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Vehicle Emissions Working Group
The Department of Infrastructure and Regional Development
GPO Box 594
Canberra ACT 2601
By email: vemissions@infrastructure.gov.au

Dear Working Group,

AGL submission to the Vehicle Emissions Discussion Paper

AGL Energy (AGL) welcomes the opportunity to make a submission in relation to the Commonwealth Government's *Vehicle Emissions* Discussion Paper ('the discussion paper').

AGL is one of Australia's leading integrated energy companies, operating across the supply chain with investments in coal-fired, gas-fired, and renewable electricity generation and upstream gas production and storage projects. AGL is also a significant retailer of energy, providing energy solutions to over 3.7 million customers in Victoria, New South Wales, South Australia and Queensland. AGL's New Energy division has been established to focus on the delivery of distributed energy services and solutions. Our goal is to be a leader in the transformation of how customers engage with energy, the development of new business models and innovative energy offerings to customers, as well as the integration of new technologies and digital capabilities.

AGL New Energy works with customers of all sizes (residential, business and networks) to understand their energy requirements and design tailored solutions. We offer customers 'beyond the meter' energy solutions, new and emerging technologies including energy storage, electric vehicles, solar PV systems, digital meters through our subsidiary business Active Stream, and home energy management services delivered by digital applications. We are also working with customers to develop a network services capability involving load management solutions.

AGL supports the Commonwealth Government's commitment to work towards a global agreement to limit global warming to less than 2°C above pre-industrial levels (2 degree goal). Achieving this outcome will require complete decarbonisation of the world economy by 2100 and very substantial emission reductions by mid-century. AGL supports the use of both regulatory and market-based policy mechanisms to deliver the required emission reductions, and targeted policies may be required for key industries, including power generation and transport. Alternative transport, including Electric Vehicles (EVs) and Natural Gas Vehicles (NGVs) can help to reduce greenhouse gas emissions from the transport sector over time, and along with policies to improve

energy productivity, can meaningfully contribute to the transition to a decarbonised economy.

Our detailed responses to the discussion paper follow.

The case for alternative fuels and electric vehicles

AGL supports the role of alternative transport fuels and technologies in increasing the diversification of Australia's fuel usage. Australia is becoming increasingly reliant upon imports of petroleum products for domestic transportation and mining applications, with net imports forecast to reach almost 90% of Australian demand by 2035[1]. Substituting some of this use of imported fuels for domestically produced alternatives can offer significant advantages, such as improving Australia's energy security, reducing air pollution, reducing greenhouse gas emissions, and boosting economic productivity. Economic advantages can include domestic job creation, lower fuel costs for businesses and individuals, improvements to Australia's terms of trade, more royalty payments for governments, and improved utilisation of existing electricity and natural gas infrastructure.

Economic analysis conducted by Energeia[2] has shown that when a broader range of costs and benefits associated with these vehicles are accounted for, uptake of EVs and NGVs at an optimal level could add over $1 billion to Australia's Gross Value Add (GVA), and reduce greenhouse gas emissions by an extra 3.3 million tonnes CO_2e over 20 years, relative to adoption forecasts under existing market and policy conditions (i.e. a 'do nothing' scenario). These benefits primarily arise due to the substitution of petroleum fuels with EVs, which would represent an estimated 22% of Australia's light passenger vehicle fleet by 2035[3].

Figure 1 presents AGL's forecast scenarios for the uptake of plug-in electric vehicles (PEV) in Australia to 2035. A range of factors will influence whether Australia ultimately follows a high, medium or low uptake pathway, including technology development, customer preferences and market conditions (including oil prices). However international experience from recent years suggests that supportive government policies can also play a very important role in establishing these markets. Based on current conditions, it appears that Australia will fall well short of achieving economically optimal uptake of alternative vehicles in the coming years and in doing so will forego opportunities for greater economic growth, energy productivity and environmental outcomes. AGL supports governments (at all levels) assessing policies that have increased the adoption of EVs in global markets for potential implementation in Australia to help overcome adoption barriers and to help to bridge the gap between likely, and optimal uptake rates.

[1] Derived from statistics and forecasts from the former Bureau of Resources and Energy Economics

[2] *Review of Alternative Fuel Vehicle Policy Targets and Settings for Australia*, Prepared by Energeia for the Energy Supply Association of Australia, July 2015.

[3] NGVs, including those powered by Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) can be substituted for diesel vehicles for several applications, including light commercial, buses, mining, and heavier freight vehicles.

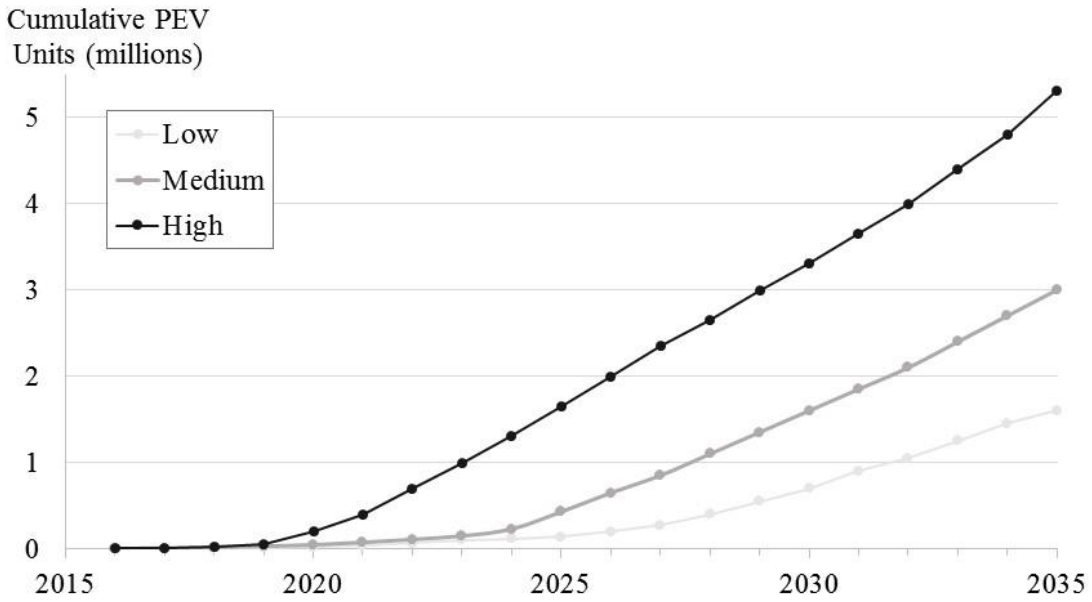

Figure 1: Uptake scenarios for Plug-in Electric Vehicles in Australia

While the global EV market is growing, Australian customers currently have limited access to electric vehicles, prices remain high and choice low. Feedback from manufacturers indicates the Australian market is not being targeted as there is a lack of policy support. For example, Nissan Australia, having previously expressed frustration with the lack of government support for importers of zero-emission cars[4], are holding back on local market introduction of the second-generation Nissan LEAF[5].

Setting a national target (ref. Discussion Paper Q.27)

Establishing a national target for EV uptake is the centerpiece of most international government policy support frameworks, with other policies and their relative settings crafted to achieve the target. AGL supports Australia setting a national target for the adoption of EVs that is consistent with broader economic, environmental and security objectives.

Energeia's analysis suggests that an economically efficient target for EVs in Australia is around 1 million by 2025, increasing to 2.3 million by 2030 and 4 million by 2035. According to this research, the sale of each EV is estimated to add over $1000 in GVA to Australia's economy, around five times higher than an equivalent petrol vehicle, and over the 20 year period, achieving the targets would create an extra 400,000 jobs in Australia relative to petrol vehicles.

Achieving this target will also reduce greenhouse gas emissions by an estimated 2.3 million tonnes CO_2e over the next 20 years if charged with 'average' grid electricity. Over time policies that are introduced to reduce the carbon intensity of the electricity generation sector (such as the Renewable Energy Target) will translate into lower emissions from the use of EVs, so that over their useful lives, the greenhouse gas emissions related to EVs that are purchased today will continue to decline. Even greater greenhouse gas abatement is possible if vehicles are preferentially charged

[4] *Industry along can't help the environment: Nissan,* Motoring.com.au, 11 April 2015, http://www.motoring.com.au/industry-alone-cant-help-environment-nissan-50448

[5] *Nissan boosts LEAF battery range to 250km,* GoAuto News, 11 September 2015, http://www.goauto.com.au/mellor/mellor.nsf/story2/EAA7A631421FB772CA257EBC0081D50E

using renewable energy, as well as opportunities for energy independence for EV owners with solar PV.

Government EV Fleets (ref. Discussion Paper Q.23)

Around 4% of new cars sold each year in Australia are purchased for Government fleets, equating to around 40,000 vehicles per year. By mandating that new government fleet purchases include EVs, governments can play an active role in facilitating EV uptake. For example, if a target were to ramp up to 50% of new government fleet procurement in 2020, up to 50,000 new EVs could enter the Australian market in 5 years.

AGL supports governments of all levels setting targets for the inclusion of EVs in their fleets, to help to build familiarity and develop markets for EVs (and related infrastructure). This will send important signals to vehicle manufacturers that EVs can be sold in reasonable volumes in the Australian market, encourage investment in supply chain capacity, and to make the most popular EV models available here. Over time, this will help to build familiarity with EV technology and its benefits, and will also deliver a significant number of depreciated EVs into the second-hand market for purchase by households and small businesses.

AGL also supports policies and other measures to encourage EV inclusion in the fleets of businesses and other organisations, with almost half of all cars sold in Australia for fleets. AGL welcomes the $50m programme that will be run through the Clean Energy Finance Corporation to provide incentives for corporate and government fleet buyers to purchase low emissions vehicles. AGL is also committed to purchasing EVs for our own business fleet, with 10% of the AGL fleet to be electric by mid-2018, and are investigating opportunities to making EVs available to our employees to use via novated leases.

Tax treatment (ref. Discussion Paper Q.24)

Several taxes (and other charges) that are applied to motor vehicles are based upon the purchase price of the vehicle, including the Luxury Car Tax, Goods and Services Tax, stamp duties, and Fringe Benefits Tax (FBT). As for many new technologies, energy efficient and low/no emissions vehicles have higher upfront costs than conventional models (which are often partially offset by lower operating costs). While concessions to some of these taxes are available for efficient vehicles, higher levels of tax, coupled with higher underlying vehicle prices, can create disincentives for potential EV purchasers.

AGL supports the Commonwealth undertaking a full review of policies along the supply chain of alternative transport vehicles, to identify and remove barriers and perverse incentives, including within the tax system. Opportunities to simplify tax record-keeping requirements for EV owners should also be considered, noting that current rules may be more complicated to apply to EVs than for conventional vehicles (for example, measuring the electricity charging costs for EVs may require sub-metering and sub-billing which is more difficult and costly than tracking petrol purchases).

It is relatively common for Australian employers to offer the private use of company-owned (or organisation-owned) vehicles to employees, and therefore FBT can represent a significant fleet-related cost. The higher upfront costs of EVs means the annual FBT payable is significantly higher than for conventional vehicles. AGL supports extending FBT exemptions currently available for certain vehicles (including taxis, and some panel vans and utilities) to include EVs, which could help to bring the cost of leasing an EV roughly in line with leasing a conventional vehicle for many employers. As EV technology costs decrease over time and their purchase prices become comparable to

conventional vehicles[6], FBT exemptions would no longer be required and could be gradually phased out. AGL recommends that FBT exemptions for EVs are also extended to novated lease arrangements.

Charging infrastructure (ref. Discussion Paper Q.27)

Charging infrastructure is an enabler for EVs to leverage existing investments in electricity networks, allowing for increased capacity utilization which can place downward pressure on the unit costs of electricity for all customers. Charging takes place where vehicles park, which is primarily the home and workplace, but also potentially in publicly-accessible locations such as shopping centres and airports. Visible charging infrastructure can play an important role in familiarising drivers with EV technologies and overcoming issues of 'range anxiety'.

There are a range of challenges for the effective planning, installation and operation of charging infrastructure, with barriers relating to information on vehicle use, land-use planning, electricity network integration, gaps in standardization, split incentives between builders and occupants in new developments, and market coordination issues. AGL recommends that a national strategy on EV infrastructure be established including measures to address each of these issues. By drawing on international best practice and the learnings from 'first-mover' markets and Australian trials, the strategy should promote an economically-efficient approach to the rollout of EV charging infrastructure.

Efficiency standards (ref. Discussion Paper Q.8 & 9)

AGL supports the introduction of vehicle efficiency standards comparable to other advanced economies globally, which are consistent with Australia's medium- and long-term greenhouse gas emission reduction commitments and aspirations, and targets to improve national energy productivity. Based upon international experience, the design of efficiency or greenhouse gas emission standards for light vehicles can play an important role in encouraging vehicle manufacturers to introduce their EV models into new markets.

AGL supports Australia introducing vehicle standards that incentivise the introduction of zero emissions vehicles into the local market. By way of example, the Volkswagen e-Golf was made available in markets which adopted California's approach to zero-emissions vehicle regulation[7], and is not currently scheduled for Australian market introduction[8].

Closing remarks

Australia does not currently have a coordinated framework to support electric vehicles and other alternative transport, which has the potential to boost economic activity and employment in Australia, improve environmental and greenhouse gas performance, improve energy security and lower operating costs for drivers. Under current policy and market conditions, higher upfront EV costs are borne by purchasers, who do not realise

[6] It is currently estimated that EVs will reach price parity with conventional vehicles by 2022.

[7] *2015 VW e-Golf coming to ZEV states for $35,445 this November*, Autoblog, 25 August 2014, http://www.autoblog.com/2014/08/25/2015-vw-e-golf-jetta-pricing/

[8] *No change to Volkswagen's diesel strategy in Australia despite hybrids ready to roll,* The Motor Report, 14 October 2015, http://www.themotorreport.com.au/62390/no-change-to-volkswagens-diesel-strategy-in-australia-despite-hybrids-ready-to-roll

benefits and cost reductions related to a range of externalities (including environmental performance).

AGL supports the development of a National EV Roadmap, including establishing an optimal EV target and the introduction of policies that remove barriers and facilitate greater EV uptake, such as the inclusion of EVs in government vehicle fleets, exemptions from FBT for EVs to reduce the cost differential for EV leasing relative to conventional vehicles, and a national strategy for EV charging infrastructure.

Should you have any questions or comments, please contact Fiona Orton [redacted].

Yours sincerely,

Tim Nelson

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AGL Energy Limited