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**Re: National Electric Vehicle Strategy – Consultation Paper Sept 2022**

Dear Francesca

The Energy Efficiency Council (EEC) thanks you for the opportunity to comment on the National Electric Vehicle (EV) Strategy Consultation Paper.

For the last decade, the EEC has advocated for the development of a substantial National EV Strategy. A strategy is essential to not just accelerate the adoption of EVs, but also prepare our grids and cities for them.

EVs and energy efficiency are intimately connected. EVs are generally at least three times as efficient as Internal Combustion Engine Vehicles (ICEV) at converting energy into movement. The efficiency of EVs means that even charging EVs using electricity from our current grid will deliver greenhouse gas abatement relative to using an ICEV, and the emissions savings will increase as our grid moves towards zero emissions.

The EEC's detailed submission is attached, and this letter highlights six key recommendations:

- Australia needs to encourage, and prepare for, the rapid electrification of transport, including light vehicles, trucks and public transport. Accelerating the adoption of EVs is essential to not just reduce local air pollution and help Australia reach its net zero emission target, but also ensure that Australia is prepared for a rapid shift in global automotive manufacturing. If we do not support a moderate-paced shift to EVs now, we will not be prepared for a very rapid transition in what vehicles are available from global supply chains.
- The Australian Government should introduce fuel efficiency standards for new vehicles, including both EVs and ICEVs. The EEC recommends that Australia adopt Corporate Average Fuel Efficiency (CAFE) standards that are similar to our major trading partners, particularly the European Union.
- The Australian Government should also support the adoption of EVs by investing in the roll-out of charging infrastructure; requiring over 50 per cent of its own fleet of vehicles to be EVs by 2025 and supporting financing models.
- The National EV Strategy needs a goal to '*Optimise the relationship between EVs and grids*'. We need to prepare our grids to support EVs, but we also need to make sure that we maximise the benefits of connecting EVs to the grid (e.g. using their batteries for vehicle-to-grid services if possible) and minimising the costs (e.g. managing the impacts of additional electricity demand).

- The National EV Strategy needs a goal to *'Use the shift to EVs to make cities better'*. To gain the full benefits of EVs, we should:
  - o Encourage vehicle-as-a-service (VaaS), where people can use EVs for periods ranging from minutes to years through models such as rentals and subscriptions. VaaS will aid mobility and lower the number of vehicles that need to be purchased and parked;
  - o Support the use of EVs to link people to mass transit (e.g. commuters taking EVs to train stations); and
  - o Build cities that allow for the use of car-sized EVs but increase the priority given to walking, cycling, public transport and small electric vehicles (e.g. bicycles and scooters). Cities that are built around active transport, mass transit and micro-mobility are more liveable, healthy and functional; and
- The National EV Strategy needs a goal to *'benefit vulnerable households'*, which includes ensuring the affordability of both transport and our electricity grid. Key issues will include access to lower-cost EVs, VaaS, mass transit and active transport.

The EEC looks forward to working closely with the Department of Climate Change, Energy, the Environment & Water as it finalises the National EV Strategy and starts development of fuel efficiency standards for new vehicles. For further information please contact me on [rob.murray-leach@eec.org.au](mailto:rob.murray-leach@eec.org.au) or 0414 065 556.

Yours sincerely



Rob Murray-Leach

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**Energy Efficiency Council submission to the  
National Electric Vehicle Strategy**

## Summary

As noted in the introductory letter, the EEC recommends that:

- Australia accelerate the adoption of electric vehicles (EVs) and prepare for the impacts of EVs on the country.
- The National EV Strategy needs to add goals and objectives to:
  - *'Benefit Vulnerable households'*
  - *'Optimise the relationship between EVs and electricity grids'*; and
  - *'Use the shift to EVs to make our cities better'*.
- The Australian Government should introduce fuel efficiency standards for new vehicles, including both EVs and Internal Combustion Engine Vehicles (ICEVs).
- The Australian Government should also support the adoption of EVs by:
  - a. Requiring over 50 per cent of its own fleet of vehicles to be EVs by 2025; and
  - b. Investing in the roll-out of charging infrastructure; and
  - c. Supporting the uptake of financing models for EVs.

## 1. Strategy framework

### **Q1. Do you agree with the objectives and do you think they will achieve our proposed goals? Are there other objectives we should consider?**

The Consultation Paper proposes goals and objectives that focus on accelerating the uptake of EVs and expanding Australia's manufacturing in the EV supply-chain. The EEC supports these goals, but other goals and objectives must be added to the strategy relating to:

- Maximising the benefits of the shift from ICEVs to EVs; and
- Minimising the potential costs associated with EVs, which largely relate to the impacts on the electricity grid the impacts of cars on our cities regardless of their powertrain.

The replacement of ICEV with EV is almost entirely an upside for Australia, and essential to ensure that Australia reaches its net zero greenhouse gas emission target. However, the way that we adopt EVs and integrate them into our electricity grids and our cities will affect the scale of both the costs and the benefits in the shift from ICEVs to EVs. Accordingly, the EEC recommends adding three goals and related objectives to the strategy, which are set out below.

#### *Proposed Goal - 'Optimise the relationship between EVs and grids'*

We need to prepare our grids to support EVs, but we also need to make sure that we maximise the benefits of connecting EVs to the grid and minimise the costs.

The first issue is when and where EVs charge – if EVs charge during the middle of the day and are in charged from distributed solar panels it will deliver substantial benefits, by:

- Utilising energy that might otherwise be shed, and
- Reducing the amount of money that needs to be spent on upgrading the distribution grid.

Conversely, when EVs charge in locations that require the expansion of distribution infrastructure (e.g. at offices that don't have solar panels), or at times when generation is limited (e.g. during the evening), it will add significant costs to our energy system that will be passed on to consumers.

The second issue is taking advantage of the potential benefits of Vehicle-to-Grid (V2G) services. Battery EVs have large amounts of storage onboard which could be used to store energy from periods of excess renewable generation and feed it into the grid during periods when generation is lower than demand. There are still significant uncertainties about how many consumers will want to participate in V2G and the volumes of V2G storage that could be available, and those uncertainties include both technical issues and social and cultural factors affecting the patterns of EV use.

To address the goal of '*Optimise the relationship between EVs and grids*' the EEC recommends that governments urgently fund further studies and trials into the potential for V2G and interactions between EVs and the grid. The earlier that we

understand these issues in detail, the better we can prepare for, and influence, these interactions.

*Proposed Goal/Objective - 'Use the shift to EVs to make cities better'*

Over 85 per cent of Australians live in urban areas, and the structure of Australian towns, cities and transport systems encourage long distance intra-urban car travel.<sup>1</sup>

Key factors that drive high use of cars include:

- Poorly designed urban layout, including low building density;
- Greater priority to cars in street-scape, such as a much higher proportion of public space to roads than pavements, pedestrian crossings, cycle-paths and public transport; and
- Much greater investment in road infrastructure than pedestrian, cycling and public transport infrastructure.

Cars are an extremely valuable part of our transport system, but the way that our cities prioritise car-based transport results in a much higher proportion of trips being made by car than in other countries, and many households are almost entirely dependent on cars for their mobility. When cities heavily prioritise car-based transport it has negative impacts that include:

- Negative impacts on exercise and health;
- Reduced mobility for people that cannot drive or afford a car. Almost 30 per cent of Australians don't have a driver's license;
- Reduced urban functionality and amenity; and
- Strains on household budgets.

The shift from ICEVs to EVs will deliver major benefits in terms of reduced air pollution, greenhouse gas emissions and transport costs. However, the shift from ICEV to EV will not, by itself, reduce the other impacts of prioritising cars in our cities. Complementing the adoption of EVs with improvements in our cities that encourage greater use of public transport, walking, cycling and small-scale EVs (e.g. electric scooters and bicycles) would deliver improved mobility, health, amenity and urban functionality.

EVs have a number of advantages of ICEV that could facilitate the reduction of car-dependency in Australia if we make clear policy choices now. To gain the full benefits of EVs, Australian governments should:

- Encourage vehicle-as-a-service (VaaS), which include car-share schemes, car rentals and taxi-like services. EVs have a higher upfront cost but much lower running costs than ICEV, and are well-suited to VaaS. Greater use of VaaS will mean higher 'vehicle productivity' (km of travel per dollar invested in vehicles),

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<sup>1</sup> World Bank 2018 *Urban Population - % of total population – Australia*, World Bank, Washington DC <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=AU>

reduced use of space for parking and better mobility for people that cannot drive or afford cars.

- Support the use of EVs to link people to mass transit (e.g. commuters taking EVs to train stations); and
- Build cities that allow for the use of car-sized EVs are also well-suited for walking, cycling, public transport and small-scale EVs.

#### ***Proposed Goal - 'Benefit Vulnerable Households'***

The National EV Strategy needs a goal to '*benefit vulnerable households*', which includes ensuring the affordability of both transport and our electricity grid. This goal will feed into a wide range of issues, including access to lower-cost EVs, VaaS, mass transit and active transport.

## 2. Actions

### **Q2. What are the implications if other countries accelerate EV uptake faster than Australia?**

The rapid uptake of EVs in other countries is causing global automotive manufacturers to phase out the production of ICEVs and accelerate the production of EVs. If other countries accelerate their uptake of EVs it will accelerate the transition in the global automotive industry, which could result in the number of ICEV models available declining rapidly in the late 2020s.

As a consequence, if Australian consumers don't start to accelerate their uptake of EVs now, they will likely be forced to rapidly shift to EVs later this decade. An accelerated uptake of EVs now will give consumers, builders, the electricity industry, governments, urban planners and regulators more experience in integrating EVs into our cities and electricity systems prior to a very rapid transition to EVs.

In other words, Australia needs to accelerate its adoption of EVs now to gain the experience to avoid very high costs from an almost overnight shift to EVs later this decade.

### **Q3. What are suitable indicators to measure if we are on track to achieve our goals and objectives?**

The EEC has no comment at this time.



### 3. What more can we do to meet our goals and objectives?

#### **Q4 Are there other measures by governments and industry that could increase affordability and accessibility of EVs to help drive demand?**

The EEC has no comment at this time.

#### **Q5 Over what timeframe should we be incentivising low emission vehicles as we transition to zero emission vehicles?**

The EEC has no comment at this time.

#### **Q6 What information could help increase demand and is Government or industry best placed to inform Australians about EVs?**

The EEC has no comment at this time.

#### **Q7 Are vehicle fuel efficiency standards an effective mechanism to reduce passenger and light commercial fleet emissions?**

Vehicle fuel efficiency standards are an incredibly effective mechanism to reduce passenger and light commercial fleet emissions. The EEC strongly recommends that the Australian Government introduce fuel efficiency standards for passenger and light commercial vehicles.

Australia is virtually the only developed country that doesn't protect consumers with fuel-efficiency standards for light vehicles (cars, vans and small trucks). The lack of standards means that Australia's light vehicle fleet is amongst the least fuel-efficient in the world, and this has costs Australians billions of dollars in wasted fuel.

Fuel-efficiency standards for light vehicles were introduced almost 40 years ago in the United States (US), Japan and many European Union (EU) countries, and have subsequently been legislated in most developed economies, and major emerging economies. It is notable that standards are in place in all countries with major automotive industries, including China, Germany, Japan and the US. Many countries have recently, or are in the process of, tightening their fuel-efficiency standards for light vehicles.

Fuel efficiency standards deliver major savings for consumers. Just the increase in fuel efficiency standards in the EU since 2000 has reduced consumers' fuel bills by over 15 per cent in countries like France. Recent strengthening in fuel efficiency standards in Japan have cut fuel bills by 35 per cent, saving Japanese consumers a whopping \$24 billion in 2016 alone.<sup>2</sup>

The US introduced Corporate Average Fuel Economy (CAFE) standards for light vehicles in 1978. Rather than set a minimum standard for every car, CAFE standards set a minimum average fuel efficiency for all vehicles sold by a manufacturer in the US. A CAFE standard allows manufacturers the flexibility to sell a mix of vehicles that are more and less fuel-efficient, but also encourages improvements in efficiency

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<sup>2</sup> International Energy Agency 2017, *Energy Efficiency Market Report 2017*, IEA, Paris.

across all models. The CAFE standard approach is generally used by other major economies.

The International Energy Agency (IEA) has strongly recommended that Australia introduce strong fuel-efficiency standards for vehicles. If Australia introduced CAFE standards for light vehicles that are comparable to European standards, it would save individual drivers \$600 to \$900 on fuel a year, delivering billions in net benefits by 2040.

In summary, Australia is long overdue to introduce fuel-efficiency standards for light vehicles and the EEC strongly recommends that they are introduced as soon as possible.

**Q8 Would vehicle fuel efficiency standards incentivise global manufacturers to send EVs and lower emission vehicles to Australia?**

Introducing CAFE standards would strongly encourage manufacturers to sell more EVs in Australia. When a manufacturer subject to a CAFE standard sells an EV, it gives them more flexibility in the other models that they sell in that country. Introducing a CAFE standard with a clear and declining forward trajectory would be even better at encouraging the sale of EVs, as it would provide a clear signal to manufacturers and local automotive retailers to increase the number of EVs that they sell in Australia.

**Q9 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?**

Globally, fuel-efficiency standards for heavy trucks are not as advanced or widespread as standards for light vehicles. However, fuel-efficiency standards for heavy trucks have been introduced in some major economies including Canada, China, India, Japan and the US.<sup>3</sup>

The EEC strongly recommends that the Australian Government undertake or fund research to determine the costs and benefits of introducing fuel efficiency standards for heavy vehicle classes in Australia.

**Q10 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?**

The EEC recommends the introduction of CAFE standards as soon as possible that are comparable with, and aligned to, European standards.

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<sup>3</sup> International Energy Agency 2017, *Energy Efficiency Market Report 2018*, IEA, Paris, p. 51.

**Q11 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?**

To complement fuel-efficiency standards, Australia should also increase the quality of fuel sold in Australia and increase the standards for light vehicles that relate to air pollution.

The EEC commends the Australian Government for bringing forward Improved fuel quality standards to 2024. Reducing the maximum amount of sulphur allowed in unleaded petrol from 150 parts per million to 10 parts per million will allow manufactures to sell ICEV with systems that support higher fuel efficiency and air quality.

The EEC also urges the Australian Government to require new light vehicles sold in Australia to meet Euro 6d standards that produce less local air pollutants.

**Q12 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?**

The EEC has no comment at this time.

**Q13 How could we best increase the number of affordable second hand EVs?**

The EEC has no comment at this time.

**Q14 Should the Government consider ways to increase the supply of second hand EVs independently imported to the Australian market? Could the safety and consumer risks of this approach be mitigated?**

The EEC has no comment at this time.

**Q15 What actions can governments and industry take to strengthen our competitiveness and innovate across the full lifecycle of the EV value chain?**

The EEC has no comment at this time.

**Q16 How can we expand our existing domestic heavy vehicle manufacturing and assembly capability?**

The EEC has no comment at this time.

**Q17 Is it viable to extend Australian domestic manufacturing and assembly capability to other vehicle classes?**

The EEC has no comment at this time.

**Q18. Are there other proposals that could help drive demand for EVs and provide a revenue source to help fund road infrastructure?**

The EEC recommends that the Australian Government should support the adoption of EVs by:

- Requiring over 50 per cent of its own fleet of vehicles to be EVs by 2025;
- Investing in the roll-out of charging infrastructure; and
- Supporting finance models that assist in the uptake of EVs.

**Q19. What more needs to be done nationally to ensure we deliver a nationally comprehensive framework for EVs?**

The EEC has no comment at this time.

**Q20. How can we best make sure all Australians get access to the opportunities and benefits from the transition?**

The EEC has no comment at this time.