KYLEA TINK MP
Independent Federal Member for North Sydney

Committee Secretary
House of Representative Standing Committee
On Climate Change, Energy environment and Water
PO Box 6021
Canberra ACT 2600

5th April 2024

Dear Committee Secretary,

Re: Inquiry into Australia's transition to electric vehicles

I welcome this Inquiry. The transition to electric vehicles (EVs) is a major shift in Australia's transport system, and demands careful planning, effective incentives, and prudent regulation.

Key recommendations:

- Ensure the transition to EVs is part of a broader transition away from private car ownership towards active and public transport use.
- Ensure the establishment of a more equitable EV market so the benefits of electrification can be experienced by all.
- Ensure a national approach to charging infrastructure, data sharing and standards including payment methods and interoperability.
- Ensure the provision of relevant information to consumers, including vehicle fuel efficiency and CO_2 emissions.
- Ensure the charging standards and tariff structures exist to enable and encourage bidirectional and smart charging.

A well implemented transition to electric vehicles is a major opportunity for households, businesses and communities, potentially leading to cost reductions, employment opportunities, emissions reduction, better energy security, cleaner, quieter streets and better health outcomes. The forthcoming introduction of the New Vehicle Efficiency Standard (NVES) should greatly assist with the availability and model choice of new EVs.

However, it's critical that we don't consider EVs in isolation, but as part of an ecosystem including broader mobility, urban design, built environment, energy systems, behaviours and societal factors. In particular, in urban settings we should be prioritising active and public transport above the use of private vehicles.

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The Avoid-Shift-Improve approach to sustainable urban transport planning is an appropriate framework to follow, whereby policies aim to avoid the need to travel or reduce the distance travelled though transport demand management and land-use planning, shift transport modes from the most energy consuming and inefficient modes towards more environmentally friendly modes (particularly non-motorised and public transport), and then seek to improve vehicle and fuel efficiency and optimise transport infrastructure.

An overall reduction in the vehicle fleet due to modal shift is of far more benefit than simply switching the fleet to EVs, from multiple perspectives including operational and embodied emissions, reduction in urban sprawl, reduction in land and resources devoted to vehicle parking, and massive public health benefits.

Additionally, equity consideration must be front and centre of the transition to electric vehicles. Equity consideration should be incorporated in the design of EV policies and incentives, and efforts made to ensure infrastructure is equitably dispersed and low-cost charging is made available in lower income residential areas.

It is paramount that the transition to EVs does not facilitate further inequities in the transport system or impose higher transportation cost on low-income households.

The follow sections respond directly to the Inquiry Terms of Reference:

The establishment of resources, systems and infrastructure required to support transition to EVs.

Interoperability

A key barrier to EV uptake is access to easy-to-use, reliable and convenient charging infrastructure. I consistently hear from members of my community they are interested in purchasing an EV but are put-off by the multiple connector types, charging ports, apps, and payment options, as well as out-of-order public charging stations. In short – the lack of interoperability standards is holding them back from making the switch the EVs.

Minimum operating standards and availability (uptime) requirements for public EV charging infrastructure are vital to boost public confidence in the transition and streamline the EV charging, use and ownership experience. The work of the Energy and Climate Ministerial Council is a good start in this regard and should be considered by the Inquiry as an essential step to support the transition to EVs.

Cross-jurisdictional coordination

As I noted in my submission to the Senate Inquiry on Residential Electrification, it is important that we turbocharge the transition to EVs with a level of coordination between Commonwealth, State/Territory and local governments. It's critical that we take a systems approach to the EV transition given that it involves changes not just to the automotive industry, but to vehicle owner behaviours, electricity grids, distribution networks and tariff structures, deployment of charging infrastructure, building design and wiring, and more.

Coordinated, cross-agency consultation and planning will be necessary, including across the three levels of government, distribution network service providers (DNSPs), EV charging companies and EV manufacturers. Urban charging strategies are highly situational and depend on factors such as the local mix of housing types, parking arrangements, public transport availability, commuter behaviours and the presence of organisations with varying fleet charging requirements.

My electorate of North Sydney is typical of inner-urban areas, with housing stock comprised of approximately 60% strata, and accordingly relatively more renters (since typically about two thirds of apartments are rented vs one third of semi & detached dwellings). It is essential that charging strategies and policies consider access for the full range of housing situations and make it as easy as possible for anyone (owner vs renter; house vs apartment; off-street vs on street parking) to own and charge an EV.

Clear labelling requirements

The New Vehicle Efficiency Standard will help Australians save money when using new cars, however, the information consumers need in order to purchase more efficient and lower impact vehicles is often hard to find.

Fuel efficiency information is located on car windscreens but 95% of consumers now start their car purchasing journey with online search - twice as many people start online than at a car yard. Car importers spent $661m on advertising in Australia in 2023, most of this online.

Measures are required to help motorists save money now, and to promote the use of smaller, cheaper and more efficient vehicles through clear labelling of fuel consumption and emissions on all car advertising including online.

Managing the impact on electricity consumption and demand – and distribution networks

Supporting V2G

Electric vehicles are potentially a massive asset available to the grid operator and distribution network service providers at next to no capital cost.

The expected widespread adoption by EV manufacturers of vehicle to grid capabilities (V2G, i.e. bidirectional charging) in the next few years provides a massive opportunity to extend the role of EVs from simply soaking up excess renewable generation, to giving some of it back on demand. An Australian EV fleet would be equivalent to the storage capacity of multiple "Snowy 2" pumped hydro schemes, and even better, it will be highly distributed in urban areas, potentially able to help smooth out both grid-level firming issues and local network congestion issues.

However, for that asset to be realised, we need to ensure the charging standards and tariff structures are there to enable it. Bidirectional smart chargers must become the norm but are presently priced well outside the range of most buyers.

Tariffs must provide a suitable incentive for vehicle owners to want to participate.

There's little point offering a 10 cent per kWh EV feed in tariff if the owner has paid 70 cents at a public fast charger. In practical terms there will also be a limit on the extent to which a vehicle owner would want their battery to be discharged during a V2G event, which will vary depending on how full their battery is at the time.

Government should incentivise and provide opportunities for EV owners to charge their vehicles in the middle of the day to match the emerging "duck curve" of excess solar electricity generation; while *disincentivising* charging during the early evening peak. Given wholesale electricity prices are increasingly negative during peak solar generation, there is already an incentive for consumers who have exposure to spot market prices to charge vehicles at this time. To the extent more retailers can offer differentiated charging targeting EVs this would help.

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Such tariff plans (which are beginning to be offered by some electricity retailers), however, rely on the identification of EV loads, which is difficult if someone in a home or apartment or office building car park is simply plugging a vehicle into a standard three pin socket.

Another critical piece of the puzzle is ensuring that EV charging can be centrally orchestrated by relevant stakeholders, including:

- Commercial and strata building managers (to ensure available switchboard capacity is not exceeded;
- Electricity retailers, distribution network service providers (DNSPs) (to smooth out local supply/demand imbalances; and/or
- Grid operators (to smooth out overall generation vs demand imbalances).

To avoid EVs becoming a millstone on the grid, we need smart charging to become the norm, to be able to remotely throttle charging (at the level of individual chargers) to avoid exceeding generation or network capacity. If someone really needs their car charged to a certain level by a certain time, they might be prepared to pay a dynamic premium tariff (akin to Uber surge pricing). It is essential that government policies support and enable these types of capabilities and consider equity.

The opportunities for expanding EV battery manufacturing, recycling, disposal and safety, and other opportunities for Australia in the automotive value chain to support the ongoing maintenance of EVs

Manufacturing and Recycling

It would be fantastic to see Australia embrace extended producer responsibility (EPR) across a range of products including vehicles (both ICE and EV). This could dramatically improve recovery rates and improve recovery rates for a wide range of metals and other materials, including battery components.

It is acknowledged that enforcing EPR across national boundaries and with regard to Australia's small market is complex and could increase purchase costs for Australian consumers. However, Australia should encourage the development and adoption of EPR on the global stage.

Safety

With regard to EV battery safety, it's important to recognise that the data indicates that battery electric cars are actually safer than hybrid or internal combustion engine vehicles. Data aggregator EVFireSafe.com, operating with an Australian Defence Department grant, finds that "a traction battery is less likely to ignite than ICE vehicles." Battery fires are most likely in conjunction with or following physical damage to the battery pack. While they burn hotter than an ICE vehicle fire and require adaptive approaches for firefighters, it is critical to dispel misplaced consumer fears.

I strongly recommend that the Australian Building Codes Board review the data and assess potential changes to improve occupant safety of buildings with car parking facilities.

The sector where battery fires *are* on the rise is electric micro-mobility devices such as eBikes and eScooters. Compared with an electric car's battery, which has sophisticated battery management, cooling and charging systems, these small devices often have cheaply made batteries with no management system. Owners may substitute the supplied charger or cables; manufacturing standards are sometimes lax; the batteries are exposed to physical damage; and consumers have not been adequately educated on the risks or appropriate handling procedures. Clearly, this is an area requiring greater scrutiny, public education and regulation.

Another important safety consideration is accident performance. According to evHub, "Every electric vehicle tested in the last five years has received a 5-star ANCAP safety rating. EVs hold the top three positions in NHTSA rollover safety testing. EVs have a lower centre of gravity which creates better, safer handling. No gearbox or engine means there is less chance of intrusion during a crash." A transition to EVs could reduce road accident injuries and fatalities for vehicle occupants.

A much-overlooked aspect of public health and safety is the reduction in air pollution associated with the wholesale transition to electric vehicles. The University of Melbourne's Climate Futures team found that "current vehicle emissions in Australia may cause:

- 11,105 premature deaths in adults per year [vs 1,266 road accident fatalities in 2023 and over 4,000 severe injuries in 2022];
- 12,210 cardiovascular hospitalisations per year;
- 6,840 respiratory hospitalisations per year;

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- 66,000 active asthma cases per year."

Significantly reducing this harm would be an outstanding achievement, which would have profoundly beneficial societal, health and economic consequences.

The impact of Australia's limited EV supply compared to peer countries.

At only 7.2% EV sales in 2023, Australia significantly lags EV leaders such as Norway (82% BEV sales) and China (22% BEV sales), and trails the EU, UK and USA in EV deployment. On the other hand, there has been an explosion in the range of EV models on sale in Australia, and the availability of stock as Covid-related supply chain issues have eased. For example, at the Everything Electric show held in Sydney during February, I was advised that wait times for some popular models had decreased to as little as days or a few weeks. The forthcoming, long overdue adoption of the Federal New Vehicle Efficiency Standards will only improve choice and supply of BEVs.

As a vast and sparsely populated country, "range anxiety" has been an often-cited inhibitor to the adoption of BEVs. However, it is largely a myth. Australia is highly urbanised, and the typical Australian registered vehicle is driven less than 15,000km per year - only 40km per day. For the vast majority of urban Australian commuters and families, long journeys that might require charging mid-journey are the exception, accounting for perhaps one or two percent of trips taken in a particular year. Assuming off-street parking (which according to JET Charge is available to around 70% of households), the vast majority of charging needs can be met using Level 1 chargers - a normal 3 pin socket, placing no more strain on the grid than running a 2 bar electric heater.

There are genuine concerns for people living in regional and remote areas of Australia, who may need to drive long distances to reach even basic services such as shops or medical care. While there are potential advantages in being able to charge remotely-based vehicles using grid or off-grid electricity, the range limitations of today's affordable models (particularly those suitable for bush use such as utes and 4WDs) combined with as yet limited public charging options in some areas, currently make EVs a difficult choice for such applications.

However, I do expect we will see continuing improvements in the deployment of regional and remote chargers; EV battery range; cost per range; range to battery weight ratios; and charging speeds, as more innovation occurs.

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Any other relevant matters

It is critical that we get this right. Learning from the experiences of many countries who lead Australia in their extent of EV and charging infrastructure deployment, but mindful of our leadership of distributed solar, clear strategy and coordinated policies across the three levels of government and considering geographic and demographic needs is essential. The EV transition can deliver massive economic, health, safety, energy security, cost of living and other benefits, but it won't if it is left to chance.

I would be delighted to take up the discussion directly with the Inquiry.

Yours Sincerely,

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