rules to particular technology, and further encourage the uptake of zero or low emissions vehicles, but can also act to obscure emissions results if not implemented transparently.

The Government should carefully consider the use of super credits in the Australian context. If super credits are awarded, they should be limited to EVs and be temporary.

The use of 'off-cycle' credits should be similarly critically evaluated. The limitations in accessing data and accurately testing the performance of these off-cycle technologies should be acknowledged, and Government should assess the integrity of overseas off-cycle credits before adopting them in Australia.

In considering which vehicle attributes to base the standards on, Government should seek to minimise the possibility of gaming the system by shifting vehicles into different categories. Additionally, the standards should incentivise the reduction of vehicle mass as a method of lowering emissions.[32]

More details are set out in the Australia Institute's report, *Fuelling Efficiency*[33] (attached).

ADDITIONAL ACTIONS

Policies complementary to fuel efficiency standards

11. What policies and/or industry actions could complement vehicle fuel efficiency standards to help increase supply of EVs to Australia and electrify the Australian fleet?

Other measures exist to reduce carbon emissions and increase the efficiency of a vehicle fleet. These can be implemented alongside fuel efficiency standards or as stand-alone

[31] Dornoff et al (2020) *On the way to "real-world" CO2 values: the European passenger car market in its first year after introducing the WLTP,* https://theicct.org/sites/default/files/publications/On-the-way-to-real-world-WLTP_May2020.pdf

[32] ICCT (2017) *Footprint versus mass: how to best account for weight reduction in the European vehicle CO2 regulation*, https://theicct.org/sites/default/files/CO2-reduction-technologies_fact-sheet_10102017_vF.pdf

[33] Quicke (2022) *Fuelling Efficiency,* https://australiainstitute.org.au/report/fuelling-efficiency/

policies, and include consumer awareness initiatives, higher fuel taxes, tax or registration fees with a CO_2 component, zero emissions vehicle sales targets, and incentives for efficient or zero emissions vehicles.

One method of incentivising zero and low emissions vehicles adopted by a number of countries is a feebate system.

Feebate systems levy a fee on the purchase of higher emitting vehicles and use the revenue to incentivise the purchase of zero or low emissions vehicles. They are easy to implement, self-funding schemes (if designed carefully), that provide more incentive than fuel efficiency standards to go above and beyond the required emissions reductions, due to the continuous incentive to improve emissions performance.

France's Bonus-Malus scheme is an example of a feebate system and provides a useful case study, having been established over 14 years ago.[34] According to the ICCT analysis of France's feebate system, step functions used to set levels of fees and rebates were initially too widely spaced, allowing manufactures to increase rebates substantially by registering vehicles with CO_2 emissions just below the step function. The system was later improved by reducing step functions, and phasing into a continuous function system. The French Bonus-Malus scheme has effectively shifted vehicle sales towards lower emitting and electric models, decreasing the average emissions of new vehicles.[35]

The New Zealand Government are also introducing a feebate scheme, the Clean Car Discount scheme.[36] The Clean Car Discount was introduced in July 2021, providing rebates for electric and plug-in hybrid vehicles. Rebates of up to NZD$7,500 are available for new vehicles, and NZD$3,000 for used vehicles. The second stage of the New Zealand scheme expanded the Clean Car Discount, charging a fee of up NZD$4,500 on new high emitting vehicles. As a whole, the feebate system is cost-neutral, as EV incentives are funded through fees on higher emitting vehicles.[37]

If designed carefully, feebate systems can be a cost-neutral method of disincentivising higher emitting vehicles and incentivising lower emitting vehicles, thereby reducing transport emissions. According to the ICCT, best practice feebate schemes are continuous and linear, with a pivot point set to make the system self-funding (rebates for low emissions

[34] ICCT (2018) Practical Lessons in vehicle efficiency policy: The 10-year evolution of https://theicct.org/practical-lessons-in-vehicle-efficiency-policy-the-10-year-evolution-of-frances-co2-basedbonus-malus-feebate-system/

[35] Monschauer & Kotin-Forster (2018) Bonus-Malus Vehicle Incentive System in France, https://www.euki.de/wp-content/uploads/2018/09/fact-sheet-bonus-malus-vehicle-incentive-system-fr.pdf

[36] ICCT (2022) General statement of ICCT's support to the Clean Vehicle Standards, https://www.transport.govt.nz//assets/Uploads/ICCT-review-of-New-Zealand-CO2-Clean-Vehicles-Billtargets-February-2022.pdf

[37] NZ Transport Agency (n.d) Clean Car questions and answers, https://www.nzta.govt.nz/vehicles/clean-carprogramme/clean-car-programme-questions-and-answers/

vehicles are funded entirely by additional fees on higher emitting vehicles), with a linear metric (CO2 emissions or fuel consumption).

While both fuel efficiency standards and feebates system share the same objective – reducing transport emissions - feebate systems directly affect the vehicle price faced by consumers, where as fuel efficiency standards apply to vehicle manufacturers.

Electric bikes, micro mobility, and motorbikes

12. Do we need different measures to ensure all segments of the road transport sector are able to reduce emissions, and if so what government and industry measures might well support the uptake of electric bikes, micro-mobility and motorbikes?

Specific measures, including subsidies should be introduced to support the uptake of micro-mobility options, particularly e-bikes.

A recent scoping review of 107 academic articles on e-bikes found that the use of e-bikes is associated with lower energy and emissions and can lead to significant modal shift.[38]

The Government should extend the Fringe Benefits Tax exemptions provided under the Electric Car Discount Bill to e-bikes, work with state and territory governments to provide loan schemes for e-bikes and consider a national bike subsidy scheme.

- The Australia Institute's Climate of the Nation 2022 shows:
    - 62% of Australians agree that governments should introduce policies that encourage moving away from cars and towards public transportation and active transportation (i.e. walking and cycling).
    - 62% support having a national subsidy scheme that provides 30% rebates for buying bikes, e-bikes or cargo bikes for work purposes.
    - 61% support making current subsidies and tax incentives for electric vehicles available for e-bikes and cargo bikes.[39]

SECOND HAND EVS

Increasing the number of second-hand vehicles

13. How could we best increase the number of affordable second hand EVs?

[38] Jenkins et al (2022) *What do we know about pedal assist E-bikes? A scoping review to inform future decisions*, https://www.sciencedirect.com/science/article/pii/S0967070X22002475#!

[39] Quicke and Venketasubramanian (2022) *Climate of the Nation 2022,* https://australiainstitute.org.au/report/climate-of-the-nation-2022/

To ensure a greater number of affordable second-hand EVs, the Government should increase the ambition of its commonwealth fleet target.

Currently, a Low Emissions Vehicle target for the Commonwealth fleet is set at 75% of new leases and purchases by 2025.[40] However, costing by the Parliamentary Budget Office shows that after 2025, the proportion of low-emissions vehicles is assumed not to change – staying at 75% up to 2033. In other words, no increased ambition for the next decade.[41]

Additionally, 'low emissions vehicles' are not defined, suggesting that the target is not limited to zero emissions vehicles.

The Commonwealth fleet target should be extended to 100% zero emissions vehicles by 2030 (excluding PHEVs), to increase the number of second-hand vehicles entering the Australian market.

STRENGTHENING AUSTRALIA'S COMPETITIVENESS IN THE EV VALUE CHAIN

Strengthening Australia's competitiveness across the EV value chain

15. What actions can governments and industry take to strengthen our competitiveness and innovate across the full lifecycle of the EV value chain?

The global transition to EVs and EV manufacturing is an enormous opportunity for Australia to rebuild its vehicle manufacturing industry.

At the National EV Summit in August, AMWU National Secretary Steve Murphy called on the Government to establish a tripartite council of government, union and industry to support the uptake of EVs and develop a long-term plan for EVs in Australia 'with a focus on industry policy, jobs, and skills and training'.[42]

The Australia Institute supports the creation of a National Innovation Council to strengthen Australia's competitiveness and innovation across the EV value chain.

[40] The Hon Catherine King MP (2022) *Accelerating Australia's electric vehicle potential*, https://minister.infrastructure.gov.au/c-king/media-release/accelerating-australias-electric-vehicle-potential

[41] Parliamentary Budget Office (2022) *Costings,* https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Budget_Office/Publications/Costings

[42] AWMU (2022) *AMWU calls for National Electric Vehicle Council to boost domestic manufacturing, https*://www.amwu.org.au/amwu_calls_for_tripartite_ev_council

Government should also consider publicly funded apprenticeships and traineeships in the EV manufacturing and associated sectors and nationally accredited transferable skills packages – as recommended by the Senate Enquiry into EVs.[43]

Additionally, the Australia Institute's Centre for Future Work has made a number of recommendations to realise Australia's EV industrial prospects, including developing an EV manufacturing industry commission, an EV industry powered by sustainable energy, adding value to Australian resources, developing EV supply chains and investing in essential skills.

These are discussed in more detail in the Australia Institute's Centre for Future Work report, *Rebuilding Vehicle Manufacturing in Australia: Industrial Opportunities in an Electrified Future* (attached).[44]

- The Australia Institute's Climate of the Nation 2022 shows:
    - 76% of Australians want to see government support to increase domestic manufacturing of zero emission electric vehicles, batteries and component parts.
    - 79% agree that manufacturing electric vehicles domestically would benefit the Australian economy, society, and environment.
    - 79% support having a long-term strategy to provide vocational training to ensure that there is a skilled workforce for the manufacturing of electric vehicles.
    - 70% support having a Manufacturing Industry Commission to explore Australia's prospects for producing electric vehicles domestically.[45]

Expanding Australia's domestic heavy vehicle manufacturing

16. How can we expand our existing domestic heavy vehicle manufacturing and assembly capability?

Australia is in a prime position to expand the manufacturing and assembly of heavy electric vehicles. Australia possesses many of the crucial elements for an EV manufacturing industry,

[43] Parliament of Australia (2019) *Recommendations*, https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Electric_Vehicles/ElectricVehicles/Report/b02

[44] Dean (2022) *Rebuilding Vehicle Manufacturing in Australia: Industrial Opportunities in an Electrified Future, https*://australiainstitute.org.au/wp-content/uploads/2022/02/Rebuilding_Vehicle_Manufacturing_in_Australia_FINAL_march.pdf

[45] Quicke and Venketasubramanian (2022) *Climate of the Nation 2022,* https://australiainstitute.org.au/report/climate-of-the-nation-2022/

including mineral reserves, a skilled workforce and industrial base – however, government support is needed to fully realise this opportunity.[46]

The Government should carefully balance the emissions reduction objectives of the EV strategy with the effect on Australian workers. Some organisations have recommended changing the regulation of truck widths to align with standards used internationally, thus increasing access to imported electric trucks.[47] If this is considered, it should happen in close consultation with domestic manufacturers, noting the potential impact this could have on them. Changes that lead to an influx in imported EVs could have negative impacts on domestic suppliers if not properly co-ordinated. These impacts could be mitigated by longer lead-in times for these changes, and close consultation with industry.

Expanding domestic manufacturing to other vehicle classes

17. Is it viable to extend Australian domestic manufacturing and assemble capability to other vehicle classes?

With appropriate Government support, it is feasible to extend domestic manufacturing and assembly to the regular vehicle market. The National Innovation Council proposed by the AMWU would be well placed to consider the measures needed to support this.

ESTABLISH THE SYSTEM AND INFRASTRUCTURE TO ENABLE RAPID UPTAKE OF EVS

Creating revenue and driving demand for EVs

18. Are there other proposals that could help drive demand for EVs and provide a revenue source to help fund road infrastructure?

While revenue from fuel tax has not directly funded Australian road infrastructure since 1959,[48] the shift to electric and more efficient vehicles will reduce government revenue from fuel tax. However, there are a number of actions the Government could considered to

[46] Dean (2022) *Rebuilding Vehicle Manufacturing in Australia: Industrial Opportunities in an Electrified Future, https*://australiainstitute.org.au/wp-content/uploads/2022/02/Rebuilding_Vehicle_Manufacturing_in_Australia_FINAL_march.pdf

[47] Australian Trucking Association and Electric Vehicle Council (2022) *Electric trucks: keeping shelves stocked in a net zero world,* https://electricvehiclecouncil.com.au/wp-content/uploads/2022/01/ATA-EVC-Electric-trucks_Keeping-shelves-stocked-in-a-net-zero-world-1.pdf

[48] Webb (2000) *Petrol and Diesel Excises, https*://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp0001/01RP06

drive EV demand and provide a revenue source. Additionally, the Government should look to the Norwegian approach to EV policy, where, simply put, the Government incentivises the things they want to encourage and taxes the thing they want to discourage.[49]

A federal road user charge could be considered. This should be implemented at the national level to deliver a co-ordinated approach across jurisdictions. The charge should include all externalities of motor vehicle use including air pollution, road damage, congestion and greenhouse gas emissions. EVs could be exempt from the charge for a temporary period, until they reach a significant percentage of national vehicles sales.

Government should also remove tax concessions and subsidies for SUVs. The latest report on light vehicle emissions intensity by the NTC shows that increasing sales of utes and SUVs are counteracting the climate change benefits of increased EV sales.[50] Through the Instant asses write-off scheme, Australia's current tax system allows small business owners to write off the costs of new utes and heavy-duty vehicles, thus incentivising their purchase. These tax concessions should be removed.[51]

Government could also consider reforming the Fuel Tax Credit system. The Fuel Tax Credit rebate is one of the top 20 most expensive programs in the Federal Budget, rebating the fuel excise tax to businesses that consume diesel off public roads. The biggest beneficiary is the mining industry, which receives the largest share of the total and also has the largest individual claims. Not only does this subsidy encourage the use of a fossil fuels, it also primarily benefits the fossil fuel industry.[52] Government could consider limiting the amount of credits an entity can claim, thereby restricting the large claims from the mining industry without overly affecting other industries like farming and agriculture, where claims tend to be smaller.

Changes to the LCT system could increase government revenue and incentivise EV uptake. Changes to the LCT were proposed by Senator Storer in the Chairs Additional Comments to the 2018 Senate Enquiry into Electric vehicles,[53] and recently costed by the Parliamentary

[49] Quicke and Armistead (2020) *Ending the ICE age, Norway's plan to end internal combustion engine vehicles sales by 2025,* https://australiainstitute.org.au/wp-content/uploads/2020/12/P975-Norway-Australia-EV-policies-WEB.pdf

[50] National Transport Commission (2021) *Carbon Dioxide Emissions Intensity for New Australian Light Vehicles 2021*, https://www.ntc.gov.au/sites/default/files/assets/files/Carbon%20Dioxide%20Emissions%20Intensity%20for%20New%20Australian%20Light%20Vehicles%202021.pdf

[51] Saunders and Denniss (2021) *One tonne of jobs and growth,* https://australiainstitute.org.au/wp-content/uploads/2021/06/P1089-One-tonne-of-jobs-and-growth-WEB.pdf

[52] Quicke (2022) *Fuel tax credit,* https://australiainstitute.org.au/post/fuel-tax-credit/

[53] Parliament of Australia (2019) *Report,* https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Electric_Vehicles/ElectricVehicles/Report

Budget Office.[54] The Australia Institute recommends redefining fuel-efficient vehicles from 7L/100km to 0L/100km.

Additionally, changes to Australia's broader climate and energy policy could be used to create additional revenue streams. For example, the Australia Institute has proposed changes to the Safeguard Mechanism that introduce a voluntary, fixed-price polluter-payment of $25 a tonne. This would raise billions for the Commonwealth to direct to industry policy to build climate solutions, including battery or electric bus manufacturing.[55]

- The Australia Institute's Climate of the Nation 2022 shows:
    - 55% of Australians support removing subsidies for large four-wheel drives through the instant asset write-off scheme, compared to 20% who oppose.[56]

Other national policies

19. What more needs to be done nationally to ensure we deliver a nationally comprehensive framework for EVs?

Preparation for battery recycling should be undertaken. According to the IEA, battery recycling could account for 10% of battery supply by 2040.[57] The International Transport Forum recommends designing for recyclability early in the EV transition and increasing data collection on battery chemistries, collection and traceability.[58]

Government should also prepare for vehicle automation by working closely with the NTC to prepare Australian roads and regulations for autonomous vehicles.[59] Additionally, further preparation for Mobility-as-a-Service and Vehicle-to-Everything technologies should be considered.

[54] Parliamentary Budget Office (2022) *Costings,* https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Budget_Office/Publications/Costings

[55] Armistead et al (2022) *Safeguarding fossil fuels: Submission,* https://australiainstitute.org.au/post/climate-safeguards-mechanism-risks-safeguarding-new-gas-coal-submission-the-australian-governments-safeguard-mechanism-is-at-risk-of-safeguarding-new-gas-and-coal-projects-and-driving-inc/

[56] Quicke and Venketasubramanian (2022) *Climate of the Nation 2022,* https://australiainstitute.org.au/report/climate-of-the-nation-2022/

[57] International Energy Agency (2022) The Role of Critical Minerals in Clean Energy Transitions, https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf

[58] International Transport Forum (2021) *Cleaner Vehicles: Achieving a Resilient Technology Transition,* 67, https://www.itf-oecd.org/sites/default/files/docs/cleaner-vehicles-technology-transition.pdf

[59] National Transport Commission (2020) *Automated Vehicle Program Approach, https://www.ntc.gov.au/sites/default/files/assets/files/Automated%20vehicle%20approach.pdf*

Ensuring all Australians benefit

20. How can we best make sure all Australians get access to the opportunities and benefits from the transition?

To ensure all Australians are brought along for this transition, consideration should be given to groups that have historically been left behind in technological and transport transitions – including regional Australians, lower incomes households and individuals, and people with disability.

Government should consider the development of a separate regional EV strategy to address the barriers to EV adoption that are unique to regional areas. For example, smaller, lighter and short-ranged vehicles are suited to urban environments but may not be practical for regional areas.

Any incentives or subsidies should consider equity in their design. The Government's main policy – the Electric Car Discount – is targeted at employees and may benefit higher income earners more. The likely distribution of benefits from this policy should be modelled.

Government should also consider ways to mitigate unfair impacts of the EV transition. For example, Greenlining provides guidance on equitable EV policies, and suggests that incentives targeting low incomes rather than capping incentives based on vehicles price leads to more equitable outcomes, as does providing subsidies at the point of sale rather than rebates.[60] People on lower incomes are more responsive to incentives and these are likely to become more important for EV adoption overtime.[61]

Additionally, revenue from measures including road user charging and fuel tax could be directed to address equity issues.

- The Australia Institute's Climate of the Nation 2022 shows:
    - 72% of Australians believe that electric vehicles subsidies should be aimed at people on lower incomes.[62]

[60] Greenlining (2022) *Electric vehicles for all: an equity toolkit,* https://greenlining.org/resources/electric-vehicles-for-all/#tab2-section3

[61] Jenn et al (2020) *An in-depth examination of electric vehicle incentives: Consumer heterogeneity and changing response over time, https://www.sciencedirect.com/science/article/abs/pii/S0965856418311091?via%3Dihub*

[62] Quicke and Venketasubramanian (2022) *Climate of the Nation 2022,* https://australiainstitute.org.au/report/climate-of-the-nation-2022/

Attachments

The following Australia Institute reports are attached to this submission:

- *Fuelling Efficiency*
- *Rebuilding Vehicle Manufacturing in Australia: Industrial Opportunities in an Electrified Future*
- *Climate of the Nation 2022*
- *Over a Barrel: Addressing Australia's Liquid Fuel Security*