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NATIONAL ELECTRICITY AMENDMENT (APPLICATION OF COMPENSATION IN RELATION TO AEMO INTERVENTIONS) RULE 2019

PROPONENT

AEMO

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INQUIRIES

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ABOUT THE AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

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1 INTRODUCTION

On 17 September 2019, the Australian Energy Market Operator (AEMO) submitted a rule change request to the Australian Energy Market Commission (AEMC or Commission) to narrow the circumstances in which compensation is payable in connection with "AEMO intervention events".¹

The proposal in this rule change request follows a recommendation made by the Commission in the final report of its *Investigation into intervention mechanisms in the NEM* (hereafter called "Interventions investigation").² In that report, the Commission recommended that AEMO submit a rule change request to narrow the circumstances in which compensation is payable to participants affected by an AEMO intervention event. This is the subject of this rule change request.

AEMO's rule change request seeks to establish that affected participants are only eligible for compensation in connection with intervention events that trigger intervention pricing under the revised "regional reference node test" (RRN test). This is the test used by AEMO to determine whether intervention pricing should be implemented in connection with a direction. The RRN test is set out in clause 3.9.3(d) of the NER and is currently being revised in response to another AEMO rule change request: the *Application of the regional reference node test to the reliability and emergency reserve trader (RERT)* (hereafter called "RRN test rule change request").

On 15 August 2019, the Commission published a draft determination for the RRN test rule change request.³ The final determination is currently scheduled to be published on 7 November 2019. The draft determination was to extend the RRN test to encompass the RERT, in addition to directions. The draft determination also clarified that intervention pricing will not be implemented when the reason for an intervention is to obtain a service that is not traded in the market, meaning there is no relevant price signal to preserve and hence no economic rationale for using intervention pricing.

In its rule change request AEMO has asked that this rule change be implemented no later than the RRN test rule change request since aligning the implementation dates would avoid the need for AEMO to develop new systems to calculate affected participant compensation in respect of interventions which do not trigger intervention pricing.

As discussed in chapter 5, the Commission proposes to use the expedited process for this rule change request on the basis that this is a non-controversial rule change request.

This consultation paper has been prepared to facilitate public consultation on the rule change request and to seek stakeholder submissions.

1 "AEMO intervention event" is defined in chapter 10 of the NER as an event where the Australian Energy Market Operator (AEMO) intervenes in the market by issuing a direction in accordance with clause 4.8.9 or exercising the reliability and emergency reserve trader (RERT) in accordance with clause 3.20.

2 AEMC, *Investigation into intervention mechanisms in the NEM - Final Report*, 15 August 2019

3 AEMC, *Application of the regional reference node test to the reliability and emergency reserve trader; Draft rule determination*, 15 August 2019.

This paper:

- provides a summary of, and background to, the rule change request
- identifies issues and questions to facilitate consultation on this rule change request
- outlines the process for making submissions.

1.1 Current framework

The NER include pricing and compensation provisions that are triggered when AEMO intervenes in the market by issuing a direction or activating the RERT. These are outlined below and discussed in more detail in chapter 2.

Currently, compensation may (subject to certain thresholds) be payable to "affected participants" and market customers with scheduled loads whenever AEMO intervenes in the market and such participants are dispatched differently as a result.⁴ This compensation is designed to put participants in the position they would have been in but for the intervention.⁵

Market customers with scheduled loads are not included in the definition of "affected participant" set out in chapter 10 of the NER. However, the compensation provisions relating to market customers with scheduled loads are found in the same clause (clause 3.12.2) as the compensation provisions for affected participants, and broadly adopt the same approach.

The term "affected participant" is used in this paper to encompass both affected participants, as defined, and market customers with scheduled loads (unless the context indicates otherwise).

1.1.1 Intervention pricing

Intervention pricing is a practice intended to minimise market distortion when AEMO intervenes in the market. It does this by preserving price signals at the level which, in AEMO's reasonable opinion, they would have been at had the intervention event not occurred. Under the current rules:

- when AEMO activates the RERT, it always applies intervention pricing; but
- when AEMO issues a direction, it has to first apply the RRN test to determine whether to apply intervention pricing.

Broadly, the objective of the RRN test is to determine whether there is a region-wide scarcity of the service that is the subject of the direction, or whether the problem being fixed is localised and remote from the RRN. If the problem is region-wide (or localised but in a part of the region that contains the RRN), then it will be important to preserve price signals and the incentive they create for investment. This is the aim of intervention pricing.

The test essentially asks whether directing a plant at the RRN would have avoided the need for the direction actually issued:

⁴ Clause 3.12.2 of the NER.

⁵ Compensation is also payable to participants who are directed by AEMO to provide services: clauses 3.15.7, 3.15.7A and 3.15.7B of the NER. However, such compensation is not relevant to this AEMO rule change or consultation paper.

- if the answer is yes, intervention pricing applies.
- if the answer is no, intervention pricing does not apply and prices are set normally.

For example, if directing a plant at the Queensland RRN (near Brisbane) would *not* have avoided the need to actually direct a plant in far north Queensland (e.g. in response to a transmission constraint), then the test is not met and intervention pricing does *not* apply.

If AEMO decides that the RRN test is met, intervention pricing is used to determine prices for energy and market ancillary services in every dispatch interval (being five minutes in duration) impacted by the intervention.⁶ An AEMO intervention event may consist of many dispatch intervals and intervention pricing is applied across all these intervals.

Intervention pricing is implemented by running the NEM dispatch engine twice – once to determine dispatch targets (the "dispatch run" or "outturn run") and once to determine intervention prices for energy and market ancillary services (the "intervention pricing run" or "what-if run").

Generators and scheduled loads are dispatched in the wholesale market in accordance with the dispatch run but prices produced by that run are ignored for the purpose of setting prices. The dispatch run includes the actions taken as part of the AEMO intervention event – including the issuing of directions or the activation of the RERT, and any counteraction constraints imposed by AEMO in order to minimise the effects of the intervention.⁷

Dispatch (and spot) prices are determined in accordance with the intervention pricing run, but dispatch targets produced by that run are ignored for system operation purposes. The dispatch levels determined in the intervention pricing run are combined with dispatch offers to calculate a clearing price that reflects the price that AEMO considers would have prevailed had the direction not been issued. This process sets the price at which the entire NEM clears (not just the region in which the intervention occurred). In this way, a direction in South Australia can impact prices in Queensland.

1.1.2

Affected participant compensation

Where AEMO issues a direction, compensation is payable to both "directed participants" (those parties to whom the direction was issued) and "affected participants" (those parties who are affected by the direction – for example, a generator whose output was reduced to minimise flow on effects from the direction).⁸

Where AEMO activates the RERT, compensation is only payable to "affected participants" reflecting that, in relation to the RERT, there are no "directed participants". Instead, the party providing services under the RERT is compensated pursuant to the relevant contractual arrangements.

Affected participants are those participants whose dispatch targets change as a result of a direction being issued or the RERT being activated. Such participants may be entitled to

⁶ Clause 3.8.21(a1) of the NER

⁷ Clause 4.8.9(h)(3) of the NER. Counteractions are used to minimise the number of participants affected by an intervention and impacts on interconnector flows.

⁸ Clauses 3.12.2(a)(1) and 3.15.7 to 3.15.7B of the NER

receive compensation from AEMO if they were dispatched less as a result of an intervention . Affected participants may also be required to repay money to AEMO in the event that they are dispatched more in the dispatch run/"real world" as a result of an intervention.

Compensation is calculated automatically and affected participants can seek additional compensation or dispute their liability to repay funds to AEMO. The cost of compensating affected participants is passed through to market customers and thus consumers.

Clause 3.9.3(a) of the NER states that, in respect of a dispatch interval where an AEMO intervention event occurs, AEMO must declare that dispatch interval to be an "intervention price dispatch interval". This is regardless of whether intervention pricing is implemented in connection with that intervention. This phrase has been a source of confusion as it appears at first glance to refer to an interval in respect of which AEMO has implemented intervention pricing. However, the phrase as defined in chapter 10 of the NER means "a dispatch interval declared by AEMO to be an intervention price dispatch interval in accordance with clause 3.9.3". As noted, that declaration is to be made in respect of all dispatch intervals when an AEMO intervention event occurs, regardless of the pricing approach adopted.

The NER require AEMO to calculate compensation for affected participants in respect of every intervention price trading interval. This means a potential compensation entitlement applies whenever an AEMO intervention event is occurring in the NEM, irrespective of whether AEMO has implemented intervention pricing.

AEMO's rule change proposal seeks to change this so that affected participant compensation is only payable in respect of interventions that trigger intervention pricing.

1.1.3

Threshold for participant compensation following market intervention

At present, no compensation is payable to the affected participant, or payable by that participant to AEMO, if the amount payable is less than \$5,000 per trading interval.⁹ However, AEMO has lodged a rule change request to amend this so that the \$5,000 threshold applies per intervention event, rather than per trading interval: *Threshold for participating compensation following market intervention* rule change request (hereafter referred to as "compensation threshold rule change request").

A draft determination for this rule change was published on 15 August 2019. The draft rule changed the compensation threshold as it relates to directed participants but made no change to the threshold as it applies to affected participants. This was on the basis that it would not be appropriate to change the threshold in respect of affected participants (thereby increasing the quantum of compensation payable to or by affected participants) when the Commission had recommended in the final report of the *Interventions investigation* that the circumstances when such compensation is payable should be narrowed.

Given that AEMO has now submitted a rule change request to action that recommendation, the Commission has separately extended the timeframe for the *compensation threshold* final determination and rule so that it aligns with the (proposed expedited) timeframe for this rule.

⁹ Clause 3.12.2(b) and (i) of the NER. Similarly, a directed participant may only lodge an additional compensation claim if the value claimed exceeds \$5,000 per trading interval: clause 3.15.7B(a4).

This will allow the Commission to determine both the circumstances in which affected participant compensation is payable, and how the compensation threshold should apply to both directed and affected participants.

1.2 Investigation into intervention mechanisms

In response to the growing use of interventions to manage system security in the NEM, the Commission undertook an *Investigation into intervention mechanisms and system strength in the NEM*. A consultation paper was released in April 2019 which examined a range of issues, as well as initiating consultation on the RRN test and compensation threshold rule changes. A final report focussing on intervention mechanisms was published on 15 August 2019, along with draft determinations for the two rule change requests. A further report on system strength issues is due to be published in December 2019.

The conclusions of this review, as well as the related rule changes, in regard to affected participant compensation are further discussed in chapter 2.

2 BACKGROUND

In the *Interventions investigation* final report, the Commission explored issues associated with the current interventions and compensation frameworks in the NER and recommended changes to improve the efficiency and effectiveness of these frameworks.

This section first provides further detail on affected participant compensation in the current framework, and then summarises the Commission's conclusions from the final report of the *Interventions investigation*.

2.1 When is affected participant compensation paid?

Affected participants are those parties (being scheduled generators or scheduled network service providers) whose dispatch targets have been affected as a result of an AEMO intervention event.¹⁰

Affected participants are entitled to receive from, or pay to, AEMO an amount that puts them in the position they would have been in but for the direction or RERT activation.¹¹ For example, if a generator generates less in the dispatch run (i.e. the "real world") than in the intervention pricing run (the counterfactual used for pricing purposes), they will be paid compensation by AEMO to put them in the position that they would have been in had the intervention event not occurred.

That is, they will be paid the difference between the amount they *would have* received based on their dispatch targets in the dispatch run (combined with the price from the intervention pricing run), and the amount they *have received* based on their dispatch targets in the intervention pricing run (again combined with the price from the intervention pricing run). The amount paid to the participant is net of the short run costs that the generator did not incur as a result of being dispatched less.¹²

By contrast, if a generator's output following an intervention is higher than it would have been had the intervention not occurred (i.e. it generates more in the dispatch run than in the intervention pricing run), it will be liable to pay an amount back to AEMO - being the additional revenue it earned, net of the additional short run costs it incurred.

Affected participants are (subject to certain thresholds) entitled to receive compensation once a direction has been issued, regardless of whether intervention pricing has been implemented in connection with that direction.

¹⁰ The definition of affected participants in Chapter 10 of the NER also includes "eligible persons", being SRD unit holders who are entitled to receive an amount from AEMO where there has been a change in flow of a directional interconnector. SRD is shorthand for settlements residue distribution agreements. A SRD unit is defined in chapter 10 of the NER as "a unit that represents a right for an eligible person to receive a portion of the net settlements residue under clause 3.6.5 allocated to a directional interconnector for the period specified in a SRD agreement entered into between that eligible person and AEMO in respect of that right". These units are auctioned off by AEMO as part of the process of managing inter regional settlement residues.

¹¹ Clause 3.12.2(a)(1) of the NER.

¹² Clause 3.12.2(j) of the NER.

Affected participants need not lodge a claim for compensation as it is calculated automatically. Affected participants can also seek additional compensation or dispute their liability to repay funds to AEMO.¹³ The cost of compensating affected participants is passed through to market customers and ultimately consumers.

AEMO is required to notify affected participants of the estimated level at which they would have been dispatched had the intervention not occurred, and the trading amount they would have received had the intervention not occurred.¹⁴ This additional amount is then incorporated into the participant's final statement for the relevant billing period: meaning the participant will be paid more by AEMO or will be required to refund money to AEMO.¹⁵

Similarly, AEMO is required to notify eligible persons of the estimated level of flow in MW of all relevant directional interconnectors that would have occurred had the AEMO intervention event not occurred and, based on these flows, an amount equal to the estimated amount that person would have been entitled to receive had the AEMO intervention event not occurred, less the amount actually received.¹⁶

To estimate these figures, AEMO uses two runs of the NEM dispatch engine, doing both a dispatch run and an intervention pricing run. At present, no compensation is payable to the affected participant, or payable by that participant to AEMO, if the amount payable is less than \$5,000 per trading interval.¹⁷ As noted in chapter 1 however, AEMO has lodged a rule change request to change this threshold so it applies per intervention event rather than per trading interval.

Compensation for market customers with scheduled loads is calculated in accordance with the formula set out in clause 3.12.2(a)(2). The quantum of compensation is determined having regard for the difference between the amount of electricity actually consumed by the scheduled load during the intervention and the amount of electricity which AEMO reasonably determines would have been consumed had the intervention not occurred.

While affected participant compensation is a "two way street" (meaning that affected participants may be required to pay money to AEMO, not just receive it), the same does not apply for market customers with scheduled load. If the above formula produces a negative figure, this is set to zero, meaning that the market customer is not liable to repay money to AEMO.¹⁸ While there are currently very few scheduled loads in the NEM, this may be expected to change as more utility scale storage systems enter the market (given that large-scale storage systems are currently required to register both as generators and market customers).¹⁹

13 Clause 3.12.2(f) of the NER.

14 Clause 3.12.2(c) of the NER.

15 Clause 3.12.2(d) of the NER.

16 Clause 3.12.2(c)(2)

17 Clause 3.12.2(b) and (i) of the NER.

18 *Clause 3.12.2(a)(2) of the NER.*

19 The Commission has recently received a rule change request from AEMO seeking to integrate energy storage systems into the NER, including establish a specific registration category for bidirectional resources. See: <https://www.aemc.gov.au/rule-changes/integrating-energy-storage-systems-nem>

2.2 When should affected participant compensation be paid?

Unlike affected participants following an intervention, no compensation is payable in the event that participants' dispatch targets change as a result of constraints being imposed by the NEM dispatch engine. This raises the question of why participants affected by intervention events are treated differently to participants affected by constraints under the normal dispatch of the system.

Generators do not receive compensation for being constrained off as a result of a network or other constraint. For example, output from South Australian wind farms is constrained above certain levels and no compensation is payable.²⁰ This is in contrast to the situation where generators typically receive compensation when they are constrained off pursuant to a direction, or are dispatched differently due to a direction or RERT activation.

In South Australia, certain combinations of synchronous generators must be online in order to maintain minimum levels of system strength. These combinations cannot easily be formulated as one or more constraints in the NEM dispatch engine. Instead, AEMO uses directions as a means of meeting the physical requirements on the system to keep it secure. However, had the goal of keeping the system secure been achieved by implementing constraints, or through compliance with the minimum system strength framework,²¹ no affected participant compensation would be payable.

Under the minimum system strength framework, if a TNSP contracts with a generator to provide system strength services, the generator can be constrained on as required by AEMO under clause 5.20C.4 of the NER. As a result of delivering system strength services via a constraint rather than via a direction, no affected participant compensation is payable to other generators, scheduled loads or eligible persons (SRD unit holders) impacted as a result of the generator being constrained on.

Further, in at least one instance, no compensation was payable to a participant who was directed to reduce output in order to restore the power system to a secure state.²² This raises questions about the appropriateness of paying compensation to affected participants when their output is reduced not as a result of a direction but due to NEM dispatch engine optimisation subsequent to a direction.

Indeed, if the NEM dispatch engine did not adjust dispatch targets in the wake of an intervention event, the result could be an insecure power system (as too much generation relative to demand can lead to frequency issues). As such, the NEM dispatch engine optimisation of dispatch targets is a necessary step to maintain system security.

20 In the third quarter of 2018, for example, 10 per cent of SA wind was spilled due to these constraints which bound 26 per cent of the time.

21 AEMC, *Rule Determination - National electricity amendment (Managing power system fault levels) Final Rule 2017*.

22 *Synergies, Final report on compensation related to directions that occurred on 1 December 2016*, June 2017.

2.3 Stakeholder responses to interventions investigation consultation paper

The *Interventions investigation* consultation paper considered whether affected participant compensation should be retained, or whether it should only apply in certain circumstances (e.g. reliability events as distinct from security events).

Of the stakeholders who commented on this issue through submissions to the consultation paper, the majority supported the retention of affected participant compensation in its current form while the others supported limiting the circumstances in which affected participant compensation is paid.

Those who supported retaining affected participant compensation in its current form stressed the importance of putting participants in the position they would have been in but for the intervention.

Those who supported limiting the circumstances in which affected participant compensation is payable considered that such compensation should not be payable in connection with security related interventions and should only be payable in connection with interventions to address scarcity of a market traded commodity.

2.4 Commission's views in the final report and related draft determinations

In the draft determination for the RRN test rule change request, the Commission determined that intervention pricing should only apply in circumstances where the intervention is to obtain a service that is traded in the market, meaning that there is a relevant price signal to preserve.²³

In addition to putting downward pressure on wholesale energy prices, this change will remove the distortion that results from seeking to signal to the market a deficiency in one service (such as system strength) by changing the price of another service (energy).

The Commission also noted in the RRN test draft determination that, in the case of interventions to address security issues, the dispatch targets used to determine the intervention price are not feasible in the sense that they would never be realised in practice given AEMO's obligation to maintain the power system in a secure operating state. Accordingly, the draft determination concluded that such targets do not constitute a sound basis on which to set prices.

Consistent with this approach, and informed by the stakeholder views outlined above, the Commission recommended in the final report of the *Interventions investigation* that affected participant compensation should no longer be payable in respect of intervention events for which intervention pricing does not apply (or, more precisely, will not apply once clause 3.9.3 is amended in the manner set out in the RRN test draft rule).

²³ AEMC, *Application of the regional reference node test to the reliability and emergency reserve trader*, Draft rule determination, 15 August 2019.

When an intervention event occurs, the NEM dispatch engine will adjust dispatch targets such that they are set at levels which are productively and allocatively efficient.²⁴ As set out in the *Interventions investigation* final report, the Commission considered that there is no case to pay affected participant compensation in such circumstances, save for those instances where there is scarcity of a market traded commodity. In such cases, affected participants may be constrained down at a time when they would otherwise receive high prices, reflecting a tight supply demand balance. In such cases, the final report therefore considered it appropriate to keep such participants "whole" by putting them in the position they would have been in but for the intervention.²⁵

Accordingly, the *Interventions investigation* final report recommended that affected participant compensation be payable only when intervention pricing applies (i.e. when, under proposed amendments to clause 3.9.3, an intervention occurs in response to scarcity of a market traded commodity). For directions for system strength and other security services such as voltage control or inertia (i.e. where there is no scarcity of a market traded commodity), affected participant compensation would not in future be payable. This was because:

- affected participant compensation is a cost to consumers that does not arise when the same outcome is achieved using constraints; removing affected participant compensation for system security interventions will increase consistency as between intervention events and constraints, and reduce costs to consumers.
- where an intervention is in response to a security issue, affected participant compensation is calculated based on dispatch targets and prices in the intervention pricing run. These dispatch targets are infeasible in the sense that they represent an insecure system which prompted AEMO to intervene in the market to change the generation mix. As such, it is not considered appropriate to compensate participants by reference to dispatch targets and prices which would never be realised in practice.
- analysis in the final report suggested that participants are able to optimise the amount of affected participant compensation they receive, a practice that is not considered to be in the interests of consumers.²⁶

Each of these points is discussed further below, with the material below being drawn from the *Interventions investigation* final report.

2.4.1 Interventions v constraints

As noted above, no compensation is payable when constraints bind and affect the dispatch targets of market participants. The *Interventions investigation* final report noted the Commission's view that whether a security outcome is achieved by a constraint or a direction is not a sufficient basis on which to apply a different approach to compensation, and that

²⁴ This assumes that AEMO has not implemented "counteractions", which are manual rather than automatic changes to dispatch targets put in place by AEMO in order to limit the number of affected participants and impacts on interconnector flows. AEMO rarely uses counteractions in connection with SA system strength directions and the Commission has recommended that the counteraction requirement be removed, as discussed in section 5.3 of the final report.

²⁵ AEMC, *Investigation into intervention mechanisms in the NEM, Final report*, 15 August 2019, p. 72.

²⁶ *ibid.*

removing affected participant compensation for security related interventions would improve consistency and reduce costs to consumers.²⁷

The similarity between constraints and directions is clearly illustrated in the market event report issued by AEMO following the direction issued to Mortlake Power Station on 1 December 2016. The direction was to desynchronise as the synchronisation of the power station had resulted in unanticipated impacts on interconnector flows.

The report of the event concluded by noting that new constraints had been included in the NEM dispatch engine in order to constrain Mortlake's output to zero during transmission line outages:²⁸

The constraint equations to manage voltage unbalance at the APD 500 kV transmission busbar were ineffective on 1 December 2016. These constraint equations were formulated to constrain off generation from Mortlake PS during such events. However, the dispatch outcomes as a result of the interaction of these constraint equations with the fast-start inflexibility profile was not envisaged.

The voltage unbalance constraint equations had a constraint violation penalty (CVP) factor of 360, in comparison to a CVP factor of 1130 for the fast-start inflexibility profile. The higher CVP factor for the fast-start inflexibility profile meant that when Mortlake PS Unit 12 came online, the voltage unbalance constraint equations were violated while the generating unit was dispatched in accordance with its fast-start profile.

AEMO has reviewed the Direction issued to Origin Energy in relation to Mortlake Power Station Unit 12 on 1 December 2016 and the circumstances surrounding this Direction, as set out in this report.

AEMO assessed its compliance with the applicable procedures and processes for determining to issue the Direction, notification, and the decision not to implement intervention pricing, and is satisfied all requirements were met.

AEMO has also identified and implemented the following improvements.

1. Because of the undesirable dispatch outcomes due to the interaction between the voltage unbalance constraint equations and the fast-start inflexibility profiles, AEMO has removed the voltage unbalance constraint equations and replaced them by constraining Mortlake generation to zero MW during future outages involving the transmission lines between Moorabool and Heywood.
2. System security constraints will be applied to reduce output from generating units to manage power system security violations.

In other words, the original constraint set was ineffective, hence a direction to Mortlake was needed in the circumstances that arose on 1 December 2016. To avoid the need to issue such directions in future, a new constraint set has been created.

²⁷ *ibid.*

²⁸ AEMO, *NEM Event Report - Direction to Mortlake Generating Unit 12 - 1 December 2016*, November 2017, p. 14.

While constraints can be difficult to formulate for all security issues (e.g. system strength), this action by AEMO highlights the substitutability of these two tools (directions and constraints) to achieve the same outcome, and underscores the case to increase consistency with respect to the compensation requirements that flow from the choice of tool.

2.4.2 **Infeasible dispatch targets**

As set out in the RRN test draft determination, the Commission has determined that intervention pricing should not apply in circumstances where there is no economic rationale for it – that is, where there is no relevant market price signal to preserve (e.g. where the direction is for system strength, inertia or voltage control).²⁹

Further supporting this view is that, in the case of interventions to maintain system security, the intervention pricing run used by the NEM dispatch engine to determine the intervention price comprises a set of dispatch targets that together constitute an insecure system. This is because the counterfactual intervention pricing run consciously excludes the units that AEMO has directed into service to maintain system security. This is done so that the run can determine what the spot and ancillary service prices would have been had the intervention not occurred.

In practice, the combination of dispatch targets in the intervention pricing run, and the price determined as a function of them, would never be allowed to be realised (beyond 30 minutes) given AEMO's obligation to maintain system security. Accordingly, we consider that this counterfactual is not a valid basis on which to determine the price at which the market clears when a system security intervention is in place, and nor does it provide a valid basis on which to calculate affected participant compensation in the same circumstances.

The situation is different when an intervention is to address a scarcity of a market traded commodity, being energy or FCAS. This is because the reliability standard in clause 3.9.3C of the NER reflects that the system is not expected to be "reliable" 100 per cent of the time. As such, the dispatch targets underpinning the intervention pricing run can be considered feasible even if they represent an "unreliable" system which has prompted AEMO to intervene.

2.4.3 **Ability to optimise affected participant compensation**

As noted above, analysis undertaken for the *Interventions investigation* final report suggests that participants are able to optimise the amount of affected participant compensation they receive.³⁰ This is because the intervention pricing run is a dynamic process which produces notional dispatch targets (for pricing purposes only) every five minutes, just like the dispatch run which is used to set actual dispatch targets for the market in the "real world". Intervention prices are published every five minutes and are automatically available to the market.

²⁹ AEMC, *Application of the regional reference node test to the reliability and emergency reserve trader*, Draft rule determination, 15 August 2019.

³⁰ AEMC, *Investigation into intervention mechanisms in the NEM*, Final report, 15 August 2019, p. 74.

Dispatch targets in each run are set having regard for dispatch offers and bids. Given this, it is possible for a participant to optimise its position. When a generator's dispatch targets change due to an intervention and they recognise that they are an affected participant, the generator can optimise its bidding and hence its target in the pricing run in order to optimise its affected participant compensation.³¹ The final report considered that bidding to optimise eligibility for compensation is not in the interests of consumers.

In the period April 2017 to April 2019, a total of just under \$4.7m was paid out to a group of 25 participants who were at various times affected by system strength directions (i.e. dispatched differently).³² This represents the amount automatically calculated by AEMO. In addition, AEMO paid out more than \$400,000 in additional compensation to two claimants in respect of five intervention events (giving a total affected participant compensation payout of \$5.1m).

During that two year period, payments to affected participants were made on 181 occasions. By contrast, a total of just over \$1m was repaid by affected participants to AEMO across 52 occasions.³³ The net result is that just under \$4.1m was paid out to affected participants (taking into account both payments to and from affected participants) and recovered from South Australian market customers, and thus end consumers, via the "compensation recovery amount".

While these sums are not large when considered in the context of the volume of energy traded in the NEM, it is nonetheless important to consider in relation to this rule change request whether affected participant compensation is warranted and appropriate in connection with system security directions. Market customers and consumers cannot manage the risk created by the requirement to pay affected participant compensation costs (in addition to directed participant compensation).

Of the automatically calculated compensation (total of ~\$4.7m), a significant proportion was paid to a group of three affected participants. The ratio of compensation paid by AEMO to this group compared with revenue repaid by them to AEMO was in excess of 9:1. By contrast, the ratio for other generators who received numerous payments were either around or somewhat below a ratio of 3:1.

Within this group of three, one participant has received more than 30 per cent of the total amount of automatically calculated compensation paid out by AEMO to affected participants. This participant received compensation on 43 occasions (representing 23 per cent of instances when AEMO paid compensation to affected participants) and only had to repay revenue to AEMO on two occasions. The quantum of its average payment across these 43 occasions was 40 per cent higher than the average of all payments made by AEMO to affected participants.

31 Where a participant is actually dispatched more as a result of the direction, it will need to repay additional revenue earned to AEMO, net of additional costs incurred. This occurs when a unit's dispatch targets in the dispatch run are higher than those in the intervention pricing run.

32 AEMC analysis of data provided by AEMO.

33 The fact that repayments to AEMO are smaller than payments by AEMO is not surprising. This is because, when AEMO directs on gas fired generators in South Australia, other scheduled generators across the NEM will typically be dispatched less, not more, than would have occurred but for the intervention.

The analysis for the *Interventions investigation* indicates that a participant in South Australia was also a major recipient of affected participant compensation, underscoring concerns that some participants may be receiving both directed and affected participant compensation.³⁴ This may (depending on the circumstances) constitute paying twice for the same energy, an issue that has implications for costs borne by consumers.³⁵

In the *Interventions investigation* final report, the Commission expressed concern that there is potential for participants to behave in a manner that is not in the best interests of consumers, and that affected participant compensation should not be paid where there is not a clear and transparent case for it. The final report noted that the 2000 Review of directions by NEMMCO and NECA recommended that “third parties whose market dispatch is affected by a direction should be compensated so that their financial position is *unaffected* by the direction” [emphasis added].³⁶

Having regard for the analysis described above, the *Interventions investigation* final report suggested that affected participant compensation is not achieving this objective: rather than simply shielding participants from losses arising from a direction to another party, as appears to have been intended, several participants are benefiting significantly from the payment of affected participant compensation. Thus, their financial position is positively “affected”, rather than kept neutral, and consumers are bearing the cost of this.

2.4.4

Summary

Given that affected participant compensation is not payable where constraints are used, and that dispatch targets in intervention pricing runs are both infeasible (for system security directions) and open to participant influence, the Commission was of the view in the *Interventions investigation* final report that affected participant compensation is not warranted in connection with system security interventions and nor is it in the interests of consumers. Accordingly, the final report recommended that affected participant compensation only be payable when an intervention triggers intervention pricing under the revised RRN test, and should not be payable when an intervention occurs in response to system security issues. This is the subject of this rule change request.

While this change will reduce the amount of compensation paid to affected participants by AEMO, it will also reduce the liability of affected participants to repay funds to AEMO.

Where an intervention does trigger intervention pricing, the potential for affected participants to optimise their position with respect to compensation will in theory remain. However, two factors suggest the potential implications of such behaviour for consumers are limited in this instance:

- There have only been two reliability directions since 2010, with a combined duration of four hours and five minutes. This reflects the incentive for participants to participate in

³⁴ AEMC, *Investigation into intervention mechanisms in the NEM, Final report*, 15 August 2019, p. 75.

³⁵ The extent to which this is true is difficult to ascertain based on the data available to the Commission.

³⁶ NEMMCO and NECA, *Power system directions in the National Electricity Market*, May 2000, p. i.

the market and earn the spot price when the supply demand balance is tight.³⁷ In contrast, there has been significant use of directions for security reasons in the last two years. During 2018, system strength directions were in place for 30 per cent of the time on average.³⁸

- During a reliability event, the extent to which other participants are “affected” (i.e. dispatched differently) due to the intervention is likely to be limited. This is because the supply demand balance in such instances is tight, and thus any change in dispatch targets is likely to be limited and/or shortlived.³⁹ A subsequent increase in demand would likely restore the dispatch targets of affected participants to (or close to) the level that applied before the direction was issued. If demand did not increase as forecast, AEMO would need to cancel the direction in accordance with its obligation to revoke directions as soon as they are no longer required.

Accordingly, the potential impact on consumers of affected participants optimising their compensation position during reliability interventions⁴⁰ is limited. For this reason, the Commission considered in the *Interventions investigation* final report that – notwithstanding the theoretical potential for affected participants to optimise their position – it is appropriate for affected participants to be compensated during reliability interventions⁴¹ so that they are “made whole” rather than losing revenue as a consequence of an intervention.⁴²

37 In such instances this will be more attractive than receiving the 90th percentile price under direction. Directed participants providing energy and market ancillary services are compensated based on the 90th percentile price: clause 3.15.7 of the NER.

38 While the RERT has been dispatched on four occasions in the last two years, very limited affected participant compensation has been payable given the circumstances in which the RERT was dispatched (i.e. inadequate reserves or anticipated load shedding).

39 For example, when AEMO directed Pelican Point into service to provide more headroom (meaning more units were online and able to increase output in response to rising demand) on two occasions in February and March 2017, other units were turned down to offset the impact of the direction.

40 Meaning those interventions which trigger intervention pricing under the revised RRN test

41 *ibid.*

42 The issue of affected participant compensation touches on matters being progressed through the Commission's Coordination of Generation and Transmission Investment review. It is possible that future changes to access arrangements may require consideration of further changes to affected participant compensation.

3 ASSESSMENT FRAMEWORK

3.1 Achieving the NEO

Under the NEL the Commission may only make a rule if it is satisfied that the rule will, or is likely to, contribute to the achievement of the national electricity objective (NEO).⁴³ This is the decision making framework that the Commission must apply.

The NEO is:⁴⁴

to promote efficient investment in, and efficient operation and use of, electricity services for the longer term interests of consumers of electricity with respect to -

- (a) price, quality, safety, reliability and security of supply of electricity; and
- (b) the reliability, safety and security of the national electricity system.

Given that compensation costs are recovered from market customers and thus consumers, the AEMC considers that the relevant aspect of the NEO for this rule change request is the promotion of the efficient operation and use of electricity services with respect to the price of electricity.

In determining whether the proposed rule is likely to promote the NEO, the Commission proposes to have regard to the following principles:

- Equity – does the proposed approach strike a fair balance between the interests of affected participants and consumers?
- Risk allocation – does the proposed approach appropriately allocate risk to those parties best able to manage them?
- Consistency – do the rules adopt a consistent approach to compensation with respect to mechanisms used by AEMO to ensure system security?

QUESTION 1: ASSESSMENT FRAMEWORK

Is the assessment framework appropriate for considering the rule change request?

Are there other relevant considerations that should be included in the assessment framework?

3.2 Making a differential rule

Under the Northern Territory legislation adopting the NEL, the Commission may make a differential rule if, having regard to any relevant MCE statement of policy principles, a different rule will, or is likely to, better contribute to the achievement of the NEO than a uniform rule. A differential rule is a rule that:

- varies in its term as between:

⁴³ Section 88 of the NEL.

⁴⁴ Section 7 of the NEL.

- the national electricity system, and
- one or more, or all, of the local electricity systems, or
- does not have effect with respect to one or more of those systems

but is not a jurisdictional derogation, participant derogation or rule that has effect with respect to an adoptive jurisdiction for the purpose of s. 91(8) of the NEL.

As the proposed rule related to parts of the NER that currently do not apply in the Northern Territory, the Commission has not assessed the proposed rule against additional elements required by the Northern Territory legislation.⁴⁵

⁴⁵ From 1 July 2016, the NER, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under the NT legislation adopting the NEL. Under those regulations, only certain parts of the NER have been adopted in the NT. (See the AEMC website for the NER that applies in the NT.) National Electricity (Northern Territory) (National Uniform Legislation) Act 2015.

4 THE AEMO RULE CHANGE REQUEST

On 17 September 2019, AEMO submitted a rule change request to action the Commission's final report recommendation with respect to affected participant compensation. The request seeks to change the rules so that affected participants are eligible for compensation only when intervention pricing is used during an AEMO intervention event.⁴⁶

AEMO notes that the draft RRN test rule provides that intervention pricing will not apply when AEMO intervenes in the market to correct a shortfall of a non-market service (e.g. system strength). However, the current NER state that affected participants may be entitled to receive, or be required to pay, compensation whenever AEMO intervenes in the NEM, regardless of the reason for the intervention or whether intervention pricing applies. That is, the affected participant compensation framework is triggered by the presence of an intervention, not by the presence of intervention pricing. AEMO suggests that this creates both economic policy and practical problems, as outlined below.

4.1 Economic problem with the current and draft rules

AEMO suggests that, if there is no justification for setting intervention prices when AEMO intervenes to secure a non-market service, then there is also no justification for compensating affected participants and relevant market customers (those with scheduled loads) during that intervention.⁴⁷

In support of this view, AEMO quotes the final report of the Commission's *Interventions investigation* which states:⁴⁸

Given that affected participant compensation is not payable where constraints are used, and that dispatch targets in intervention pricing runs are both infeasible (for system security directions) and open to participant influence, the Commission considers that affected participant compensation is not warranted in connection with system security interventions and nor is it in the interests of consumers. Accordingly, the Commission recommends that affected participant compensation only be payable when an intervention triggers intervention pricing under the revised RRN test, and should not be payable when an intervention occurs in response to system security issues.

4.1.1 Proposed solution

AEMO proposes that affected participants and relevant market customers should be eligible for, or required to pay, compensation under clause 3.12.2 only when intervention pricing is used during an AEMO intervention event.

⁴⁶ AEMO, No affected participant compensation without intervention pricing, rule change request, 17 September, p. 2. Available at <https://www.aemc.gov.au/rule-changes/application-compensation-relation-aemo-interventions>

⁴⁷ AEMO, Rule change request, p. 5.

⁴⁸ AEMC, *Investigation into intervention mechanisms in the NEM - final report*, 15 August 2019, p. 76.

AEMO states that, if this proposed rule is made, it would resolve the issues identified in the *Interventions investigation* final report, by making sure that affected participants and relevant market customers only receive (or pay) compensation in respect of intervention events when intervention pricing has been applied. This would reduce compensation costs to consumers, particularly noting the large number of recent directions for system strength which, under the proposed change, would no longer trigger affected participant compensation. It would also reduce AEMO's administrative costs which are recovered through market fees and ultimately paid by consumers.

QUESTION 2: THE PROPOSED SOLUTION

What are stakeholders views on the AEMO request to change the NER so that affected participant compensation is only payable in connection with intervention events that trigger intervention pricing under the revised RRN test?

Are there any other issues relevant to this rule change request that the AEMC should consider?

4.2 Practical problems with the current and draft Rules

AEMO notes that the current NER require AEMO to calculate potential compensation for affected participants when AEMO intervenes in the NEM using the process described in section 2.1.

As the revised RRN test would remove intervention pricing when AEMO intervenes for a non-market service, there will be a large number of directions for which intervention prices will not be set. In the absence of intervention pricing run dispatch targets produced automatically by the NEM dispatch engine, AEMO would need a new source of counterfactual dispatch targets to calculate affected participant compensation.

AEMO has considered potential solutions to this problem and notes that these might involve:

- A production change that would trigger a third type of NEM dispatch engine run during interventions without intervention pricing. This run would attempt to simulate what would have happened without intervention.
- A real-time parallel process that would detect interventions without intervention pricing and automatically rerun the affected dispatch intervals. The reruns would attempt to simulate what would have happened without intervention. The results of this process would be used only in calculating Affected Participant and Market Customer compensation.
- A resource-intensive manual process that would rerun dispatch intervals containing intervention without intervention pricing. The reruns would attempt to simulate what would have happened without intervention.

AEMO notes that, in each case, this would be a bespoke process that would only be used for a single purpose. AEMO states that, even if a solution to the lack of intervention pricing run

targets were only required temporarily, given the current volume of directions impacted any solution is still likely to be complicated, costly, and time-consuming to design and implement. AEMO notes it could take months simply to design and test any solution, and that this would necessitate a delay in the commencement of the RRN test rule.

4.2.1

Proposed solution

To resolve this problem efficiently, AEMO has requested that the proposed rule change regarding affected participant compensation be made in a timeframe that aligns with the change to the RRN test rule, and with minimal delay to that rule.⁴⁹ This will avoid AEMO having to waste resources developing a new source of intervention pricing run dispatch targets to calculate affected participant compensation.⁵⁰

Such issues will be considered in determining an appropriate implementation date for this rule change and the RRN test rule. The final determination for the RRN test is currently scheduled for 7 November 2020.

Relevant considerations include that, since the intervention pricing process is currently embedded within AEMO's market management system (MMS) it is difficult for it to be "switched off" and run in the background to calculate affected participant compensation.

QUESTION 3: PRACTICAL PROBLEM

What are stakeholder views on the practical problem that AEMO has identified?

4.3

Indicative drafting

As noted above, AEMO has suggested that the definition of the phrase "intervention price trading interval" be modified for the purposes of clause 3.12.2 and 3.12.3 only. For those purposes, AEMO suggests that a *relevant* intervention price trading interval will be one in which AEMO has set dispatch prices and ancillary service prices in accordance with clause 3.9.3(b). AEMO notes that there should be no need for further modifications in the settlement rules for recovery of compensation amounts, since they will only apply where those amounts have actually been determined under rule 3.12.

The Commission has considered how AEMO's rule change request might most effectively be implemented in the NER. As the Commission intends to progress this rule change as a non-controversial rule with one round of consultation, we have developed preliminary, indicative drafting to accompany this consultation paper (see Appendix A) for the purpose of seeking stakeholder input on the rule change request.

In this indicative drafting, we adopt a similar approach to that suggested by AEMO but have opted to change the definition of intervention price trading interval generally, not just for the purposes of clause 3.12.2 and 3.12.3. This would remove the confusion that arises from

⁴⁹ AEMO, Rule change request, p. 2.

⁵⁰ *ibid*, p. 6.

using the phrase "intervention price trading interval" to mean an interval subject to an intervention event, regardless of whether intervention pricing is implemented in connection with that intervention. It would also avoid creating further confusion, noting that the phrase "relevant intervention price trading interval" is already used in a number of provisions: e.g. in the clause 3.12.2(2) definitions of "DC", "RRP", "BidP" and "QD", and in the clause 3.15.8(b) definition of "E".

As set out in Appendix A, the indicative drafting amends the chapter 10 definition of "intervention price dispatch interval" so that it means an "intervention dispatch interval" in respect of which AEMO has implemented intervention pricing in accordance with the revised RRN test rule. This would bring the legal meaning of the phrase in line with its "plain English" meaning.

To facilitate this change, a new definition of "intervention dispatch interval" would be included in chapter 10. This would refer to the process set out in clause 3.9.3(a) whereby AEMO is required to declare a dispatch interval to be an "intervention dispatch interval" where one or more AEMO intervention events is in effect. The wording of clause 3.9.3(a) will also be amended slightly to replace "occurs" with "in effect". This is designed to make clear that intervention dispatch intervals are those intervals where an intervention event is in place, not simply an interval in which an intervention event commences.

The National Electricity Amendment (Five Minute Settlement) Rule 2017 will commence on 1 July 2021. This rule will amend clause 3.9.3 of the NER and the Chapter 10 definitions that have been amended by this rule ERC0282. Therefore the final rule for ERC0282 will include clauses to preserve the changes made in this rule ERC0282 post 1 July 2021.

QUESTION 4: INDICATIVE DRAFTING

Do stakeholders have any views on the indicative drafting?

5 PROCESS FOR THIS RULE CHANGE

5.1 Treatment as a non-controversial rule change

The Commission considers that the rule change request is a request for a "non-controversial rule" and accordingly can be processed using the "expedited process" in section 96 of the National Electricity Law.

A non-controversial Rule is defined in the National Electricity Law as "a Rule that is unlikely to have a significant effect on the national electricity market".⁵¹ National electricity market is defined as "(a) the wholesale exchange operated and administered by AEMO under this Law and the Rules; and (b) the national electricity system".

The Commission considers that the rule change request is unlikely to have a significant impact on the national electricity market. This is because the proposed rule impacts affected participant compensation, which is a secondary process that occurs as part of the settlement process. It does not influence or impact the actual dispatch of the wholesale market. Therefore, the Commission considers that changing the circumstances when affected compensation payment is payable does not significantly affect the national electricity market, and so can be considered to be non-controversial as defined in s87 of the National Electricity Law.

Rule changes that are considered to be non-controversial may be processed under an expedited (faster) process under which there is only one round of consultation and the AEMC is required to publish its final rule determination within eight weeks of commencing the rule change process.⁵²

The Commission proposes to use the expedited process to consider this rule change request provided that it does not receive any valid requests not to use the expedited process. Such requests must be received by close of business on 7 November 2019. To be valid, an objection should set out the reasons why the rule change request will have a significant impact on the national electricity market.

5.2 Key dates

Submissions are invited in relation to the matters identified above, and any other relevant issue.

The key dates for stakeholders in this process are as follows:

- Commencement of this rule change process: 24 October 2019
- Objections to an expedited process to be received by: 7 November 2019
- Submissions to the proposal to be received by: 21 November 2019
- Final decision to be published under an expedited process by: 19 December 2019

⁵¹ Section 87 of the National Electricity Law.

⁵² The AEMC has published a notice under ss. 95 and 96 of the National Electricity Law to commence and assess this rule change request as a non-controversial rule.

6 LODGING A SUBMISSION

The Commission invites requests not to make a rule under the expedited process and written submissions on this rule change proposal.

All enquiries on this project should be addressed to Samuel Martin on (02) 8296 0646 or samuel.martin@aemc.gov.au.

6.1 Lodging a request not to make a rule under an expedited process

Written requests not to make a rule under the expedited process in s. 96 of the NEL must include reasons for the request, and must be lodged online with the Commission by 7 November 2019 in accordance with the process specified below.

6.2 Lodging a submission to this rule change request

Written submissions on the rule change request must be lodged online with the Commission by 21 November 2019 in accordance with the process specified below.

Where practicable, submissions should be prepared in accordance with the Commission's guidelines for making written submissions on rule change requests.⁵³ The Commission publishes all submissions on its website, subject to a claim of confidentiality.

6.3 Lodging online

Submissions, or requests not to make a rule under the expedited process, must be lodged online via the Commission's website, www.aemc.gov.au, using the "lodge a submission" function and selecting the project reference code ERC0282.

The request or submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

⁵³ This guideline is available on the Commission's website www.aemc.gov.au.

ABBREVIATIONS

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Commission	See AEMC
IPWG	Intervention Pricing Working Group
MCE	Ministerial Council on Energy
NEL	National Electricity Law
NEO	National electricity objective
NERL	National Energy Retail Law
NERO	National energy retail objective
NGL	National Gas Law
NGO	National gas objective
RERT	Reliability and Emergency Reserve Trader
RRN	Regional reference node

A INDICATIVE DRAFTING

Indicative drafting for ERC0282 – based on Version 124 of Chapter 3 of the NER (as amended by the draft rule for ERC0253).

Note: the final rule for ERC0201 - 5MS (to commence on 1 July 2021) changes clause 3.9.3 substantially and also relevant Chapter 10 definitions. The final rule for ERC0282 would also include drafting to address this.

3.9.2 Determination of spot prices

- (a) **[Deleted]**
- (b) **[Deleted]**
- (c) Each time the *dispatch algorithm* is run by AEMO, it must determine a *dispatch price* for each *regional reference node* for a *dispatch interval* in accordance with clause 3.8.21(b), provided that if AEMO fails to run the *dispatch algorithm* to determine *dispatch prices* for any *dispatch interval* then the *dispatch price* for that *dispatch interval* is the last *dispatch price* determined by the *dispatch algorithm* prior to the relevant *dispatch interval*.
- (d) The *dispatch price* at a *regional reference node* represents the marginal value of *supply* at that location and time, this being determined as the price of meeting an incremental change in *load* at that location and time in accordance with clause 3.8.1(b).
- (e) Notwithstanding clauses 3.9.2(c) or (d), for any *dispatch interval* if:
 - (1) the *dispatch price* for that *dispatch interval* has not already been set by the *central dispatch* process and AEMO reasonably determines that the *central dispatch* process may determine that all *load* in a *region* could not otherwise be supplied and AEMO issues instructions that are current for that *dispatch interval* to *Network Service Providers* or *Market Participants* to shed *load*, then AEMO must set the *dispatch price* at that *region's regional reference node* to equal the *market price cap*;
 - (2) AEMO has declared a *dispatch interval* to be an *intervention price dispatch interval* under clause 3.9.3(a), then subject to clause 3.9.3(c) AEMO must set the *dispatch price* in accordance with clause 3.9.3;

3.9.3 Pricing in the event of intervention by AEMO

- (a) In respect of a *dispatch interval* where one or more a-AEMO intervention event(s) occurs-is in effect AEMO must declare that *dispatch interval* to be an *intervention price dispatch interval*.
- (b) Subject to subparagraphs (b2)(1) and (b2)(2) if, in AEMO's opinion, the reason for the *AEMO intervention event* is to obtain either:
 - (1) a service for which a *dispatch price* or *ancillary service price* is determined by the *dispatch algorithm*; or

- (2) a service that is a direct substitute for a service for which a *dispatch price* or *ancillary service price* is determined by the *dispatch algorithm*,

then subject to paragraph (c), AEMO must in accordance with the methodology or assumptions *published* pursuant to paragraph (e) set the *dispatch price* and *ancillary service prices* for an *intervention ~~price~~ dispatch interval* at the value which AEMO, in its reasonable opinion, considers would have applied as the *dispatch price* and *ancillary service price* for that *dispatch interval* had the AEMO *intervention event* not occurred.

- (b1) Without limitation, examples of the types of service referred to in paragraph (b) include:

- (1) *energy* that is capable of being provided by any *generating unit* within a *region*;
- (2) where a *network constraint* or other *constraint* is binding, *energy* that is only capable of being provided by any *generating unit* located in the part of the *region* that includes the *regional reference node*;
- (3) *market ancillary services* that are capable of being provided by any *ancillary service generating unit* within a *region*;
- (4) where a *network constraint* or other *constraint* is binding, *market ancillary services* that are only capable of being provided by any *ancillary service generating unit* located in the part of the *region* that includes the *regional reference node*; and
- (5) demand response that reduces the need for the provision of *energy* or *market ancillary services* within a *region*.

- (b2) AEMO must continue to set *dispatch prices* pursuant to clause 3.9.2 and *ancillary service prices* pursuant to clause 3.9.2A if the reason for the AEMO *intervention event* is to obtain:

- (1) *energy* and *market ancillary services* which, as a result of a *network constraint* or other *constraint*, are only capable of being provided by a *generating unit* or *ancillary service generating unit* in a part of the *region* which due to the *constraint* does not include the *regional reference node*; or
- (2) demand response which, as a result of a *network constraint* or other *constraint*, is needed to reduce demand for *energy* or *market ancillary services* in a part of the *region* which due to the *constraint* does not include the *regional reference node*; or
- (3) a service for which a *dispatch price* or *ancillary service price* is not determined by the *dispatch algorithm* regardless of whether *energy* or *market ancillary services* are also provided as a by-product of the provision of the services listed in sub paragraphs (b3)(1) to (b3)(4).

- (b3) Without limitation examples of the services referred to in subparagraph (b2)(3) include the provision of:

- (1) *inertia*;
- (2) *voltage* control;

- (3) system strength; and
- (4) *non-market ancillary services*.

(b4) In respect of any *intervention price-dispatch interval* in which more than one *AEMO intervention event* ~~occurs~~ is in effect, *AEMO* must in accordance with the methodology or assumptions *published* pursuant to paragraph (e) set *dispatch prices* and *ancillary service prices* pursuant to paragraph (b) as if:

- (1) the services described in paragraphs (b) and (b1) were not provided; and
- (2) taking into account ~~any energy or market ancillary services~~ provided as a by-product of the provision of any services described in subparagraph (b2)(3).

(c) *AEMO* may continue to set *dispatch prices* pursuant to clause 3.9.2 and *ancillary service prices* pursuant to clause 3.9.2A until the later of:

- (1) the second *dispatch interval* after the first *dispatch interval* in which the *AEMO intervention event* occurred; or
- (2) if applicable, the second *dispatch interval* after the restoration of the *power system* to a *secure operating state* after any *direction* which constitutes the *AEMO intervention event* was issued,

provided that *AEMO* must use its reasonable endeavours to set *dispatch prices* and *ancillary service prices* pursuant to clause 3.9.3(b) as soon as practicable following the *AEMO intervention event*.

(d) ~~[Deleted]~~.

(e) Subject to paragraph (g), *AEMO* must develop in accordance with the *Rules consultation procedures* and *publish* details of the methodology it will use,

and any assumptions it may be required to make, to determine *dispatch prices* and *ancillary service prices* for the purposes of paragraphs (b) or (b2).

- (f) The methodology developed by AEMO under paragraph (e) must wherever reasonably practicable:
- (1) be consistent with the principles for *spot price* determination set out in clause 3.9.1;
 - (2) enable AEMO to determine and *publish* such prices in accordance with clause 3.13.4; and
 - (3) be consistent with the principles for *ancillary service price* determination set out in clauses 3.9.2 and 3.9.2A.
- (g) AEMO may make minor and administrative amendments to the methodology developed under paragraph (e) without complying with the *Rules consultation procedures*.

3.12.2 Affected Participants and Market Customers entitlements to compensation in relation to AEMO intervention

(a) In respect of each *intervention price trading interval*:

(1) an *Affected Participant* is entitled to receive from AEMO, or must pay to AEMO, an amount as determined in accordance with this clause 3.12.2 that will put the *Affected Participant* in the position that the *Affected Participant* would have been in regarding the *scheduled generating unit* or *scheduled network service*, as the case may be, had the *AEMO intervention event* not occurred, taking into account solely the items listed in paragraph (j);

(2) a *Market Customer*, other than a *Market Customer* which was the subject of any *direction* that constituted the *AEMO intervention event*, is entitled, in respect of one or more of its *scheduled loads*, to receive an amount calculated by applying the following formula:

$$DC = ((RRP \times LF) - BidP) \times QD$$

where:

DC (in dollars) is the amount the *Market Customer* is entitled to receive in respect of that *scheduled load* for the relevant *intervention price trading interval*;

RRP (in dollars per MWh) is the *regional reference price* in the relevant *intervention price trading interval* determined in accordance with clause 3.9.3 (b);

LF where the *scheduled load's connection point* is a *transmission connection point*, is the relevant *intra-regional loss factor* at that *connection point* or where the *scheduled load's connection point* is a *distribution network connection point*, is the product of the *distribution loss factor* at that *connection point* multiplied by the relevant *intra-regional loss factor* at the *transmission connection point* to which it is assigned;

BidP (in dollars per MWh) is the price of the highest priced *price band* specified in a *dispatch bid* for the *scheduled load* in the relevant *intervention price trading interval*;

QD (in MWh) is the difference between the amount of electricity consumed by the *scheduled load* during the relevant *intervention price trading interval* determined from the *metering data* and the amount of electricity which AEMO reasonably determines would have been consumed by the *scheduled load* if the *AEMO intervention event* had not occurred,

provided that if DC is negative for the relevant *intervention price trading interval*, then the adjustment that the *Market Customer* is entitled to claim in respect of that *scheduled load* for that *intervention price trading interval* is zero.

Chapter 10

New definitions

intervention dispatch interval

A *dispatch interval* declared by AEMO to be an *intervention dispatch interval* in accordance with clause 3.9.3(a).

Amended definitions

intervention price dispatch interval

An *intervention dispatch interval* in respect of which AEMO has set *dispatch prices* and *ancillary service prices* in accordance with clause 3.9.3(b).

~~A *dispatch interval* declared by AEMO to be an *intervention price dispatch interval* in accordance with clause 3.9.3.~~

intervention price trading interval

A *trading interval* including one or more *intervention price dispatch intervals*.