

Rule Change Notice: Removal of constrained off compensation for Outages of network equipment (RC_2018_07)

This notice is given under clause 2.5.7 of the Wholesale Electricity Market Rules (**Market Rules**).

Submitter: Zaeen Khan – Public Utilities Office (**PUO**), Department of Treasury

Date submitted: 14 December 2018

The Rule Change Proposal

Under the current Market Rules, a Market Generator whose Balancing Facility is dispatched downwards Out of Merit due to an outage of an item of network equipment receives compensation for its Constrained Off Quantities for the relevant Trading Intervals. This compensation is recovered from Market Customers.

The PUO considers that Western Power does not, nor should it be required to, provide 100% reliable network services to a Facility as part of its connection agreement. This means that Market Generators accept a certain level of unavailability of their Facilities as a result of network outages, and consistent with this should not be paid constrained off compensation by the market in these circumstances.

The PUO is therefore seeking to remove constrained off compensation for Balancing Facilities that are dispatched downwards Out of Merit due to an outage of any network equipment.

The Rule Change Proposal, which is attached to this notice, gives complete information about:

- the proposed amendments to the Market Rules;
- the relevant references to the Market Rules and the proposed specific amendments to those clauses; and
- the submitter's description of how the proposed amendments would allow the Market Rules to better address the Wholesale Market Objectives.

Decision to progress the Rule Change Proposal

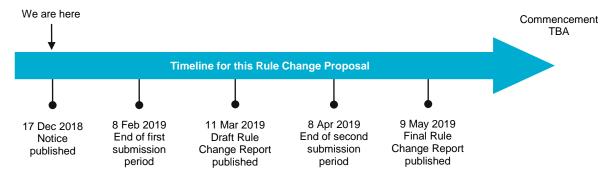
The Rule Change Panel has decided to progress this Rule Change Proposal on the basis of its preliminary assessment that the proposal is consistent with the Wholesale Market Objectives.



Timeline

This Rule Change Proposal will be progressed using the Standard Rule Change Process, described in section 2.7 of the Market Rules.

The projected timeline for progressing this proposal is:



The Rule Change Panel has extended the first submission period beyond the usual 30 Business Days to account for the Christmas period.

Call for Submissions

The Rule Change Panel invites interested stakeholders to make submissions on this Rule Change Proposal. The submission period is 35 Business Days from the Rule Change Notice publication date. Submissions must be delivered to the RCP Secretariat by **5:00 PM on Friday 8 February 2019**.

The Rule Change Panel prefers to receive submissions by email, using the submission form available at: https://www.erawa.com.au/rule-change-panel/make-a-rule-change-submission sent to support@rcpwa.com.au.

Submissions may also be sent to the Rule Change Panel by post, addressed to:

Rule Change Panel

Attn: Executive Officer C/o Economic Regulation Authority PO Box 8469 PERTH BC WA 6849





Wholesale Electricity Market Rule Change Proposal

Rule Change Proposal ID: RC_2018_07

Date received: 14 December 2018

Change requested by:

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Organisation:	Public Utilities Office, Department of Treasury
Address:	David Malcolm Justice Centre, 28 Barrack Street, Perth WA 6000
Date submitted:	14 December 2018
Urgency:	2 – High
Rule Change Proposal title:	Removal of constrained off compensation for Outages of network equipment
Market Rule(s) affected:	Clauses 7.7.3A, 7.7.6, 7.7.7B (new), 7.7.11 (new) and the Glossary of the WEM Rules

Introduction

Clause 2.5.1 of the Wholesale Electricity Market (WEM) Rules (Market Rules) provides that any person may make a Rule Change Proposal by completing a Rule Change Proposal form that must be submitted to the Rule Change Panel.

This Rule Change Proposal can be sent by:

Email to: rcp.secretariat@rcpwa.com.au

Post to: Rule Change Panel

Attn: Executive Officer

C/o Economic Regulation Authority

PO Box 8469

PERTH BC WA 6849

The Rule Change Panel will assess the proposal and, within 5 Business Days of receiving this Rule Change Proposal form, will notify you whether the Rule Change Proposal will be further progressed.

In order for the proposal to be progressed, all fields below must be completed and the

change proposal must explain how it will enable the Market Rules to better contribute to the achievement of the Wholesale Market Objectives.

The objectives of the market are:

- (a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;
- (b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;
- (c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;
- (d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and
- (e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

Details of the Proposed Rule Change

1. Describe the concern with the existing Market Rules that is to be addressed by the proposed rule change:

This rule change proposal contains proposed amendments to deliver a low cost, administrative solution to remove constrained off compensation payments resulting from Outages of any network equipment.

Background

Under the Wholesale Electricity Market (**WEM**) Rules, Market Generators must make Balancing Submissions for each Trading Interval, specifying prices and quantities at which their Facilities may be dispatched. Market Generators schedule their Facilities¹ by varying prices and quantities in their Balancing Submissions in response to market forecasts.

The Australian Energy Market Operator (**AEMO**) uses these Balancing Submissions to form the Balancing Merit Order (**BMO**) – the order in which Facilities must be dispatched to ensure economically efficient market outcomes. AEMO, in its capacity as System Management, then determines the expected operational load for the relevant Trading Interval and dispatches Facilities, in economic order, to meet that demand.

In dispatching Facilities to meet operational load, AEMO may only depart from the BMO if it is necessary to maintain system security and reliability. In this regard, AEMO may decide to issue Dispatch Instructions to Facilities out of sequence with the BMO or 'Out of Merit'.

Where a Facility is dispatched Out of Merit, either upwards or downwards, the WEM Rules provide that the Market Generator is eligible to be paid compensation to cover the cost, or foregone revenue, associated with the required change in volume of electricity generated.

¹ With the exception of the Synergy Balancing Portfolio which is scheduled by System Management.

These are known as constrained on (when dispatched upwards) and constrained off (downwards) compensation payments, or constraint payments. Constraint payments are calculated for each Trading Interval by multiplying the constrained quantity by the difference between the Balancing Price and offer price. Constraint payments are paid by Market Customers to Market Generators, pro-rated based on volumes consumed during the relevant Trading Interval.

<u>Issue</u>

On 4 September 2018, Kleenheat wrote to the Rule Change Panel (**RCP**) to raise concerns about the high and unexpected level of constrained off compensation payments in recent Trading Months. Kleenheat was concerned about:

- the method used to calculate constrained off payments in the WEM; and
- the lack of information available to Market Customers to enable them to forecast the expected cost of constrained off compensation payments.

At the 12 September 2018 Market Advisory Committee (**MAC**) meeting, Kleenheat raised its concerns² and members discussed the issue broadly. MAC members noted that the total amount of constraint payments had increased, and that constrained off compensation payments had been excessive over recent months.



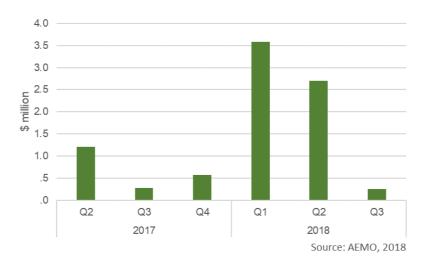


Figure 1.1: Historical constrained off compensation payments

Kleenheat highlighted that the constrained off payments were excessive, noting that payments often reach more \$1,000 per megawatt hour due to the minimum price able to be offered in the WEM (the Minimum STEM Price) of -\$1,000 per megawatt hour.

MAC members noted they had been aware of the issue for some time. The former Independent Market Operator (**IMO**) had developed a pre-rule change proposal in 2013 to prevent unwarranted constrained off compensation payments (**RC_2013_16**)³. However, due to the

² Agenda item 10 of MAC compiled papers, available at: https://www.erawa.com.au/cproot/19436/2/MAC%202018_09_12%20-%20Compiled%20Papers.pdf, RCP, 12 September 2018.

³ The pre-rule change proposal: Outages and the Application of Availability and Constraint Payments to Non-Scheduled Generators (RC_2013_16) was discussed with the MAC on several occasions, most recently at the 19 March 2014 MAC meeting. Agenda item 5b of MAC compiled papers, available at: https://www.erawa.com.au/cproot/15302/2/MAC%20Meeting%2069%20Papers.pdf, IMO, 19 March 2014.

proposed implementation costs associated with RC_2013_16 (\$430,000), coupled with the fact the former Government's electricity reform program was underway, it was considered prudent to defer the rule change.

At the September 2018 MAC meeting, members noted that while a rule change proposal such as RC_2013_16 would largely address the constraint payments issue, it remains undesirable to spend any significant amount of money to amend systems that would likely be replaced as part of the current Government's reform program. However, MAC members agreed the issue should be addressed as a priority and that a more targeted, lower cost solution was required.

Participants acknowledged that network Outages are the largest contributor to the quantity of electricity being constrained off⁴. At a subsequent MAC workshop⁵, participants identified that removing the ability for a Market Generator to receive constrained off compensation payments due to a network Outage would largely resolve the issue raised by Kleenheat. The Public Utilities Office agreed to develop the necessary rule change.

The Public Utilities Office considers that the proposed amendments to the WEM Rules contained in this rule change proposal provide a low cost, administrative solution to remove constrained off compensation payments related to an Outage of any network equipment.

Network Outages as a cause of constrained off compensation

Where a Facility is not available to deliver⁶ some or all of its capacity, the relevant Market Participant must advise AEMO and the market of this unavailability by logging an Outage⁷. The Market Participant is then required to update Balancing Submissions to accurately reflect the availability of the Facility as soon as the impact of the Outage is known.

Market Generators usually have sufficient information to ensure any internal constraints are reflected in Balancing Submissions. However, where a Facility is affected by an external constraint such as a network Outage, it is not always possible to make accurate Balancing Submissions, particularly if the effects of the network Outage on an individual Facility are not known in advance (and for Non-Scheduled Generators it is not required). In these circumstances, Balancing Submissions, and therefore the BMO, does not accurately reflect the availability of a Facility or number of Facilities.

Where the BMO does not reflect the availability of Facilities (including where the BMO has not been updated to reflect the impact of a network Outage), AEMO may be required to dispatch Facilities Out of Merit, which results in constraint payments, particularly constrained off compensation payments.

The Public Utilities Office considers that, in these circumstances, the payment of constrained off compensation is unwarranted. It should be highlighted that:

⁴ AEMO also noted this in its Quarterly Energy Dynamics Report for Q2 2018, where it stated the increase in constrained off compensation "was due to planned network outages in the North Country region of the South West Interconnected System occurring over March and April 2018. In Q2 2018, there were 12 consecutive days of planned network outage impacting six generation facilities in the region."

generation facilities in the region."

5 On 24 October 2018, the RCP facilitated a workshop to discuss the issue further and consider options for development of a rule change proposal. The workshop included representatives from the RCP, AEMO, the Public Utilities Office, the Economic Regulation Authority, Kleenheat, Synergy, Bluewaters Power, Perth Energy, Alinta Energy and Community Electricity. Minutes of the workshop, which are included in the meeting papers for the 20 November MAC meeting, are available on the RCP website at https://www.erawa.com.au/cproot/19903/2/MAC%202018 11 20%20Compiled%20Meeting%20Papers.pdf.

⁶ For a generator, this includes an inability to produce electricity, or export the electricity that is produced.

⁷ Similarly, Western Power as the Network Operator must advise AEMO when one or more of the critical network elements is unavailable. The critical network elements are those that affect system security and reliability and are included on the equipment list published in accordance with clause 3.18.2(a) of the WEM Rules.

- Western Power does not, nor should it be required to, provide 100% reliable network services to Facilities as part of its connection agreement. This means Market Generators accept a certain level of unavailability of their Facilities as a result of network Outages and consistent with this should not be paid constrained off compensation by the market in these circumstances.
- The WEM notionally operates on an unconstrained basis⁸. However, a number of network constraints have not been addressed and now impose limitations on certain Facilities. The Market Generators with these Facilities have non-standard connection agreements, such as post-contingent runback schemes,⁹ and accept a higher level of unavailability of their Facilities as a result of network Outages. As part of the State Government's electricity sector reform program, all Market Generators will be transitioned to constrained access. Having agreed to a reduced level of access, these Market Generators should not be paid constrained off compensation when a network constraint affects their availability.

Despite this, under current market arrangements, Market Generators are paid constrained off compensation in some instances when a network Outage occurs. This is because, for settlement, AEMO calculates constrained off compensation by comparing the quantity of actual energy generated by a Facility (and the Balancing Portfolio as a whole) to the theoretical amount that should have been dispatched (the theoretical energy schedule). The theoretical energy schedule is calculated using a Scheduled Generator's Balancing Submission, and AEMO's estimate of the maximum amount that would have been generated for a Non-Scheduled Generator, both of which may not accurately reflect a Facility's availability during a network Outage.

The Public Utilities Office proposes to remove the impact of constraint payments arising from a network Outage by allowing AEMO to issue an Operating Instruction. This will have the effect of excluding the associated quantities from the Downwards Out of Merit Generation volumes used to calculate constrained off compensation payments for Facilities dispatched Out of Merit.

This rule change proposal is consistent with the electricity sector reforms currently being progressed by the Western Australian Government, which includes the transition to a constrained network access framework by 2022, under which all Facilities will be security constrained. Constrained off compensation payments will not exist once firm access rights are removed.

The Public Utilities Office considers the recent significant and potential ongoing financial impact of the issue is of sufficient scale to warrant resolution prior to the implementation of the broader reforms.

Proposed solution

As previously noted, the IMO had developed a pre-rule change proposal that addressed this issue, however, it was not progressed because it involved a significant cost and significant changes to AEMO's systems, including the settlement and outages systems.

At the September 2018 MAC meeting and the subsequent MAC workshop, participants agreed that a lower cost, administrative solution was preferable. Three possible solutions were

⁸ That is, under system normal conditions, every Facility is able to export into the network its maximum generation output at any time

⁹ These provide the ability for AEMO or Western Power to curtail the amount of electricity exported to the network in real time in certain circumstances.

considered:

- 1. requiring the Market Generator to log a Consequential Outage and changing the theoretical energy schedule for Non-Scheduled Generators;
- 2. changing AEMO's estimate of the output of a Non-Scheduled Generator where it is constrained off due to a network Outage; and
- 3. requiring AEMO to issue an Operating Instruction where a Facility is constrained off due to a network Outage.

Option 1 would require significant rule change development work and system changes.

Option 2 would require significant rule change development work and would only resolve the issue for Non-Scheduled Generators, not Scheduled Generators.

Option 3 was considered the best option as it would require minor rule change development work, minimal system changes and addresses the issue for all generators.

The Public Utilities Office has progressed the development of Option 3 in this rule change proposal and proposes to:

- introduce the new clause 7.7.11 and amend the definition of an Operating Instruction in the WEM Rules to allow AEMO (acting as System Management) to issue a retrospective¹⁰ Operating Instruction to a Market Generator with a Balancing Facility that has been constrained off Out of Merit as a result of an Outage of any network equipment;
- amend clause 7.7.3 of the WEM Rules to include an Operating Instruction issued under the new clause 7.7.11 as a type of Operating Instruction that may be specified in the Operating Instruction issued; and
- amend clause 7.7.6 and introduce the new clause 7.7.7B to allow:
 - the retrospective issue of an Operating Instruction for this purpose by AEMO;
 and
 - the Operating Instruction to be deemed to be confirmed by the relevant Market Participant;

for the purposes of an Operating Instruction issued under the new clause 7.7.11 of the WEM Rules.

Specifically providing for AEMO to issue an Operating Instruction where a Facility has been constrained off as a result of a network Outage will allow the Downwards Out of Merit Generation quantity to be set to zero under clause 6.16A.2(b)(ii) of the WEM Rules. This would prevent any payment of constrained off compensation under clause 6.17.4 of the WEM Rules.

It should be highlighted that the Public Utilities Office considered whether equivalent changes were required to allow the Portfolio Downwards Out of Merit Generation quantity to be set to zero. However, as the Balancing Portfolio is dispatched by AEMO using an indicative order,

¹⁰ It should be highlighted that the Public Utilities Office proposes to only allow the issue of this type of Operating Instruction retrospectively, as it relates solely to the quantity of generation for the purposes of Settlements and does not affect the real-time dispatch of Facilities by AEMO. This proposal does not alter the timing requirements of Dispatch Instructions issued for other purposes.

there is sufficient discretion for the system operator to dispatch alternative Facilities that are unaffected by a network Outage. This means that in practice, Synergy would not be paid constrained off compensation as would happen for a Balancing Facility not in the Balancing Portfolio.

The associated proposed amending rules are provided in section 3.

2. Explain the reason for the degree of urgency:

The former IMO proposed changes to address the issue in 2013 in particular due to the increase in constrained off compensation payments to Market Generators with Non-Scheduled Generators. However, the rule change proposal was deferred due to the associated cost and potential redundancy of the system changes as a result of the electricity sector reforms.

The issue will ultimately be resolved with the proposed adoption of security constrained, economic dispatch in the WEM in 2022 as part of the current electricity sector reform program. However, due to the potentially significant financial impact on Market Customers, the Public Utilities Office considers the proposed low cost, administrative solution (Option 3 listed in the previous section) should be progressed with high urgency.

The MAC agreed at its meeting on 12 September 2018 that this issue should have a high urgency rating.

3. Provide any proposed specific changes to particular Market Rules: (for clarity, please use the current wording of the rules and place a strikethrough where words are deleted and underline words added)

- 6.16A.2. The Downwards Out of Merit Generation in a Trading Interval for a Balancing Facility equals:
 - (a) subject to clause 6.16A.2(b), the Minimum Theoretical Energy Schedule less the Sent Out Metered Schedule; or
 - (b) zero if:
 - the Economic Regulation Authority has notified AEMO under clause 7.10.8 that the relevant Market Participant has not adequately or appropriately complied with a Dispatch Instruction;
 - ii. the Facility was undergoing a Test or complying with an Operating Instruction;
 - iii. the Minimum Theoretical Energy Schedule less the Sent Out Metered Schedule is less than the sum of:
 - any Downwards LFAS Enablement and, if the Facility is a Stand Alone Facility, any Downwards Backup LFAS Enablement, which the Facility was instructed by System Management to provide, divided by two so that it is expressed in MWh; and

- 2. the applicable Settlement Tolerance; or
- iv. the Balancing Facility is a Non-Scheduled Generator and System Management has not determined a MWh quantity for the Facility and the Trading Interval under clause 7.13.1(eF).

. . .

- 7.7.3A. Each Operating Instruction must contain the following information:
 - (a) details of the Registered Facility to which the Operating Instruction relates;
 - (b) the time the Operating Instruction was issued;
 - (c) the time at which the response to the Operating Instruction is required to commence and an estimate of when the Operating Instruction will cease to apply;
 - (d) if applicable, the required level of sent out generation or consumption; and
 - (e) whether the Operating Instruction relates to a Network Control Service Contract, an Ancillary Service Contract, a Test<u>-or</u> a Supplementary Capacity Contract, or an Outage of any network equipment under clause 7.7.11.

. . .

7.7.6. Subject to clause 7.7.7:

- (a) and-clauses 7.7.7, 7.7.7A and 7.7.7B, System Management must issue a Dispatch Instruction or an Operating Instruction by communicating it to the relevant Market Participant in accordance with the Power System Operation Procedure. System Management must develop a Power System Operation Procedure which prescribes a communication method or methods which allow sufficient time for the Market Participant to confirm and to respond to that Dispatch Instruction; and
- (b) clauses 7.7.7 and 7.7.7B, a Market Participant must:
 - i. confirm receipt of the Dispatch Instruction or Operating Instruction;
 and
 - ii. advise if it cannot comply or cannot fully comply with the Dispatch Instruction or Operating Instruction.

The advice and confirmation under this clause 7.7.6 must be made in the time and manner set out in the Power System Operation Procedure.

7.7.7. Clause 7.7.6 does not apply where System Management has operational control of the relevant Registered Facility in accordance with clause 7.8, in which case System Management may communicate the Dispatch Instruction or Operating Instruction at a later time and by a method agreed with the Market Participant.

- 7.7.7A. Clause 7.7.6 does not apply where the Operating Instruction is deemed to have been issued in respect of a Registered Facility in accordance with an Ancillary Service Contract or Network Control Service Contract and relates to the automatic activation of the Ancillary Service or Network Control Service in which case System Management may communicate the Operating Instruction to the relevant Market Participant at a later time in accordance with the Ancillary Service Contract or Network Control Service Contract.
- 7.7.7B. Clause 7.7.6 does not apply where the Operating Instruction has been issued retrospectively in response to an Outage of any network equipment under clause 7.7.11, in which case System Management may communicate the Operating Instruction to the relevant Market Participant at a later time, and the Operating Instruction is deemed to have been confirmed by the relevant Market Participant.

. . .

- 7.7.11. System Management may retrospectively issue an Operating Instruction to a Balancing Facility for the relevant Trading Intervals where:
 - (a) System Management issued a Dispatch Instruction to that Facility to reduce its output under clause 7.6.1C(b) or 7.6.1C(c) in response to an Outage of any network equipment; and
 - (b) the required level of sent out generation specified in the Dispatch
 Instruction issued to that Facility is lower than it would have been if the
 Outage of the network equipment did not occur,

and for the purposes of clause 6.16A.2 that Facility is deemed to have been complying with that Operating Instruction.

. . .

Operating Instruction: Means an instruction issued by System Management:

- (a) requiring a Facility to increase or decrease its output or decrease its consumption to meet the requirements of:
 - (a)i. a Network Control Service Contract;
 - (b)ii. an Ancillary Service Contract;
 - (c)iii. a Test under these Market Rules;
 - (d)iv. a Supplementary Capacity Contract; or
 - (e)v. Ancillary Services, other than LFAS but including LFAS Backup Enablement, to be provided by Facilities other than Facilities in the Balancing Portfolio-; or
- (b) retrospectively under clause 7.7.11, in response to an Outage of any network equipment.

4. Describe how the proposed rule change would allow the Market Rules to better address the Wholesale Market Objectives:

The WEM Rules as a whole, if amended to reflect the proposed amending rules above will not only be consistent with the Wholesale Market Objectives but also generally allow the WEM Rules to better achieve Wholesale Market Objectives (a), (c) and (d).

(a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;

The Public Utilities Office considers the proposed amendments will remove any constraint payments resulting from a network Outage by excluding the associated quantities from the Downwards Out of Merit Generation volumes used to calculate constrained off compensation payments for Facilities dispatched Out of Merit. This will have the effect of removing unwarranted constrained off compensation and avoiding a significant wealth transfer between Market Customers and Market Generators.

The Public Utilities Office therefore considers the proposed changes will better achieve market objective (a).

(b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;

The Public Utilities Office does not consider the proposed changes will impact market objective (b).

(c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;

The proposed changes will align the compensation for Non-Scheduled Generators with those that apply for Scheduled Generators. The Public Utilities Office therefore considers the proposed changes will better achieve market objective (c).

The proposed changes do not apply to Synergy's Balancing Portfolio. The Public Utilities Office highlights that this is because the dispatch of the Balancing Portfolio by AEMO would not result in constrained off compensation payments related to an Outage of any network equipment. The Public Utilities Office therefore considers the proposed changes that only apply to Balancing Facilities other than the Balancing Portfolio are consistent with market objective (c).

(d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and

The Public Utilities Office considers that the proposed amendments will:

- reduce the time and effort in relation to the investigation of the merit of constrained off compensation payments, thereby reducing the long-term compliance cost overall;
- avoid potential increases in prudential obligations as a result of unwarranted constrained off compensation payments; and
- reduce the risk of paying constrained off compensation payments, which cannot be hedged, and which is typically passed through to the end customer.

The Public Utilities Office therefore considers the proposed changes will better achieve market objective (d).

(e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

The Public Utilities Office does not consider the proposed changes will impact market objective (e).

5. Provide any identifiable costs and benefits of the change:

The amendments if implemented as proposed will resolve a long-standing issue that has resulted in significant unwarranted payments to Market Generators as a result of network Outages.

In the 24 October 2018 MAC workshop, AEMO indicated that some system changes may be required to data flows into the settlement system, but that it was likely that these changes will be minor.

The WEM Rules already set the Out of Merit quantity to zero if a Balancing Facility is subject to an Operating Instruction. As such, minimal changes to processes and systems are expected (in particular, to the settlement calculations), with the only changes expected being in the issue of Operating Instructions and in the preparation of data to provide for settlements.

The Public Utilities Office expects there will also be changes to sections 5.4 and 5.7 of the Power System Operation Procedure: Dispatch.