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Energy Transformation Taskforce

Energy Policy WA

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Energy Transformation Taskforce Issues Paper – DER Roadmap: Distributed Energy Resources Orchestration Roles and Responsibilities

AGL Energy (**AGL**) welcomes the opportunity to respond to the Energy Transformation Taskforce's Issues Paper – DER Roadmap: Distributed Energy Resources Orchestration Roles and Responsibilities.

AGL is one of Australia's largest integrated energy companies and the largest ASX listed owner, operator, and developer of renewable generation. AGL is also a significant retailer of energy, providing energy solutions to around 3.95 million across Australia, including 1,500 business connections in Western Australia following the acquisition of Perth Energy in 2019.

AGL's product and service suite promote continued consumer uptake of distributed energy resources (**DER**) enabling customers to actively participate and share in the value that DER can provide to the electricity system. Our current DER product and service offerings in the NEM include our leading-edge Virtual Power Plant[1] (**VPP**), our retail offer for electric vehicle owners[2], and our electric vehicle subscription service[3].

As a leader in DER products and services, AGL has also actively participated in bringing the consumers' view and interests into the development of a range of policies, regulations, and technical standards applicable to DER. AGL has consistency advocated that the regulatory framework governing DER integration should empower consumers with choice to utilise and optimise DER assets and to participate in competitive market services which address broader energy system needs.

Strategic direction

AGL supports the strategic vision for DER elaborated in the Taskforce's DER Roadmap, where DER supports the broader electricity system and benefits all grid users.

In developing appropriate policy solutions to assist the energy market transition, we believe that industry and market participants should trial technologies and business models to then inform fact-based and 'no regret' changes to the energy market framework.

[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-yourownbattery?cide=semr&gclid=EAIaIQobChMIicjKmKuP5wIVyjUrCh2eXwvVEAAYASAAEgLZRPD_BwE&gclsrc=aw.ds.
[2] See further, AGL EV Plan, available at https://www.agl.com.au/electric-vehicles.
[3] See further, AGL Electric Vehicle Subscription, available at https://www.agl.com.au/get-connected/electric-vehicles/ev-subscription.

AGL's VPP was established through our trial in South Australia with ARENA that commenced in 2016.[4] AGL has since expanded its VPP offer to customers in NSW, Queensland, SA and Victoria enabling them to either bring their own battery or purchase a battery through AGL to participate.[5] In 2020, we also enrolled our VPP in the AEMO VPP Demonstrations to test accessing and sharing in wholesale (**FCAS**) value.[6] We have developed a range of insights through these trials on customer participation and the technical integration of VPPs, including on API integration with AEMO to provide FCAS services and exploration of network support service provision with distribution network businesses.

We strongly support Project Symphony as it will provide a range of valuable insights to inform the development of requirements of aggregated DER integration into both the Wholesale Electricity Market (**WEM**) and National Electricity Market (**NEM**). We also understand that AEMO is continuing to develop a range of other market trials, including the Victorian DER marketplace, that will provide a range of complementary insights to inform DER market design.

AGL considers some of the proposed changes in the Issues Paper to be premature without obtaining insights from these trials and risk creating additional barriers to DER integration and/or unintended consequences to market participants and end-user customers.

Key recommendations

AGL recommends the following concepts be considered further:

1. *Opportunities to attract competitive retail aggregation that may deliver greater benefits to customers through visibility and applicable consumer protections*. Whilst there are energy solutions business models operating in WA, AGL strongly supports the model where a single entity is the customer's electricity retailer and aggregator (**Aggregator-Retailer Model**). This provides the customer with more transparency of the co-optimisation of value streams derived from their DER investment as well as more complete consumer protections. Having the aggregator separate from the retailer (**Independent VPP model**) is highly complex from an operational perspective, does not provide customers' with sufficient visibility and risk potential misalignments between the customers' expected value of orchestration and the benefits being realised by the aggregator.

2. *Facilitate battery investment incentives*. Given the high penetration and impact of solar PV systems, AGL believes that implementation of battery storage, together with orchestration, is the most effective and efficient way to provide positive benefits to WA end customers and the network. AGL's SA VPP Pilot Trial demonstrated the significant benefits of batteries on load shape, in particular a flattening of the duck curve during the midday minimum, and aiding the system in managing solar PV export by allowing it to be stored and then discharged when demand increases late afternoon. This trial also confirmed batteries did not cause a second peak. Initial Government battery subsidy schemes in SA have promoted uptake of energy storage solutions and allowed market trials to be undertaken, such as

[4] AGL's SA VPP delivered the sale, installation and orchestration of 1,000 energy storage systems installed behind-the-meter in homes and small businesses. For further information regarding AGL's ARENA SA VPP program, including the two milestone reports published to date, please refer to https://arena.gov.au/projects/agl-virtual-power-plant/.

[5] For further information regarding AGL's Virtual Power Plant, please refer to https://www.agl.com.au/solar-renewables/solar-energy/bring-your-own-battery?cide=sem-r&gclid=EAIaIQobChMIicjKmKuP5wIVyjUrCh2eXwvVEAAYASAAEgLZRPD_BwE&gclsrc=aw.ds.

[6] See further AEMO VPP Demonstrations, Available at https://aemo.com.au/en/initiatives/major-programs/nem-distributed-energy-resources-der-program/pilots-and-trials/virtual-power-plant-vpp-demonstrations.

the AGL VPP Pilot trial. To realise these benefits, we would support any customer incentive being made conditional on entering an aggregation arrangement.

3. *Consider appropriate safeguards on the distribution system operator and distribution market operator functions to ensure they support the operation of a competitive market for DER services.* These safeguards should seek to:
    - Improve the competitive market's access to information on the available opportunities in the LV network.
    - Ensure that competitive market services are fairly valued to compete on a level playing field.
    - Establish appropriate regulatory oversight in the development of dynamic export limits to ensure consistency in consumer outcomes.

    In this context, we would recommend consideration of the UK experience in developing a DSO market structure, which we understand provided a range of safeguards to ensure clear boundaries between network monopolies and markets, effective competition for services and neutral tendering of network management and reinforcement requirements[7].

4. *The need for appropriate ring-fencing requirements to delineate the network and DSO functions from participation in the emerging market for DER services.* AGL recommends establishing a complementary ring-fencing regulatory framework to ensure the separation of Western Power's regulated monopoly business activities, costs and revenues from those associated with providing services in contestable markets. We also recommend that stand-alone systems and distribution connected storage investments can only be delivered through a ring-fenced entity through competitive processes and not directly by Western Power.

5. *Project Symphony trial inform regulatory frameworks.* While we would welcome further policy consideration of DER integration, we would urge against pursuing the proposed changes until relevant *Project Symphony* trial insights can be drawn. This is particularly important in the context of market considerations in relation to DSO and DMO functionalities.

Our feedback to the questions raised in the Issues Paper is included in the **Attachment**.

Should you have any questions in relation to this submission, please contact Kurt Winter, Regulatory Strategy Manager, on 03 8633 7204 or Sarah Silbert, Regulatory Strategy Manager, on 0400 813 300.

Yours sincerely

Con Hristodoulidis

Senior Manager Regulatory Strategy

[7] See further Ofgem position paper on Distribution System Operation (August 2019), Available at https://www.ofgem.gov.uk/publications-and-updates/ofgem-position-paper-distribution-system-operation-our-approach-and-regulatory-priorities

ATTACHMENT

Distribution System Operator
D1- What processes or arrangements should be used or created to register an aggregator that provides network support services to the DSO (Western Power)?
D2 - Should different 'use of system' charges apply for DER customers? If so, how should the costs and benefits DER be accounted for?

AGL recommends that arrangements used to facilitate network support services should be informed by DSO trials across Australia and experience with DSO functions in international markets with similar market structures to WA. To this end, the proposed Project Symphony trial should provide valuable insights into the broad range of DSO functions elaborated in the Issues Paper and inform fact-based and 'no regret' regulatory and market changes to the energy markets framework.

Further, we consider that WA's DER market design could also draw relevant insights from other market trials currently in development, including the Victorian DER marketplace as well as the UK DSO market arrangements, to ensure a framework that empowers customers with choice and maximises the benefit of DER integration for all energy users.

In relation to the DSO policy questions raised in the Issues Paper, we would recommend consideration of the following:

- *Network monitoring.* AGL agrees that improved network visibility on the low voltage distribution network is needed to facilitate DER participation. As well as assessing cost efficiency of network infrastructure to support visibility against representative sampling, policymakers and regulators should also consider how to improve the competitive market's access to information on the available opportunities in the LV network.

- *Platform development.* In considering appropriate technology platforms and interfaces between the DSO, DMO and aggregators, we recommend aligning with the national framework for interoperability that is being developed through a range of industry forums including the Distributed Energy Integration Program and the API Technical Working Group. In our view, a nationally consistent framework has a range of advantages including:
    - Mitigating 'rail gauge' issues emerging in the WA market that could otherwise increase the cost of participation or reduce the level of competition in the WA market; and
    - Reducing the risk of investment in potentially stranded assets, not only for Western Power but also for hardware vendors and aggregators such as VPP operators and AEMO.

- *Operating envelopes.* In transitioning toward dynamic operating envelopes, we recommend consideration be given to:
    - How operating envelopes can reward DER owners for services that resolve historical issues within the distribution network operation (rather than as a means to mandate the provision of network support services such as power quality response modes).
    - The level of regulatory scrutiny required to ensure that operating envelopes support consistency in customer outcomes. The regulator may need to develop a customer export value methodology that appropriately values customer impacts and differentiates between

historic circumstances of distribution network operation and issues associated with higher DER penetration.

- *Procurement.* In addition to ensuring transparency where a DSO obtains network support services, the regulatory framework may also need to ensure:
    - The DSO provides a 'Distribution Statement of Opportunities' with sufficient lead time for the competitive market to tender for services, in much the same way that AEMO produces the Electricity Statement of Opportunities (ESOO); and
    - That competitive market services are fairly valued by a DSO.

- *Network versus private assets.* Rather than focusing on transparency in the interaction of network-owned assets and third-party aggregation schemes, we consider that the regulatory framework should enable competitive market aggregation to fairly compete in providing non-network solutions, through transparency of competitive market opportunities as noted above in relation to procurement.

- *DER access and connection agreements.* As well as facilitating efficient access, the regulatory framework should also promote equitable outcomes so that customers can access the network on fair terms to provide a range of services to the broader energy market system, and that customers contribute fairly to the costs of shared networks.[8]

- *Dynamic connection agreements. C*onsideration should be given to:
    - The need for transparency in such agreements on the potential impacts to consumer value to support investment certainty for DER customers; and
    - Additional safeguards to ensure distribution networks negotiate in good faith and that appropriate regulatory oversight is provided to ensure fair outcomes for customers.

- *Capacity markets.* We support further consideration on the interaction of aggregated dynamic connection agreements and the capacity market and consider that this should be framed as one of the focus areas for exploration in Project Symphony.

- *Equity in curtailment.* Rather than focusing on the issue of equity in curtailment, financial incentives should be established to manage curtailment of solar generation to support the ongoing security of the grid prior to any emergency scenario unfolding. By facilitating aggregators to provide services to the market, the regulatory framework may facilitate greater efficiency that in turn delivers savings to the broader customer base. On the other hand, we anticipate some complexity in developing an appropriate methodology for allocation that is fair to all DER customers.

- *Reliability and market services.* Rather than considering how the hierarchy of DER response can be governed (for example that network needs are met prior to market needs), we consider that the regulatory framework should enable the aggregator to co-optimise value streams between network support services and wholesale market value.

[8] We have been engaging on the question of appropriate access and pricing arrangements to accommodate DER integration in the NEM. For further information, see AGL submission to the AEMC's Consultation paper on distribution energy resources integration (15 September 2020), Available at https://thehub.agl.com.au/articles/2020/09/agl-supports-reforms-to-better-facilitate-der-integration

- *Understanding autonomous responses (e.g. Volt-watt, volt-var, frequency watt).* In considering how the DSO will manage autonomous response modes, we would recommend consideration of how customers would be compensated for these services particularly where their procurement materially impacts customer value.

  Through AGL's SA VPP, we have been able to draw upon operational data to develop a range of important insights into the interaction of DER with the low voltage distribution network, including on voltage management.[9]

  In 2019 20, AGL undertook some preliminary analysis of the effect of Volt VAr on our SA VPP fleet with a view to understanding:
  - The effect of Volt VAr in reducing voltage; and
  - The impact of power quality response modes on customer value

  Our study found that the voltage reduction impact of the Volt Var power quality response mode at individual sites was minimal across a range of network types. At the same time, the ability of that asset to provide real power is curtailed. This reduces the value of a customer's investment for self-consumption and limits their ability to transact in the value of that asset. We also assessed the impact of power quality response modes on customer value and found there is an equity risk in the way uniform power quality response modes impact customers, with some customers experiencing material value losses due to network locational characteristics. We are actively exploring opportunities with academic institutions to draw upon our SA VPP operational data to expand understanding of the impact power quality response modes on customer value.

- *Communications infrastructure and common communications protocols.* AGL appreciates that with the increasing penetration of DER, the bi-directional nature of energy flows presents a new set of technical requirements that need to be considered in managing system security and reliability. We believe that promoting interoperability through technical standards will be a key enabler for the use and optimisation of DER across Australia's energy markets. We agree that communications will be critical to supporting DER integration and supports ongoing efforts to develop appropriate standards and understand different technological use cases.

- *Communications standards.* AGL believes that a common, open technical standards framework will best support the development of a market for DER services to interact with the broader energy market system. we believe technical standards and requirements should adhere to the following guiding principles:
  - Align with internationally accepted standards, where consistent with Australian energy market structures, to ensure access to an open and competitive market for DER;
  - Be technology agnostic and remain future-proofed for future technological developments; and
  - Empower consumers with choice to utilise DER assets for their own comfort and to participate in competitive market services which address broader energy system needs through innovative aggregator models such as virtual power plants.

[9] For further information regarding AGL's ARENA SA VPP program, including the two milestone reports published to date, please refer to https://arena.gov.au/projects/agl-virtual-power-plant/.

- *Communications reliability.* AGL agrees this is a critical issue that should be considered further. We anticipate a range of implementation changes in the context of different technology use cases including hardwired communications as well as 3G/4G systems.

Distribution Market Operator

Question M1: Taking into consideration how the future registration of aggregated DER is outlined in the Registration and Participation Framework in the Wholesale Electricity Market paper, are additional changes required to incorporate aggregated DER in the WEM?

Question M2: Should energy exported from DER be more explicitly integrated into the WEM?

Question M3: Monitoring and compliance for participation in energy, capacity and ESS markets need to be considered for aggregated DER. How should aggregated DER be monitored and measured for compliance?

Question M4: What performance standards should apply to aggregated DER facilities?

Question M5: Are any additional arrangements needed to incorporate aggregated DER facilities into the new scheduling and dispatch process (SCED)?

Question M6: Other than for device level communications, what other communication is required to manage aggregated DER? For example, communications between the aggregator and the DSO (Western Power) or AEMO.

AGL supports in principle the Taskforce's conception of DMO functionality as an extension of existing wholesale market optimisation through an independent market operator. However, as noted above in relation to DSO functionality, the necessary reforms to enable DMO functionality need to be informed by appropriate market testing to ensure cost-effective and fit-for-purpose solutions.

In relation to the specific DSO issues and policy questions raised in the Issues Paper, we would recommend consideration of the following:

- *Local conditions on the distribution network are dynamic.* We agree that publication of operating envelopes will assist DER providers and AEMO to better understand location distribution conditions and how these might affect dispatch of resources and wider system constraints. We would recommend consideration be given to the time horizon for the publication of this information as well as the platform through which it is published in order to maximise opportunities for market aggregators to respond with cost-competitive solutions. As noted above in relation to DSO functionality, we would also recommend establishing appropriate regulatory scrutiny to ensure that operating envelopes support consistency in customer outcomes.

- *Market registration.* We support consideration of the extent to which existing classifications accommodate aggregated DER in the WEM. In order to attract increased participation in

aggregator services, we would encourage aligning these requirements with registration changes being affected through the NEM.[10]

- *Capturing DER generation in energy markets.* AGL considers that settling energy generated at customers' premises through the WEM could enable the development of a more mature market for DER services. WEM settlement would enable aggregators to realise the true value of orchestration at times when the grid requires a range of services and share in that value with customers. We agree with the Issues Paper that the settlement of customer generated energy outside of the WEM limits the ability of customers to participate in markets and creates risks for retailer aggregators who are required to absorb the financial implication of any net imbalance. While the transition of the REBS scheme toward DEBS provides greater cost-reflectivity in the value of DER, it provides no ability for aggregators to realise the substantial value of aggregated DER in circumstances where it might respond to WEM pricing signals.

- *Facility visibility.* In light of our experience in the AEMO VPP Demonstrations, we support the need for high-resolution facility metering, and appropriate communications to provide certainty to AEMO that aggregated platforms have provided the requested services. Nevertheless, any minimum standards will need to carefully balance the costs to all systems across the market against the potential benefits. In our view, key capabilities should include:
    - Granularity of data (one minute granularity as a minimum here in our view) and data points that monitor all facets of the site (some battery systems only meter the gross site load and do not individually meter household load and solar individually);
    - Monitoring and reporting of both power flow and grid conditions (including voltage and frequency). This would facilitate DERs to act as more than just charge/discharge systems; and
    - Cybersecurity compliance.

- *Capacity market.* In principle, we agree with the need for participants to undergo regular monitoring to ensure obligations are met and we would encourage consideration of fit-for-purpose testing procedures to be developed to support DER.

- *Meter Data.* AGL supports the focus on enabling greater access to customers' metering data for aggregators, subject to establishing appropriate consumer protections. In our view, this could support greater visibility for aggregators of where there are opportunities to provide network services. It may also be prudent to consider how any changes to meter data provision would interact with the Consumer Data Right reforms.

- *Distribution loss factors.* We anticipate some complexity in understanding how transferrable existing processes related to loss factor application are to a VPP or aggregated facility which consists of many small distributed resources. We would recommend any assessment in this regard appropriately balance the system benefits of applying distribution loss factors with the potential costs that would be imposed upon aggregators thereby impacting upon the value of DER market participation.

[10] By way of example, we note that the AEMC is currently considering rule change proposals that consider appropriate categories for energy storage systems. See further: https://www.aemc.gov.au/rule-changes/integrating-energy-storage-systems-nem.

- *Communications infrastructure and common communications protocols.* AGL agrees that communications will be critical to supporting DER integration and supports ongoing efforts to develop appropriate standards and understand different technological use cases. This should be guided by the insights and learnings of trials being undertaken in the NEM and Project Symphony. It is anticipated that as a market matures and moves to a dynamic operating window, the DSO would be able to provide instructions around constraints and the DMO would be able to forecast demand for every 5-minute interval.

Aggregators

Question A1: What aggregation options or models could deliver the most efficient outcome for the system and consumers?

Question A2: Are there any current barriers to DER aggregation? If so, what are they and how could they be overcome?

Question A3: What should be the key elements of a regulatory framework for aggregation?

Question A4: Should aggregators be able to participate in all WEM market segments in order to stack the value of available DER services?

Question A5: Have stakeholders experienced difficulties in accessing consumer meter data for the purpose of providing DER services? If so, what were those difficulties and how did they limit opportunities to unlock the value of DER?

Aggregator models and licensing requirements

We note that the Issues Paper contemplates the aggregator supplying the non-contestable market in the SWIS. AGL recommends that the aggregator is also the customer's electricity retailer and the market design be based on this model (**Aggregator-Retailer Model**). Adoption of this model supports the review of the contestability threshold in the SWIS for those residential DER customers seeking orchestration as an open, competitive market will ensure the best return on their DER investment. It is our experience through offering VPP products in other markets that the Aggregator-Retailer Model provides:

- *Customer ability to co-optimise different value streams*: The aggregator-retailer model better enables customers to realise different value streams from their DER assets including optimising self-consumption and participating in a range of services to support the energy market system (wholesale energy, ancillary services, network support services). In our view, this model provides DER customers with a unique single view of the value of orchestration as compared with their usual self-consumption. This understanding of co-optimised value may not be possible under the Independent VPP Model.

- *Customer protections*: If an Independent VPP Model is adopted, it may not be obvious to the customer where orchestration may in fact increase their separate electricity bill. Whereas under the Aggregator-Retailer Model the retailer has visibility over all metering data and can ensure orchestration events are managed and the benefits are maximized for the customer. By way of example, AGL's VPP product guarantees that orchestration services will not increase the customer's electricity bill by more than a specified capped amount over each 12-month period.

- *Superior risk mitigation:* The Independent VPP Model could allow potential misalignment of the goals of the customer and those of an independent aggregator who are incentivised to respond to market conditions and their business objectives.

- *Privacy benefits*: Metering data collection and communications between systems is better controlled by a single entity with appropriate means to build and maintain a secure system with cybersecurity compliance protections.

If the Aggregator-Retailer Model is adopted, the current licensing process for electricity retailers would satisfy the registration arrangements for aggregators.

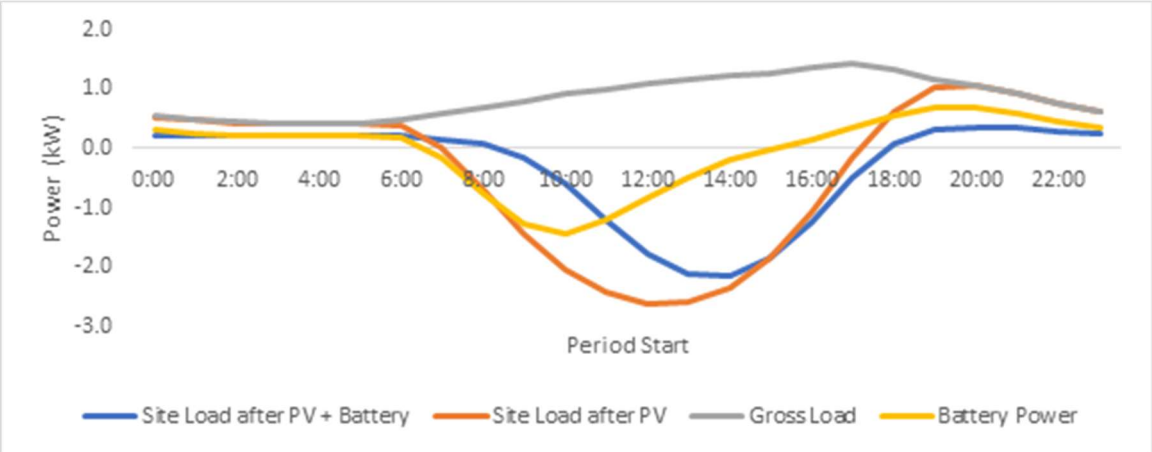
If the Independent VPP Model is adopted, AGL recommends that aggregators be required to register to operate within the SWIS subject to similar licensing requirements as electricity retailers.

Barriers to market entry

AGL considers there are a range of barriers to DER aggregation in the SWIS, including the following:

- *No retail contestability*: A significant proportion of solar PV customers fall within the non-contestable small use segment and if the orchestration market is not opened to competition, then this segment will not be able to access competitive orchestration products offered under the Aggregator-Retailer Model;

- *Insufficient residential battery investment*: We consider that increased deployment of batteries would support peak demand reduction in the WA market. As we have observed in our SA VPP operations, residential batteries present substantial potential to reduce solar export during the day by shifting the export peak. As the chart below illustrates, the gross/underlying site load (grey) is dramatically reduced after taking into account the site solar and battery (blue). The difference between the blue and orange line demonstrates the extent to which the addition of a battery reduces solar exports during the day by default, and importantly shifts the solar export peak to later in the day (~2pm).



Given the very low residential battery numbers and low forecasted uptake in the SWIS, we would encourage further consideration of opportunities for a batteries incentive scheme to promote residential solar battery purchase. Aggregation in and of itself will not resolve the need for greater deployment of batteries in the short term. Whilst the WA battery market is in its infancy, an incentive program would stimulate residential battery uptake, in turn supporting the scaling of orchestration services in the WA market.

- *Export tariff subsidy*: The current pricing of DER export for eligible customers receiving the Renewable Energy Buyback Scheme at 7.3c/kWh is prohibitive for aggregators to offer a viable commercial product. The recently announced Distributed Energy Buyback Scheme is a step in the right direction but for commercial products to be offered these buy-back tariffs need to reflect the true value of energy to the grid with no subsidy or mark-up.

- *Metering limitations*: There may be a lack of control by aggregators over DER export if time of use meters[11] with the required communication functionally are not installed.

- *Western Power installing community batteries*: if Western Power under the New Investment Facilities Test installs large scale batteries in front of meter solutions to defer augmentation projects, this could act as a barrier to entry depending how Western Power offers or allocates control of these storage assets to retailers or aggregators. Further, if these community batteries are open to customers to rent battery capacity based on their load profile, this may defer or stop these customers from investing in storage solutions themselves and entering into individual orchestration products.

Regulatory Frameworks

AGL recommends that the regulatory framework be designed to balance the value realised by consumers and the security of the system. We consider this will be best achieved through the Aggregator-Retailer Model allowing for co-optimising of different value streams, enabling the customer's own needs to be met whilst benefiting from the choice to provide services to the broader system in exchange for reward. The network benefits from allowing the market to competitively offer the services it needs, promoting efficiencies where DER export is priced to reflect its true cost.

[11] These meters should be configurable to 5 min data capture when the market moves to 5-minute trading intervals.

Customers

Question C1: Should a customer with new or upgraded DER be required to participate in an aggregation scheme to mitigate the risk of a significant proportion of DER in the SWIS remaining 'passive'? If yes, what should be the trigger for such a requirement? If not, why not?

Question C2: What provisions need to be made for customers who make the choice to participate in aggregation services, for example to limit their energy export while enabling them to use their DER for their own purposes?

Question C3: If the application of dynamic operating envelopes results in temporary limits on customer DER exports, what measures should be put in place to ensure that this does not unnecessarily limit DER output in preference to other alternatives such as load management or other generation sources?

That is, what criteria should apply to the network operator's assessment of when to undertake a network enhancement to remove constraints that prevent the export of DER energy and to maximise the ability of small DER owners to participate equally with other energy resources?

In reviewing the role of DER customers and their evolving ability to become active participants in the SWIS, AGL recommends the following tenets form the foundation of the market and guide the creation of the regulatory framework:

- *Consumer needs and behaviour* should drive market design – a *competitive market design* empowers consumers with choice to utilise DER for their own self consumption and to participate in a range of wholesale market and network services.
- *Transparent pricing of DER export* will drive consumer behaviour and investment decisions. If pricing of DER export reflects its true market value, consumers will invest in DER to meet their household needs and any DER exported will be priced to reflect its value in the market promoting the objectives of efficient network investment and technical neutrality.
- *Consumer choice* should underpin the retail market - where DER customers can easily switch between competitive market orchestration providers to realise the greatest benefit from a diversity of market offers.
- Ensure *equity across the customer base* – customers who do not have DER installed at home are not penalised by bearing a greater burden of the network costs.

AGL believes that DER customers' participation in orchestration services should be enabled on a voluntary basis, rather than being mandatory, in an open, competitive market which facilitates consumer choice and positive market pricing signals.

Mandatory participation in orchestration would be difficult to implement as it assumes all aggregators are willing to offer orchestration services to all customers. However, some systems will not meet the technical requirements nor some customers satisfy the contractual preconditions. If the desired outcome is DER consumers participating in aggregation, then this is best incentivised by pricing signals that encourage DER export at the most appropriate times which reflect true economic cost. This could be aided by:

- Allowing residential households to continue to install solar PV capacity to suit their self-consumption needs but with further review of the buy-back tariff scheme which currently can promote households to maximise their system size beyond their need;

- Introducing cost reflective pricing of DER export to ensure that DER exported energy is not being subsidised by other market participants and distorting price signals in energy markets; and

- In the short term, due to the current cost of residential batteries and slow uptake, enable orchestration services through the competitive market installing distribution connected batteries for local solar PV customers to feed into. This stored energy could then be exported back into the grid via aggregators at peak demand times.

Multiple trading relationships

Question G1: Would aggregated DER providing services into the WEM require changes to metering and settlement arrangements?

If so, how could this be implemented without multiple meters at a customer site and the associated costs?

We would recommend drawing upon the AEMC's and ESB's consideration on this subject to inform the Taskforce's policy position.[12]

Equity of DER dispatch

Question G2: How can we ensure equity of access of DER to markets? That is, how can the greatest number of customers be allowed to install DER and provide services, if they choose? How could this be implemented?

Question G3: As tariffs (import and export) and other incentive mechanisms evolve to consider active DER, is it reasonable to require that, where practicable, non-contestable customers can access services provided by aggregators? If so, how could this be achieved?

G4: Should there be guidelines or rules around how DER within aggregator schemes, other factors being equal, are dispatched?

Equity of access

AGL considers that equity of access to markets will be best resolved by establishing a competitive market structure that enables consumers to choose how they utilise their DER assets to meet their own energy needs and realise value for the broader energy market system. As noted above, we would encourage greater consideration of the DSO and DMO functionalities to support the development of competitive market framework for the optimisation of DER value streams.

Tariffs to support access

As noted above, AGL supports non-contestable customers having access to aggregator services through the Aggregator-Retailer Model and allowing these customers to become contestable if seeking orchestration services. In our view, all customers should be empowered to realise the benefits of different orchestration value streams through orchestration. As the broader tariff reform program is progressed, we

[12] See further AEMC 2020 Retail Competition Review, Final Report (30 June 2020) Available at https://www.aemc.gov.au/sites/default/files/documents/2020_retail_energy_competition_review_-_final_report.pdf; ESB Post 2025 Project, Available at https://esb-post2025-market-design.aemc.gov.au/all-about-2025.

also consider that pricing arrangements could more accurately account for the value of DER (including through cost-reflective pricing and novel pricing arrangements such as the bulk wholesale tariff model).[13]

Guidelines/ rules on aggregator dispatch

AGL does not support regulating how DER within aggregator schemes is dispatched. We consider that effective competition between aggregators should encourage the development of a range of offers to individual customers.

The aggregator will need to be explicit and clear about the conditions of when the customer's export may be called on, including how many times and any financial benefits to the customer when their system is orchestrated. Dispatch should generally align to the price the aggregator is prepared to offer the energy to AEMO and any requirements aggregators are required to comply with under capacity arrangements entered into with AEMO.

Regulating how DER within aggregator schemes is dispatched risk leading to vanilla outcomes for customers and reducing the potential for a more mature market for DER services to emerge, where customer can choose between providers based on an assessment of service and price outcomes.

Emergency conditions

Question G5: Should the DSO (Western Power) or the System Operator (AEMO) be able to issue instructions directly to end-user DER in the presence of a network reliability risk or system security risk, or should all instructions come via an aggregator?

AGL's preference is that financial incentives be established to manage curtailment of solar generation to support the ongoing security of the grid prior to any emergency scenario unfolding.

Accordingly, we would recommend:

- In the first instance, AEMO seeks to procure any emergency support services from aggregators who would then issue any instructions to their customers or change customers' DER export. This would be in response to the economic signals that the aggregator is receiving from the Balancing Market or Essential System Services market.

- In circumstances where these services cannot be procured, AEMO then invoke direct controls to curtail end-user DER assets directly.

Dispatch of Western Power assets and contract

Question G6: Who should be responsible for the dispatch of DER owned by Western Power to address network support needs?

The market dynamics governing the dispatch of assets to provide network support services needs to support a competitive market through competitive neutrality. Accordingly, AGL recommends that this

[13] We have been engaging on the question of appropriate access and pricing arrangements to accommodate DER integration in the NEM. For further information, see AGL submission to the AEMC's Consultation paper on distribution energy resources integration (15 September 2020), Available at https://thehub.agl.com.au/articles/2020/09/agl-supports-reforms-to-better-facilitate-der-integration/

function be separated from WP's ownership of DER assets and that all assets be dispatched in accordance with an independent priority process that is managed by AEMO as DMO.

AGL recommends that as Essential System Services become available in the market any Western Power DER owned assets should be leased or sold to third parties to ensure Western Power is not competing with market participants for the provision of unregulated services and control of these assets should not be retained by Western Power. This transition from Western Power to independent third parties will ensure that DER can be utilised for a broad range of ESS which in turn will contribute to lower costs in the market.