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Australian Energy Market Commission
Submitted via: www.aemc.gov.au

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Dear Jashan

Distributed energy resources integration – updating regulatory arrangements, Consultation paper

AGL Energy (**AGL**) welcomes the opportunity to respond to the Australian Energy Market Commission's (**AEMC**) Consultation paper on distributed energy resources integration – updating regulatory arrangements, 30 June 2020 (**Consultation Paper**).

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 include our leading-edge Virtual Power Plant[1], 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. We have been engaged in a range of industry forums focused on DER integration including the Distributed Energy Integration Program (**DEIP**) Access and Pricing Reference Group, EV Grid Integration Working Group, and Standards, Data and Interoperability Working Group. We have consistency advocated in these forums 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.

Our feedback on the Consultation Paper is based on our operational experience with DER products and services and ongoing involvement in DER regulatory reform.

Strategic direction

AGL supports the proposed changes to provide a clearer mandate to distribution networks to provide export services to customers and to align network incentives to reflect this. We consider these incremental reforms appropriately reflect the need to facilitate new operational modes for distribution networks to ensure that networks effectively facilitate the interaction of DER with the energy market system.

We also support exploring further opportunities for pricing reform, given the absence of any network pricing signals for energy exports but the question of equity will need to be carefully assessed.

[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-ownbattery?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.

In assessing the rule change proposals brought forward by SA Power Networks' (**SAPN**), Total Environment Centre (**TEC**) together with the Australian Council of Social Service (**ACOSS**), and St Vincent de Paul Society Victoria's (**SVDP**), AGL recommends:

1. The AEMC's assessment framework should also consider:
    - Customer choice;
    - Consistency in pricing and access outcomes for customers; and
    - Appropriate risk allocation between market participants.
2. The definitional changes to mandate distribution networks providing export services to customers promotes the development of a market-based framework for the provision of DER services.
3. Aligning the proposed reforms to enable export services and the existing regulatory arrangements for voltage management, including state jurisdictional arrangements and their interaction with the network expenditure regulatory framework.
4. Requiring short term measures that promote greater performance measures and data disclosure to allow for appropriate benchmarking before revising the service target performance incentive scheme (STPIS) framework.
5. The introduction of export charges facilitates improved investment certainty for DER customers.
6. Reward pricing is not introduced until the broader tariff program is progressed, in order to enable the value of DER to be more fully accounted for (including cost-reflective pricing and novel pricing arrangements such as the bulk wholesale network tariff model).
7. Addressing challenges associated with enabling supplementary connection agreements for a network and its customer to negotiate additional capacity, where that investment is not otherwise justified under a 'net market benefits' test.
8. Apply the access and pricing arrangements consistently to all distribution connected customers.

We elaborate our feedback 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 KWinter@agl.com.au.

Yours sincerely

Elizabeth Molyneux

GM Policy and Markets Regulation

ATTACHMENT

Question 1: Assessment framework

1. *Is the assessment framework, specifically the criteria outlined above, appropriate for considering the proposed rule changes?*
2. *Are there any other relevant considerations that should be included in the assessment framework?*

AGL supports the assessment framework outlined in the Consultation Paper and recommends the following criteria be considered in addition to those proposed:

- ***Customer choice.*** While the national electricity objective and national energy retail objective inform criteria on efficient provision of electricity services (taking into account total system costs) and efficient (cost reflective) pricing, the nature of customer owned DER should also inform a greater focus on the extent to which the proposals empower customers with choice so that they can realise the greatest benefit from their own investment. The advent of DER technologies means that many customers now have a choice as to whether they purchase electricity through the traditional centralised source or generate it themselves in their homes or workplaces. In our view, a competitive market underpinned by customer choice has the greatest potential to realise the benefits of DER for the broader energy market system and should be preferred over control-based approaches.
- ***Promotion of consistent outcomes for customers.*** As well as facilitating efficient access and pricing arrangements, 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.
- ***Ensuring risks are managed by the party best able to manage them.*** The Commission should evaluate whether the proposals support the appropriate allocation of risk across market participants, including distribution network businesses, service delivery partners and customers.

Question 2: Definitional issues

1. *Should export services be recognised as part of the network services provided by DNSPs to customers?*
2. *Are the proposed definition changes necessary and appropriate to enable export services to be recognised as part of the services provided by DNSPs to customers?*
3. *Are there any unintended consequences that could arise from SAPN's proposed amendments to definitions?*
4. *Are there more appropriate approaches to enable export services to be recognised under the framework that are not considered above?*
5. *Are there any other issues related to definitions that the Commission should consider?*

The transition towards distributed energy necessitates the provision of export services

AGL supports definitional changes to provide a clearer mandate to distribution networks to provide export services to customers, given that the National Electricity Rules (**NER**) do not provide any specific guidance. AGL believes the definition should take the form of obligations or incentives, as to how networks should incorporate export capacity in their general planning and provision of services.

The NER needs to facilitate new operational modes, such as orchestration and customer usage optimisation, by ensuring that networks effectively facilitate the interaction of DER with the energy market system.

To establish a fit-for-purpose regulatory framework that best serves DER customers and the broader energy market, we consider that the regulatory framework governing distribution networks' connection and access arrangements should:

- Empower consumers with choice to either utilise their DER assets for their own comfort and/or to participate in a range of competitive market services which address broader energy system needs;
- Enable economically efficient access arrangements that appropriately balance the anticipated consumer and market benefits with the cost and complexity of implementation; and
- Ensure a consistent customer experience by affording the same rights and protections to consumers regardless of how they choose to receive their energy supply and services.

We consider that the definitional changes should be based on service type rather than consumer type.

SAPN's approach, in amending the definition of terms applicable to 'distribution service', may provide a more holistic solution than that of the TEC together with ACOSS, which proposes recognising prosumers as the export equivalent of retail customers. In our view, SAPN's approach is more likely to canvas the full spectrum of services that may be required to support export services.

Moreover, the introduction of the concept of prosumers may introduce unnecessary additional complexity in the context of consumer protections, as provided for under the National Energy Customer Framework. As businesses diversify and new entrants disrupt the energy market, AGL believes that customer protections should be designed towards an outcomes-based model that ensures a consistent customer experience, regardless of the energy service provider.[4]

Reform needs to complement the development of a market-based framework

Any definitional changes to mandate distribution networks providing export services to customers should complement and not foreclose the development of a market-based framework for the provision of DER services. Accordingly, we would recommend additional safeguards be considered to:

- Provide greater accountability for network constraints management to support improved investment certainty for DER customers. We discuss in more detail in response to Question 4 below.
- Ensure distribution networks are not empowered with *de facto* market functions associated with the co-optimisation of DER services that would be better served by a more mature market-based framework, including the potential establishment of a distribution market operator (**DMO**).

AGL supports the development of market-based solutions as the most efficient and effective way to allow customers to engage and share in DER value. We believe that further work is required to test a market-based framework that:

- Enables DER to bid as scheduled resources for wholesale and ancillary services; and

[4] See further, 'AGL encourages outcomes focused regulation for consumer protections' (13 February 2020), AGL Submission in response to AEMC Review of Consumer Protections in an Evolving Market for both New Energy and Traditional Retailers, Available at https://thehub.agl.com.au/articles/2020/02/agl-encourage-outcomes-focused-regulation-for-consumer-protections.

- Opens the network value pool to the competitive market through enhanced transparency and opportunities for non-network solutions.

AGL continues to explore opportunities to collaborate with AEMO and distribution networks businesses to engage in innovation trials to develop a more mature market for DER services. We have been an active participant in AEMO's VPP Demonstrations and see these trials as an important step in the integration of these kinds of business models into Australia's energy markets. We would encourage a coordinated and carefully sequenced approach towards DER market integration, to ensures market reforms draw appropriate learning from these early trials and provide a fit-for-purpose regulatory framework into the future. In our view, this will provide investment certainty for DER hardware manufacturers, aggregators, software providers, and the market more broadly.

We also support the work being undertaken by the Energy Security Board, in its P2025 market design program and broader DER work program.

Voltage management

AGL considers that the proposed definitional changes to incorporate export services may also necessitate broader consideration of the regulatory framework governing voltage management on low voltage (LV) networks.

While voltage management is substantially a matter for state jurisdictional regulation, the network expenditure regulatory framework informs distribution networks' ability to fulfil their regulatory obligations and ensure that voltage levels remain within the permitted statutory range. We have also observed an increasing desire for distribution networks to utilise technical standards to obtain network support services in the invocation of power quality response modes to ensure voltage level remains remain within the permitted statutory range.

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.[5]

Among a range of insights, we have observed that voltage levels across the grid are generally high, regardless of whether customers are exporting solar. We note that the Energy Security Board's (ESB) and Australian Energy Regulator's (AER) commissioned UNSW report,[6] also found that high voltages are due to a range of factors, especially historic circumstances of distribution network operation, with implications for compliance and consumer losses.

Given that DER is typically not the sole cause of the problem, we would recommend the Commission consider how the proposed reforms would interact with the existing regulatory arrangements for voltage management to promote equitable customer outcomes enabling access to the network on fair terms. In particular, the Commission should consider:

- Whether the proposed reforms require that voltage management be regulated through the NER; and

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[5] 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/.

[6] 2ESB cover note on UNSW voltage report: https://prodenergycouncil.energy.slicedtech.com.au/sites/prod.energycouncil/files/200502%20ESB%20cover%20note%20on%20UNSW%20Voltage%20Report.pdf.

- Approaches to support more comprehensive solutions to voltage management, including articulating additional service standards, providing more explicit incentives and/or performance benchmarking.

In summary, AGL supports the establishment of an export services obligation for distribution networks, provided that obligation is:

1. Defined in the NER;
2. Based on service type rather than customer type;
3. Promotes DER uptake through market-based solutions; and
4. Addresses how network manage voltage.

Question 3: Proposed changes to definitions

1. *Are the proposed approaches to the classification of export services necessary and appropriate?*
2. *Are there more appropriate approaches to enable DNSP expenditure on export services to be economically regulated that are not discussed above?*
3. *Are there any other issues related to service classification that the Commission should consider?*

AGL supports consequential changes to the classification of export services, to better facilitate distribution networks providing export services to customers, consistent with the definitional changes discussed above.

As in the case of any definitional changes, consequential changes to the classification of export services should complement and not foreclose the development of a market-based framework for the provision of DER services.

Question 4: Obligations on DNSPs

1. *Should the NER be amended to impose obligations on DNSPs to provide export services as proposed?*
2. *Would it be appropriate to impose obligations on DNSPs to consider network planning solutions in relation to DER integration?*

a. Is there a need for the introduction of specific arrangements to guide network planning and investment decisions around additional DER hosting capacity?

b. Do you consider that a net market benefit test is a useful way to guide DNSP network planning and investment for export services?

3. Should a principle for the allocation of export capacity in the NER be introduced? If so, what principle should be included?

AGL supports the proposals brought forward by TEC and ACOSS for additional new obligations on export services, efficient investment and allocation of hosting capacity. We consider that the package of reforms proposed by TEC and ACOSS could improve the investment outlook for DER customers by rebalancing the networks investment and planning regulatory framework to explicitly consider DER integration and the benefit that DER can provide the broader market.

While SAPN suggests that amending the definitions and service classifications would be sufficient, we do not believe this would ensure appropriate customer outcomes especially as the distribution service market matures. The services provided by networks will not necessarily be of an equivalent nature to consumption-based services as DER customers increasingly look to participate in market through aggregation services. Network access arrangements will therefore require a greater degree of regulatory oversight to ensure that they complement the establishment of a more mature distribution market structure. Moreover, the historical experience of poor network investment and management of voltages also points to the need for a more prescriptive approach to ensure better customers outcomes.

We offer the following insights on the specific elements of the proposals brought forward by TEC and ACOSS:

- ***Networks to prepare a comprehensive 5 yearly DER integration strategy***. In our view, this requirement will support greater accountability in distribution networks expenditure decision-making and aligns well with the Australian Energy Regulator's (**AER**) intention to establish DER integration expenditure guidance. As we observed in response to the AER consultation, AGL does not consider that the AER's Expenditure Forecast Assessment Guideline is currently fit-for-purpose to assess DER integration expenditure. [7]

- ***Networks to optimise existing infrastructure to maximise DER hosting capacity.*** We support making this requirement more explicit in the NER as incentive frameworks such as the STPIS could lead networks to reduce export services in the interest of efficiency, given the potential for mixed financial incentives as identified in the Consultation Paper.

- ***Introduction of 'net market benefit' test as guiding principle for planning and investment.*** We support this requirement and consider that this could act as a complement to the current economic efficiency test to ensure that networks fairly evaluate the benefits DER in assessing network infrastructure. However, we would welcome greater guidance on how networks assess investment planning to support DER integration to ensure consistent methodologies are applied that appropriately account for market costs and benefits.

- ***Prosumers given option to purchase additional access or capacity (via negotiated export capacity agreement or export charging)***. While we support this concept in principle, we consider it may be difficult in practice for DER customers to negotiate appropriate outcomes, given the disparity in bargaining power with distribution networks. We also note that while DER customers can negotiate additional access now, there is no incentive for networks and the cost to customers may be a substantial impediment. Accordingly, additional safeguards may be required to enable this to work in practice, including that distribution networks negotiate in good faith and that any appropriate regulatory oversight be provided with respect to the pricing for additional access.

- ***Offer base level of service at no additional cost based on 'net market benefit' test***. We support a base level of certainty and to the extent possible consider this should be aligned to networks regulatory reset 5-yearly cycle to provide a base level of investment certainty for customers. However, we anticipate some complexity in how this service and allocation will interact with dynamic

[7] See further AGL Submission to AER Consultation Paper, Assessing DER Integration Expenditure, November 2019, Available at https://thehub.agl.com.au/-/media/thehub/documents-and-submissions/2020/agl-submission_-consultation-paper_assessing-der-integration-expenditure-november-2019_final.pdf?la=en&hash=2FA87583F62C7A13CDEA2674E3F50608.

export envelopes (which could fluctuate day to day). There may also be some complexity in how site specific the service is i.e. how it reflects network topology.

- ***Allocation pricing principle balancing fairness and equity not first come, first served, or auctioning to highest bidder***. We anticipate some complexity in developing an appropriate methodology for allocation that is fair to all DER customers and also ensures efficiency in the sense of enabling access to aggregators who may be best placed to provide services into market.

Question 5: Efficiency Incentives
1. If 'distribution services' expressly include export services, are there any regulatory barriers to adapting existing incentive schemes to export services?
2. Should the STPIS be extended to export services or is a new incentive scheme required?
3. If the STPIS or a new incentive scheme is to apply to export services:
a. What are the practical challenges of designing relevant performance measures and collecting robust data? Can these challenges be overcome over time?
b. Should the details of the scheme be prescribed in the NER or is it appropriate for the AER to design the scheme?
c. Are there any additional factors the AER should be required to take into account (eg, under NER clause 6.6.2 relating to the STPIS)?
d. Do export service standards (to meet customer expectations) need to be established to set a performance 'baseline' for the incentive scheme?

AGL supports the focus on aligning network incentives. Currently there is little incentive for networks to invest in measures to reduce export constraints as the regulations do not currently impose a penalty for constraining DER exports.

We believe that any incentives framework needs to be appropriately structured to provide simpler penalties/ incentives to drive more efficient operation of hosting capacity.

We are not convinced the SAPN and TEC/ACOSS proposals on incentives reform would be sufficient to get the right outcomes, given the challenges associated with applying the STPIS scheme to exports. We anticipate that a range of operational challenges would impede the effectiveness of the STPIS scheme in driving improved customer outcomes in the immediate term, including:

- The difference between hosting capacity and other service attributes reflected in the STPIS (such as reliability), given that its value is derived from a range of market indicators that can vary irregularly (including wholesale market prices, feed-in tariffs, contract prices and FCAS payments);
- The current lack of robust data to establish appropriate benchmarking for distribution networks' performance in export services; and
- The need to define performance measures and a performance standard i.e. guaranteed service level outcome versus inconvenience payment.

Accordingly, we consider that other options may need to be considered in the short term to improve distribution networks' disclosure of export service levels, for example reputation incentives for information disclosure or punitive measure for inadequate reporting.

Once adequate reporting and data has been established, further consideration can be given to the development of an appropriate performance standard. Further analysis will also be required to assess how STPIS could be applied effectively including relevant methodologies and inputs.

Question 6: Pricing Arrangements

1. *Should DNSPs have the option to propose to the AER charges for export services?*
2. *What are the potential benefits and costs of enabling export charges?*
3. *If customers can already negotiate 'deeper' connection agreements, is a 'supplementary' connection arrangement required to allocate DER-related costs – as proposed by TEC/ACOSS?*
4. *If NER clause 6.1.4 is removed, and DNSPs are able to develop tariffs for export services:*

a. What are the implementation issues?

b. Should the existing tariff structure statement process and pricing principles apply? For example, is a principle required to guide DNSP decisions on cost allocation between consumption and export services – as proposed by SAPN?

c. Are transitional or 'grandfathering' arrangements needed and, if so, should they be prescribed in the NER?

5.Should the regulatory framework better recognise the benefits DER services provide to DNSPs? For example, does SAPN's proposal to allow for negative prices address the issue?

6. Should these reforms only apply to small customers?

Rebalancing network pricing arrangements to support equitable outcomes

AGL supports exploring further opportunities for pricing reform, given the absence of any network pricing signals for energy exports. We agree with the Commission that this is a timely debate, particularly given the equity dimension in terms of customers who do not currently have access to DER.

In general, we consider that the removal of NER clause 6.1.4 which prohibits the use of system charges for export services has the potential to address equity concerns regarding the extent to which non-DER participants cross-subsidise DER customers' use of the distribution network.

The introduction of export pricing should also improve investment certainty for DER customers' by supporting greater market access through the provision of relevant network infrastructure. Whilst SVDP suggests there is a need to consider who pays for enabling higher DER uptake, we believe that the cost of DER integration should also reflect the benefits that DER can provide to the energy market system and its broader customer base. As the market for DER services evolves beyond wholesale energy provision towards ancillary services and network support services, network pricing arrangements need to be flexible enough to accommodate the spectrum of market benefits that DER can provide.

Having regard to SAPN's proposed export tariff that would be cost-reflective, it is not clear how the proposal would actually support greater market access for DER. We agree with the proponents that increased use of distribution networks by DER to export electricity into the system will eventually drive the need for new network expenditure as the inherent 'hosting capacity' of the existing assets is used up. However, in the absence of an overall net change in distribution networks' expenditure outlook, we do not consider that the linkage of export charges to improved investment and certainty for DER customers has been made clear.

In our view, investment certainty is likely to be better supported by the proposed changes to distribution networks services obligations and incentives schemes. In particular, the introduction of a 'net market benefit' test as a guiding principle for planning and investment could better support network expenditure decisions in circumstances where it is demonstrated to provide a benefit for the broader energy market system.

Recognising and rewarding customers for the benefits their DER can provide

AGL supports the proposals brought forward by SAPN and TEC and ACOSS that the regulatory framework could better recognise and reward customers for the benefits their DER provide.

We anticipate a range of operational challenges in implementing reward pricing with respect to a network use of system charge only that should be carefully considered, including the following:

- From a market design perspective, in the absence of a more mature market mechanism such as a DMO that could facilitate DER bidding for network support services, reward pricing intermediated by distribution networks alone risks placing distribution networks in the position of determining the market value of DER and may not be sufficient to support aggregators co-optimisation of different value streams.
- From a network operational perspective, reward pricing would require the development of a range of forecasting methodologies and inputs to inform the setting of applicable charges, taking in account the fixed charge, capacity tariff and time-of-use components of customers' tariff structures.
- From a customer experience perspective, the introduction of reward pricing assumes that customers would respond in the desired way. We note SAPN's proposal that distribution use of system charges should allow negative prices to reward customers for benefits distribution level exports provide the distribution network in managing consumption driven network congestion. As we have observed in the broader network tariff reform program, the policy intent to create economic value through more cost reflective network tariffs relies upon retailers solving the dichotomy between network tariff complexity and customers' desire for simplicity.

We do not consider that reward pricing should be implemented in the context of export charges at this point in time, until the broader tariff reform program is progressed. In our view, this would enable the market value of DER to be more fully accounted for.

We feel that the broader tariff reform options to promote greater innovation in DER product and service offerings, including cost-reflective pricing and novel pricing arrangements such as the bulk wholesale network tariff model (whereby network tariffs are charged to retailers based on an aggregated load profile of the retailers' customers) is a greater priority because of its materiality.

We also note the proposal brought forward by TEC and ACOSS to allow for supplementary connection agreements for a network and its customer to negotiate additional capacity, where that investment is not otherwise justified under a 'net market benefits' test. We support the concept as a means to overcome the tension between the open access regime and networks' ability to constrain access based on local network conditions. Nevertheless, we anticipate a range of operational challenges to implementing this option, including the following:

- Negotiating individual supplementary connection agreements could entail substantial cost, given that networks may need to undertake network augmentation works to facilitate access. These costs may not be economically efficient to support only a small customer cohort, particularly in circumstances where the 'net market benefits' test has not been satisfied.
- Individual customers may still encounter an unequal bargaining position in negotiating supplementary agreements. Accordingly, additional safeguards may be required to encourage more balanced negotiations between the parties, for example requiring that networks negotiate on reasonable terms.

Transitional arrangements and application

AGL does not support transitional arrangements. AGL supports the introduction of these reforms in a timely manner to address equity concerns of non-DER customer and establish a financial stream to support distribution networks' planning and investment into the future. While we appreciate the need to mitigate the impact of export charges on DER owners anticipated return on investment, we do not anticipate that the scale of these charges would have a material impact, given that these charges would be contained to the network use of system costs. We also understand that the AER would apply its own transitional arrangements to minimise any undue customer impact associated with these reforms.

We also do not consider that the proposed reforms should only apply to small customers. Rather, the access and pricing arrangement should be consistent for all distribution connected customers, noting that for larger commercial and industrial customers there is scope to negotiate access arrangements through connection agreements.