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Department of Planning, Industry and Environment

NSW Government

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Promoting innovation for NSW energy customers – Public consultation paper

AGL Energy (**AGL**) welcomes the opportunity to respond to the NSW Government's Promoting Innovation for NSW Energy Customers Public Consultation Paper (**Consultation 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. AGL is also a significant retailer of energy and telecommunications with 4.5 million customer accounts across Australia.

We are a market leader in the development of innovative products and services that enable consumers to utilise their distributed energy resource (**DER**) assets to optimise their energy load profile and better manage their energy costs. Our current DER product and services include our leading-edge Virtual Power Plant (**VPP**)[1], Peak Energy Rewards demand response program[2], retail offer for electric vehicle (**EV**) owners[3] and EV subscription service[4]. Through our EV Orchestration Trial,[5] we are seeking to understand how EVs could help the wider energy system by 'orchestrating' vehicle charging through smart chargers, Vehicle to Grid chargers and API technology. Our new Solar Grid Saver offer[6] rewards customer for participating in solar orchestration, pausing their solar exports in periods of minimum operational demand whilst enabling them to continue to generate and use their solar power.

AGL is focused on supporting customers in their digital journey, developing a range of solutions that simplify and enhance the customer experience. We are also committed to meeting the needs of our energy customers both now and through the transition to a net zero emissions future.[7]

Strategic direction

AGL supports the NSW Government's leadership role in providing a pathway to deploying technologies at scale over the coming decade for the benefit of all energy consumers. We welcome the intent of the Consultation Paper to identify reforms to improve customer access to and uptake of new energy technologies

[1] For further information regarding AGL's Virtual Power Plant, currently available to customers in New South Wales, Queensland, South Australia and Victoria please refer to https://www.agl.com.au/solar-renewables/solar-energy/bring-your-own-battery?cide=semr&gclid=EAIaIQobChMIicjKmKuP5wIVyjUrCh2eXwvVEAAYASAAEgLZRPD_BwE&gclsrc=aw.ds.
[2] See further AGL Peak Energy Rewards, available at https://www.agl.com.au/newcampaigns/peakenergyrewards.
[3] See further, AGL EV Plan, available at https://www.agl.com.au/electric-vehicles.
[4] See further, AGL Electric Vehicle Subscription, available at https://www.agl.com.au/get-connected/electric-vehicles/ev-subscription.
[5] See further, AGL Electric Vehicle Orchestration Trial, available at https://arena.gov.au/projects/agl-electric-vehicle-orchestrationtrial/.
[6] See further, AGL Solar Grid Saver offer, available at https://discover.agl.com.au/energy/helping-to-maximise-your-solar-savings/; Maximising solar to support Australia's evolving grid (Part 1), available at https://www.agl.com.au/thehub/articles/2021/11/maximising-solar-to-support-australias-evolving-grid; Maximising solar to support Australia's evolving grid (Part 2), available at https://www.agl.com.au/thehub/articles/2021/11/maximising-solar-to-support-australias-evolving-grid-part-2.
[7] For further information regarding AGL's approach to the environment and climate change see https://www.agl.com.au/about-agl/sustainability/our-approach-to-the-environment.

and innovation, including smart meters, solar photovoltaic (**PV**) inverters, batteries, electric vehicle (**EV**) charging infrastructure, flexible demand management and virtual power plant (**VPP**) services. We also welcome the Department's exploration to improve energy customers' digital journey and their interaction with the NSW Government as a means of enabling government to lead the way to improve customer protections, experience and engagement.

Our recommendations are based on the following principles that we consider will ensure any reforms undertaken are done so at the lowest cost to the consumer and produce the maximum benefit:

- Leverage national processes where possible rather than developing jurisdictional changes. Where NSW specific solutions are required, develop 'no-regrets' solutions that complement the national framework.
- Sequence reform, prioritising foundational elements to enable the market's development and support positive customer outcomes. Other measures can then complement and build upon that foundation.
- Ensure that the impact on customers is front and centre of all decision-making. Customers should be rewarded for their ability to support flexibility in the energy market system. They should also be empowered through transparency, simplicity and a consistent consumer protection framework.

Key recommendations

1. On the matter of accelerating smart meter deployment, it is important that jurisdictional strategies are compatible with retailers' existing smart meter obligations and do not conflict with other jurisdictional and national arrangements to accelerate the roll out of smart meters (to avoid the risk of inflating costs). To support accelerated deployment, we recommend the following:
    - Smart meter costs not be published on comparison sites as this would entail substantial complexity and may compromise confidential commercial information.
    - Further regulations to expedite smart meter installation for solar not be progressed as the current regulatory arrangements are fit-for-purpose to support timely installation.
    - Mandate a retirement age for basic meters to ensure regulations align with actual meter life and community expectations about the technology.
    - Require that distributors provide Accredited Service Providers with blanket approval to re-mount old meters on new meter boards in apartment buildings to expedite meter board upgrades.
    - Align existing DNSP obligations when they undertake manual re-energisation and de-energisation services; Require that retailers publish their timeframes for remote re-energisation rather than metering provider timeframes.
2. To support distributed energy resources, focus on the following practical measures:
    - Clarify roles and responsibilities in the distributed energy ecosystem to maximise value for customers and ensure a consistent customer experience.
    - Advance distribution network regulation to support the two-way flow of energy and unlock network value for consumers.
    - Promote distribution network pricing reform to better signal the costs of using the infrastructure.

- Support the development of competitive market solutions to the challenge of minimum operational demand.

3. We would also encourage careful sequencing of these measures to facilitate the market's development. Advancing distribution network regulation, improved customer protections, smart meter deployment and network tariff reform should be given priority as enabling regulatory solutions before alternative approaches are scaled (for example community batteries that may rely upon uneconomic business models that impose greater costs on consumers).
4. With respect to introducing any new remote disconnection and reconnection technical standards and dynamic export limits, in principle we support the introduction of dynamic export limits and dynamic operating envelopes, provided they enable more transparent management of network constraints and provides DER customers with greater access than would otherwise be possible with fixed limits on the size or export limits of the system. We recommend sequencing an implementation timetable to follow:
    - The establishment of a national policy on interoperability through the ESB;
    - The conclusion of SAPN's ARENA Flexible Export for Solar PV demonstration project; and
    - The deployment of further technical trials to test the integration of aggregators and network dynamic operating envelopes.
5. In relation to quality, standards and compliance of DER assets, we support the proposal to fast-track mandating that all new DER installed must be active i.e. visible and controllable. In developing an appropriate regulatory approach, we would encourage careful consideration of the following matters:
    - Minimum viable and standard communications capabilities and their associated costs;
    - Mitigating cyber security risks in the scaled deployment of visible and controllable assets; and
    - Providing adequate notice to industry to meet the proposed specifications and to mitigate any impact to consumers who have already contracted for the installation of new DER assets.
6. We also recommend the NSW Government support the current reform agenda to develop a nationally consistent policy framework that can ensure DER technical standards work in customers' best interests.
7. With respect to improving the visibility of residential DER and data management, we recommend the NSW Government support the existing national frameworks, including the AEMO DER Register and the Consumer Data Right (CDR) regulatory framework:
    - We support improvements to the AEMO DER Register to expand its coverage of DER assets and improve the accuracy of the information provided. We also recommend consideration be given to linking the DER Register with the "approved" products list, that is now mandated by the Clean Energy Regulator.
    - We recommend that any additional jurisdictional regulations be subject to a rigorous cost benefit analysis to ensure they deliver benefits over and above the current regulations.
8. In developing a policy approach to community batteries that supports equity of access to new technologies whilst ensuring economically efficient outcomes, we recommend consideration of the following matters:

- Require that networks only procure network services in response to identified network constraints and that community batteries be considered as one of a range of solutions (alternative options should include aggregated BTM assets that could provide network services through orchestration).
- Consider the relative benefits of subsidies for BTM assets to support equity of access to new energy technologies as compared with government funding towards community batteries, given that questions remain over the commerciality of community batteries in the current market environment whether led by market participants or network service provides.
- Avoid establishing direct participation schemes in the deployment of community batteries, that risk imposing high costs with limited benefits. Enabling flexibility for proponents in how customers' engage would support the most economically efficient investment in community batteries and maximise the benefits of these investments to consumers across the energy market framework.

9. To support the deployment of EV charging equipment in established apartment buildings, we recommend consideration be given to the provision of financial support to owner corporations.
10. AGL also recommends the NSW Government work with other jurisdictional governments to establish a nationally consistent regulatory framework governing ownership, operation and settlement of transactions associated with EV charging infrastructure that promotes efficient outcomes for consumers.
11. To support the deployment of stand-alone power systems (SAPS) in an economically efficient manner, we recommend:
    - Complementary reforms that require distribution networks to openly and transparently procure network services and provide relevant data and information to other market participants about applicable system and voltage constraints.
    - If the NSW Government is minded to establish a regulatory derogation with respect to the SAPS service delivery model for remote locations, a threshold market testing requirement be established to assess the maturity of retail market competition prior to approving the deployment of an integration service delivery option.
12. In developing a program that enables customers to compare the emissions performance of energy retailers more easily, we recommend developing a methodology based on the way Scope 2 emissions are captured under the National Greenhouse and Energy Reporting Scheme (**NGERS**) and other supporting documents, such as the GHG Protocol Scope 2 Guidance. We also recommend consideration of the following:
    - Retailers' offerings in GreenPower and carbon offsets;
    - Contractual arrangements where generation contracts are underwritten with renewables and firming (such as large-scale battery investments) which in effect reduce the emissions intensity of the wholesale market pool; and
    - As a matter of priority, the weighting of criteria in the program methodology should be designed towards supporting tangible emissions reduction activities in Australia's energy market system (e.g. in the treatment of generation contracts underwritten with renewables and firming and the quality of carbon offsets).

13. Update the life support rebate settings, including the list of eligible equipment and a broader review of the program alongside the Medical Energy Rebate to ensure they remain fit-for-purpose. Consideration should also be given to the linkage between energy concessions and life support registration requirements as not all life support customers receive concession which can disadvantage some customers.

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

APPENDIX – Consultation Questions

Part 1: Digital energy technologies

1. Meter costs to customers

AGL commends the NSW Government and other jurisdictional governments for continuing to explore ways through which the installation of smart meters can be accelerated, further building on the Australian Energy Market Commission (AEMC) Review into Metering Services[8].

As we recently observed to the South Australian Government, AGL firmly believes that since competition in metering began in 2017, the smart meter roll out has progressed at a pace consistent with the digital metering reforms of ensuring consumers control or have the power to choose when they want a digital meter installed to support products or services they have elected to take up (e.g., solar, batteries, EVs). This objective was explicitly used to avoid the high upfront capital costs borne by consumers without commensurate benefits, as happened in Victoria during the mandated roll out program where Victorian electricity consumers paid an estimated $2.239 billion for metering services by 2015, including the rollout and connection of smart meters, while few benefits accrued for energy consumers.[9]

Notwithstanding, AGL is committed to finding effective strategies and collaborative industry solutions to increase the penetration of smart meters in South Australia and across NECF. To avoid the risk of inflating costs associated with the roll out, it is important that these strategies are compatible with retailers' existing smart meter deployment programs and do not conflict with other jurisdictional and national arrangements to accelerate the roll out of smart meters.

In response to the AEMC's Review of Metering Services, AGL provided detailed insights into the progress of the smart meter roll out since Power of Choice reforms took effect in December 2017. As one of the leading retailers in the NECF smart meter roll out, AGL put forward a number of suggestions to enhance the roll out in its response to the Directions Paper. We encourage the Department to consider AGL's submission to the AEMC as a many of the recommendations apply to the current consultation.[10] Specifically:

- That the pace of the roll out is consistent with the forces of a competitive market. Attempting to accelerate the speed of the roll out through increased regulatory intervention and without proper consideration to retailers' existing deployment programs will inevitably result in higher costs for consumers without necessarily enjoying the benefits of the digital meter.
- The speed of the smart meter roll out will naturally accelerate with the removal of barriers and disincentives (for example, the capital costs associated with removing DNSP assets, issues at the customer's site affecting the installation, mandatory tariff reallocation).
- Complexities and challenges with DNSPs' processes such as family failure notifications and a lack of meter age profiles and forward planning information from SAPN exacerbate inefficiencies in the smart meter roll out.

[8] Australian Energy Market Commission, *Review of the Regulatory Framework for Metering Services, Directions Paper,* 16 September 2021.
[9] Victorian Auditor-General's Office, *Realising the Benefits of Smart Meters*, 2015.
[10] AGL Energy, *Submission to the Australian Energy Market Commission Review of the Regulatory Framework for Metering Services, Directions Paper*, 28 September 2021.

We note the proposed options to address the lack of consistent, transparent and publicly available information about the cost of a smart meter and associated services to the end-user customer, that include amendment to the AER's Retail Pricing Information Guidelines, displaying the costs of smart meters on Energy Made Easy and introducing pricing guidelines for smart meter installations.

We anticipate substantial complexity with putting smart meter costs on comparison sites as this would contain confidential information (contained in retailers' agreements with metering coordinators) that differs from site to site. It would also be necessary to separate once off meter costs from the ongoing meter costs retailers pay for the life of the meter (generally 10 years).

2. Meter life and redundancy charges

AGL agrees that there is an opportunity for NSW to review the rules and requirements around meter life to ensure they align with actual meter life and community expectations about the technology.

We anticipate that the proposed Option 1 (mandating a retirement age for basic meters) may be preferable to Option 2 (the current process - requiring distributors to notify relevant parties where a 'family failure' occurs) as this option would allow retailers to better plan for metering replacements.

On the other hand, we note there would still be instances of 'family failure' if Option 1 were progressed. We also anticipate impacts of accelerating the meter rollout in terms of environmental impacts and loss of jobs (meter readers).

3. Solar connection delays

We appreciate the concern that some solar customers are experiencing significant delays to their smart meter installation when required for the use of their solar panels. Nevertheless, we consider that the current regulatory arrangements are fit-for-purpose to support timely installation.

We note that there is currently a regulated timeframe of days for the installation of smart meters under the National Electricity Retail Law and that reporting on this issue is readily available via the Australian Energy Market Operator and the Australian Energy Regulator. It is also possible to request a new meter electronically.

AGL usually follows the regulated timeframe unless there is a customer appointment of a metering coordinator. Some circumstances that are outside of retailers' control may also cause delays.

We anticipate some shortcomings with respect to the proposed options, including the following:

- Option 1 (allowing third parties to request a meter installation) would cause some complexity as the installation of solar necessitates retailers changing customers' retail tariff which requires retailers to directly engage with customers to protect their privacy.
- Option 2 (advocating clear role responsibilities) does not appear necessary given that the regulatory framework already specifies roles, responsibilities, and compliance timeframes.

4. Meter board upgrades

We appreciate the concern that meter board upgrades may cause delays to meter installation and solar usage and result in additional unplanned costs, particularly for those customers requiring a smart meter to support other sustainability infrastructure investments such as solar.

We support Option 2 (distributors to provide Accredited Service Providers (ASPs) with blanket approval to re-mount old meters on new meter boards in apartment buildings) as the preferable option to expedite this process. We note that small jobs and upgrades to meter boards are generally covered by metering coordinators in customers' connection agreements. Given that the metering board relates to a customers' property, we do not consider this work falls within the retailers' responsibility. We consider it more appropriate that distribution networks manage this issue in circumstances where customers cannot afford the necessary upgrades.

We also anticipate the following shortcomings with respect to the other proposed options:

- Option 1 (allowing customers to submit a picture of their meter board to their retailer to allow the metering provider to make a preliminary assessment) could delay rather than expedite the processing of customers' requests. The pictures sent by customers would also not show issues behind the board and likely lead to incorrect requirements to upgrade a meter board, leading to a poor customer experience.
- Option 3 (introducing smart meter pricing guidelines) would be complicated as each site has different issues and costs as we elaborated above.

6. Consumer protections for remote vs manual re-energisation and de-energisation

AGL generally supports the proposed option 1 (to align existing obligations on DNSPs when they undertake manual re-energisation and de-energisation services).

Nevertheless, we do not consider it necessary that retailers publish their metering providers' timeframes for remote re-energisation. Rather, it should be retailers' timeframes that are published. Publishing metering providers' specific timeframes may create confusion for customers especially where metering providers have varying re-energisation windows based on their commercial arrangements with their partner retailers).

Part 2: The future of distributed energy resources

8. DER in NSW

AGL welcomes the NSW Government's intent to provide clear policy direction and coordination to the evolution of the distributed energy system in NSW. As far as possible, we would encourage a nationally harmonised policy framework to ensure consistent outcomes for customers and to reduce to and complexity for businesses operating across Australia's energy markets. Nevertheless, we support the NSW Government's leadership role in provide a pathway to deploying technologies at scale over the coming decade for the benefit of all energy consumers.

We are generally supportive of the proposed guiding principles elaborated in the Consultation Paper. In ensuring that the impact on customers is a primary consideration in all decisions, the NSW Government should be careful to consider the impact to all consumers (DER and non-DER assets owners). Beyond the guiding principles elaborated, we would also recommend the following principles that we proposed in our formal response to the Energy Security Board's Post 2025 Market Design Options Paper[11]:

- Focus on customer outcomes driven by simplicity and transparency;
- Customers choice on whether to offer up DER for wider network services;
- Consumer protections based on two-way flow of energy;
- Network pricing and access arrangements that provide for efficient and equitable outcomes; and
- Networks should not be provided a competitive advantage based on their ownership structure.

We would recommend that the NSW Government focus on the following practical measures to support DER and the suggested guiding principles:

- Clarify roles and responsibilities in the distributed energy ecosystem to maximise value for customers and ensure a consistent customer experience, including through the Energy Security Board's DER Implementation Plan:
    - Implement a fit-for-purpose consumer protections and retail authorisation framework for DER service providers; and
    - Ensure effective network economic regulation to ensure networks compete in the contestable market on an equal footing to prevent cross-subsidisation and potential consumer harm.
- Advance distribution network regulation to support the two-way flow of energy and unlock network value for consumers:
    - Promote access to distribution networks on fair terms with connection agreements that empower customers to provide services to the broader energy market system;
    - Ensure technical standards balance customer impacts and promote customer choice to participate in market services; and

[11] See further, AGL Submission on the Energy Security Board's Post 2025 Market Design Options Paper (10 June 2021), available at https://www.agl.com.au/thehub/articles/2021/06/agls-submission-on-the-energy-security-boards-post-2025-market-design-optionspaper.

- Support competitive procurement of network services as a first best option with data and information to facilitate contestability.

- Promote distribution network pricing reform to better signal the costs of using the infrastructure, including consideration of:
  - The potential benefits associated with mandating time of use network tariffs across distribution networks to optimise the use of existing infrastructure by encouraging demand management pricing[12]; and
  - 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. 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.[13]

- Support the development of competitive market solutions to the challenge of minimum operational demand. By leveraging insights from other jurisdictions and from industry participants, the approach should:
  - Empower consumers to be part of the solution through smart technology;
  - Be value accretive and consistent for customers; and
  - Build social licence and establish trust that service providers will act in customers' best financial interest.

We believe these priority measures would support greater demand side participation and flexibility for customers and market participants. We would encourage careful sequencing of these measures to facilitate the market's development. Advancing distribution network regulation, improved customer protections, smart meter deployment and network tariff reform should be given priority as enabling regulatory solution before alternative approaches are scaled (for example community batteries that may rely upon uneconomic business models that impose greater costs on consumers).

AGL has observed a broad range of material concerns and barriers that will need to be mitigated to support DER. We have also identified a range of enablers to customers being rewarded for flexibility from their DER and flexible energy use. We recently elaborated these in our submission to the ESB's Customer Insights Collaboration[14] with reference to a range of knowledge sharing reports and industry insights, canvassing:

- Regulatory and market reform to unlock value and choice for customers;
- Wholesale market settings to support flexibility; and

[12] See for example, Infrastructure Victoria's Recommendation 9 in its 30 Year Infrastructure Strategy for Victoria: https://www.infrastructurevictoria.com.au/report/1-1-navigate-theenergy-transition/.
[13] On the bulk wholesale network tariff, see the Brattle Group Report (2018) Electricity Distribution Network Tariffs: Principles and analysis of options: https://www.brattle.com/wpcontent/uploads/2021/05/14255_electricity_distribution_network_tariffs_-_the_brattle_group.pdf. See also DEIP access and pricing reform package outcomes: https://arena.gov.au/assets/2020/07/deip-access-pricing-reform-package-outcomes.pdf.
[14] See further, AGL response to the Customer Insights Collaboration – Release One – Q1 2022 Call for Evidence (24 January 2022), Available at https://www.agl.com.au/content/dam/agl-thehub/220202-agl-submission-esb-customer-insights-collaboration-call-for-evidence-january-2022-final.pdf.

- Fit-for-purpose consumer protection to improve experience for all consumers.

AGL appreciates the important equity dimension in the energy transition in ensuring access to the benefits of new technologies for all customer cohorts. We welcome the NSW Government's interest in developing policies and programs to ensure that vulnerable, low-income and other 'locked out' households are not disadvantaged. We would encourage consideration of the following options in particular:

- Contracting renewable energy power purchase agreement arrangements with energy service providers for government social housing sites as an alternative to government concession arrangements;
- Scaling the NSW Government's existing Solar for Low Income Households program to reach a larger customer cohort to facilitate access to solar and reduce consumer bills;
- Develop programs focused on electrification and the deployment of smart appliances for vulnerable, low-income and other 'locked out' households;
- Advance time of use and cost-reflective network tariffs to better signal the costs of using the infrastructure.

9. Enabling flexibility and dynamic operating envelopes

AGL appreciates that the NSW Government is considering the opportunity to proactively implement measures now that would enable any future lack of load issues to be managed effectively or avoided.

In principle we support the introduction of dynamic export limits and dynamic operating envelopes, provided they enables more transparent management of network constraints and provides DER customers with greater access than would otherwise be possible with fixed limits on the size or export limits of the system.

AGL has had the benefit of engaging on the South Australian Smarter Homes reforms, the industry API technical working group that developed the CSIP-AUS Australian Implementation Guide for 2030.5 and on the SA Office of the Technical Regulator's Dynamic Export Limits Committee.

Having regard to this experience, we would urge the Department to consider the following issues in advance of introducing any new remote disconnection and reconnection technical standards and dynamic export limits in NSW:

- The current policy work program to establish a national interoperability policy, that is being led by the ESB;
- The current shortcoming of the Australian implementation guide for IEEE 2030.5 (CSIP-AUS) in its ability to support aggregator use cases that could support more cost-effective outcomes based on the structure of Australia's energy market system;
- The need to establish regulatory settings on the basis of proven market trials to ensure technical solutions provide the necessary network security objectives whilst also supporting positive customer outcomes;
- The need to provide appropriate lead times for industry to enable compliance and mitigate any impact to consumers who have already investment in DER.

There is an ongoing reform agenda to develop a nationally consistent policy framework that can ensure DER technical standards work in customers' best interests. This work is being guided principally by the ESB in its development of an interoperability policy as well as the Australian Energy Market Commission's work on

DER technical standards governance. We recently made a submission in response to the ESB's interoperability policy[15], where we highlighted the ongoing need to ensure that CSIP-AUS is adapted to facilitate the aggregator use case that could support more cost-effective outcomes based on the structure of Australia's energy market system.

We consider that the jurisdictional governments should only progress technical standards guidance where they can make 'no-regrets' decisions to progress standards in this infant but growing area. Regulatory guidance can be revised and further developed as industry learns more from trials. The technical standards adopted in NSW should also be informed by a harmonised national approach, to reduce cost and complexity for businesses operating across Australia's energy markets and maximise the potential for all manufacturers to comply. Until this national policy framework is established, there is risk that all manufacturers may not be able to comply with the jurisdictional technical standards thereby slowing down the sale and uptake of solar in the NSW market.

We believe these technical integration questions should also be progressed through further industry trials to ensure that any regulatory settings are evidence-based. Industry has not yet had the benefit of the final report learnings from SAPN's ARENA Flexible Export for Solar PV demonstration[16] project to inform the appropriate setting of regulatory arrangements to ensure that customers are not negatively impacted. It will be important to understand the potential barriers to customers integrating with prescribed dynamic exports across a larger cohort of customers and across the lifespan of the demonstration pilot. While we understand that the demonstrations were intended to involve around 800 customers, we also note that early knowledge sharing reports indicated that customers have varied internet setups, and gaining connectivity to the inverter/ gateway device (Droplet) varies on a site to site basis (some were more difficult that others).

We also consider it necessary to deploy further technical trials to test the integration of aggregators and network dynamic operating envelopes.

Accordingly, we would recommend the NSW Government sequence its implementation timetable for the introduction of any new remote disconnection and reconnection technical standards and dynamic export limits to follow:

- The establishment of a national policy on interoperability through the ESB;
- The conclusion of SAPN's ARENA Flexible Export for Solar PV demonstration project; and
- The deployment of further technical trials to test the integration of aggregators and network dynamic operating envelopes.

10. Quality, standards and compliance

As a leader in DER products and services, AGL has actively participated in bringing the consumers' view and interests into the development of a range of policies, regulations, and technical standards applicable to DER. We currently represent the Australian Energy Council (AEC) membership on a range of relevant Standards Australia Committees, including:

[15] See further AGL submission to the ESB Interoperability Policy (8 February 2022), Available at https://www.agl.com.au/content/dam/agl-thehub/220209-esb-interoperability-policy-stage-1-inverter-based-resources.pdf.
[16] See further SA Power Networks Flexible Export for Solar PV Trial, Available at https://arena.gov.au/projects/sa-power-networks-flexible-exports-for-solar-pv-trial/.

- EL-42 (Renewable Energy Power Supply Systems and Equipment);
- EL-54 (Remote demand management of electrical products); and
- EL-64 (Decentralised electrical energy and grid integration of renewable energy system).

We are also engaged in a range of industry forums focused on the development of appropriate technical standards and protocols to support DER integration, including the Distributed Energy Integration Program, API Technical Working Group, South Australian Office of the Technical Regulator Dynamic Exports Committee, and the Energy Security Board's DER Maturity Plan Pilot Stakeholder Steering Cohort. We have consistently advocated in these forums for technical standards and protocols governing DER to empower consumers with choice to utilise and optimise DER assets for their own comfort and to participate in competitive market services which address broader energy system needs.

AGL appreciates the importance of installed technologies being both controllable and compliant with all relevant technical safety and quality standards to support the effective transition towards a two-sided market that allows the participation of customer assets.

We support the NSW Government's proposal to fast-track mandating that all new DER installed must be active i.e. visible and controllable. In developing an appropriate regulatory approach, we would encourage careful consideration of the following matters:

- Minimum viable communications capabilities and their associated costs;
- Mitigating cyber security risks in the scaled deployment of visible and controllable assets; and
- Providing adequate notice to industry to meet the proposed specifications and to mitigate any impact to consumers who have already contracted for the installation of new DER assets.

We also believe there is an ongoing need to improve the governance arrangements for DER technical standards, having regard to the following shortcomings:

- The inability to implement consistent technical standards across the NEM and the need for a fast, flexible, and transparent standards setting process.
- The lack of an overarching strategic direction to inform DER standards proposals; and
- The lack of a formal cost benefit analysis framework both in the Standards Australia development process and in the AEMC's incorporation of AS 4777.2:2020 into the National Electricity Rules (NER), to ensure reform proposals are in the long-term interest of consumers.

We recommend the NSW Government lean into the current reform agenda to develop a nationally consistent policy framework that can ensure DER technical standards work in customers' best interests. This work is being guided principally by the Energy Security Board in its development of an interoperability policy as well as the Australian Energy Market Commission's work on DER technical standards governance.

The current lack of a nationally harmonised approach to DER technical standards in the NEM increases the compliance cost and complexity for businesses operating across Australia's energy markets. By way of example, the South Australian Government's implementation of its Smarter Homes Reforms in 2020 established unique regulatory arrangements in South Australia that do not reflect the national energy market regulatory framework.

As we observed in response to the ESB's interoperability policy, substantial work remains to establish a national technical standards framework that:

- Promotes customer choice and enable customer participation by aligning with internationally accepted standards, where consistent with Australian energy market structures;
- Supports portability to the extent that the benefits outweigh the costs;
- Enables access to secure and open IT platforms as well as technical DER device capabilities; and
- Aligns with the policy direction towards a market-based framework to allow customers to engage and share in DER value.

We would recommend against DNSPs being able to remotely access or communicate with DER assets on their network to check and dynamically manage settings in accordance with changing conditions on the network. We consider that a nationally consistent interoperability policy framework, alongside the market trials currently on foot to test the application of communications protocols, will provide a more cost-effective solution. We would also recommend against requiring an additional spot checks of inverter settings as compliance should already be assured through DNSP connection processes and CER regulatory oversight.

11. Improving the visibility of residential DER and data management

AGL recommends the NSW Government clarify its policy intent in seeking to enhance the visibility of residential DER and data management to then inform the development of a preferred approach.

AGL supports a national framework as the preferable approach to DER data collection and notification. We consider this is well served by the AEMO DER Register and the Consumer Data Right (CDR) regulatory framework. While the AEMO DER Register is intended to support system security, the CDR framework is intended to facilitated customer preferences and choice.

We would support improvements to the AEMO DER Register to expand its coverage of DER assets and improve the accuracy of the information provided. We would also recommend consideration be given to linking the DER Register with the "approved" products list, that is now mandated by the Clean Energy Regulator.

While we appreciate the shortcomings of the current regulatory frameworks in facilitating the provision of real-time operational data across the networks, we consider that this type of information may be best interrogated through purpose-build research and modelling, including through the networks' regulatory expenditure proposals.

We would recommend that any additional jurisdictional regulations to enhance the visibility of residential DER and data management be subject to a rigorous cost benefit analysis to ensure they deliver benefits over and above the current regulations.

12. Community batteries and emerging technologies

AGL appreciates that community or neighbourhood scale batteries have the potential to support Australia's energy transition by storing energy locally while benefiting from some economies of scale. The batteries, typically 100kW to 5MW, provide advantages over other forms of storage when connected locally to the distribution network in terms of local grid stability, solar enablement, and local use of energy.

However, while there may be economic and equity advantages in the deployment of community batteries, there are a range of financial, regulatory and consumer matters that need to be resolved to ensure their efficient uptake.

In 2021, AGL received grant funding from the Victorian Government through its Neighbourhood Battery Initiative to investigate the feasibility of neighbourhood-scale batteries on the Mornington Peninsula (**AGL's Study**)[17]. AGL's Study sought to test if and how the local neighbourhood could be serviced by a neighbourhood scale battery, including:

- Possible battery design options;
- Potential financial return for a competitive market participant to own and operate the battery, and provide agreed network services to the local distribution network;
- The incremental economic value the battery provides to the network and the community;
- How community members should participate with the battery scheme; and
- Under different circumstances, who is/are the preferred party/parties to own and operate the battery.

Now complete[18], AGL's Study provides a range of insights to support the policy and regulatory framework for community batteries into the future, including the following:

- From a technical standpoint, the battery could be effective at reducing peak demand. AGL's Study tested how the battery behaved under different duration, network tariff and network service requirement scenarios.
    - A 1MW / 2MWh system is the preferred duration, effectively balancing network benefit with capital cost.
    - To encourage the desired behaviour, and enable profitability, network tariffs would need to be bespoke or entirely absent for distribution network connected batteries. For a 1MW/2MWh battery, introducing United Energy's low voltage grid tariff discouraged desired 'solar soaking' behaviour, as the battery charged less during the day, and reduced gross profit from $99K per year to -$8K per year (based on FY21 price data).
    - Installing batteries without enforcing network service requirements risks worsening grid stability when the battery charges during shoulder periods (periods either side of peak demand).
- Questions remain over the commerciality of neighbourhood batteries in the current market environment. The Study assessed the net present value of seven different scenarios and tested the sensitivity to various factors. We also consider it unlikely that other community battery trials have delivered a commercial return for network service providers or market participants, given their scale and noting that all projects received Federal or State Government support.

[17] See 'AGL begins feasibility study on Mornington Peninsula neighbourhood-scale batteries' (8 September 2021) Available at https://www.agl.com.au/about-agl/media-centre/asx-and-media-releases/2021/september/agl-begins-feasibility-study-on-mornington-peninsula-neighbourho.

[18] We anticipate that AGL's final report will be published shortly and would welcome the opportunity to share insights with the Department.

- Residential customers may receive benefits from distribution scale batteries without a direct participation scheme through lower wholesale electricity prices and lower cost of network services. Schemes offering 'virtual storage' subscriptions, or 'peer-to-peer trading' may reduce profitability and restrict the ability to scale distribution scale batteries across Australia's electricity networks, and reduce overall consumer benefits. Direct participation schemes can be costly to implement and tend to benefit a smaller group of customers than sharing of benefits in Australia's energy market regulatory framework.
- Behind-the-meter (BTM) investments offers a number of advantages over front-of-meter investments including that they do not incur network tariffs, excess solar generated at the site can be used at the site, and there are no incremental land costs. AGL's Study illustrated that investing in BTM assets was only marginally more expensive overall in the Victorian context (taking into account existing state subsidies) and customers would also derive additional benefits from a BTM solution.
- While ownership by a competitive market participant provides a range of advantages as compared with network ownership (access to energy markets, access to customers, transparency of opportunities to provide network services), the regulatory framework would need to guarantee a level playing field for all battery service providers connected to the networks for the competitive benefits to be realised.

Having regard to our experience through the AGL Study, we would recommend the NSW Government consider the following matters in developing its policy approach to community batteries:

- Require that networks only procure network services in response to identified network constraints and that community batteries be considered as one of a range of solutions (alternative options should also include aggregated BTM assets that could provide network services through orchestration).
- Consider the relative benefits of subsidies in BTM assets to support equity of access to new energy technologies as compared with government funding towards community batteries, given that questions remain over the commerciality of neighbourhood batteries in the current market environment whether led by market participants or network service provides.
    - While BTM investments may be more expensive, these assets offer other additional benefits to consumers in terms of self-consumption.
    - Government investment in community batteries risks underutilisation unless proponents can guarantee the capacity will be utilised through a combination of network and wholesale energy market services.
- Avoid establishing direct participation schemes in the deployment of community batteries, that risk imposing high costs with limited benefits. Enabling flexibility for proponents in how customers engage would support the most economically efficient investment in community batteries and maximise the benefits of these investments to consumers across the energy market framework rather than a smaller group of customers.

13. EV infrastructure in existing apartment buildings

AGL understands there are a range of barriers to the installation of EV charging infrastructure in apartment buildings, including fit-for-purpose building regulations to support retro-fitting EV charging equipment, wiring arrangements, billing arrangements and embedded network regulations.

We appreciate that work is currently underway to reform the National Construction Code to support the deployment of EV charging infrastructure for new apartment complexes.

Nevertheless, there is also a need to develop policies and programs to support the deployment of EV charging infrastructure for existing apartment buildings. AGL would recommend consideration be given to the provision of financial support to owner corporations to support the deployment of EV charging equipment in established apartment buildings in order to:

- Facilitate compliance with the EV readiness standard as defined in the NSW apartment design guide; and
- Deploy EV charging equipment in shared parking areas.

AGL would also recommend that the NSW Government work with other jurisdictional governments to establish a nationally consistent regulatory framework governing ownership, operation and settlement of transactions associated with EV charging infrastructure that promotes efficient outcomes for consumers.

While it may be prudent to allow the market to evolve in this space, it will be important to ensure that customers are afforded equivalent consumer protections as in the broader electricity market system. Policymakers should be careful to avoid creating a separate regulatory framework for EV charging providers that may risk repeating the embedded network experience where customers are locked into anti-competitive supply arrangements and face barriers to switching providers and a lack of information.

14. Stand-alone power systems

AGL is generally supportive of the national regulatory framework[19] that was developed by the Australian Energy Market Commission (**AEMC**) to facilitate the transition towards stand-alone power systems (**SAPS**) (**National Framework**). We consider the National Framework will support greater optionality in efficient alternatives to traditional electricity supply arrangements. This approach ensures energy consumers have access to more reliable and affordable energy supply, particularly where the costs of providing grid-connected services may be high, for example in remote locations and areas which are difficult to access or susceptible to bushfires.

At the same time, the National Framework focusses on maintaining competitive solutions in generation and retail services for those consumers who transition to SAPS, which the AEMC consider fundamental to ensuring cost competitive outcomes for consumers. The National Framework limits distribution networks' ability to provide SAPS generation services through the Australian Energy Regulator's (**AER**) Electricity Distribution Ring-fencing Guideline (**Ring-fencing Guideline**) and the proposed exemptions framework.[20]

While these measures provide reasonable safeguards to ensure energy consumers do not pay more than they have to for energy supply, we consider that additional safeguards are required to ensure the Ring-fencing Guideline exemptions framework is complemented and reinforced against high cost and inefficient network investments and/or favour investment proposals from affiliated ring-fenced entities to the detriment of consumers.

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[19] See AEMC, Updating the regulatory frameworks for distributor-led stand-alone power systems, Available at https://www.aemc.gov.au/market-reviews-advice/updating-regulatory-frameworks-distributor-led-stand-alone-power-systems.

[20] See AER, Electricity Ring-fencing Guideline Review, Available at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/electricity-ring-fencing-guideline-review/aer-position.

The Ring-fencing Guideline provides a fundamental safeguard to ensure a level playing field so that new participants and business models can fairly compete in delivering cost effective energy solutions. Against the backdrop of technology advancements that can provide multiple services both in contestable markets and to support the ongoing security and operation of local distribution networks, we believe a competitive-based approach is best placed to support efficient outcomes, including energy storage solutions, for the benefit of all consumers.

Accordingly, we believe the policy focus should be on strengthening and improving the effectiveness of the ring-fencing framework and implementing complementary reforms to support the development of a more mature market for distribution network services. Complementary reforms should require distribution networks to openly and transparently procure network services and provide relevant data and information to other market participants about applicable system and voltage constraints.

We would therefore recommend the NSW Government implement the following additional safeguards to complement the Ring-Fencing Guidelines:

- Require that distribution networks appoint an objective probity officer to facilitate the assessment of tender proposals;
- Require distribution networks publish sufficient locational information to enable competitive market proponents to develop cost competitive proposals; and
- Require that all contractual information with respect to these tenders be provided to the Department for review.

We appreciate that in isolated regional locations it may be more efficient to derogate from the NEM consistent service delivery model and offer and integrated service solution. Provided this approach is only applied in limited geographical circumstances, where customers do not have access to effective retail competition, we do not anticipate material customer detriment.

In transitioning customers to SAPS, AGL foresees similar risks of customer detriment as exist in the context of embedded networks. AGL was very supportive of the AEMC's recently proposed reforms to the regulatory framework for embedded networks, which will serve to improve customer outcomes through better customer protections and access to retail market competition. It is therefore critical that the regulatory framework for transitioning customers to SAPS ensures appropriate safeguards, particularly as their uptake begins to scale.

Accordingly, if the NSW Government is minded to establish a regulatory derogation with respect to the SAPS service delivery model for remote locations, we recommend that a threshold market testing requirement be established to assess the maturity of retail market competition prior to approving the deployment of an integration service delivery option.

Part 3 – Energy customers' digital journey

18. Electricity retailers' emissions performance

AGL supports the NSW Government's commitment under its NSW Net Zero Plan to enable customers to compare the emissions performance of energy retailers more easily. We also agree with the proposed principles that should guide the approach, namely:

- ease of obtaining the required data and information from retailers;
- accuracy of the criteria in forming electricity retailers' emissions profiles, and
- usefulness and desire for the information by customers.

Nevertheless, we anticipate a range of complexities in approaching this matter that will need to be carefully managed to ensure the NSW Government's proposed program presents accurate representations to consumers to support positive consumer outcomes.

The integrity of the methodology adopted, and the accuracy of the information presented will impact customers' own ability to measure their Scope 2 emissions and in turn make informed decisions about their energy usage.

In our view, a preferable approach would be to develop a methodology based on the way Scope 2 emissions are captured under the National Greenhouse and Energy Reporting Scheme (**NGERS**) and other supporting documents, such as the GHG Protocol Scope 2 Guidance. This would entail the application of existing methodologies to measure the emissions intensity of purchased electricity to a new context. Nevertheless, it would provide a more accurate picture of each retailer's emissions intensity, having regard to contracted versus spot market generation and temporal changes that reflect wholesale market fluctuations.

Scope 2 emissions are not only specified and reported under the NGER legislation, but also reported on through voluntary disclosures by an increasing number of businesses. Although Scope 2 emissions relate to the emissions intensity of electricity purchased and consumed, the principles regarding their calculation would similarly apply to disclosure of the electricity sold by a retailer (i.e. their portfolio). An incorrect representation of emissions intensity sold may therefore provide challenges for businesses that are seeking to meet their corporate disclosure obligations concerning electricity purchased and consumed. Any diversion from processes to meet existing statutory obligations and practices should come from an understanding of internationally recognised frameworks to measure electricity emissions intensity.

Alternate methodologies could be constructed that reflect the nominal emissions intensity of a retailer, but it should be made clear that these methodologies do not accurately reflect the actual emissions associated with the electricity sold by these parties. For example, in the technical working paper that accompanied the national energy guarantee (NEG) policy framework, a methodology was proposed whereby a corporate group's controlled generation is automatically allocated to that corporate group's retail entity as well as a methodology for allocating residual generation across all retailers. Whilst this approach provides a means to account for emissions from contracted generation, it provides no basis for calculating the emissions associated with electricity sold at any given time due to, among other considerations:

- Applying corporate control as a de facto measurement of a retailer's actual emissions intensity without taking into account how those assets were utilised in a particular market settlement period (where they may be contracted to another retailer); and

- For retailers without generation under control, attributing a residual emissions intensity that may be higher than their actual emissions as the residual emissions methodology would spread the emissions of generations not under a retailer's control across all retailers.

It is important to note that not all electricity trades, purchases and contracts outside of the spot market are linked to an identifiable generation source. Indeed, many steps have been taken to increase the liquidity of financial derivatives in the wholesale market, which are not physically tied to any generation source. Financial contracts will not specify generation type and while power purchase agreements can be linked to an identifiable generation source, they only notionally entail the sale of electricity and may still entail a derivative arrangement.

We consider it relevant that a methodology to measure retailers' emissions intensity takes into account retailers' offerings in GreenPower and carbon offsets:

- AGL's Green Energy offering[21] is accredited under the national GreenPower program which certifies companies producing electricity from eligible renewable energy generators. Because the green electricity purchased is additional to the Commonwealth Government's RET, it further increases the level of renewable energy powering Australia's grid.
- AGL's Carbon Neutral[22] electricity and gas offerings are certified under the Australian Government's Climate Active Program[23] and enable customers to offset the greenhouse gas emissions associated with their electricity and gas plans. The Climate Active Program publicly reports a range of emissions metrics of individual retailers in connection with the certification process.

We would also recommend consideration be given to contractual arrangements where generation contracts are underwritten with renewables and firming (such as large-scale battery investments) which in effect reduce the emissions intensity of the wholesale market pool.

We also anticipate some complexity in calibrating the weighting for the proposed criteria elaborated in Table 3 of the Consultation Paper. As a matter of priority, we consider that the weighting of criteria should be designed towards supporting tangible emissions reduction activities in Australia's energy market system:

- By way of example, generation contracts underwritten with renewables and firming should be treated more favourably than offsets (that may concern activities outside of the Australia's energy market system).
- The quality of carbon offsets should also be considered. Particularly in the context of carbon credits obtained from international markets, there are ongoing risks in terms of double accounting and crediting projects that may not actually reduce carbon dioxide emissions. In some instances, these projects may cause other environmental harm or negatively impact upon local communities.

[21] See further https://www.agl.com.au/get-connected/green-power/.
[22] See further https://www.agl.com.au/residential/carbon-neutral?cide=sem-a&ds_rl=1271940&s_kwcid=AL!7813!3!482641854617!e!!g!!agl%20carbon%20neutral&ds_rl=1271940&gclid=EAIaIQobChMIpquZhP697QIVwrmWCh3CIghrEAAYASABEgLzL_D_BwE&gclsrc=aw.ds.
[23] See further https://www.climateactive.org.au/buy-climate-active/certified-members/agl.

We would welcome further detailed consultation to support the Department in developing a fit-for-purpose program to support this important policy commitment.

In terms of existing frameworks that electricity retailers use to report on emissions and/or offsets, we note the following:

- AGL is required to report on its Scope 1 and Scope 2 emissions to the Clean Energy Regulator under the NGERS legislation.
- Additionally, electricity retailers have renewable certificate reporting obligations under both the large scale renewable energy target (RET) and small-scale renewable energy scheme (SRES) that could provide relevant inputs into a methodology to measure retailers' emissions intensity. The Clean Energy Regulator administers the two schemes.

19. Definition of life support equipment for energy rebates

AGL supports the NSW Government's interest in updating the life support rebate settings, including the list of eligible equipment and a broader review of the program alongside the Medical Energy Rebate to ensure they remain fit-for-purpose. AGL would recommend consideration also be given to the linkage between energy concessions and life support registration requirements as not all life support customers receive a concession which can disadvantage some customers.

We consider that the list of approved life support equipment should be reviewed every 5 years. We would recommend consultation with the Australian Medical Association to understand how regularly new life support equipment is distributed.

We also see potential for automation to reduce the burden on impacted customers by allowing signed medical certificates from doctors to be accepted for concessions. AGL can currently accept them for registering life support. This would negate the need for the doctor to sign the form, which has proven difficult during the pandemic with the rise in telehealth appointments or where customers who need to attend specialist practitioners.

In terms of AGL's experience with life support customers, we note the following:

- AGL never rejects a life support rebate application based on equipment type. If the equipment is certified by the medical practitioner but not eligible for concession, they will still be registered for life support protections. However, a number are rejected due to, for example, lack of doctor's signature or customer signature.
- At the end of January 2022, 10,525 life support customers receiving concession of a total of 24,280 registered life support customers in NSW.