

NATIONAL ELECTRICITY RULES RULE 8.2 - STAGE 2 DISPUTE

IN THE MATTER OF

ORIGIN ENERGY LIMITED (ORIGIN)

AND

AUSTRALIAN ENERGY MARKET OPERATOR LIMITED (AEMO)

AEMO STATEMENT OF ISSUES

WITHOUT PREJUDICE

1. PURPOSE

The matter relates to a dispute raised by Origin under rule 8.2 of the National Electricity Rules (NER) concerning the calculation and application of certain factors (called contribution factors or 'causer pays' factors) used in determining the amounts payable by individual Market Participants in the National Electricity Market (NEM) to recover the cost of 'regulation' frequency control ancillary services (FCAS).

The dispute is to be resolved by determination of a dispute resolution panel (DRP) in stage 2.

AEMO understands that Origin proposes to pursue two alternative interpretations of the NER provisions relevant to the recovery of regulation FCAS costs arising from a local market ancillary service requirement. These are respectively referred to as the 'regional factor' and the 'global recovery' interpretation. AEMO further understands that a group of generators also proposes to make submissions on the global recovery interpretation or a variant of it.

This document was prepared by AEMO on a without prejudice basis. It sets out AEMO's high level position on the regional factor and global recovery interpretations, as currently understood by AEMO without the benefit of detailed submissions from Origin or any other party. This document is not intended to represent a complete or final position on any issue.

2. FACTUAL BACKGROUND

2.1. FCAS

AEMO procures various types of FCAS through the spot market to assist in meeting power system security requirements. FCAS may be provided by registered Market Generators, Market Customers or Market Small Generation Aggregators, in each case using facilities that AEMO has pre-approved as meeting the technical specification for providing FCAS.

There are two principal types of FCAS: regulation and contingency, each with a number of subsets. Regulation FCAS (regulating raise and regulating lower) are used to correct the generation/demand balance in response to minor deviations in load or generation. 'Contingency FCAS' are enabled to correct the generation/demand balance following a major contingency event such as the loss of a large generating unit or transmission element.

The majority of FCAS providers are Market Generators.

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Origin is a Market Customer (retailer), with load throughout the NEM, and a Market Generator with generating facilities in most NEM regions, including two in South Australia (SA). Neither of these was registered to provide FCAS at the relevant time.

2.2. The SA FCAS Requirement

The dispute arises out of circumstances that occurred between 11 October and 10 November 2015, when AEMO acquired regulation FCAS specifically from the SA region of the NEM. AEMO did this because of scheduled maintenance that raised a credible risk of loss of the Heywood interconnector – the only alternating current (AC) transmission link connecting SA to the rest of the NEM. If the ‘in-service’ line were to trip, regulation FCAS located within SA itself would be needed to control frequency in the region in accordance with power system security standards.

On 1 November 2015, the interconnector did trip, resulting in SA operating asynchronously from the rest of the NEM for 35 minutes.

Under most circumstances, regulation FCAS requirements are ‘global’, as they can be sourced from any region in the interconnected NEM. This requirement was ‘local’, as it could only be sourced from within SA. The cost of services that meet a local FCAS requirement is allocated only to the region(s) the service relates to. Given the limited available FCAS providers in SA, the cost in this case was very high – approximately \$26.5 million over the affected period. Based on 2015 average costs in the NEM, the expected cost for an equivalent global requirement would have been less than \$500,000.

3. HOW AEMO INTERPRETS AND APPLIES THE REGULATION FCAS RECOVERY RULES

3.1. Regulation FCAS Recovery Calculations - Summary

The amount of regulation costs to be recovered from Market Participants in each region comprises the allocation to that region of the total aggregate global and local FCAS requirements under NER 3.15.6A(h), defined as ‘TSFCAS’. That amount is then recovered from Market Participants in accordance with NER 3.15.6A(i) in two parts:

- (1) From Market Generators, Market Small Generation Aggregators and Market Customers with metering on their facilities that allows their contribution to the aggregate deviation in frequency of the power system to be assessed, based on a contribution factor ‘MPF’.
- (2) If any residual unallocated amount remains, from Market Customers without such metering, in accordance with a factor, also ‘MPF’, that is the same for all of them and is referred to as the ‘residual’ contribution factor.

AEMO calculates the MPF numbers under a published procedure under NER 3.15.6A(k), called the ‘causer pays’ procedure (Procedure). Under NER 3.15.6A(m) and 8.9, AEMO must consult with Registered Participants and other interested parties before making or amending the Procedure.

3.2. Steps for determination of MPFs

The Procedure describes how AEMO calculates an individual factor for each Market Participant with facilities that have metering capable of measuring their performance relative to network frequency in (or close to) real time. A single factor is calculated for each of those participants based on the performance of all their facilities across the NEM.

For Tasmania, which is not synchronously connected to the rest of the NEM, the Procedure requires AEMO to calculate a separate ‘frequency index’ value, representing the amount of frequency correction the power system requires. This value is used as an input to the MPF calculation.

The deviations of all relevant facilities relative to the frequency requirement of the system must be measured in 4-second intervals, aggregated to 5-minute dispatch intervals, over a total period of 28 days. Contribution factors are determined and published using the measurements in the immediately preceding 28-day period, and those factors are then applied to the recovery calculations for the four weeks commencing approximately 2 weeks after publication. Therefore, contribution factors will never reflect the performance of facilities relative to frequency in the same timeframe as the need arises for the FCAS to which those factors are applied.

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The steps to calculate the contribution factors in the Procedure can be broadly summarised as follows:

1. Capture the deviations of each metered facility from its expected generation or consumption trajectory over each dispatch interval over 28-day periods.
2. Compare the deviations with the frequency correction required by the power system in the same (usually 4-second) interval – at any point in time a single frequency correction value is applied for all mainland regions and a separate value for Tasmania.
3. A positive deviation indicates that the facility is acting to correct the frequency; a negative deviation indicates it is contributing to a frequency problem.
4. Aggregate the 4-second deviations to 5-minute factors per dispatch interval, and disregard factors affected by the occurrence of contingency events.
5. Sum the remaining 5-minute factors over the 28-day period and determine the net aggregate factors for each Market Participant over each of the metered facilities in its portfolio across the NEM.
6. Discard all net positive Market Participant contribution factors, because only the causers of the frequency deviation will share in the costs.
7. Determine the residual percentage for Market Customers without MPFs.

3.3. Allocation of costs for local requirements using contribution factors

The way AEMO allocates the cost of each regulation FCAS service to each region under NER 3.15.6A(h), and then applies the recovery calculations under NER 3.15.6A(i), is documented in the AEMO publication 'Efficient Dispatch and Localised Recovery of Regulation Services Business Specification' (Business Specification).

The Business Specification is not part of the Procedure; it was a document published shortly before the effective date of the Cost Recovery of Localised Regulation Services rule,¹ to explain how AEMO's systems and processes were to be structured to meet the NER requirements in 3.15.6A(h) and (i).

To effect recovery of the costs attributable to local FCAS requirements, section 4.2.2.4 of the Business Specification provides that AEMO selects from the published set of MPFs only those applicable to Market Participants with market generating units or appropriately metered loads in the affected region(s). The Business Specification and relevant systems were developed on the basis that, where the definitions of 'MPF' and 'AMPF' say 'for the region or regions relevant to the [regulation] service', those words refer to Market Participants and not contribution factors. As set out in clause 5.14 of the Procedure, a single MPF is applied for a Market Participant in AEMO settlement systems, representing the performance of all the generating units and relevant loads within the participant's portfolio.

A residual contribution factor for the local requirement is derived from the NEM residual factor by pro-rating the total customer energy in the affected region(s) to the total customer energy in the NEM.

AEMO then applies a 'scaling up' calculation to the MPFs, described in section 4.2.2.5 of the Business Specification, so that 100% of the local requirement costs are allocated to the Market Participants in that region.

The same scaling up calculation is applied when a region or regions operates asynchronously.

¹ National Electricity Amendment (Cost Recovery of Localised Regulation Services) Rule 2007 No 5, commenced 1 January 2009.

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4. AEMO'S POSITION ON REGIONAL FACTOR INTERPRETATION

AEMO has set out its initial responses to Origin's regional factors interpretation in a without prejudice statement of issues prepared during stage 1 of the dispute. This statement should be available on the WEMDRA's website, at <http://www.resolveadvisors.com.au/origin-aemo-fcas-dispute-2016>.

5. AEMO'S POSITION ON GLOBAL RECOVERY INTERPRETATION

AEMO understands the global recovery interpretation is that the cost of a local regulation FCAS requirement should be recovered from all Market Participants across the NEM who have been allocated individual causer pays factors, in accordance with those factors. It is not clear whether the residual to be recovered from Market Customers would be allocated based on customer energy only in the affected region(s), or across the NEM.

The global recovery interpretation is not consistent with the purpose or the intent of localised recovery for regulation services, as introduced by the National Electricity Amendment (Cost Recovery of Localised Regulation Services) Rule 2007 No 5 (Localised Recovery Rule).

Without the benefit of detailed submissions, AEMO notes the following:

- TSFCAS is allocated between Market Participants with individual causer pays factors under NER 3.15.6A(i)(1), 'for the region or regions relevant to the service'.
- There is only one categorisation of regulation FCAS on a regional basis. This is expressed in the concept of 'global' and 'local' market ancillary service requirements (NER 3.8.1(e2)).
- Accordingly, where the service meets a global requirement, Market Participants in all regions are relevant. For a service that meets a local requirement, only Market Participants in the affected regions are relevant.
- Under rule 3.8.1(e2)(2), a local market ancillary service requirement is defined as a service which must only be sourced from one or more nominated regions. The requirement for 35MW regulation FCAS to be sourced within SA in October/November 2015 was clearly a local requirement within this definition.
- It may have been the intent for the costs of a local requirement to be recovered from the region(s) the local requirement was intended to support (which appears consistent with the AEMC's final determination on the Localised Recovery Rule). In this case, SA was both the source and the beneficiary of the service. While the regulation FCAS acquired in SA may have contributed to frequency control across the interconnected mainland regions, it was specifically acquired from relevant SA generators to address a system security requirement for SA alone.
- A local market ancillary service is not limited to a situation where one or more regions is electrically islanded (operating asynchronously) from the rest of the NEM. The definition is consistent with submissions and determinations on the Localised Recovery Rule, which clearly indicate that regional islanding was not the only reason local regulation FCAS requirements could arise.
- The fact that AEMO is only required to determine separate causer pays factors after a region(s) have operated asynchronously is not relevant to the recovery calculation in other circumstances where a local regulation FCAS requirement applies.
- AEMO uses the published causer pays factors under 3.15.6A(j)(1) to determine the recovery amount for local regulation FCAS requirements where separate factors have not been determined under (j)(2) – in other words where the local requirement does not arise from an islanding event. The local recovery calculation uses essentially the same process as AEMO applies to determine separate 'factors' for the purposes of (j)(2).

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6. RETROSPECTIVE REINTERPRETAION

AEMO's Procedure, the Business Specification and associated systems were developed after the Localised Recovery Rule, based on an understanding of the NER in relation to local regulation FCAS recovery that was apparently shared by participants at the time. The Procedure, which AEMO is required to apply, was developed after a mandatory process of consultation with Market Participants. The Procedure, processes and systems have not changed substantially since January 2009.²

The combination of circumstances in SA with the very high cost of local FCAS services was unprecedented, and the implications for the recovery allocation were almost certainly not contemplated when the Localised Recovery Rule and the Procedure were made. The nature of this dispute suggests that the Localised Recovery Rule could have been more clearly expressed. Nevertheless, a change in circumstances does not justify reinterpretation of the rules in order to retrospectively achieve an outcome that might be perceived as more 'right', or 'fair' in those circumstances.

The regional factor interpretation cannot be applied without changes to the Procedure. The global recovery interpretation may also require Procedure changes, and both would require significant revisions to AEMO's systems. The precise detail of those revisions remains unclear. The NER provide no authority to make such changes without undergoing a consultation process, which allows all participants the opportunity to consider the implications, costs and benefits of any proposed approach and provide feedback on appropriate outcomes before they are implemented.

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AEMO

25 May 2016

² Other than to provide for a new category of Market Participant – market small generation aggregators.