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Response Electric Vehicle Smart Charging Issues Paper

AGL Energy (AGL) welcomes the opportunity to comment on the Energy Security Board's (ESB) Issues Paper on Electric Vehicle (EV) Smart Charging, released in July 2022 (Issues Paper).

Supporting the integration and technical standards of EVs will be a key enabler for the use and optimisation of EVs across Australia's energy markets. If EV charging is smart and flexible, EVs will be a significant asset to the system. However, while AGL supports a coordinated industry approach to developing technical standards for smart EV charging, it is too early to introduce such standards in Australia.

The EV sector is in the early stages of development. Australia is some years behind EV uptake and implementation of regulation in comparison to several other jurisdictions. We have an opportunity to learn from their experiences and adopt well established and tested approaches when they have reached their maturity. A wait and see approach will allow Australia to adopt internationally accepted standards to ensure access to an open and competitive EV market is maintained. Mandating unique and Australian-specific standards will limit availability of products and services and work as a disservice to energy consumers.

In the near term, our focus needs to be on accelerating uptake of EVs and supporting consumers in making grid-friendly choices, not regulating to manage future potential EV related grid impacts. There is a need to balance prescriptive regulations with trials and new product offerings to allow for the design and utility of the market to be customer-led. AGL continues to offer products and conduct trials to develop a better understanding and dataset on EV charging behaviours. Work carried out by industry in partnership with consumers will aid in the development of innovative products and services that meet consumer expectations on how they want to utilise their EV.

Over time, as data improves and incentives get stronger, EV charging will become smarter. AGL's focus is to continue develop new products and services that will enable our customers and the community through the energy transition and decarbonise how they live, work, and move.

If you have any queries about this submission please contact Emily Gadaleta, Regulatory Strategy Manager at egadaleta@agl.com.au.

Yours sincerely,

Chris Streets

General Manager (a/g), Policy, Markets Regulations and Sustainability



Ensuring EV design is customer led

Australia is at the beginning of the development of an EV industry. The Electric Vehicle Council recently reported that there is approximately 50,000 EVs on the road so far, out of approximately 15 million passenger vehicles, representing 1 vehicle in every 300.¹ Understanding consumer attitudes and behaviours will be key to shaping our future regulatory approach to EVs. Governments, regulators, and industry have an opportunity to utilise this growth to work directly with consumers to steadily develop a system that provides them with adequate choice and protections. Over time, the increased adoption of EVs will change energy markets, triggering the emergence of new business models, technologies, and services. The emergence of new EV-related products and services in the retail market should help increase competition, driving down costs and delivering increased customer benefits. Finally, the utility that an EV and associated smart charging provides consumers should be considered as both a consumer energy resource, but just as importantly, as a method of transportation.

AGL is conducting multiple EV projects and trials and has a market-leading understanding of the implications of EV uptake on the energy system. Relevant projects and expertise include:

- \$1/day electric car energy plan - launched in 2016 and concluded in 2018, the plan provided consumers unlimited EV charging for \$1/day with complimentary carbon offset for the EV load.
- AGL's current offer for electric vehicle owners includes bonus credits and complimentary carbon offset for the whole of house energy load.
- As part of the Australian Renewable Energy Agency (ARENA) funded Demand Response trial in New South Wales, AGL tested deferral of EV charging for 14 consumers to reflect a demand response event.²
- AGL EV Subscription offer - piloted in 2020, AGL's EV subscriptions have launched in Sydney, Melbourne, Brisbane, and South Australia. The product provides choice and flexibility with customers able to swap, upgrade or cancel at any time, while also including registration, insurance, tyres, repairs, roadside assistance, optional installation of an EV charger and carbon neutral credits as part of the subscription.
- ARENA funded EV charging trial across New South Wales, Queensland, Victoria, and South Australia. As part of the \$8.25 million trial, AGL has recruited 300 EV owners to demonstrate a range of smart and managed charging solutions.³
- Kaluza and AGL trial utilising Kaluza-powered products and analytics to optimise charging of EVs. AGL customers participating in the trial will be rewarded up to \$20/month for allowing Kaluza to manage their vehicle's charging.

AGL is continuing to work with customers to develop and trial new products and offerings to suit their consumption and transportation needs. When the EV market in Australia has matured, and accepted standards have become clear on the international stage Australian standards should be guided and adhere to the following principles:

- Align with internationally accepted standards to ensure access to an open and competitive EV market,
- Be technology agnostic and remain future-proofed for future technological developments, and

¹ Electric Vehicle Council, Home EV Charging and the grid: impact to 2030 in Australia (august 2022), available at <https://electricvehiclecouncil.com.au/wp-content/uploads/2022/08/Home-EV-charging-2030.pdf>

² See further ARENA Advancing Renewables AGL Demand Response Project, available at <https://arena.gov.au/projects/agl-demandresponse/>.

³ See future ARENA AGL Electric Vehicle Orchestration Trial, available at <https://arena.gov.au/projects/agl-electric-vehicle-orchestration-trial/>



- Empower consumers with choice to utilise DER assets for their own comfort and to participate in competitive market services which address broader energy system needs through innovative aggregator models.⁴

Regulation of EV charging should be in line with consumer expectations, rather than prescribing standards to manage the system ahead of consumer testing. Adoption of a specific standard at this point in time could limit future options for industry and consumers. This presents considerable risks if the wrong regulation chosen as consumers could bypass default charging arrangements which would thereby remove any gained efficiencies. However, if a minimum standard for EV charging equipment be adopted, AGL supports the minimum requirement being Open Charge Point Protocol (OCPP) 1.6J communications capability or higher.

Role of retailer

The forecast increase in electricity consumption and change to the underlying residential demand profile associated with the uptake of EVs presents a significant opportunity for retailers to innovate their services offerings to attract EV consumers. As mentioned AGL has delivered multiple EV projects and trials and has a market leading understanding of the implications of EV uptake and consumer preferences towards connectivity of EVs to the electricity system and pricing for use of the energy system. Therefore, AGL believes energy retailers and aggregators are best place to provide the Charge Point Operator functions.

Retailers play a vital role in managing the risk between the often-volatile spot wholesale price and delivering on customer expectations of fixed and predictable retail prices. AGL believes that EVs present substantial opportunities for electricity retailers to deliver greater value to EV owners while also offering significant benefits to the broader energy system and consumers. These benefits could be materialised both through traditional energy contracts and innovative product and service offerings such as managed charging and orchestration. Retailers hold the ability to optimise wholesale price risk and hedge costs on behalf of consumers by matching distributed generation with customer load by leveraging various emerging technologies such as EVs. By gaining an understanding of consumer consumption behaviours and preferences, AGL can best manage these risks on behalf of customers and minimise cost to serve overall.

Tariff design

Through experience in various EV trials and product offerings, we observed there are various options to incentivise customers to shift their EV load that would otherwise provide benefits to the broader energy market by reducing peak demand associated with the increased uptake of EVs. A key insight is that by and large consumers prefer simple and transparent retail pricing to incentivise their charging behaviour/preference. This is supported by ECA and Forethought's Consumers Expectations Research that listed 'Simple' as one of the five elements of a consumer's vision of a better energy future.⁵ 'Simple' in their research outlined that a better future meant simplified, more comprehensible information as consumers find pricing confusing and overwhelming, and struggled to understand the breakdown of costs in their bills.

From November 2016 to November 2018, AGL's ECP offered a \$1/day unlimited EV home charging energy plan. Customers on this plan had no incentive to modify when or how much they were charging their EV. The charging profile obtained from the 100,000+ days of data obtained by AGL through this pilot project reflects a convenience profile, with no trade-off against impacts on the broader electricity system.

⁴ As outlined in AGL's submission to Australian Energy Market Commission's 2020 Retail Competition Review: Electric Vehicles, Issues Paper, available at https://www.agl.com.au/content/dam/agl-thehub/documents/agl-submission_-2020-retail-energy-competition-review_-electric-vehicles-issues-paper_final_redacted.pdf

⁵ Energy Consumers Australia and Forethought, 'A Future Energy Vision: Consumer Expectations Research Household findings of the research' available at <https://energyconsumersaustralia.com.au/wp-content/uploads/Future-Energy-Vision-Forethought-Household-Full-Report.pdf>



Demand in NSW during a particular day of the trial, 14 February 2018, reached 12,846 MW for the trading interval ending 17:00pm (EST) while the charging profile of consumers on the \$1/day plan started to increase markedly at about the same time. It was apparent that convenience-based charging has the potential to increase peak demand substantially. With increasing penetration of solar PV, peak demand in the NEM is expected to move later into the day which will increase the overlap between the regional peak demand and the peak of convenience-based charging. Increasing peak demand would likely result in higher wholesale and network costs.

We consider that EVs should be priced and treated as any normal additional load coming onto the network. With changes to tariffs and services and the rollout of offers for EV consumers, including bundled products, EV tariffs may be more complex for consumers to understand and compare than traditional electricity supply tariffs. Technology specific tariffs for new loads entering the market has the risk of complicating energy pricing plans. This trend adds complexity in consumers being able to choose and compare offers.