AGL Energy Limited
T 02 9921 2999
F 02 9921 2552
agl.com.au
ABN: 74 115 061 375

Level 24, 200 George St
Sydney NSW 2000
Locked Bag 1837
St Leonards NSW 2065

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Mark Feather

General Manager, Strategic Energy Policy and Energy Systems Innovation

Australian Energy Regulator

GPO Box 3131

CANBERRA NSW 2001

Sent via email: NetworkPolicy@aer.gov.au

Flexible Export Limits Issues Paper

AGL Energy (AGL) welcomes the opportunity provide feedback to Australian Energy Regulator's (AER) Flexible Export Limits Issues Paper, dated 17 October 2022.

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 4.3 million customer accounts across Australia. AGL supports an energy market system that empowers consumers to take control of their energy consumption and costs.

AGL is market leader in the development of innovative products and services that enable consumers to make informed decisions on how and when to use their consumer energy resource (CER) assets to optimise their energy load profile and better manage their energy costs. Our current CER product and services include our leading-edge Virtual Power Plant (VPP), Peak Energy Rewards demand response program, retail offer for electric vehicle (EV) owners and EV subscription service.

We commend the AER for its forward-thinking, consumer-centric approach to developing a policy and regulatory framework that can facilitate and support the harmonised implementation of flexible export limits across the National Energy Market (NEM). In the near future, dynamic operating envelopes (DOE) - and flexible export limits as they relate to CER - will be one of the leading solutions to network constraints and managing available capacity. The challenge for the AER throughout this review will be to develop a policy direction that maintains consumer access to value in CER assets and supports the continued uptake of distributed solar PV, battery storage and emerging energy products and technologies. It will also be crucial at this formative stage of the market, that the AER sustain a thriving market for aggregation services that will see more value flowing back to customers, and a more flexible and lower cost system.[1] This will require the AER to re-evaluate or expand its expected models for the operation of flexible export limits and further contemplate the role of energy market participation and Frequency Control Ancillary Services (FCAS) responses within the flexible export limits framework design.

AGL supports an approach where principles of network efficiency, consumer access and freedom to choose to participate form the foundation of the AER's flexible export limits policy. However, we believe that this should underpinned by the strategic priority of developing a nationally consistent and standardised flexible export limits framework across the NEM. We acknowledge that Distribution Network Service Providers

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[1] AGL, Response to the Interoperability Policy Directions Paper, 25 November 2022, p2.

(DNSPs) may be best positioned to decide how and when it is necessary to manage congestion in their network. However, fragmentation of approaches to congestion management at this early implementation phase risks harming the long-term interests of consumers if the emergence of compatible devices, new energy products, services and participants is stifled by varied and inconsistent flexible export limits requirements and processes across DNSPs.

Noting that consumers are investing their own capital in CER assets, maximising their return on investment whilst maintaining system security should be the overarching objective of policy and market development arrangements. We recommend that the AER not delay establishing standardised requirements for network implementations of flexible export arrangements, where necessary and appropriate, and to continue to explore opportunities to align some of the issues explored in this consultation through a nationally consistent approach.

To be clear, at this stage, AGL does not support the development of policy or requirements relating to import controls as we do not believe that a case has been made for limiting both export and import. We do not view the application of DOEs to consumer imports as appropriate at this early implementation phase for flexible export limits.

AGL's feedback to the Flexible Export Limits Issues paper is based on our operational experience with CER products, our role as one of Australia's largest VPP operators and ongoing involvement in a number of trials and projects that seek to test the operation of DOEs.

Expected Models for the operation of flexible export limits

The AER notes that it will be exploring the initial issues associated with implementation and operation of flexible export limits through the lens of the two broad models of operation that it expects to observe:

- 'Model 1 DNSP to device'; and
- 'Model 2 Trader flexible limit passthrough'.

As an operator of one of Australia's largest VPPs, AGL has extensive knowledge of the merits and challenges of the various models of operation for DOEs/flexible export limits. AGL has long been a proponent of a third and distinct model of operation for flexible export limits, the 'Parallel trader communication model'. Separate to the Model 2 structure whereby the trader disintermediates the communication between the DNSP and the vendor/device (and in so doing unnecessarily complicates the communications and compliance architecture), in the Parallel trader communication model there is a parallel channel of communication between the DNSP signals and the trader/ aggregator's controls to the device/vendor using IEEE2030.3/CSIP-AUS client, and the trader/aggregator is then able to develop dispatch logic to blend market signals within the constraints of the DOE limit without becoming a part of the chain of mandatory communications between the DNSP's utility server and the device.

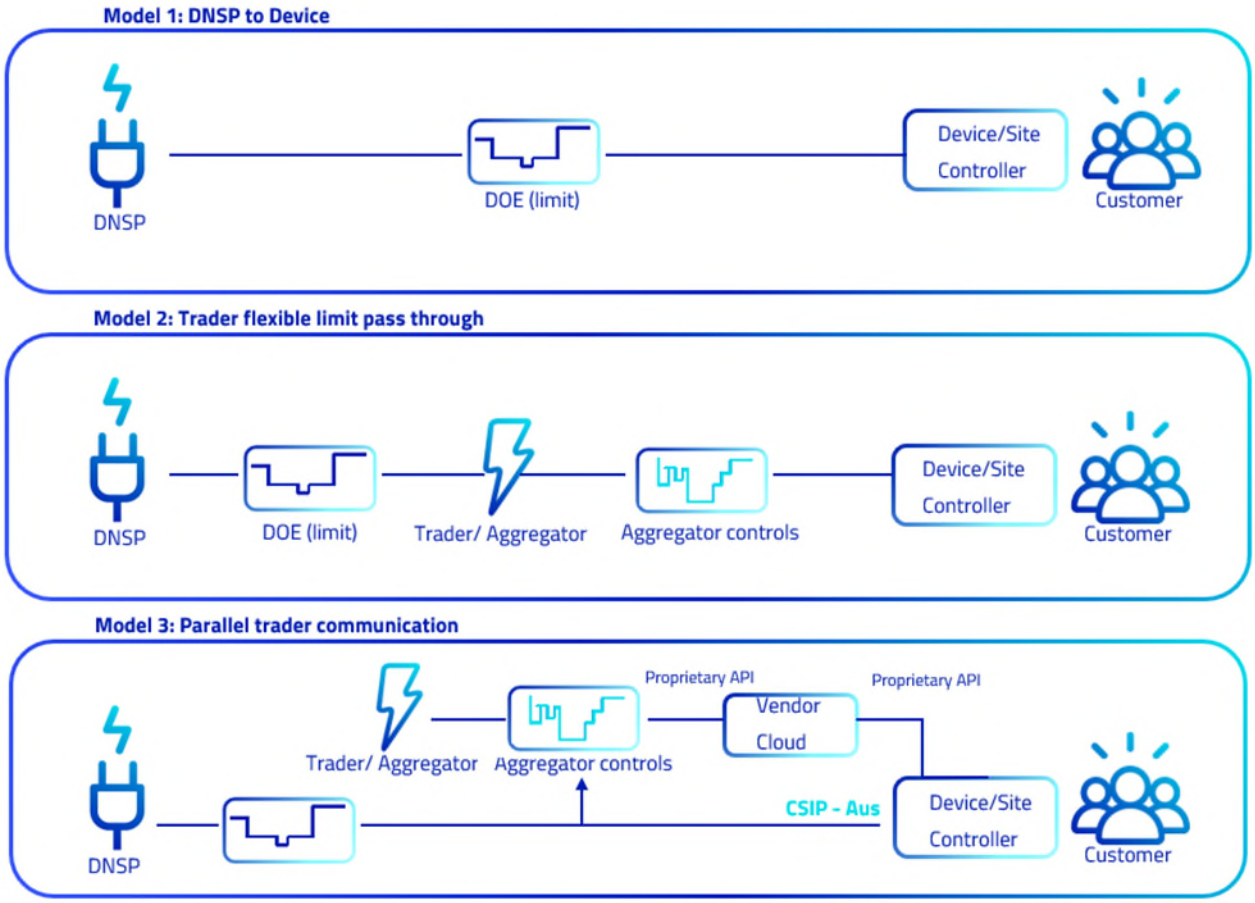

Figure 1: Models of operation for flexible export limits incorporating the Parallel Trader Communication Model

The 'Parallel trader communication model' is not an iteration or variation of Model 2, but rather its own standalone, distinct concept which we believe will be the preferred approach for traders and aggregators in the future. This is, in part, because Model 3 offers several advantages to the 'Trader flexible limit passthrough' concept described in the Issues Paper. For example, under Model 2, once the utility server sends a command to the trader, the trader becomes responsible for maintaining compliance of that device and managing continuous communication with the device. For most traders, this will invariably mean costly investment into server infrastructure, software build costs, and an operational running expense that effectively duplicates the investment by the DNSP in their own infrastructure, when the trader only wants to see what the limit is and wants to be flexing the device within the bounds of that limit, without taking on the compliance role.

The Parallel trader communication model of operation is particularly important where a customer chooses to change aggregator, without affecting the underlying connection between their device and the DNSP's servers. Model 2 in particular risks the creation of a technology provider role that becomes a monopoly gatekeeper to a customer's device, where the technology provider enabling compliance to the DOE limits is the only party that can also provide aggregation/VPP services to the customer. This risk to a competitive aggregation services market has already been seen in the 'Relevant Agent' role under South Australia's Smarter Homes implementation.

AGL is also concerned that a rushed and piecemeal implementation of CSIP-Aus in some jurisdictions leaves a lot of key technical guidance for technology providers and participants undefined, which results in contradictory policies and confusion.

As an example, where a customer has both distributed solar PV and battery storage connected to a single hybrid inverter (as opposed to an AC-coupled solar inverter and AC-coupled battery inverter), the system must comply with the set flexible export limit, whereas batteries installed in an AC-coupled arrangement do not, even though the behaviour of both systems is largely identical. Where the hybrid inverter operation must comply with a DOE set by the network, but of which aggregators have no visibility, this makes the creation of VPP value through response to market signals extremely challenging. [redacted]

Further confusion exists in how OEMs will be expected to handle potential conflicts in signals that they receive from an aggregator and from the network utility server. AGL has spoken to a number of its hardware vendors who all have vastly different approaches to handling potential conflicts, largely due to the lack of guidance in the CSIP standard and from networks who have not had the time to consult broadly on an effective approach or to communicate one to industry. AGL expects that confusion amongst OEMs will further impede CER services market growth under a non-harmonised flexible exports regime.

It is important that the AER accurately capture the range of the fundamental operating models that will appear in the market from the onset so that the AER can undertake a holistic analysis of the issues and implications of each model to enable efficient implementation of flexible export limits and ensure appropriate consumer protections are developed. In AGL's view, this will require DNSPs currently implementing a form of flexible exports in their own jurisdictions to pause their development and wait for the AER to complete its harmonised framework. Jurisdictions with immediate need should use short term interim measures that provide no regrets decisions and will not result in longer-term consumer harm. Once the AER framework has been developed, DNSPs in these jurisdictions can move to setting limits within the AER framework.

Capacity Allocation Principles

AGL supports consistent and nationally harmonised principles for guiding DNSP capacity allocation methodology. We agree that the five principles developed through the Distributed Energy Integration Program (DEIP) should to some extent be auditable and apply uniformly across networks in the NEM in the future. While we consider that a principles-based approach is generally appropriate in this context, we note that this complex area of work is still evolving in the market and there are a number of questions around fairness and transparency that will need to be resolved before these principles are mandated. To this end, it would be premature for the AER to set binding principles at this early stage of the development of the flexible export limits framework. Rather, the AER should continue to explore this topic by facilitating insights-gathering and research in capacity allocation principles to ensure that they promote the desired customer outcomes. As part of Project Edge, the University of Melbourne has undertaken research into capacity allocation which we believe could contribute to the development of this policy area.

Specific to the capacity allocation principles put forward in the Issues Paper, we provide the following feedback:

Principle 2: *Allocation should seek to maximise the use of network export hosting capacity while balancing customer expectations regarding transparency, cost and fairness.*

This principle should be constructed in a way that encourages DNSPs to provide sufficient clarity to customers on how flexible export limits might impact the payback period for any CER asset investment. This principle should also consider how capacity allocation may impact any rewards and incentives for customers who choose to participate in flexible energy services.

Principle 3: *Capacity allocation can initially be based on net exports and measured at the customer's point of connection to the network.*

AGL does not believe this principle will promote efficient utilisation of the shared hosting capacity.

Capacity Allocation Methodology

AGL does not support each DNSP developing their own capacity allocation methodology, leading to a piecemeal approach and fragmentation that may distort the aggregator market and create unnecessary complexity that will be difficult to unwind at a later stage. We see a clear role for the AER in developing a standardised methodology for all DNSPs, as well as approving and auditing compliance with the methodology by the DNSP.

In line with our recommendation to harmonise the capacity allocation principles when research into this area is sufficiently mature, we encourage the AER to also support uniform methodology-setting among all DNSPs which will not only facilitate ease of entry for new market participants and support aggregator markets, but also reduce the burden for the AER in having to periodically review and approve iterative DNSP methodologies that are likely to change over time.

Consumer Participation

We support that customers should opt-in to flexible export limits for both existing and new connections and agree that empowering customers by seeking their active, informed consent will foster acceptance for flexible export limits, build a social license and promote active consumer participation.

We note, however, that there is some complexity for retailers in understanding which customers have opted into a flexible export agreement with the DNSP. Retailers should have a level of visibility at the point of the customer entering into the agreement as it could impact the retailer offerings available to the customer and other factors. As part of this stream of work, we encourage the AER to work closely with AEMO to consider the impacts on data that is held in the DER register (including future updates and data agreed to as part of the upcoming EV Supply Equipment standing data consultation) and standing information provided to retailers as we believe access to this information has a place both in the DER register and MSATS.

Connection Agreements

The structure of dynamic Connection Agreements and how they operate should be standardised to include factors such as the nameplate capacity of the Integrated Energy Storage asset, the fixed versus variable component of the customer's dynamic connection agreement, and other features relevant to the customer's ongoing participation. The harmonisation of network connection agreements across all DNSPs in the NEM will be critical to achieve consumer trust based on consistency of Connection Agreements that clearly spell out the rights of CER owners with respect to enabling flexible exports, how this might impact their experience in flexible energy services and their rights to correction of faults and errors with the behind the meter device not adhering to agreed national standards and performance.

FCAS

Many energy-savvy consumers who invest in CER for their homes and businesses seek to optimise their return on investment by value stacking the energy services available through their assets. This is a key motivator for customers in participating in VPP/aggregator models, however, the operation of flexible export limits will unavoidably curtail the value of the customer's CER to some degree. The AER will need to carefully consider how aspects of its policy can mitigate the risk of declining consumer confidence in the future role of CER while also minimising the impact on investment certainty.

One such recommendation that can help the AER balance network needs and consumer outcomes is to explicitly exclude FCAS device responses from the flexible export limit framework and to allow aggregators/traders to override the flexible export limit to facilitate participation in the markets and meet broader NEM security and reliability requirements. FCAS responses are measured at the battery terminal where the site is responding to locally detected conditions and while the FCAS response may push a single circuit beyond its dynamic limit (for a period of no more than 10 minutes sustained response), that response will have worked to help stabilise the broader grid.

We appreciate that there are a number of technical considerations regarding the role of FCAS in the flexible export limits framework that warrant further discussion with networks, aggregators/traders, and market bodies which we would welcome the opportunity to participate in.

Notification period of a dynamic limit

AGL supports the proposed 24 hours advanced notice of DNSP forecasts for export limits and agrees with the AER's comment that the forecasting technique will need to be consistently applied across all DNSPs. We challenge, however, whether AEMO is necessarily the best placed party to coordinate this functionality. Sending constraint notification to AEMO and then sending the same notifications to aggregators could be duplicative in effort, which in turn introduces costs, complexity, and reliability issues. Provided that the implementation of the CSIP-Aus standard is identical between DNSPs, the most appropriate approach is for traders/aggregators to access the limits directly from the DNSP server. [redacted] In the interim, the industry will need to consider a range of inputs on this subject, including outcomes from various trials and projects over the coming years and undertake a proper-cost benefit to determine the most appropriate entity for this function.

Interval Length

We support DEIP's recommended five-minute time interval for flexible export limits and consider that a mandated and universally consistent approach will avoid the need for costly investment in the development of separate systems for cross-jurisdiction aggregators which would alleviate barriers for new market entrants and facilitate the growth of aggregator markets across the NEM.

Consumer interest and understanding

AGL advocates for empowering consumers through unhindered access to relevant, easy-to-understand information, a right to choose the most appropriate offer for the customer's energy needs and commensurate rewards and incentives. Provision of information should be incumbent on DNSPs where that information relates to:

- a projection of the overall dollar impact to the customer as a result of entering into a dynamic connection agreement,
- whether the customer will be better offer compared to other options available to the customer in the market;

- export capacity impact; and
- total percentage of the time that the flexible export limit will be applied to the customer's CER assets.

Consistent with our general observations in this consultation, we consider that consumers would benefit from a level of standardisation in the information they are provided by DNSPs and how and when that information is shared.

Data Protection and Privacy

The Issues Paper contemplates that existing ring-fencing provisions prevent DNSPs from using ring-fenced information (including customers' personal data) for purposes other than which the ring-fenced information was acquired or generated. For this reason, the AER considers the current arrangements as they relate to consumer data privacy are sufficient. The AER does not propose to establish a separate privacy framework at this stage. AGL supports the AER position that the development of a standalone privacy frameworks for data created through the flexible export limits arrangement would be duplicative and unnecessary.

AGL does note there are two aspects to data privacy. First, is the sharing of consumer data between the DNSP and their ring-fenced entity to avoid a competitive advantage being afforded to the DNSP's ring fenced entity. As noted above, the AER addresses this through the Ring-Fencing Guideline. Second, is the protection of consumer data being shared without consumers' consent. Any broadening of the DER Register or EV Supply Equipment standing data must ensure they meet the existing privacy laws for collecting, storing and sharing such data.

On the subject of data protection and cybersecurity, AGL notes that implementation of CSIP-Aus utility servers across the NEM will aggregate a single point of control of all rooftop solar (and potentially battery) systems in each DNSP jurisdiction, which presents a significant grid security risk. Noting that although this issue is not the subject of this consultation, it is an issue that does not appear to have been fully addressed by DNSPs seeking to implement flexible export arrangements currently.

Compliance and enforcement of technical standards that facilitate export limits

We agree that the direction that the AER and AEMC will take with respect to compliance and enforcement of technical standards for flexible export limits could have far-reaching implications for the roles and responsibilities in the industry, which in turn, will affect the end-user experience.

If you would like to discuss any aspect of AGL's submission, please contact Valeriya Kalpakidis at vkalpakidis@agl.com.au.

Yours sincerely,

Con Hristodoulidis

Senior Manager, Regulatory Strategy

AGL Energy