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Legislative Assembly Committee on Transport and Infrastructure
Parliament of New South Wales

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29 July 2025

Supplementary questions to AGL Energy – Inquiry into infrastructure for electric and alternative energy source vehicles in NSW

AGL Energy (**AGL**) welcomes the opportunity to provide a response to the supplementary questions provided by the Legislative Assembly Committee on Transport and Infrastructure (**the Committee**), following the 30 June 2025 public hearing for the abovementioned inquiry.

1. What impact could the increased energy demands from EV charging during peak hours have on your energy supply and operations? Are there any possible risks associated with this, such as service disruption or blackouts?

AGL acknowledges that the electrification of transport presents both opportunities and challenges for the energy system. However, based on current data and projections, the impact of EV charging on peak energy demand is expected to be modest in the near term.

Analysis by the Electric Vehicle Council¹ suggests that by 2030, EVs will contribute approximately 1% of total peak grid demand. Findings from AGL's own ARENA-funded EV Orchestration Trial² reinforce this, showing very low coincident peak demand—around 450W per vehicle, even without coordinated pricing mechanisms. This is equivalent to the load of just a few traditional incandescent light bulbs. Our experience also shows that EV owners are highly amenable to changing behaviour in response to simple price signals, such as AGL's Night Saver EV plan.

The diversity of charging behaviours and the flexibility of EV loads mean that unmanaged charging is unlikely to cause bulk system demand surges or widespread blackouts. Instead, any risks are more likely to be localised, such as on specific feeders or distribution networks, particularly in areas with high EV uptake and limited infrastructure.

The opportunity to reduce bills for all customers significantly outweighs the risks of expanding EV use. A typical EV uses a similar amount of electricity as a typical house. EV charging will add significantly to energy use on the distribution grid (reducing cost per unit of electricity used) without significant increase in the maximum capacity that distribution networks need to build (the incremental additional cost is low).

Nonetheless, AGL has identified the following potential risks:

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

² AGL (May 2023), AGL Electric Vehicle Orchestration Trial – Final Lessons Learnt Report, [20230703-AGL-Electric-Vehicle-Orchestration-Trial-Final-Report.pdf](https://www.agl.com.au/~/media/AGL-Electric-Vehicle-Orchestration-Trial-Final-Report.pdf).



- Voltage fluctuations and phase imbalances, especially in public charging scenarios where multiple vehicles may charge simultaneously during peak hours.
- Localised outages due to equipment stress or software malfunctions following power disruptions.

AGL's view is that these risks can be mitigated by distribution network service providers (DNSPs) as part of the core operations.

At a system level, a study for AEMO³ found that unidirectional EV chargers are not expected to be more vulnerable to voltage and frequency disturbances than other forms of electronic loads. The price responsive behaviour of EV charging could create new security risks such as sudden load step changes which could impact the electricity system's frequency, but these changes could be mitigated.

Based on current information, these system or network risks do not pose a significant threat to AGL's core energy supply operations.

2. How can risks associated with increased energy demands from EV charging during peak hours be mitigated?

AGL is actively implementing and exploring a range of strategies to mitigate these risks:

- Consumer-led load shifting: Many EV owners already optimise charging times to align with solar generation or respond to time-of-use (TOU) tariffs, reducing pressure on the grid during peak periods. AGL's EV plans attracted over 22,000 customers in FY24.
- Dynamic pricing signals: Initiatives like AGL's Night Saver EV Plan and Octopus Energy's Plunge Pricing demonstrate how market-led pricing can effectively incentivise off-peak charging.
- Smart charging and throttling: AGL has the capability to automatically throttle public EV chargers during high-demand events, balancing grid stability with customer expectations. OVO Energy, an AGL affiliated entity, offers EV Plan and EV Control which enables smart charging propositions for the customer.

In the medium term, Vehicle-to-Grid (V2G) technology presents a transformative opportunity that could significantly improve resilience and reduce costs across the electricity supply system. According to the ARENA/RACE for 2030 National Roadmap for Bidirectional EV Charging in Australia⁴ by the early 2030s, the total EV fleet battery capacity is likely to surpass all other forms of storage in the NEM, including Snowy 2.0.

V2G offers great promise for additional benefits, as outlined in modelling for ARENA⁵:

- Wholesale market benefits of \$0.7–\$2.7 billion consisting of reduced generation CAPEX, OPEX and emissions.
- Distribution network cost reductions of \$0.3–\$2.4 billion by reducing local peak demand.

V2G uptake must be consumer-led to be successful. Consumer interest and preferences will be critical to realising the opportunity of V2G and should inform associated technologies and supporting products. However, AGL would like to emphasise that the ongoing growth in EV uptake can deliver benefits for all customers even without the addition of V2G opportunities.

³ ENX (December 2023), EV Technical Standards for Grid Operation, [enx---ev-technical-standards-for-grid-operation---insights-for-the-nem.pdf](#)

⁴ ARENA (February 2025), National Roadmap for Bidirectional EV Charging in Australia, [National Roadmap for Bidirectional EV Charging](#).

⁵ ENX and Endgame Economics (February 2025), National Bidirectional EV Charging Roadmap - V2G Electricity Market Modelling Report, <https://arena.gov.au/assets/2025/02/National-Bidi-Roadmap-MARKET-MODELLING-REPORT-2025-02-12.pdf>.



This range of solutions highlights that EVs are not only manageable within the current energy framework but can also become a valuable asset to enhance grid resilience and flexibility.

3. Are you satisfied with the current data transparency obligations of DNSPs?

There is significant opportunity to improve data transparency and data sharing from DNSPs to streamline and inform investment and connections by end use customers, and to accelerate the rollout of public EV charging and distribution scale batteries. While DNSPs are progressively improving their understanding of network conditions, this information is not often available to external parties.

AGL's view is that the following settings are required to enhance the ability of retailers and technology providers to optimise EV charging and grid integration:

- Improved access to timely granular locational network data, and the DNSPs interpretation of that data, particularly around local constraints and peak load profiles.
- Collaborative frameworks that enable market-led solutions to flourish, rather than relying solely on regulated interventions.
- Network EV charging tariffs and structures which send efficient price signals to shift load.

Ultimately, the success of EV integration into the energy system depends on open data ecosystems, consumer empowerment, and flexible market mechanisms—areas where AGL continues to lead through innovation and partnership.

AGLs preference is generally collaboration and incentives. We are not aware of regulatory barriers that prevent DNSPs from providing valuable network information to their customers and investors.

The interactions between competitive markets and DNSPs need to be fair and transparent and facilitate effective competition between participants in contestable markets that rely on those networks. DNSPs are regulated natural monopolies and there should be requirements or incentives on DNSPs to ensure network data transparency. This can be achieved by working collaboratively with network users to prioritise the most important information.

If you have any queries about these responses, please contact Ralph Griffiths at RGriffiths@agl.com.au.

Yours sincerely,

Ralph Griffiths

GM Policy and Market Regulation

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