



Mr John Pierce
Australian Energy Market Commission
Level 6, 201 Elizabeth Street
Sydney NSW 2000
Lodged via www.aemc.gov.au

Thursday, 26 April 2018

Dear Mr Pierce,

RE: Frequency Control Frameworks Review Draft Report (ref EPR0059)

ENGIE appreciates the opportunity to comment on the Australian Energy Market Commission (AEMC) Frequency Control Frameworks Review draft report (Draft Report).

ENGIE congratulates the AEMC on its comprehensive examination of power system frequency control arrangements in the National Electricity Market (NEM), and the factors contributing to the deterioration in the quality of frequency control in the NEM observed in recent years.

ENGIE notes that the Draft Report seeks to facilitate interim arrangements where needed, to achieve an immediate improvement in power system frequency control, and to also facilitate longer term solutions. ENGIE supports this approach, provided that any interim arrangements, which will almost inevitably be less effective or efficient, do not become the default longer term arrangement.

The Draft Report has made a number of draft recommendations and ENGIE has set out its responses to each of these recommendations below.

Draft Recommendation 1a – causer pays contribution factors

ENGIE offers qualified support to this recommendation.

The draft recommendation proposes that the average period for calculation of causer pays contribution factors be better aligned with the period over which costs are incurred. ENGIE supports measures that seek to achieve a more effective link between the costs associated with the provision of a service and the drivers that create the need for the service. ENGIE therefore supports the proposal that the Australian Energy Market Operator (AEMO) investigate whether this link can be improved.

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ENGIE notes that the draft recommendation includes the statement that the average period for calculation of the contribution factors would “preferably be on a five-minute basis”. ENGIE suggests that if the AEMC were to require AEMO to investigate this issue, then it would be inappropriate for the AEMC to pre-empt the outcome by indicating its preferred outcome. In fact, ENGIE believes that calculation of the contribution factors at the five-minute level may not achieve the most effective link between costs and cause.

The cost of regulation Frequency Control Ancillary Service (FCAS) is primarily a function of two parameters – the amount of service enabled by AEMO, and the regulation FCAS prices offered in the market. Neither of these can be changed once a five-minute dispatch interval has commenced.

The current regulation FCAS arrangements require AEMO to determine the amount of service to be enabled well in advance of a dispatch interval. The amount of service enabled is (presumably) based on AEMO’s assessment of the requirement, based on its experience over the previous days / weeks / months. ENGIE notes that there is insufficient transparency at present on exactly how AEMO determine how much regulation FCAS to enable, and this is addressed by the AEMC’s draft determination number three.

ENGIE is concerned that seeking to apply contribution factors on a five-minute basis will not achieve the best link between costs and cause, since the factors that lead to the cost (FCAS bids and AEMO enablement) are related to matters that are assessed over a much longer time frame.

In summary, ENGIE supports the draft recommendation that AEMO look more closely into this issue, with the qualification that the AEMC preference that this be on a five-minute basis be removed.

Draft recommendation 1b – clarification of causer pays procedure

ENGIE supports this recommendation since there is currently a level of uncertainty and confusion regarding the details of the causer pays calculations. As noted in the draft report, it is important that participants are able to calculate their own contribution factors so that they can achieve confidence that they understand how they are derived and applied. Once participants have a better understanding of these factors, they will be better placed to respond appropriately to them, which should lead to an improvement in frequency performance.

Draft recommendation 2 – primary regulating response should be remunerated

The draft report includes discussion on a number of options that have been considered by the AEMC to allow primary regulating response to be remunerated. ENGIE’s response to each of these options is discussed below.

Option A - Provision of a primary regulating response with regulating FCAS

ENGIE does not support this option.

The regulating FCAS service is fundamentally different to the proposed new primary regulating response as follows:

- Regulating FCAS is remotely controlled by AEMO whereas primary regulating response would be locally controlled,

- Regulating FCAS is a secondary frequency control service whereas primary regulating response would be a primary service,
- Regulating FCAS responds to both frequency and time error with pre-set calibration and bias factors whereas primary regulating response would respond to local frequency alone,
- Regulating FCAS control signals take account of a generating units energy dispatch target, whereas primary regulating response does not.

As well as these differences in the nature of the two services, there are a number of problems associated with this option as outlined below:

- At present a generating unit offers to provide regulating FCAS at a certain price. If it is required to also provide primary regulating response, this will inevitably lead to an increase in price for the service.
- Assessment of service delivery will become difficult; how will AEMO distinguish between response to automatic generation control (AGC) signals and response due to local frequency deviations?
- Many generators (and demand side options) that could provide primary regulating response are not able to provide regulating FCAS. These options would therefore be excluded by the unnecessary technical requirement of being AGC capable.

The Draft Report suggest that this option may be relatively easy to implement and may provide greater simplicity and transparency. ENGIE does not agree with this assessment. On the contrary, attempting to incorporate the new primary regulating service into the existing regulating FCAS will complicate the existing FCAS arrangements with the likely result that some current regulating FCAS service providers will either increase their offer price, or withdraw altogether. Neither of these outcomes would be desirable.

Option B – Activation of existing contingency FCAS at a narrower frequency set point

ENGIE does not support this option.

The existing contingency FCAS services are important in containing power system frequency deviations following contingency events, and interfering with this capability may place the power system security at risk.

As noted in the Draft Report, this option would require substantial changes to the frequency control frameworks in the NEM and would require a review of the frequency operating standard and the market ancillary services specification (MASS). Such fundamental change is not justified.

The issue to be addressed is the need to improve frequency control within the normal operating band. There is no suggestion that there are issues to be addressed regarding contingency FCAS provision. It is therefore inappropriate to interfere with something that is working well (contingency FCAS) in order to deal with an issue of frequency control within the normal operating band.

Option C – mandatory provision of response

ENGIE does not support this option.



The fundamental principle that market solutions should always be sought where feasible has been critical to the success of the NEM, and this principle should not be overturned without very good reasons.

The market arrangements for FCAS provision in the NEM have been successful to date and have in general, been able to deliver adequate FCAS provision at efficient prices. It is only relatively recently that the issue of deteriorating frequency control within the normal operating band has been identified.

The option of mandating frequency response should only be considered if it can be demonstrated that a market solution is not feasible. The fact that the AEMC have been able to outline a number of potential market based solutions indicates that there is no need to fall back on a mandated solution.

Option D – contract procurement

ENGIE is supportive of this option as an interim measure, if deemed necessary as a step towards a new market service.

ENGIE notes that the existing FCAS market arrangements in the NEM were preceded by contract arrangements for FCAS at NEM commencement. As noted in the Draft Report, contract arrangements are less able to provide a flexible response, and are unlikely to be as cost competitive as true market arrangements.

If needed to provide further time for new market arrangements to be implemented, ENGIE would support a transitional contractual arrangement for provision of primary regulating service.

Option E – new markets for primary regulating response

ENGIE supports this option.

The introduction of a new market for primary regulating response is ENGIE's preferred option as it builds on the success of the existing FCAS arrangements in the NEM, and provides the most flexible solution to the identified problem. It is also most likely to lead to the most efficient, cost effective solution, provided that the new service is defined in such a way to allow a wide range of technologies to participate.

The Draft Report has noted that the AEMC would need to receive a rule change request before it can proceed with this option. ENGIE would nevertheless encourage the AEMC to continue to develop this option in preparation of its final report, and include a suggestion that a body such as AEMO or the COAG Energy Council lodge the appropriate rule change proposal.

Option F – incentive payments through causer pays

ENGIE supports this option as supplement to options D & E.

ENGIE is broadly supportive of investigating the feasibility of enhancing the causer pays process to include incentive payments, although the feasibility of this needs to be carefully considered. This option would potentially eliminate the need for AEMO to enable a pre-determined amount of regulation FCAS, and instead rely on real time incentives / penalties to manage power system frequency.



ENGIE suggests that the feasibility of this option needs to be carefully considered before proceeding. This option will also be somewhat dependent on the outcomes of the draft recommendation 1a (causer pays contribution factor averaging period).

The Draft Report suggests that options F and A are preferred by the AEMC as they are likely to be the lowest cost options. ENGIE does not support this conclusion since, as noted above, option A is problematic and option F needs more detailed consideration to confirm its feasibility.

ENGIE suggests that the approach that achieves the best mix of practical implementation with efficient outcomes would be to adopt option D (contracted primary regulating service) as an interim measure, whilst progressing to option E (new market). At the same time, the feasibility of option F could be carried out in parallel. If option F is found to be feasible, it could be introduced alongside the market services.

Draft recommendation 3 – FCAS transparency

ENGIE supports this draft recommendation.

It is very important that industry participants, regulators and stakeholders have access to high quality, standardised data and information regarding the nature and performance of frequency control in the NEM. In the absence of such information, there is opportunity for miss information to take hold and distract the industry from the key issues.

ENGIE notes that the draft recommendation would place an obligation onto AEMO for provision of this information. ENGIE is supportive of this approach, and would encourage AEMO to commence provision of this information in advance of a rule being finalised.

Draft recommendations 4 to 8 – emerging needs

ENGIE supports these recommendations.

ENGIE agrees with the Draft Report conclusions that more needs to be done to facilitate the provision of frequency control via distributed energy resources. The Draft Report has identified potential areas of improvement in the national electricity rules, the MASS and Australian Standard 4777. ENGIE is supportive of the proposed initiatives to review these instruments to remove unnecessary impediments to provision of frequency control from distributed energy resources.



Terminology

Although terminology is not the most important issue under consideration, ENGIE believes that it is important to establish and maintain consistent and un-ambiguous terms for each of the mechanisms used to maintain power system frequency. This is especially important if we are to continue to rely on defined markets to procure the various frequency control services.

ENGIE acknowledges that the distinction between primary and secondary frequency control has a universal basis in power system engineering, and is useful in distinguishing the transition from inertial, to primary and then to secondary control, as depicted in figure 2.4 of the Draft Report. ENGIE also recognises that it is possible to translate the current defined NEM FCAS services to the language of primary and secondary control, as included in section 2.2 of the Draft Report.

Up until now, the NEM FCAS arrangements have been arranged into two broad categories – contingency services and regulation services. As noted in section 2.2 of the draft report, regulation FCAS service would be regarded as secondary frequency control. The NEM contingency services are further divided into three categories – fast, slow and delayed. If we translate these into the universal language, then the fast and slow contingency services would be described as primary frequency control services, whereas the delayed FCAS would be described as a secondary frequency control service. This is summarised in the following table.

NEM description	Universal description
Regulating FCAS	Secondary frequency control
Fast Contingency FCAS	Primary frequency control
Slow Contingency FCAS	Primary frequency control
Delayed Contingency FCAS	Secondary frequency control

ENGIE supports the AEMC proposal to introduce a new service to better manage frequency control within the normal operating band. However, the proposal to describe this as ‘primary regulating response’ will introduce an ambiguity into the NEM FCAS lexicon. Clearly, the intent is that the new service is relatively fast acting and not reliant on a remote control signal – features that are consistent with primary frequency control. However the use of the term ‘regulating’ is problematic in the NEM context, as it is likely to be confused with the current regulating FCAS service – which is a secondary frequency control.

ENGIE believes that the new service would be better defined by not making reference to either the term primary (which captures some of the current contingency FCAS services) or regulating (which captures the current regulating FCAS – a secondary service).

ENGIE would suggest a term such as ‘Immediate FCAS’ or ‘Normal band FCAS’.



The NEM FCAS categorisation of regulation and contingency services is well defined and understood by industry participants. Whilst translation to the universal language of primary and secondary services is useful when comparing to overseas arrangements, there has not been a need to adopt this language in the NEM context.

ENGIE trusts that the comments provided in this response are of assistance to the AEMC in its deliberations. Should you wish to discuss any aspects of this submission, please do not hesitate to contact me on, telephone, 03 9617 8331.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Chris Deague".

Chris Deague
Wholesale Regulations Manager