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**House of Representatives Standing Committee on Climate Change, Energy,
Environment and Water “Inquiry into the transition to electric vehicles”**

bp Australia welcomes the opportunity to provide a submission to the “Inquiry into the transition to electric vehicles” (the Inquiry).

bp has a long and proud history of operations in Australia that reaches back to 1919. Over the 100 years bp has supplied Australia with affordable, reliable and secure fuels through our network of 1,200 branded retail sites across the country. Approximately 350 of these are company-owned, and more than 800 are owned and operated by our independent business partners. We employ and support over 5,000 jobs across Australia and have operations in every state and territory.

bp is aiming to be a **net zero** company by 2050 or sooner and to help the world get there too. This means increasing our efforts to decarbonize our entire global operations (scope 1 & 2); our oil and gas production (scope 3); and in the energy products we sell (life-cycle emissions intensity).

Decarbonising transport is a key focus of bp’s global strategy where we see **electric vehicle (EV) charging**, biofuels, and hydrogen being used across the economy including for transport. A mix of low carbon technologies will be needed during the transition across different modes and sectors such as mining, manufacturing and maritime. These are expected to change over time as we charge towards 2050 when low carbon technologies becoming increasingly more scalable, competitive, and affordable.

bp strongly advocates for policies that make reducing transport emissions more attractive to investors while providing choice and balance for customers so they can make the journey that’s right for them. In Australia we have publicly advocated and supported:

- legislation to **reduce greenhouse gas emissions** to 43% below 2005 levels by 2030, and net zero emissions by 2050;
- the **National EV Strategy** and a **National Vehicle Efficiency Standard (NVES)** to grow supply and support Australians having access to a broad range of modern vehicles including electric vehicles; and



- most recently we publicly called for a **Low Carbon Fuel Standard** to grow demand for low carbon solutions to support Australia’s energy transition both on the ground and in the air.

Our submission covers off our ambitions with electric vehicle charging for both light and heavy vehicles, our experience and challenges as a **charging point operator (CPO)** building, owning and operating a high speed public charging network across Australia; and recommendations to government to balance out the transition for Australians while keeping pace towards achieving net zero.

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Electrifying transport in Australia

The transport sector accounts for around 18 per cent of Australia's national CO₂ emissions. Electric vehicles, when powered by low carbon electricity, play a significant role in reducing emissions. bp believes electrification of transport is key to helping the world get to net zero and we've made it one of our transition growth engines.

bp's ambition is to install 100,000 charge points worldwide by 2030 and at the time of publishing we have installed over 29,000. Our ambition is centred on a belief that high-speed charging will be the key enabler of any country's electrification of mobility.

In late 2022, bp launched **bp pulse (our EV charging business)** in Australia and committed to install 600 charge points by 2025. To date we've installed some 120 charge points in under 18 months. bp pulse is building out before demand to give Australian drivers confidence as they journey from home and back.

About bp pulse

bp pulse brings to Australia more than a decade of global experience in delivering EV charging infrastructure and experience as a Charge Point Operator (CPO) across countries including the UK, China, Germany, USA, India, Spain and Portugal.

We've over 29,000 charge points globally and expect to have more than 100,000 by 2030. Our focus is on high-speed charging with ~79% of our charge points today being rapid (>50 kW) or ultra-fast (>150 kW).

Our largest and most-powerful EV charging hub in the UK is based at the National Exhibition Centre (NEC) in Birmingham offering 30 ultra-fast and 150 fast charge points enabling 180 EVs to charge simultaneously. This is one of nine gigahubs (and growing) in the UK.

Our China business recently began operating a 'megahub' in Shenzhen with 30,000 kilowatts of charging capacity across 480 charge points. In Germany, 100% of our network is made up of charge points that can charge at 50 kW or faster. We are already installing 350 kW chargers in multiple markets.

Bp Pulse are installing charging infrastructure on existing bp operated forecourts, but also building dedicated EV-only hubs in strategic, safe, high-demand locations with the value-added services (food & drink, toilets and other amenities) which drivers demand. In addition to our 'on the go' charging infrastructure, we are also installing home chargers in the UK and Germany.

We're also working with fleets, including the UK's national postal service (Royal Mail) and Uber in multiple countries, installing charging infrastructure in their key locations.



Addressing the Inquiry's Terms of Reference

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

The transition to EVs is contingent on two key priorities:

- Firstly – affordable and resilient supply of EVs to the Australian market; and
- Secondly – a public network of rapid and ultra-fast EV chargers.

The four-Ps of EV charging

bp's early lessons building and operating EV-charging infrastructure across different global markets and Australian jurisdictions, is best framed around four Ps - **Power, Products, Permissions and Place**.

Power

*High **power** grid connections remain one of the biggest bottle necks in delivering charging infrastructure; it is the main obstacle to growing this nascent industry.*

- Design a **low carbon fuel standard** that could include EV charging infrastructure alongside biofuels and other low carbon options.
- Harmonise and streamline network connections to minimise delays in connecting chargers and reduce network costs associated with operating across jurisdictions.
- Introduce supportive tariff structures for CPOs. Where demand is relatively low, allow CPOs to opt out of demand/capacity charges to minimise cost pressure until markets mature through to 2030 to sustain the ongoing operation of public charging.
- Support second lines of supply to commercial premises and large gigahub developments.
- Enable Vehicle to Grid (V2G) deployment at scale and trial different types of incentives/tariffs to encourage consumer participation to enable EV use as a distributed energy resource that can support energy system security.

Product

*EV charging hardware and software are new, fast-evolving, **products** in a high-paced market. Governments regulating too soon can stifle innovation and customer choice.*

- Immediately legislate a **New Vehicle Efficiency Standard** to provide choice and access to a broad range of efficient and modern vehicles including EVs.
- Focus government incentives to fast and ultra-fast public charging to accelerate the transition and provide EV drivers with confidence, secure and reliable supply.
- Leverage scaled EV demand and fleet turnover by incentivising commercial EV fleets.
- Ensure product technical standards and regulation are implemented in step with the global market. The more notice the market has of new standards, the higher likelihood of compliance without destroying value in existing technology. *For example we caution against the National Measurement Institute's proposal for an Australian specific certificate of approval for EVSE installation and use at this early stage.*

- Set minimum standards for uptime based on available power capacity to ensure a reliable supply.

Permission

*Planning, **permitting** and legal consents can be slow, bureaucratic, localised and fragmented. These constraints present significant impairments to rapid roll-out of infrastructure – increasing costs and making it unviable for charge point operators.*

- Establish a government and industry board to steer and hasten a regulatory pathway for EV charging implementation.
- Release a national publication of post-code level EV registration data to help CPOs service demand centres – such as the Victorian government’s initiative.
- Allow EV charging infrastructure to be fast-tracked through local and state planning systems – such as the NSW government initiative in some planning frameworks.
- Make network capacity data nationally available so CPOs can anticipate demand and coordinate development planning with local and state governments.

Place

*Governments’ role is vital to a well-coordinated roll-out of infrastructure, identifying and incentivising for EV charging in **places** where there is no business case such as regional and remote Australia.*

- Unlock government land for dedicated EV ‘gigahub’ charging through public-private-partnership arrangements (or similar) – such as the ACT Government’s Public Charging Infrastructure Fund.
- Target government funding towards public fast EV charging in regional and destination tourist centres where sporadic demand exists but remain commercially challenged – various state governments have incentivised some infrastructure but not to a scalable level to give confidence.
- Identify demand hubs for public charging including the adequacy of installed capacity and if not, what policy, regulatory or other investment incentives may be leveraged and accelerated in that place for both light and heavy vehicles.

2. The impact of moving from ICE vehicles, including fuel excise loss, existing supply chains and the environment

In our submission to Australia’s National EV Strategy, bp advocated for ambitious and fair policy settings based on the following principles:

- Is equitable, ensuring no one is left behind in the energy transition (we note fuel excise is a matter for governments but unchecked cross-subsidies can cause distortion and unintended policy outcomes).
- Be market-based to deliver the most efficient outcomes with GHG abatement as the central driver – a well-designed **low carbon fuel standard** or similar scheme will help suppliers and customers make informed choices.

- Balances an approach to encourage new technologies to turn over the vehicle fleet, alongside approaches and technologies to decarbonise the existing vehicle fleet.

There's no doubt electrification is key to decarbonising transport. In the [2023 Energy Outlook](#), in road transportation, the number of electric cars and light duty trucks increases from around 20 million in 2021 to between 550-700 million (30-35% of that vehicle parc) by 2035 in its Accelerated and Net Zero scenarios and to around 2 billion vehicles (around 80%) by 2050 (Figure 1).

The role of oil in transport declines as the world switches to lower-carbon alternatives

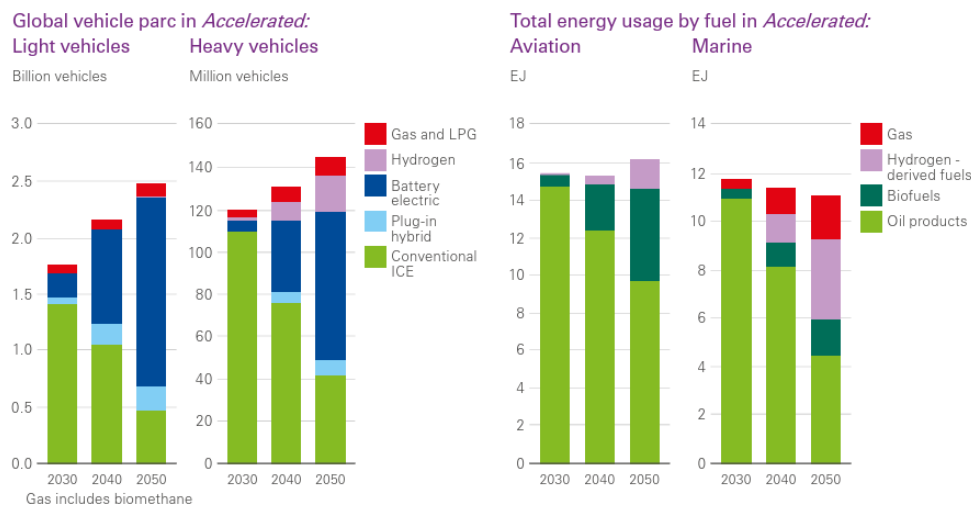


Figure 1 - bp energy outlook 2023, pp.43

However, policy that focuses on decarbonising new vehicles via electrification alone will not be enough. It will take many decades for Australia's vehicle stock to turn over, and throughout this time the use of the internal combustion engine will continue.

It's true that increased EV penetration will gradually impact the revenue collected from fuels excise, however – **EVs are not the only consideration in this matter**. Broader *and ongoing* vehicle efficiency improvements also hold implications for government's clear role to fund sustainable transport infrastructure. We recommend the government revisit the Productivity Commission [report](#).

bp urges the Government to consider implementing a low carbon fuel standard. Given the relatively minor adjustments required to existing fuels infrastructure and the potential abatement opportunity, biofuels can make a significant impact to abate GHG emissions from Australia's transport emissions together with electrification.

A low carbon fuel standard

A low carbon fuel standard (LCFS) is instrumental for decarbonising transport energy, driving the use of renewable fuels and reducing transport emissions. LCFSs are market-based and include all transport energy technologies, providing policy support to liquid and gaseous fuels, and electricity for EV charging – incentivising economically efficient GHG savings. LCFSs have been successfully implemented in California, Oregon and Washington in the USA, Brazil, and Germany (not called an LCFS but the same in principle).

Fuels compete based on their carbon intensity with transport energy supplier obligated to meet an overall carbon intensity reduction target in a given year. This carbon intensity target trajectory decreases over time, which sends market signals for investors and customers on the need for ongoing, scaled decarbonisation.

The efficacy of the policy as a mechanism that incentivises investments in new EV charging sites is evidenced in the aforementioned LCFS markets. Accordingly, we are seeing LCFSs (or similar policies) proposed for implementation in Europe, such as the Netherlands, and the US- Illinois, Michigan and New York.

In jurisdictions where the policy is in place it is our experience that it has helped improve the economic case for EV sites that would otherwise not have passed a final investment decision with the parallel benefit of incentivising deployment of the renewable fuel needed to decarbonise the legacy fleet.

3. Opportunities for fuel savings

bp believes that Australian motorists will make different choices to reduce their transport emissions.

bp believes existing retail sites will continue their important role in serving the community by offering a range of liquid fuels including Opal (supplied in remote Australia), bp ultimate, diesel, as well as EV charging - to cater to all motorists during the energy transition.

bp charges forward on EV journey with AGL

In June 2023 [bp and AGL](#) launched an initial offer for customers in New South Wales to receive special charging rates at bp pulse rapid and ultra-fast chargers when they sign up for AGL's new EV home energy plan. This is part of bp's global commitment to provide customers and partners with the energy and mobility they want, where they want it, and to encourage uptake and break down the barriers for people considering an EV.



4. Electricity consumption and demand

bp estimates that while over 90 per cent of EV drivers are expected to charge at home, the role and visibility of public fast charging will be critical to mainstream EV uptake. It is an enormous task for CPOs to build out ahead of demand, where significant commercial risks are faced, exacerbated by inefficient development and operation costs including delays in network connections, and unsupportive tariff structures.

To date, government funding has been needed to de-risk private investments in public charging, but faster network connectivity, tariff reforms and, ultimately, sufficient demand will be critical to the ongoing commercial viability of public EV charging. EVs can, in future, also bring benefits for grid optimisation, manage/support loads, avoid network costs and overinvestment.

If costs are not suppressed in the early stages of this nascent market, poor customer outcomes in the form of higher costs, reduced charging reliability and uptime may result. Costly tariffs can inhibit efficient signals for investment in local CPO networks including for ongoing maintenance.

Importantly, a material volume of liquid fuel consumption (especially diesel) takes place 'off-road' by Australia's large resource extractive industry, with major participants already signalling an intent to electrify. Doing so however will require focussed effort in the rapid and very large-scale rollout of firmed renewable generation and transmission infrastructure – often in remote parts of Australia, such as the Pilbara. In addition to the enabling infrastructure (ports, roads, housing) required for this effort, clarifying regulatory and cost-recovery arrangements is important.

Lastly when designing policy for increased electrification of transport, a broader view of (increasing) electricity demand is needed.

Network charges in the United Kingdom

The United Kingdom has recently changed electricity standing charges (the fixed regulated cost of electricity) to increase charges attached to *capacity available* rather than *capacity used*. According to ChargeUK, the UK's CPO trade body, this has resulted in standing charges increasing in some cases by over 300%.

As charging infrastructure is currently installed in advance of demand, increasing costs for capacity before sites have sufficient utilisation creates a negative investment signal that either results in some sites becoming uneconomic, or requires a significant reduction of power availability – with fewer chargers installed at lower power per site.

Connection and capacity costs need to be designed to encourage further infrastructure investment, with the understanding this investment is already taking place in advance of consumer demand.

5. EV Supply and Supply Chain Opportunities

With other countries implementing mandates and placing targets for zero or lower emissions light and heavy-duty vehicles, we observe emerging supply constraints across many markets. Both a global and domestic approach is needed.

In the case of heavy-duty vehicles, the pace of the transition, regulations and policies for heavy trucking does not match passenger vehicles or light commercial vehicles. Any improvement to heavy-duty vehicle GHG emissions standards should ideally be on a technology agnostic 'well to wheel' basis allowing ICE vehicles operating on renewable fuels to be part of the interim solution on the path to deep decarbonisation via battery electrification and hydrogen.

Trucking OEMs have yet to commit to any timeframes domestically, risking Australia falling behind without some form of target. While targets are welcome, policy should not outpace technology and manufacturing capability – there needs to be flexibility and resilience built into the supply chain while managing the readiness of local supply chains to service OEMs (i.e. after market components). There are several regulatory opportunities that can support more supply of low emissions and zero emissions trucks, local supply and refuelling infrastructure and sources (i.e. hydrogen).

bp recommends:

- Leveraging innovation and technological advances with open and competitive global supply chains.
- Using targets and incentives to help drive down technology costs.
- Providing targeted local manufacturing support to guarantee safety, reliability, and after-market support.
- Setting targets for OEMs to increase supply.
- Streamlining accreditation via Australian Design Rules (ADR) to align with international standards and increase the purchase range of electric heavy vehicles that can be imported to Australia including:
 - increasing the minimum truck width from 2.5 to 2.55 metres, with additional consideration for refrigerated trucks that may require up to 2.60 metres and
 - amending steer axle mass limit to 8 tonne and increasing the rear axle mass limit to 1.5 tonne for electric trucks. In the longer term, the steer axle mass limit should increase to 8.5 tonnes, with the rear axle mass limit increasing by 2 tonnes.

6. International comparisons

Countries with developed road transport decarbonisation policy frameworks have consistently implemented three key policy approaches to provide consumer confidence to purchase EVs, and industry confidence to invest in EV development and the necessary infrastructure:

- Tailpipe emissions standards and purchase incentives (modernising the fleet);



- Transport energy decarbonization regulation (decarbonising the fuels/electricity); and
- Infrastructure and production support (getting the chargers and tankage in place)

Fleet turnover

In the EU and US, tailpipe CO₂ emissions standards have been implemented, in-effect mandating majority EV sales from the early 2030s. This is designed to ensure new vehicles sold are electrified, and over time transition the vehicle parc to EVs. Some regions, such as the UK and California, have also implemented zero emission vehicle (ZEV) mandates to further ensure that enough EVs are being brought to market for consumers by requiring OEMs to sell a set proportion of vehicles sold as EVs. In the UK, this requirement is 22% in 2024, rising incrementally to 80% by 2030.

Some regions (US West Coast, EU, UK) have also adopted so-called 'ICE phase outs' by 2035. While definitions of prohibited vehicles vary between these regions, the intent is to clearly signal to OEMs the cessation of sales of ICE-*only* light duty vehicles by 2035. It should be noted that in some regions targets are facing political challenge, and ultimately require enabling policies (such as set out in this paper) to be achieved.

Many EU member states and the US offer subsidy and incentive programmes (one-off grants, vehicle tax relief) for EVs to lower their upfront cost and encourage consumer take-up. This has proven particularly effective in markets like Norway where EVs now make-up the vast majority of new vehicle sales.

Infrastructure support

Countries have recognised the importance of building-out charging infrastructure ahead of vehicle demand and provide various forms of upfront financial support to accelerate charger deployment. For example, the US National Electric Vehicle Infrastructure program offers US\$ 4bn over 5 years to states to award to EV charging projects while the UK offers 'matched' funding to local authorities under the Local Electric Vehicle Infrastructure fund to support public EV charger deployment.

In addition, most (if not all) countries with EV policies are continuing to implement means of reducing – or at least increasing the consistency of - the planning and connection processes. This is currently the source of significant delays to EV charger roll-out in many markets.

Concluding remarks

bp Australia welcomes this opportunity to engage with the parliamentary committee on not just the transition to Electric Vehicles, but the broader topic of how EVs alongside other initiatives can decarbonise Australia's transport emissions.

We hope that our 100 year history supplying fuels across Australia, our swift rollout of fast-speed public EV charging infrastructure domestically, and our global insights from operating some of the largest EV-charging businesses globally can assist the inquiry.

We look forward to further engagement with you.