



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

Mr John Pierce

Australian Energy Market Commission

PO Box A2449

Sydney South, NSW 1235

30 April 2018

Submitted: via AEMC website

Frequency Control Frameworks Review – Draft Report

AGL Energy (AGL) welcomes the opportunity to comment on the Draft Report from the Commission's Frequency Control Frameworks Review.

AGL is one of Australia's leading integrated energy companies and largest ASX listed owner, operator and developer of renewable generation. AGL is also a significant retailer of energy, providing energy solutions to over 3.6 million customers accounts throughout eastern Australia. AGL is a customer-focussed business and we endeavour to provide customers with products and services that best meet their diverse wants and needs.

We support the current program of work to provide further clarity on issues affecting frequency control within the National Electricity Market (NEM), particularly given the increasing penetration of variable renewable generation and planned withdrawals of large synchronous generation plant over the coming years. We do note that this transition is underway at present, but will be ongoing for the coming decades rather than years. This requires ensuring that the trajectory of proposed amendments appropriately supports existing technologies over that longer term period, while providing the correct frameworks and incentives to ensure that newer technologies are enabled within the NEM in the near term.

AGL broadly supports the three proposed recommendations relating to key issues identified in the Draft Report, with the exception of the change to the causer pays averaging period. AGL considers that market mechanisms provide the most efficient means of encouraging market participants to provide effective frequency control at the least cost to end-use consumers. Ensuring that participants are effectively remunerated for providing required market services under a competitive framework will likely reduce the current disincentives to providing primary frequency control, and may drive new technical solutions to provide this service. Such market mechanisms would be well supported by a higher level of transparency relating to the current state of frequency control as well as ongoing monitoring and assessment of frequency control performance.

Improving the price signal provided by the causer pays procedure may assist participants to more proactively manage their exposure to causer pays factors. However, as AGL has raised in our submission to the recent AEMO consultation on the Regulation FCAS Contribution Factor (Causer Pays) Procedure¹ we have concerns regarding whether the practicalities of this change or the potential impact on generator behaviour would outweigh any potential benefits.

In respect of the emerging issues highlighted in the draft report we agree that further consideration of the opportunities that may exist for enabling distributed energy resources (DER) to provide system security services will be required in the near term. Assessing the utility of various emerging technologies in this

¹ <https://www.aemo.com.au/Stakeholder-Consultation/Consultations/Causer-Pays-Procedure-Consultation>



space through open industry trials, with the support of AEMO and ARENA where appropriate, would help clarify the efficiency and effectiveness of those services and any regulatory barriers that may need to be removed. We continue to support further consideration of AS4777 and DNSP connection standards and the restrictions they impose on the use of DER, particularly as they relate to storage or hybrid systems.

One issue that was not addressed specifically in the draft recommendations was the potential for increasing alignment of technical requirements relating to DER in Australia with international standards. We would support further consideration of the increased costs in having to adapt DER systems to meet Australian requirements compared to any benefits these NEM specific requirements provide.

We have provided specific comments on each of the draft recommendations in the attachment to this submission.

Should you have any questions or comments, please contact Chris Streets on (03) 8633 6758 or CStreets@agl.com.au.

Yours sincerely,

Elizabeth Molyneux

General Manager Energy Markets Regulation



AGL responses to the draft recommendation

Draft recommendation 1

(a) That AEMO investigate whether:

(i) the average period used for calculation of contribution factors could be aligned with the period over which the costs are incurred, preferably on a five minute basis

(ii) the ten business day notice period between publishing and applying contribution factors is appropriate or could be removed.

(b) That AEMO clarify how the causer pays procedure works and the specific variable that generator performance is measured against (i.e. frequency indicator or frequency) such that contribution factors can be calculated in real time by market participants.

AGL's response

AGL supports enhancements to the transparency of the causer pays procedure, particularly around providing further information on the specific variables relating to generation performance. However, AGL considers that retaining the 28-day sample period ensures a more representative causer pays factor, incentivises good participant behaviour, and does not require changes to existing processes.

Draft recommendation 2

That the providers of a primary regulating response should be remunerated for the costs of providing the service, in particular where the opportunity costs of maintaining the capacity to provide the service (e.g. maintaining headroom to be able to increase output) are likely to be high.

The implementation of one of the following two options is likely to build on the existing market frameworks and support improved frequency control during normal operation:

- provision of a primary regulating response through the existing regulating FCAS markets*
- changes to the causer pays arrangements to facilitate the provision of incentive payments for primary frequency response during normal operation.*

Further work is required to investigate and describe the potential arrangements for the implementation of these options, and the associated costs and benefits of these arrangements.

AGL's response

AGL supports a market based approach for primary frequency control that can be competitively provided by a technologically diverse range of generation and load. AGL considers a market based approach will result in the most cost-efficient outcome. The appropriate incentives for primary frequency control within the normal operating band would encourage the most efficient provision of these services, allowing for newer technologies to compete with existing traditional sources on a technologically neutral basis.

Draft recommendation 3

That a rule change request be submitted to amend the NER to require:



(a) AEMO to monitor, and publish reports on, frequency outcomes with respect to the requirements of the frequency operating standard

(b) AEMO to provide information to the AER on the performance of FCAS markets and for the AER to monitor, and report on, the performance of FCAS markets.

AGL's response

AGL support ongoing monitoring and reporting on frequency performance on a regular basis. We consider that making this a Rule requirement, with a corresponding obligation on the AER to provide appropriate oversight, will ensure that any future trends relating to the degradation of frequency performance are identified early and addressed cost-efficiently.

Draft recommendation 4

That a rule change request be submitted to enable:

(a) Market Ancillary Service Providers to classify small generating units as ancillary service generating units for the purposes of offering market ancillary services

(b) Small Generation Aggregators to classify small generating units as ancillary service generating units for the purposes of offering market ancillary services.

These changes may also require changes to AEMO's MASS.

AGL's response

AGL is supportive of this recommendation as a means of enabling additional providers of ancillary services into the market.

Draft recommendation 5

That AEMO:

(a) provide more information regarding particular service characteristics that may be able to be trialled under the MASS

(b) undertake trials of distributed energy resources providing FCAS that consider various technology types and different options for metering and verification, with a view to sharing the outcomes of the trials with relevant stakeholders

(c) conduct a broader review of the MASS and consider how the value of distributed energy resources can be appropriately recognised.

AGL's response

AGL supports trials of DER based provision of ancillary services, and considers that some of the ARENA related trials of new mechanisms for technology enablement could act as an effective template for DER specific trials. These trials should seek to facilitate innovation in this area through competitive processes open to the broader industry.

Draft recommendation 6

That Energy Networks Australia, in developing its national connection guidelines, provide guidance on:



- *what capability is reasonable to require from distributed energy resources as a condition of connection in order to address the impact of that connection*
- *the expected application of AS 4777 to different connection types and sizes*
- *the technical justification for any mandated services*
- *the extent to which any mandated services would detract from the ability for distributed energy resources to offer system security services.*

The Commission encourages stakeholders to provide input into the development of these guidelines.

AGL's response

AGL does not support the ENA's national connection guideline as a voluntary mechanism on Network Service Providers (NSP) to harmonise technical and connection requirements, without suitable governance arrangements and assurances that it will be adopted by all NSPs. We are concerned that in an effort to establish a nationally consistent connection framework, the ENA Framework, could instead lead to poor customer outcomes due to the likelihood to establishing lowest common denominator requirements. Further, ENA Framework risks further entrenching networks businesses' current approach to grid connections without necessarily delivering any further benefit to consumers and generators or simplifying the connections process.

To ensure the continued advancement of the energy market transformation into the future, we consider that the connections process should be substantial streamlined, particularly for non-contentious connection applications at the distribution level. This may entail a more limited role for network businesses (including in any application processes) as customers are empowered to individually manage their own energy system requirements.

AGL encourages the AEMC to review the current connections framework set out in the National Electricity Rules, and to ensure that sufficient transparency and justification is provided by NSPs on application and network requirements, and to ensure that connections are processed in a timely manner.

While we believe that there is value in retaining the negotiated connection framework for large connections, we also believe that greater clarity is required on the role of AEMO in setting generator performance standards, on counterparties to work in good faith and fairly balance operational and financial risk.

Specifically, on AS4777, as was noted in our previous submission to this Review, a new standard was introduced in April and applies to new installations (ie not retrospective). It includes more stringent disconnection requirements and as a result:

- Combined with the high grid voltage seen in certain jurisdictions, there is a high rate of inverter disconnection. This is preventing storage inverters from participating in frequency response programs, such as the "virtual power plant".
- Also, recently installed storage inverters will disconnect from the network before older PV systems disconnect from the network. The batteries could otherwise be 'soaking up' the electricity from the PV system, so disconnection of the battery can cause further grid issues.

A better approach would be to consider the DER installed behind the meter as a holistic system that can interact and support the wider network, via its connection point. For example, if the grid segment, which includes the customer's connection point, is experiencing high voltage, the network could incentivise customers to provide orchestration services, such as the charging of batteries, the activation of loads, or the injection of reactive power from solar inverters, as a means of addressing a network issue.

Customers should be incentivised to provide system security services but they must be fairly compensated for supporting the stability and reliability of the wider grid. These incentives should be market driven and reflect the fair value for the services provided. Importantly, network connection agreements and regulatory



frameworks should not compromise the investment that the customer has made, or limit energy market interaction by curtailing energy production, unnecessarily applying export constraints or preventing customer's from providing demand response or other market support services through other third party providers.

Draft recommendation 7

That:

(a) AEMO, in conjunction with DNSPs, conduct trials of aggregated distributed energy resources providing FCAS to assess their ability to provide services under different network conditions, and how the provision of those services affect the local network and the power system more broadly

(b) DNSPs and aggregators share information about the types of network conditions that may constrain the operation of distributed energy resources providing system security services, and the types of services that may affect network conditions, with a view to determining how the value of distributed energy resources can be maximised for both parties.

AGL's response

As stated above, AGL considers that such trials should seek to facilitate innovation through competitive processes open to the broader industry. We have concerns that models involving network service providers or central procurement by the market operator may distort competitive FCAS markets. Any trial involving network service providers should at a minimum engage with ring-fenced affiliates while also including competitive market participants to ensure the most efficient solutions are considered.

Draft recommendation 8

That, in the medium term:

(a) AEMO conduct a broader review of the MASS to recognise the capability, and more accurately value the response profile, of new technologies that are capable of providing frequency control services

(b) the AEMC and AEMO refine the time frames and develop a work program for making any substantive changes to FCAS frameworks. This process should be informed by:

(i) an assessment of any consequential impacts arising from the implementation of any revisions to frequency control arrangements in the normal operating frequency band

(ii) investigations to be undertaken by AEMO into:

a. the emerging capabilities of fast frequency response technologies including trials of various technology types, with a view to sharing the outcomes of the trials with relevant stakeholders, and to inform the development of future service specifications

b. the evolving technical and operational requirements of the power system and the inter-relationships between different system services, including frequency response, inertia and system strength

In the short term, the Commission will consider what recommendation it will make, if any, on the receipt of submissions from stakeholders in response to this draft report.

AGL's response

AGL broadly supports this proposed workstream.