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1 April 2021

Future Fuels Strategy: Discussion Paper, February 2021

AGL Energy (**AGL**) welcomes the opportunity to respond to the Australian Government's Future Fuels Strategy: Discussion Paper, February 2021 (**Discussion Paper**).

AGL is one of Australia's leading integrated energy companies and one of the largest ASX listed owner, operator, and developer of renewable generation. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources.

AGL is also a significant retailer of energy and telecommunications with 4.5 million customer accounts across Australia. AGL is a market leader in the development of innovative products and services that enable consumers to make informed decisions on how and when to use their distributed energy resource (**DER**) assets to optimise their energy load profile and better manage their energy costs. As part of this suite of activity, AGL has secured ARENA funding to undertake an EV orchestration trial. Through our EV Orchestration Trial[1], we are seeking to understand how EVs could help the wider energy system by 'orchestrating' vehicle charging through smart chargers, Vehicle to Grid (**V2G**) chargers and API technology.

We welcome the Australian Government's Future Fuels Strategy and focus on enabling consumer choice, stimulating industry development, and reducing emissions in the road transport sector.

The uptake of EVs will be an integral technology pathway for decarbonising Australia's economy. As we previously observed to the 2018 Select Committee on Electric Vehicles,[2] the widespread uptake of EVs, when coupled with the decarbonisation of the electricity grid and increasing penetration of local solar photovoltaic (**PV**) technologies, presents a substantial opportunity to deliver emissions reductions consistent with Australia's long-term commitments under the Paris Agreement.

Strategic direction

We consider the Australian Government's Future Fuel Strategy provides an optimal opportunity for the Australian Government to set a direction on a national EV strategy and provide a framework for the states to

[1] See further, AGL Electric Vehicle Orchestration Trial, available at https://arena.gov.au/projects/agl-electric-vehicle-orchestration-trial/.
[2] See further AGL Submission to the Commonwealth Parliament Senate Select Committee on Electric Vehicles, 2018 (27 July 2018), Available at https://thehub.agl.com.au/-/media/thehub/documents-and-submissions/2018/agl-submission_-commonwealth-inquiry-into-electric-vehicles_final_27-july-2018.pdf?la=en&hash=11D9929521DB27D43CFF3D803E826DC0.

put in place complementary EV measures.[3] As the Commonwealth Senate Select Committee on Electric Vehicles concluded in 2019:

> *EVs are at the forefront of a major transformation of the world's transport sector [but] EV uptake in Australia lags behind that of other comparable countries due to a relative absence of overarching policy direction from the Australian Government*.[4]

As part of the Future Fuel Strategy, we would encourage the Commonwealth and State governments to work together through the Energy and Infrastructure and Transport National Cabinet Reform Committees and national market reform processes to develop a national EV roadmap that establishes a nationally agreed EV target and supporting policy initiatives. Complementary measures deployed through state-based policy and regulatory levers could then be geared towards attaining the national EV target.

We support the Australian Government's five priority initiatives articulated in the Discussion Paper.

We provide key recommendations and more detailed responses to improve outcomes on some of those priority initiatives in the **Attachments.**

On EV grid integration in particular, the Strategy should support cross-government collaboration to deliver a nationally harmonised regulatory framework that serves to reduce cost to consumers and support consistent consumer outcomes. To facilitate customer choice, the Strategy should also seek to promote a competitive-based mechanism for DER integration that incentivises and empowers EV consumers to provide services to support the broader energy market system.

Beyond the five priority initiatives articulated, we consider the Strategy should also capture the following areas to achieve its policy objectives:

1. *Increase the variety (diversity) of choice and affordability of new and used EVs in the Australian market* - through emissions targets, vehicle fuel efficiency standards, quantitative EV targets and government fleet targets. A nationally agreed EV target would set the 'light on the hill' objective that can then drive coordinated Commonwealth and State governments' initiatives in support of the national target. It would also establish a clear benchmark against which to measure ambition and progress across the national economy. Establishing an EV target is the centrepiece of most international government policy support frameworks for EVs, with the scope and scale of other supporting policies crafted to achieve that target.[5]
2. *Consider complementary policy levers to phase out internal combustion engine vehicles to support accelerated transition towards EVs*. Importation rules and/or fuel fee arrangements that 'escalate' over time may present useful avenues to facilitate transition.[6]

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[3] See further, Australian Government Department of Industry, Science, Energy and Resources, Future Fuels Strategy discussion paper (5 February 2021), Available at https://www.industry.gov.au/news/future-fuels-strategy-discussion-paper-have-your-say.

[4] See further Senate Select Committee on Electric Vehicle, Report (30 January 2019), Available at https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Electric_Vehicles/ElectricVehicles/Report. AGL made a submission to the Inquiry, a copy of which is available at ttps://thehub.agl.com.au/-/media/thehub/documents-and-submissions/2018/agl-submission_-commonwealth-inquiry-into-electric-vehicles_final_27-july-2018.pdf?la=en&hash=11D9929521DB27D43CFF3D803E826DC0.

[5] For example, the Norwegian Parliament set a target that all new cars sold by 2025 be zero emissions vehicles (battery electric or hydrogen), see further https://elbil.no/english/norwegian-ev-policy/. The UK Government's Road to Zero Strategy (2018 includes the ambition to see at least half of new cars to be ultra low emission by 2030, Available at https://www.gov.uk/government/news/government-launches-road-to-zero-strategy-to-lead-the-world-in-zero-emission-vehicle-technology.

[6] In a presentation to Australia's Electric Vehicle Council in November 2020, Vice Chair of the UK Climate Change Committee Professor Julia King noted that fuel price was a key driver of changes in consumers' purchasing behaviour in the UK with the introduction of

3. *Ensure fuel and transport pricing reform accelerates the uptake of EVs in the short-term whilst laying the groundwork for a nationally harmonised distance-based road user pricing framework in the long-term*. Into the future, Australia's fuel and transport pricing frameworks will need to adapt to support a fit-for-purpose approach in response to emerging technologies such as EVs.
4. *Improve consumer confidence in the emerging market for EV products, systems and services* - by ensuring a harmonised national customer protections framework that is fit-for-purpose and through which customers receive the same rights and protections irrespective of how they choose to receive their EV energy supply and services.

Should you have any questions in relation to this submission, please contact Kurt Winter, Regulatory Strategy Manager, on 03 8633 7204 or KWinter@agl.com.au.

Yours sincerely

Elizabeth Molyneux

GM Policy and Markets Regulation

'elevator' fuel fees able to stimulate transition away from fossil fuel vehicles. See Baroness Browne of Cambridge and Vice Chair UK Climate Change Committee, 'ZEVs: Accelerating transport decarbonisation' (17 November 2020) Presentation to the Electric Vehicle Council.

ATTACHMENT A – KEY RECOMMENDATIONS

AGL recommends the Australian Government consider the following:

1. Establish a nationally agreed EV target to drive coordinated Commonwealth and State government initiatives.
2. Lead the development of a nationally harmonised fuel and transport pricing reform program to accelerates the uptake of EVs in the short-term whilst laying the groundwork for a distance-based road user pricing framework in the long-term.
3. Focus the Future Fuels Strategy on vehicle electrification as a priority technology for deployment until such time as hydrogen fuel cell EVs becomes a viable alternative for consumers.
4. Develop policy measures to accelerate deployment of home charging infrastructure as a complement to public charging infrastructure deployment.
5. Carefully design the investment criteria guiding the EV charging infrastructure funding under the Future Fuels Fund to ensure efficient deployment, having regard to a range of matters.
6. Pursue concerted policy efforts with State Governments to improve the connections process for charging infrastructure proponents.
7. In considering the main barriers to commercial fleet transition, assess fringe benefits tax arrangements that currently disadvantage EVs due to their higher upfront costs.
8. Adopt a more holistic policy approach to road freight fleet transition in recognition of the barriers to uptake and successful initiatives implemented in other jurisdictions.
9. Draw relevant insights on EV grid integration for the existing breadth of trials and research to inform policy and regulatory reform, rather than directing that further trials be pursued.
10. Support cross-government collaboration in energy market and technical standards reform to deliver a nationally harmonised regulatory framework that serves to reduce cost to consumers and support consistent consumer outcomes.
11. Promote a competitive-based mechanism for DER integration that incentivises and empowers EV consumers to provide services to support the broader energy market system.
12. Consider insights from the Distributed Energy Integration Program (**DEIP**) EV Residential Tariffs and Incentives Taskforce and associated industry trials on opportunities for tariff innovation.

ATTACHMENT B – DETAILED FEEDBACK ON THE DISCUSSION PAPER

1. EV charging and hydrogen refuelling infrastructure

AGL supports the Australian Government's co-investment in the early deployment of public EV refuelling infrastructure and the proposed supporting actions to address EV 'charging blackspots' through the Future Fuels Fund and support for businesses with charging infrastructure costs to enable fleet uptake.

International experience underscores the strong correlation between public charging infrastructure and the uptake of EVs.[7] At the early stages of the EV market, fast charging infrastructure addresses only an occasional need for EV owners, without necessarily capturing the indirect value of EV charging services, such as improved network asset utilisation if EV charging is appropriately managed and/or enhanced payback when EVs are coupled with local generation. Accordingly, AGL supports early market competitive grant programs to help bridge the payback gap for investors in the short term.

We would encourage careful consideration of the investment criteria guiding the funding rounds under the Future Fuels Fund to ensure efficient deployment, including:

- *Enabling infrastructure proponents to manage the technical dimensions of site selection*. The deployment of fast charging infrastructure will sometime require associated electricity network infrastructure augmentation, such as substation upgrades. This necessitates that charging infrastructure proponents carefully plan and work with distribution networks in determining appropriate sites to ensure the efficient roll out of infrastructure. Whilst the investment criteria should direct investment towards certain regions, flexibility should be provided with respect to site selection to enable the market to determine the most efficient location.
- *Facilitating co-location of charging infrastructure with existing infrastructure*, such as service stations and semi-private locations. We understand that whilst property owners are aware of the business opportunity associated with charging infrastructure, the high set up costs and long payback period still present substantial barriers to deployment. The availability of subsidises for small and medium businesses' installation of EV charging infrastructure would accelerate broad based access to EV charging, supporting local jobs during construction and long-term benefits for participating businesses that host EV charging.
- *Avoiding duplication with respect to sites that would otherwise already attract private investment*.

The planning and deployment of public charging infrastructure would also benefit from concerted policy efforts between the Commonwealth and State Governments to improve the connections process for charging infrastructure proponents. We would recommend the following actions:

- *Transparency of network constraints:* Ensuring transparency of networks constraints information to support efficient industry investment in charging infrastructure. We believe the Commonwealth and State governments can take a leading and co-ordinating role by requesting distribution networks provide public information about the strength and quality of their networks to allow charging infrastructure proponents to properly plan and work with distribution networks on the efficient roll out of infrastructure.

[7] We note in the context of the Norwegian market, which is the global leader in terms of market share of EVs, the Norwegian Government launched a program in 2017 to finance the establishment of at least two multi-standard fast charging stations every 50km on all main roads in Norway (https://elbil.no/english/norwegian-ev-policy/).

- *Streamline the network connections framework*. The connections approval process for setting up a public charging site is time-consuming and varies considerably between distribution networks businesses, both in terms of the process for approval and the associated fees. We consider that greater alignment in the various state-based network connection frameworks would improve the viability of scaled investment in charging infrastructure. We note this issue is on the forward work agenda for the Distribution Energy Integration Program.

Beyond co-investment in public and semi-private charging infrastructure, we would also recommend consideration of policy measures to accelerate deployment of home charging infrastructure, such as concerted policies with state governments to reduce barriers to the mandatory provision of home charging infrastructure in greenfield housing and/or potential consumer subsidies. We consider that home charging is likely to be the dominant choice for consumers into the 2030s. Recent consumer research undertaken by motoring clubs on behalf of the Electric Vehicle Council highlighted that consumers want to see subsidies for home charging installations alongside increased investment in public charging infrastructure.[8]

While we appreciate the Australian Government's interest in advancing hydrogen refuelling as an alternative technology to support consumer choice, we understand that hydrogen fuel cell EV technology is still in a very early-stage as compared with battery EVs.[9] The limitations of hydrogen fuel cell EVs (as compared to BEVs) include:

- The power-to-wheel efficiency is less than half that of battery EVs;
- Hydrogen fuel cell EVs are up to 20 per cent more expensive than an equivalent BEV; and
- There are only three commercial hydrogen vehicle models available.

We note that hydrogen has found some success in the very niche application of forklifts and there are numerous trials and strategies both in Australia and overseas that are focused on the development of hydrogen more broadly, for road and train transport.

However, having regard to the current maturity of the technology and its ability to be scaled, we consider that the electrification of transport should be the priority in Australia. Accordingly, we would strongly recommend that the Future Fuels Strategy focus on vehicle electrification as a priority technology for deployment until such time as hydrogen becomes a viable alternative for consumers.

2. Early focus on commercial fleets

AGL supports the Australian Government's early focus on commercial fleets, including the proposed actions to support business to incorporate new vehicle technology into their fleets through the Future Fuels Fund.

In considering the main barriers to commercial fleet transition, we would also recommend the Australian Government consider complementary support through the fringe benefits tax arrangements that currently disadvantage EVs due to their higher upfront costs.

We note the Australian Government's intention to support for road freight businesses to trial new technologies through the Freight Energy Productivity Program. Given the substantial upfront costs associated with road

[8] See further Electric Vehicle Council, State of Electric Vehicles (August 2020), Available at https://electricvehiclecouncil.com.au/wp-content/uploads/2020/08/EVC-State-of-EVs-2020-report.pdf.

[9] See further Michael Liebriech Separating Hype from Hydrogen – Part Two: The Demand Side (16 October 2020) Available at https://about.bnef.com/blog/liebreich-separating-hype-from-hydrogen-part-two-the-demand-side/.

freight fleet transition, we believe the proposed trial grants will deliver more useful insights to support scaled deployment into the future by supporting a more holistic approach. For example, transitioning road freight still entails a significant cost gap and there is also a need for these businesses to substantially upgrade their facilities to support the transition. Therefore, AGL would recommend a more holistic approach be taken in recognition of the barriers to uptake, including the following possible measures:

- Direct financial incentives that address the large cost-gap in the near-term.
- Support for charging infrastructure and pick-up and drop-off locations.
- Dedicated charging hubs for freight vehicles to ensure reliable access.
- Low emission zones in which high-emitting vehicles are subject to access fees.
- Explicit/priority parking areas for zero emission vehicles ("green loading zones").

A similar approach should also be considered for the people-mover equivalent segment, that is taxis and rideshare vehicles.

3. Improving information for motorists and fleets

AGL supports the Australian Government's intent to improve information for motorists and fleets, including the proposed actions to redevelop the Green Vehicle Guide, deploy fleet trials, and issue tax treatment guidance.

We believe the Australian governments can play an important role in facilitating the provision of authoritative consumer information to increase consumers' knowledge of EV technologies thereby increasing EV uptake. Developed EV markets are characterised by easy access to consumer information that includes cost calculators, information concerning incentives, technical standards, infrastructure, case studies on user experience as well as myth busting information.[10]

We would recommend the Australian Government leverage existing expertise, including through the Electric Vehicle Council and Charge Together Fleets Program, to facilitate knowledge sharing opportunities both with Australian consumers and vehicle dealerships.

4. Integrating battery electric vehicles into the electricity grid

AGL supports the Australian Government's intent to understand the opportunities and risks of large-scale uptake of battery EVs to Australia's electricity supply and demand and grid security and interest in supporting emerging charging technologies that could support grid security whilst also unlocking additional value for consumers. Through AGL's own EV Vehicle Orchestration Trial[11], we are seeking to investigate this very question through three technical solutions to managed charging (smart chargers, V2G and API technology).

In light of the broad range of industry trials and research being led by energy retailers including AGL, distribution networks, and research institutions including the Racefor2030 Collaborative Research Centre,[12] we would recommend against further studies through the Future Fuel Fund at this point in time. Rather, we

[10] See further EVenergi and ARENA (2019) Unlocking Demand for Renewable Powered Electric Vehicles, Available at https://arena.gov.au/knowledge-bank/unlocking-demand-for-renewably-powered-electric-vehicles/.
[11] See further AGL Electric Vehicle Orchestration Trial, available at https://arena.gov.au/projects/agl-electric-vehicle-orchestration-trial/.
[12] See further Race for 2030 Collaborate Research Centre, Available at https://www.racefor2030.com.au/about/.

would encourage the Australian Government to draw relevant insights from the existing breadth of trials and research.

Further, we strongly support the Australian Government's focus on collaboration with industry to plan for the grid integration of EVs, including through the DEIP and consider this forum will continue to provide a useful avenue to synthesise insights and inform policy and regulatory reform.

As customers continue to embrace DER product and service offerings such as EVs and solar battery orchestration, the economic, technical and regulatory challenges associated with the integration of DER into Australia's energy market system has become a focus in a broad range of policy and regulatory forums, including through the Energy Security Board, DEIP and each of the energy market bodies.

While the Australian Government's Strategy should not seek to duplicate these existing reform programs, we consider it could play a key role in informing the Australian Government's policies on DER integration and the need for nationally harmonised rules and technical standards.

The emergency of innovative EV solutions such as demand response and orchestration will be best supported by a national policy and regulatory framework that serves to reduce cost to consumers and support consistent consumer outcomes.

Technologies such as EVs present a range of novel challenges to support customer participation and value, from customers' ability to realise value by providing services into Australia's energy market system to their ease of access to charging infrastructure and appropriate payment systems to support a seamless customer experience. To mitigate against any 'rail gauge' issues and/or risks of stranded assets, the Australian Government should support cross-government collaboration in these areas to deliver a harmonised framework.

The key area for reform is the development of competitive-based arrangements where consumers as owners of DER assets are rewarded for offering up their DER assets for wider energy market services. We consider such an approach will deliver the greatest benefit, as DER uptake continues to grow.

We have observed a range of recent regulatory proposals that seek to accelerate the implementation of technical standards and communications protocols for DER, including the SA Government's Smarter Homes Consultation and Consultation on Proposed Demand Response Capabilities for Selected Appliances in South Australia. These responses risk disempowering the owner of the asset to actively participate and support the wider electricity system reliability. Rather, market participants and the operator take control of the customer asset. This outcome increases the payback period of the DER asset investment for the owner and disincentives the uptake of these assets and services by consumers.

AGL recommends the Australian Government promote a competitive-based mechanism that incentivises and empowers consumers.

In support of increased consumer participation and uptake of DER, the following complementary reforms are also important to better facilitate DER integration:

- Connection, access, and pricing arrangements that better incentivise networks to support DER uptake, and enable greater certainty of access and services for DER owners.
- The network expenditure assessment framework appropriately accounting for networks facilitating the interaction of DER with the broader energy market system.

- Establishment of technical standards that better balance safety, open access and interoperability and consumer value/access to broader energy network and wholesale market value streams.
- A regulatory framework that promotes the contestable market for non-network solutions (the current framework incentivises distribution owners to seek capital build solutions over non-network solutions as the capital is included in their regulated asset base which boosts their return on capital) and ensures that ring-fencing arrangements are robust enough to avoid causing customer detriment.

In terms of opportunities for tariff innovation, we would recommend the Australian Government consider insights from the DEIP EV Residential Tariffs and Incentives Taskforce and associated industry trials. AGL is co-leading the Residential Tariffs and Incentives Taskforce with the Electric Vehicle Council. This Taskforce aims to draw upon insights on EV customers' preferences and behaviours, network businesses' desired outcomes and retailers' capabilities as well as international learnings to identify opportunities for tariff design and assess whether a separate tariff approach to EVs is appropriate. Based on engagement to date, we note the following:

- Whilst we support efforts to transition towards demand management pricing in the medium term, we do not consider demand management pricing should be implemented through demand tariffs in the form of a kVA tariff or otherwise as we consider that time of use network tariffs provide greater scope for the retail market to manage risk on behalf of customers and ensure optimal outcomes.
- We also support consideration of alternative approaches to tariff design, such as the bulk wholesale network tariff model. Under this model, distribution networks charge cost reflective network tariffs to retailers based on an aggregated load profile of the retailers' customers. We believe this approach could better incentivise retailers to manage the risks associated with network costs thereby promoting greater innovation in the development of products and service and investment.

5. Supplementary policies

AGL supports the Australian Government's supplementary policy initiatives to:

- Advance emissions standards for both light and heavy-duty vehicles to support greater diversity in vehicle availability.
- Develop design standards and payment principles for EV charging infrastructure through a nationally harmonised approach to deliver consistent consumer outcomes.
- Harmonise the measurement of battery EV charging through the National Measurement Institute and International Organisation of Legal Metrology.

With respect to road user charging, AGL recommends the Australian Government lead the development of a nationally harmonised fuel and transport pricing reform. The objective of the reforms should be to accelerate the uptake of EVs in the short-term whilst laying the groundwork for a distance-based road user pricing framework in the long-term.

We are concerned by the South Australian and Victorian governments' announcements last year to introduce road charges for EVs. With the comparatively small market that exists in Australia, the introduction of short-sighted and ad-hoc taxes will stunt the development of this emerging industry and leave Australia well behind other developed nations.

Australia will be best served by a national harmonised approach. Having regard to the commitment made by infrastructure and transport minister in 2019 to consider the revenue implications of new technology vehicles, Australian governments should work together to develop a consistent framework.

AGL supports a nationally harmonised distance-based road user pricing framework that can be applied equally to internal combustion engine (ICE) vehicles and EVs. Initially, this framework should be applied to ICE vehicles only to test the parameters of the framework whilst supporting the continued development of Australia's EV market.

In the medium term (5-10 years and as EVs reach price parity with ICE vehicles), EVs should be transitioned into the road user pricing framework. At this point in time, consideration should also be given to developing more sophisticated cost reflective charges (considering inputs such as costs of building and maintaining roads, congestion, carbon emissions, air and noise pollution including the associated public health impacts and costs, and road trauma) as well as variation of charges by time, location, and vehicle type.