RCP | Rule Change Panel

Draft Rule Change Report: Administrative Improvements to the Outage Process (RC_2014_03)

Standard Rule Change Process

30 October 2020

Contents

1. Rule Change Proposal, Process and Timeline

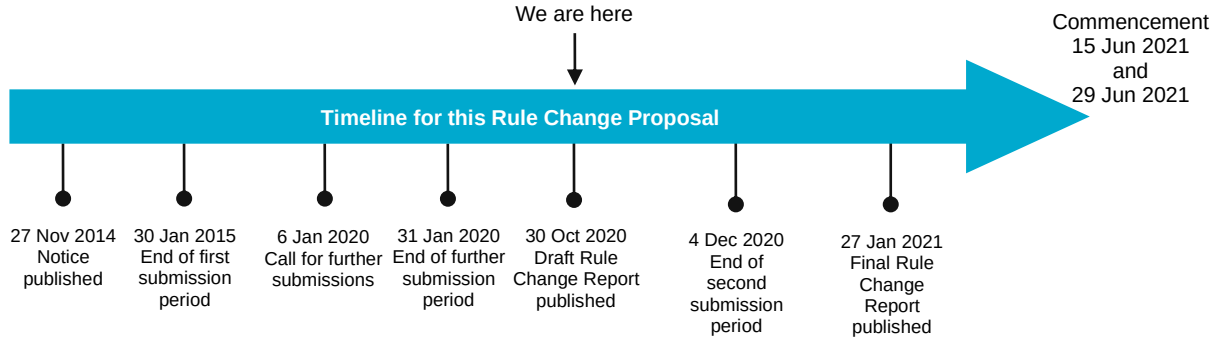
On 27 November 2014, the Independent Market Operator (**IMO**) submitted a Rule Change Proposal titled "Administrative Improvements to the Outage Process" (RC_2014_03). The Rule Change Proposal sought to implement changes to:

- increase the efficiency of processes used to report and manage Forced Outages and Consequential Outages in the Wholesale Electricity Market (**WEM**); and
- clarify the processes relating to the determination and use of outage quantities for Scheduled Generators and Non-Scheduled Generators.

The Rule Change Proposal is being processed using the Standard Rule Change Process, described in section 2.7 of the WEM Rules.[1] The timeframes for the first submission period and the preparation of the Draft Rule Change Report were extended by the IMO under clause 2.5.10; and the timeframe for the preparation of the Draft Rule Change Report was further extended by the Rule Change Panel under clauses 1.18.3(b) and 2.5.10. Further details of the extensions are available on the Rule Change Panel's website.

On 6 January 2020, the Rule Change Panel published a call for further submissions on this Rule Change Proposal (**CFFS**). The further submission period closed on 31 January 2020.

The key dates for progressing this Rule Change Proposal, as amended in the extension notices, are:



Please note that, due to the size and complexity of the Rule Change Proposal, the availability of resources over the December holiday period and the likelihood that stakeholders will have significant resources allocated to consulting with the Energy Transformation Implementation Unit (**ETIU**) regarding the Energy Transformation Strategy (**ETS**), the Rule Change Panel has:

- extended the second submission period beyond the usual 20 Business Days to allow stakeholders enough time to consider the proposed amendments; and
- extended the publication of the Final Rule Change Report beyond the usual 20 Business Days to allow the Rule Change Panel enough time to develop the Final Rule Change Report.

The Draft Rule Change Report is drafted on the basis that the reader has read all the related documents, including the Rule Change Proposal, the first period submissions, the CFFS and

[1] Based on advice from ETIU, the Rule Change Panel expects that the Minister will implement a number of administrative amendments to the Wholesale Electricity Market Rules before the likely commencement date for this Rule Change Proposal, which include replacing the term 'Market Rules' with 'WEM Rules'. The Rule Change Panel has used the new terminology in this report to maintain consistency with these amendments.

the submissions received in response to the CFFS (**further submissions**). All documents related to this Rule Change Proposal can be found on the Rule Change Panel's website at https://www.erawa.com.au/rule-change-panel/market-rule-changes/rule-change-rc_2014_03.

2. The Rule Change Panel's Draft Decision

The Rule Change Panel's draft decision is to accept the Rule Change Proposal in a modified form, as set out in section 7 of this report.

2.1 Reason for the Rule Change Panel's Draft Decision

The Rule Change Panel has made its draft decision on the basis that the Amending Rules, as modified in this Draft Rule Change Report:

- will reduce administrative burden and compliance risks and costs for Rule Participants by removing unnecessary obligations;
- will promote market efficiency by increasing transparency about the impact of network outages on generator availability;
- will support the provision of more accurate Balancing Forecasts and Forecast Balancing Merit Orders (**BMOs**);
- will reduce the loss of market transparency arising from the application of large static constraints in the Generator Interim Access (**GIA**) tool to manage planned network outages;
- will provide Market Generators affected by Foreseeable Constraints[2] with the information they need to form their Balancing Submissions and reduce the risk of generator Forced Outages arising from late changes to Triggering Outages;[3]
- will ensure that Non-Scheduled Generators affected by Foreseeable Constraints are subject to the same gate closure restrictions and eligibility for constraint payments as Scheduled Generators in similar circumstances;
- will ensure appropriate and consistent outcomes for all Intermittent Generators (including GIA generators) that are affected by Foreseeable Constraints in terms of Balancing Submission obligations, constraint payments and the provision of estimates for use in Reserve Capacity certification;
- will prevent unwarranted reductions of Capacity Credits due to the impact of a network outage on Reserve Capacity Test results;
- will support the provision of more timely information to AEMO about Forced Outages that Rule Participants know are about to occur;
- will simplify the basis for reporting quantities of de-rating for Non-Intermittent Generator Outages;
- will address manifest errors affecting the calculation of capacity-adjusted outage quantities[4] and reduce the likely administrative costs of calculating capacity-adjusted

[2] See section 6.3.2.1 of this report for an explanation of the concept of Foreseeable Constraints.

[3] In this report and the proposed Amending Rules, 'Triggering Outage' means an outage of Network equipment that AEMO considers will (if it proceeds) reduce the effective capacity of a Scheduled Generator or Non-Scheduled Generator to a specific quantity for a specific period.

[4] In this report, a 'capacity-adjusted outage quantity' is an outage quantity for a Scheduled Generator or non-Intermittent Non-Scheduled Generator that is adjusted to exclude capacity that is not assigned Capacity Credits. Capacity-adjusted outage quantities are used for several purposes in the WEM Rules, including the calculation of Capacity Cost Refunds.

outage quantities, while still ensuring appropriate outcomes for Outages that occur on high-temperature days;

- will improve clarity around the calculation and use of outage quantities under the WEM Rules;
- will prevent the payment of unwarranted constrained off compensation to Scheduled Generators that are subject to a Forced Outage or Consequential Outage in a Trading Interval;
- will ensure that distribution-connected generators are eligible for Consequential Outages;
- will support the effectiveness of AEMO's prudential monitoring by allowing AEMO to set tighter reporting deadlines for Forced Outages of a specific generator if a Forced Outage could have a material impact on the Market Generator's Trading Margin;
- have an estimated implementation cost and timeframe that will allow net benefits to be realised over the remaining period before the expected implementation of the new market arrangements in October 2022;
- will allow the WEM Rules to better achieve Wholesale Market Objectives (a), (b) and (c);
- are consistent with Wholesale Market Objectives (d) and (e);
- were generally supported by the majority of Market Advisory Committee (**MAC**) members and observers at various MAC meetings and the MAC workshops held on 17 January 2018 and 25 October 2019 to discuss the Rule Change Proposal; and
- were generally supported (subject to some concerns regarding specific issues[5] and a more general concern about avoiding unwarranted implementation costs) by the submissions received in response to the Rule Change Panel's CFFS on this Rule Change Proposal.

Additional detail outlining the analysis behind the Rule Change Panel's draft decision is provided in section 6 of this report.

2.2 Proposed Commencement

The Amending Rules are proposed to commence at the following times:

Rules	Commencement
Section 1.nn	8:00 AM on 15 June 2021
All remaining amendments	8:00 AM on 29 June 2021

These commencement dates are provisional and may be subject to change in the Final Rule Change Report.

[5] See section 5.6 of this report for an explanation of the concept of Foreseeable Constraints.

3. Call for Second Round Submissions

Second Submission Period

The Rule Change Panel invites interested stakeholders to make submissions on this Draft Rule Change Report.

The submission period is 25 Business Days from the Draft Rule Change Report publication date. Submissions must be delivered to the RCP Secretariat by **5:00 PM** on **Friday 4 December 2020**.

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

4. Proposed Amendments

4.1 The Rule Change Proposal

In this Rule Change Proposal, the IMO sought to:

- remove the requirement for a Market Participant to provide a notice signed by an Authorised Officer (**authorised notice**) to seek approval for a Consequential Outage;
- introduce the ability for Rule Participants to log a Forced Outage or Consequential Outage in advance of the outage occurring;
- amend clause 3.21.6 to make the calculation rules for capacity-adjusted outage quantities consistent with current practice, including:
    - using the MW equivalent of the Capacity Credits assigned to a Scheduled Generator instead of its Reserve Capacity Obligation Quantity (**RCOQ**) in the calculations; and
    - requiring Market Generators to enter outage quantities into the System Management Market Information Technology System (**SMMITS**) on an as generated basis instead of a sent out basis;
- restrict the application of clause 3.21.6 to Scheduled Generators, and amend clause 3.21.5 to clarify how outage quantities should be calculated for Non-Scheduled Generators;
- require System Management[6] to provide the IMO with outage quantities for each Scheduled Generator and Non-Scheduled Generator for each Trading Interval on a sent out basis at 15 degrees,[7] in addition to the temperature-adjusted values provided for Scheduled Generators;
- clarify that the obligation for Rule Participants to provide “full and final details” of an Outage “no later than 15 calendar days following the Trading Day” applies separately to each Trading Day of the outage period; and
- make several minor grammatical and formatting amendments to improve the integrity of the WEM Rules.

The proposed amendments are discussed in detail in section 6.3 of this report. Full details of the Rule Change Proposal are available on the Rule Change Panel’s website.

4.2 Changes to the WEM Rules Affecting the Rule Change Proposal

Since the formal submission of this Rule Change Proposal:

- the WEM Rules have changed significantly;
- the market operator function has transferred from the IMO to AEMO; and
- the system management function has transferred to AEMO.

The Rule Change Panel has therefore applied the proposed changes to the WEM Rules as expected at the likely time of commencement (29 June 2021), accounting where applicable for the changes made to the WEM Rules since the submission of the Rule Change Proposal.

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6 References to System Management in this report mean System Management in its form as a ring-fenced entity within Western Power. Any comments made by System Management after the system management function was transferred to AEMO are attributed to AEMO.

7 Note that all temperature references in this report are specified in degrees Celsius.

A summary of the required changes to the original Rule Change Proposal drafting is provided in Appendix A of this report.[8]

The Rule Change Panel notes that the rationale for the proposed changes is, in most cases, unaffected by changes made to the WEM Rules since the submission of this Rule Change Proposal and the transfer of functions to AEMO.

4.3 The IMO's Initial Assessment of the Proposal

The IMO decided to proceed with the Rule Change Proposal on the basis that section 4 of the Rule Change Proposal indicated that the proposed amendments would better achieve the Wholesale Market Objectives. In particular, the proposed streamlining of the Consequential Outage process and the clarification of the obligations of the parties involved in the outage process were expected to allow the WEM Rules to better achieve Wholesale Market Objectives (a) and (d).

On this basis, the IMO considered that Rule Participants should be given an opportunity to provide submissions on the Rule Change Proposal.

[8] The revised drafting has been used as the base for the further changes to the proposed Amending Rules presented in Appendix E of this report.

5. Consultation

Although the Rule Change Panel has summarised the submissions received in the first and further submission periods and the views expressed by the MAC in accordance with clause 2.7.7 of the WEM Rules, the Rule Change Panel has reviewed this information in its entirety and taken into account each matter raised by stakeholders and the MAC in making its decision on this Rule Change Proposal.

Full details of the MAC meetings discussed in this section, including meeting papers, presentations and minutes, are available on the Rule Change Panel's website at https://www.erawa.com.au/rule-change-panel/market-advisory-committee/market-advisory-committee-meetings.

5.1 MAC Consultation by the IMO before the Formal Submission of the Rule Change Proposal

The IMO presented a Pre-Rule Change Proposal to the MAC at its 25 June 2014 meeting. No comments were made by MAC members and it was agreed that the IMO should submit the Rule Change Proposal into the formal process and progress it using the Standard Rule Change Process.

5.2 Submissions Received during the First Submission Period

The first submission period for this Rule Change Proposal was held between 27 November 2014 and 30 January 2015. The IMO received submissions from Community Electricity and Perth Energy. A late submission was also received from System Management.

All submitters supported the Rule Change Proposal and considered that the proposal would better facilitate the achievement of the Wholesale Market Objectives.

Community Electricity supported the Rule Change Proposal on the grounds that it removed unnecessary administration, clarified the requirements placed on participants, reconciled the WEM Rules with current practice and improved the transparency of outages.

Perth Energy noted that the proposed changes would reduce the administrative burden for Market Participants, which would improve the overall efficiency of market operations, improve the level of information being provided to System Management, and assist in the planning of dispatch. Perth Energy expressed explicit support for the proposed changes to remove the requirement to provide an authorised notice for a Consequential Outage and to allow the logging of a Consequential Outage in advance.

System Management supported the proposed changes to remove the requirement to log a Forced Outage prior to a Consequential Outage and allow the logging of a Consequential Outage in advance. However, System Management questioned the necessity of the proposed requirement for it to provide outage quantities to the IMO at 15 degrees on a sent out basis, given that the IMO was already capable of calculating this number itself.

System Management also noted that there were fundamental issues related to Consequential Outages which remained unaddressed (such as the definition of an Outage and issues with consistency in the application of the Consequential Outage rules). System Management acknowledged that these outstanding issues had been discussed with the IMO in relation to other rule changes that were in progress at the time System Management prepared its submission.

The assessment by submitting parties as to whether the Rule Change Proposal would better achieve the Wholesale Market Objectives is summarised below.

Table 5.1: Submitters' Assessment against the Wholesale Market Objectives (First Submission Period)

Submitter	Wholesale Market Objective Assessment
Community Electricity	Considered that the Rule Change Proposal would improve the integrity of the WEM Rules and was consistent with all the Wholesale Market Objectives.
Perth Energy	Perth Energy provided no specific assessment but considered that the proposed changes would improve the overall efficiency of market operations and assist in the planning of dispatch (Wholesale Market Objective (a)).
System Management	Believed that the proposed change would assist to better facilitate achievement of the Wholesale Market Objectives, but also considered that the Wholesale Market Objectives would be better served by addressing the broader issues with the definition and applications of Consequential Outages.

Copies of all submissions on the Rule Change Proposal received during and after the first submission period are available on the Rule Change Panel's website.

5.3 The Rule Change Panel's Response to Submissions Received during the First Submission Period

The Rule Change Panel's response to each of the specific issues raised in the first submission period is presented in Appendix B of this report. A more general discussion of the proposal, which addresses the main issues raised in submissions and the Rule Change Panel's response to these issues, is available in section 6.3 of this report.

5.4 MAC Consultation after the First Submission Period

On several occasions the IMO extended the publication date for the Draft Rule Change Report to allow the IMO to consider the outcomes of the Electricity Market Review (**EMR**) and any potential impacts on the Rule Change Proposal.

In May 2015, the Minister asked the IMO to exercise its discretion under clause 2.5.10 of the WEM Rules to extend the normal timeframes for processing all Rule Change Proposals in progress (except for those relating to the deferral of Reserve Capacity Cycles) until the new rule change approval body was established as part of the EMR reforms.

The rule making functions were transferred from the IMO to the Rule Change Panel on 26 November 2016. The Rule Change Panel commenced its rule making functions on 3 April 2017.

The Rule Change Panel further extended the timeframe for publication of the Draft Rule Change Report in extension notices published on 10 April 2017 and 21 December 2017. The purpose of the extensions was to allow the Rule Change Panel enough time to assess the Rule Change Proposal against the recent changes to the WEM Rules, while managing competing priorities of other Rule Change Proposals.

The remainder of this section 5.4 presents a summary of MAC consultation on the Rule Change Proposal over the period before the publication of the CFFS.

5.4.1 MAC Consultation during 2017

During July-August 2017 the Rule Change Panel, in consultation with the MAC, assigned a High urgency rating to this Rule Change Proposal in accordance with its new Rule Change Proposal Prioritisation and Scheduling Framework.

13 September 2017 MAC meeting

The Chair gave a presentation on the Rule Change Proposal to provide an update on the status of the proposal and to raise some questions for MAC members. The following points were discussed.

- The Chair asked what should happen if a request for a Consequential Outage, submitted after the event, was rejected. Mr Dean Sharafi (representing AEMO in its function as System Management) considered that the Outage should be automatically converted into a Forced Outage.
- Mr Patrick Peake (representing Market Customers) and Mr Sharafi agreed that System Management should be required to provide a Market Participant with the reason for the rejection of a Consequential Outage request.
- In response to a question from Mr Peake, the Chair advised that the issue of when a generator was constrained off rather than the subject of a Consequential Outage was out of the scope of this Rule Change Proposal.
- The Chair noted that allowing a Market Participant to log and receive approval for a Consequential Outage before the start of that outage would reduce uncertainty for participants and improve market transparency.

  Mr Andrew Stevens (representing Market Generators) suggested that SMMITS already allowed participants to log Forced and Consequential Outages in advance.

  Mr Sharafi questioned the need to allow Forced Outages to be logged in advance as they were by nature unexpected. Mr Stevens replied that there are many situations in which a Market Participant is aware that it is going to have to take a Forced Outage before the start of that outage. Mr Stevens considered however that the ability to get approval for a Consequential Outage in advance was the more important change for Market Participants.

  Mr Sharafi indicated that AEMO did not intend to assess or approve any Consequential Outages until after the event, because the timing and impact of the triggering network outage is uncertain until it happens.

  The Chair questioned how Market Generators with an unapproved Consequential Outage would offer into the Balancing Market and how this would affect market transparency. The Chair considered it was not clear from the proposed Amending Rules how the process was meant to work in practice. Further workshops with AEMO and Western Power were likely to be needed to work through the different scenarios and develop a practical design that took all the relevant factors into account.
- Mr Will Bargmann (representing Synergy) raised a concern that using the number of Capacity Credits held by a Scheduled Generator instead of its RCOQ in outage quantity calculations may cause some interpretation issues, as RCOQ was used in several other places in the WEM Rules. The Chair agreed that the proposed changes needed to be

reviewed to ensure they did not create problems in other sections of the WEM Rules that involve the use of RCOQ.

- Mr Mark Katsikandarakis (of AEMO) noted that a recent AEMO system change aligned the temperature derating curves used in certification and Reserve Capacity Tests with the temperature derating curves in Standing Data, so AEMO had a piece of work underway to contact generators and ask them to provide updated derating curves. Ms Wendy Ng clarified that the requested updates were restricted to format changes only.[9]
- Mr Stevens suggested that generators should only be required to enter an outage quantity that reflected the actual remaining capacity of the unit over the period of the outage. For example, if an outage occurred overnight when the temperature remained well under 41 degrees then the outage quantity entered should reflect what the generator actually expected the unit to be able to send out over this period, and not a larger outage quantity because the maximum output of the unit might be lower if the temperature was to approach 41 degrees. Mr Stevens considered that temperature derating curves should only be used for Reserve Capacity Tests.
- The Chair sought the views of MAC members on what outage quantity should be recorded for a Scheduled Generator that trips off during a Trading Interval. Several members considered that the de-rating quantity should be based on what the unit actually managed to send out in the Trading Interval, without any temperature-related adjustment (i.e. option 1 for the presentation's Example 2). Mr Sharafi agreed, but noted that AEMO may need to make changes to its systems to accommodate option 1.
- There was some discussion about how de-rating quantities should be recorded and outage quantities calculated on days where the maximum temperature exceeded 41 degrees.
- There was some discussion about what threshold should apply to the requirement to record outages for Non-Scheduled Generators. The Chair suggested that the appropriate threshold might depend on AEMO's operational needs. Mr Sharafi considered that the threshold suggested in the presentation was consistent with the tolerance ranges used for Facilities and so appeared reasonable, but indicated AEMO would consider the matter further and provide an update to RCP Support.[10]

The Chair asked MAC members and observers to provide their feedback on the questions listed in the presentation by 27 September 2017.

Feedback received from MAC members and observers on questions raised during the 13 September 2017 MAC meeting

Five parties provided feedback on the questions raised during the 13 September 2017 presentation.

AEMO and ERM Power supported the proposed removal of the requirement to provide an authorised notice to request a Consequential Outage.

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9 AEMO subsequently advised RCP Support that the system change mentioned by Mr Katsikandarakis was rolled back in November 2018, and confirmed that the sent out temperature de-rating curves used for certification and Reserve Capacity Tests were different from the as generated temperature de-rating curves recorded in Standing Data.

10 The Rule Change Panel introduced a materiality threshold for reporting Non-Scheduled Generator outages in the Rule Change Proposal: Outage Planning Phase 2 – Outage Process Refinements (RC_2013_15). The Amending Rules for RC_2013_15 commenced on 1 February 2020. Since the materiality threshold changes were not progressed through this Rule Change Proposal (RC_2014_03), the Rule Change Panel has not included further details of the relevant consultation in this report. See section 7.2.2.1 and Appendix B.3.1.3 of the Final Rule Change Report for RC_2013_15 for further details.

ERM Power, Bluewaters Power (**Bluewaters**) and AEMO all supported the proposal to allow Consequential Outage requests to be submitted in advance. However, Synergy raised several concerns about the proposed arrangements, mostly relating to the implications of late changes to a Triggering Outage.

Respondents expressed differing views on whether a rejected Consequential Outage request should be converted to a Forced Outage. Bluewaters and AEMO both considered that Market Participants should be required to update their ex-ante Consequential Outage requests[11] to reflect changes to the Triggering Outage, but did not suggest any timeframe requirements or how very late changes to Triggering Outages (e.g. within Balancing Gate Closure) should be managed.

Bluewaters considered that a Consequential Outage request that was yet to be approved should not prevent the Facility from being subjected to a Reserve Capacity Test; and that a Reserve Capacity Test should be deemed invalid if the Facility suffered a Consequential Outage during the test.

AEMO supported the proposed replacement of RCOQ with the number of Capacity Credits held by the Facility in the capacity-adjusted outage quantity formula. However, Synergy reiterated the concerns raised by Mr Bargmann during the MAC discussion about the replacement of RCOQ with Capacity Credits.

Mr Stevens elaborated on his suggestion at the MAC discussion that outage quantities should be recorded, and capacity-adjusted outage quantities calculated, on a non-temperature dependent basis. Bluewaters supported Mr Stevens' suggestion, while both AEMO and ERM Power raised questions about the current arrangements and agreed that further discussion of the issues around temperature adjustment of outage quantities was warranted. Synergy advised that changes to the basis for recording Scheduled Generator outages might require adjustments to its systems.

AEMO considered that an alternative approach for reporting outage quantities, based on the concept of 'remaining availability',[12] would be more intuitive and simpler for Market Participants. However, AEMO supported the idea of simplifying the processes for entering and calculating outage quantities, and recognised that there may be some short-term gains in market operation under the current proposal where time to deliver and costs of implementation were not preclusive.

Respondents offered no specific suggestions in response to the questions raised about the use of outage quantities. AEMO supported changes to the outage calculations to enable AEMO to consider Non-Scheduled Generator outages during the certification of Reserve Capacity and Reserve Capacity performance monitoring, but did not suggest what calculation would be suitable. ERM Power supported moving the outage rate calculations from the WEM Procedure:[13] Facility Outages (**Outage Procedure**) to an appendix of the WEM Rules.

AEMO supported the proposed clarification of the timing for provision of "full and final details" of an Outage. Synergy further considered that Outage details should be updateable up to the

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11 In this report, an 'ex-ante Consequential Outage' means a Consequential Outage for which the affected Rule Participant submits a Consequential Outage request before the outage begins.

12 Under this alternative approach a Market Participant reporting an outage would advise the quantity of capacity that remained available for service (the 'remaining available capacity') rather than the quantity by which the capacity of the Facility had been reduced. For example, if an outage reduced the capacity of a Facility from 100 MW to 80 MW, the Market Participant would report 80 MW (the remaining available capacity) rather than 20 MW (the quantity of de-rating).

13 ETIU has advised that the Minister's proposed administrative amendments to the WEM Rules include replacing the terms 'Market Procedure' and 'Power System Operation Procedure' with 'WEM Procedure'. The Rule Change Panel has used the new terminology in this report to maintain consistency with the expected amendments.

relevant deadline for the final Non-STEM Settlement Adjustment Process, and that any changes made should be taken into account in settlement adjustments.

Synergy suggested that the Rule Change Panel consider the 13 April 2017 decision of the Supreme Court of Western Australia on a request by Bluewaters for a declaration to require AEMO to evaluate an Outage Plan submitted for a Facility that had tripped and was still out of service (**Bluewaters decision**),[14] and the implications the Rule Change Panel's proposed changes would have on the reasoning of the judge in that case. Synergy also suggested that the Rule Change Proposal could be used to address any issues with the relevant clauses raised in that case.

8 November 2017 MAC meeting

During a review of candidate issues for the proposed MAC Market Rules Issues List (**Issues List**), MAC members generally agreed that, if possible, two candidate issues should be addressed as part of this Rule Change Proposal:

- **Issue 17:** potential changes to allow the logging of Forced Outages after the current 15 day deadline; and
- **Issue 33:** potential changes to allow Forced Outage and Consequential Outage details to be amended after their initial entry in SMMITS.[15]

There was some discussion about how the late logging of a Forced Outage for a Scheduled Generator would flow through to the settlement adjustment process, and specifically how it would affect the generator's capacity refunds and constrained off payments. Ms Jenny Laidlaw (of RCP Support) considered that additional changes were likely to be needed to ensure the correct settlement adjustment outcome. Mr Martin Maticka (representing AEMO) agreed to investigate what would be the simplest and cheapest option to achieve the desired result, i.e. the correct payment of capacity refunds and the recovery of any unwarranted constrained off compensation (Action 31/2017).

13 December 2017 MAC meeting

With respect to Action 31/2017, Mr Sharafi noted that changes to SMMITS and the settlement adjustment rules would be required to support the reporting of Forced Outages after the current 15-day deadline. Mr Sharafi proposed to keep the action item open until AEMO was able to provide further information on the required changes.

Ms Laidlaw provided an update on the Rule Change Proposal. The following points were discussed.

- Ms Ng raised a concern about the straw man proposal for determining outage quantities for Scheduled Generators that trip off during a Trading Interval (slide 7 of the presentation). Ms Ng considered that the proposed calculation method could overstate the outage quantity, as it did not recognise that the full capacity of the unit was available during the period preceding the trip.

  Ms Laidlaw acknowledged Ms Ng's concerns and invited stakeholders to suggest an alternative approach that was simple, measurable and auditable, noting that

[14] Bluewaters Power 2 Pty Ltd –v- Australian Energy Market Operator Ltd [2017] WASC 98, available from: https://ecourts.justice.wa.gov.au/eCourtsPortal/Decisions/ViewDecision?returnUrl=%2feCourtsPortal%2fDecisions%2fFilter%2fSC%2fCitationNumber&id=d6ad0c85-c57f-4a38-4825-8101001537ba.

[15] See section 6.4.2.2 of this report for further details.

RCP Support had not found a better option than the one presented, taking into account all the costs and benefits.

Mr Stevens noted that any overstatement of outage quantity would only apply to the Trading Interval in which the trip occurred, and that the cost and complexity of alternative approaches may not be justified.

- There was some discussion about whether capacity-adjusted outage quantities should be calculated in SMMITS or AEMO's settlement systems.
- Mrs Jacinda Papps (representing Market Generators) gave an example where a Pinjarra unit under automatic generation control (**AGC**) was dispatched down via its AGC instructions in conflict with its formal Dispatch Instruction. There was some discussion about whether such occurrences should be treated as Consequential Outages, even though they did not specifically relate to the outage of another piece of equipment.
- Ms Laidlaw noted that RCP Support intended to hold a workshop in January 2018 on RC_2014_03, with AEMO, Western Power and any other interested parties.

The Chair invited MAC members and observers to provide any feedback on the revised straw man proposals in the presentation by email to RCP Support.

Feedback received from MAC members and observers on the straw man proposals presented at the 13 December 2017 MAC meeting

Seven parties provided feedback on the 13 December 2017 presentation.

Mr Geoff Gaston (representing Market Customers), Mr Peter Huxtable (representing Small Use Customers), ERM Power and Alinta Energy (**Alinta**) all generally supported the revised straw man proposals for the reporting, calculation and use of outage quantities. However:

- ERM Power reiterated the concerns raised by Ms Ng at the meeting that the straw man proposal for determining outage quantities for Scheduled Generators that trip off during a Trading Interval could overstate the outage quantity; and
- Alinta advised that it was still considering the proposed materiality threshold for reporting Non-Scheduled Generator outages.

Bluewaters had no issues with the high-level concepts presented, but advised that it would wait until further details were available before commenting.

Bluewaters and Synergy supported the inclusion of Issues List issue 17 in the scope of this Rule Change Proposal. Bluewaters also considered that the requirement to report a Forced Outage for Trading Intervals covered by an approved Commissioning Test Plan was redundant, and requested the issue be discussed at the upcoming MAC workshop for the Rule Change Proposal.

AEMO advised that it had no comments at that stage, but reiterated its preference (which was shared by Synergy) for outage submissions to be based on remaining availability.

Synergy shared ERM Power's concerns about the straw man proposal for determining outage quantities for Scheduled Generators. Synergy also:

- raised concerns that the proposed principles for determining the quantity of de-rating (in slide 4 of the presentation) could create an obligation to log an outage any time a Facility could not achieve its maximum sent out capacity (**MSOC**), e.g. when de-rated due to ambient temperatures; and

- reiterated its request for the Rule Change Panel to consider the issues raised in Synergy's previous feedback (following the 13 September 2017 MAC meeting) around the Bluewaters decision and the proposed changes to support ex-ante Consequential Outage requests.

5.4.2 17 January 2018 MAC Workshop

RCP Support held a MAC workshop for this Rule Change Proposal on 17 January 2018. A summary of the workshop and the additional feedback provided by attendees after the meeting (shown in italics) is provided below. Further details, including workshop discussion notes, handouts and minutes, are available on the Rule Change Panel's website.

The purpose of the workshop was to discuss:

- a straw man option for the management of ex-ante Consequential Outages;
- other issues relating to Consequential Outages;
- several issues and potential solutions relating to the recording, calculation and use of outage quantities; and
- several issues that had been suggested for inclusion in the scope of the Rule Change Proposal.

Slide 3:[16] Consequential Outages terminology:

- Most attendees agreed that the WEM Rules should refer to a Market Participant "requesting" rather than "reporting" a Consequential Outage.

Slide 4: Ex-ante Consequential Outages – general principles:

- No concerns were raised regarding the general principles for ex-ante Consequential Outages listed in Slide 4.

Slide 5: Consequential Outages – working assumptions:

- AEMO clarified that a rescheduled Outage was treated by AEMO as a new Outage, except that the linkage to the original Outage was a factor AEMO took into account when prioritising competing Planned Outages under the WEM Rules.
- There was some discussion about when a delay to the start of a Triggering Outage should require that Outage to be formally delayed/rescheduled, resulting in changes to any associated Consequential Outages. There was general agreement that AEMO should only need to reschedule the Triggering Outage if the delay was long enough to allow the affected generator(s) to return to service. As this period would depend on the characteristics of the generator(s) involved (e.g. start-up and gate closure times) it was agreed that AEMO should exercise its judgement in these situations, taking the relevant factors into account.
- Several attendees confirmed that in some (but not all) cases, a Consequential Outage might extend past the end of a Triggering Outage, e.g. where a Facility needed its network connection to be restored before it could commence its start-up.

[16] The slide number references relate to the workshop discussion notes, which are available on the Rule Change Panel's website.

Slides 6-7: Linking ex-ante Consequential Outages to Triggering Outages:

- The attendees discussed several options for establishing a link between an ex-ante Consequential Outage request and the Triggering Outage, including:
    - whether the Network Operator or AEMO should be responsible for notifying affected Market Participants of a Triggering Outage;

      (Synergy preferred the Network Operator to have the responsibility "to support timeliness of information sharing in case there is a concern")
    - whether formal notification of affected Market Participants should occur when the Triggering Outage request is first submitted to AEMO, or when AEMO first accepts/accepts with conditions/approves the Triggering Outage;

      (Synergy preferred the formal notification to occur when the triggering outage request was first submitted to AEMO.)
    - whether Market Participants should be able to request a Consequential Outage before the Triggering Outage has been accepted/accepted with conditions/approved;

      (Synergy considered that this should be permitted) and
    - whether a reference id for the Triggering Outage should be provided to affected Market Participants, and if so how (and by whom) it should be determined.

      (Synergy considered that a reference id should be provided via email notification.)

  No final positions were agreed, although there was general agreement that the MPI Id[17] from SMMITS could provide a suitable reference id.

  (Synergy supported the use of the SMMITS MPI Id.)
- Mr Dean Frost (of Western Power) considered that it would be reasonable and good practice for Western Power to notify affected Market Participants and provide them with the relevant MPI Id when it submitted a Planned Outage request. Mr Frost noted that most network Planned Outages were requested about six weeks in advance and suggested the Network Operator could be required to notify the affected Market Participants within two Business Days of making the request. However, Mr Frost noted that this option would not work for Opportunistic Maintenance requests.

  (Following the workshop, RCP Support contacted Western Power to discuss the practicality of Western Power providing Market Participants with the relevant MPI Id for a Triggering Outage (for use as a reference id for their own Consequential Outage requests). RCP Support and Western Power agreed that, while technically Western Power could do this task if necessary, it would introduce a level of unnecessary complexity and inefficiency in the Planned Outage process. Western Power noted that AEMO had access to all the necessary information to process Consequential Outage requests, and indicated that Western Power could provide additional information to AEMO if required.)
- Most generator attendees indicated that, although they were unlikely to request a Consequential Outage before the Triggering Outage was accepted/accepted with conditions/approved, it was useful to know when the Triggering Outage request was submitted.

[17] Market Participant Interface Identifier.

- AEMO attendees indicated a preference for the Network Operator to be responsible for notifying affected Market Participants. Mr Matthew Fairclough (of AEMO) questioned the need for a reference id.
- It was noted that the entire process (including the handling of exception cases) needed to be considered to determine the most efficient approach.

Slides 8-13: Straw man processes for ex-ante Consequential Outages:

- The attendees discussed the straw man processes for the approval of ex-ante Consequential Outages and the management of subsequent events, such as the rejection, withdrawal, rescheduling, early finish and late finish of the Triggering Outage. The straw man processes were based on the premise that an ex-ante Consequential Outage request should be accepted or approved as early as possible to provide certainty to the affected Market Participant and visibility of the Consequential Outage to other Market Participants. [18]

  (Synergy requested an option to resubmit Balancing Submissions subject to the same gate closure as other Market Generators in the event of a cancellation or early finish of a Triggering Outage. Synergy wished to avoid any obligation to resubmit Balancing Submissions in situations where resubmission was not possible.

  Synergy considered that AEMO should contact Market Participants before cancelling a Triggering Outage, and that Western Power should communicate directly with the relevant power station and notify AEMO in the event of an early finish to a Triggering Outage.)

Slide 14: Late notification rules for changes to Triggering Outages:

- Attendees did not identify any additional factors (apart from reaction time, gate closure time, start-up times and the operational state of the unit at the time of notification) that should be considered under the late notification rules for Consequential Outages. Mr Chris Wilson (of AEMO) noted that these considerations were already covered to some extent in Chapter 7A of the WEM Rules, in respect of the obligations for Balancing Submissions.
- There was some discussion about the inclusion of start-up times in outage periods for Market Generators. Ms Laidlaw noted that a generating unit returning from a Consequential Outage was not available to the market until it was able to synchronise, but agreed that this needed to be made clear in the WEM Rules.

Slide 15: Ex-post Consequential Outages:

- The AEMO attendees agreed that if AEMO rejected an ex-post Consequential Outage request, then it should convert the Outage to a Forced Outage in SMMITS. There was general agreement that it should be possible for Rule Participants to amend the end time of a Forced or Consequential Outage (subject to appropriate audit controls).
- Mr Frost noted that all Western Power Forced Outage notifications were dealt with within two weeks of them having occurred, and asked whether any changes were proposed to the requirement to provide full and final details of a Forced Outage within 15 days. Ms Laidlaw noted that while she did not know when the matter would be addressed, there was likely to be value in requiring Market Generators to record at least preliminary details of Forced Outages in SMMITS before the current 15-day deadline, to provide

[18] As noted in section 6.3.2.1 of this report, the Rule Change Panel has since decided against this approach due to cost and practicality concerns, and proposes a less expensive option that provides greater transparency for all Market Participants.

greater transparency and improve the accuracy of Outstanding Amount calculations. It was unclear whether similar benefits would apply to earlier logging of network Forced Outages.

- Mr Daniel Kurz (of Bluewaters) asked whether the opportunity to convert a Forced Outage to a Consequential Outage would remain (i.e. if a Market Generator, after logging the original Forced Outage, became aware that the outage was actually a Consequential Outage). There was some discussion about the implications of supporting this option and other late changes to outage records.

Slide 16: Consequential Outages and Reserve Capacity Tests:

- There was general support from attendees for the proposed approach.

Slide 17: Consequential Outages – next steps:

- Mrs Papps asked what aspects of the process were likely to be included in the WEM Rules versus the WEM Procedures. Ms Laidlaw replied that the intention was to leave as much detail as possible to the WEM Procedures, but to specify key deadlines and responsibilities for achieving those deadlines (and providing the necessary audit trail) in the WEM Rules.

Slides 20-21: Outage quantity reporting – December 2017 MAC straw man:

- No concerns were raised about the proposal to make outage quantity reporting temperature independent.
- Attendees agreed that the incremental benefits of the 'remaining available capacity' approach for outage quantity reporting over the straw man approach (de-rating against MSOC) were insufficient to warrant having to implement a new outage system or make far more material changes to SMMITS to implement this Rule Change Proposal, given the high urgency rating of the proposal and uncertainties about the scope and timing of future market reforms.
- There was some discussion about how MSOC should be defined. Ms Laidlaw noted that this Standing Data value would be the MW quantity that a Market Generator needed to cover in its Balancing Submission (even if some of that quantity was usually unavailable); and the maximum available capacity value used by a Market Generator to calculate its outage quantities. Ms Laidlaw asked attendees to email RCP Support their views on how MSOC should be defined, and in particular:
    - whether it should be limited by the physical limits of the network connection and/or the contractual Declared Sent Out Capacity (**DSOC**) of the Facility;

      (Synergy agreed with both limits to the extent the limits apply to an individual Facility. Synergy noted that physical and DSOC limits can apply at a power station level (e.g. a maximum export of 100 MW from two units each with a maximum capacity of 55 MW), and considered that the Market Participant should be free to manage these limits within their Balancing Submissions and not be constrained to a maximum of 50 MW from an individual unit. Synergy also noted that AEMO could allow/request output above the DSOC in certain circumstances, where network conditions allow.)
    - whether it should represent the maximum sustainable capacity under normal, optimal conditions or the maximum output achievable for short periods only under emergency conditions; and

(Synergy considered it should represent the maximum sustainable capacity, but that Market Participants should not be restricted from offering additional capacity if available.)

- how and whether any generation capacity normally reserved for embedded loads should be accounted for.

  (Synergy noted that the effect of embedded loads was difficult to calculate as it was dependent on many factors, and considered that Market Participants should be afforded sufficient flexibility to determine the appropriate level given all relevant factors.)

Slide 22: Forced Outage quantities for Scheduled Generators:

- There was some discussion about the straw man methodology to determine the outage quantity for a Scheduled Generator that trips off during a Trading Interval or otherwise fails to meet its required output levels. Some attendees expressed concern that the straw man might over-estimate the outage quantity in some situations, but no practical alternative approaches were offered. Ms Laidlaw asked any attendee who wished to propose an alternative methodology to contact her to arrange a meeting.

  (Synergy provided a brief summary of an alternative approach that it later described in detail in its further submission on this Rule Change Proposal.) [19]

Slides 23-25: RCOQ and Capacity-Adjusted Outage Quantities:

- The attendees discussed the factors that can affect the RCOQ of a Facility and their implications for the calculation of capacity-adjusted outage quantities, and specifically on which quantity (currently specified as "RCOQ") should be used in the clause 3.21.6 calculations.
- There was general support for adopting the straw man approach rather than an alternative approach that would require changes to the definition of RCOQ and consequential changes such as changes to the Net STEM Shortfall calculation.
- It was suggested that the Appendix 1(k)(i)(3)[20] and (4)[21] Standing Data values could be used explicitly in the clause 3.21.6 calculations, provided that their definitions were updated to clarify that the values excluded any adjustments under:
  - clause 4.12.4(b)(ii) (where the Market Generator offers short-term overload capacity in its certification application);
  - clause 4.12.4(b)(iii) (adjustments to account for "staffing and other restrictions"); and
  - clause 4.12.6 (adjustments to reflect Outages and approved Commissioning Tests).

Slide 26: Use of outage quantities in the WEM Rules:

- Ms Laidlaw asked all attendees to review the "Use of Outage quantities in the Market Rules – straw man" table in the workshop handout document, and email RCP Support if they had questions or concerns about the proposed approach for any of the clauses listed in that table.[22]

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19 See section 6.3.3.4 of this report for further details.

20 "the Reserve Capacity Obligation Quantity of the facility at 41ºC (if applicable)".

21 "the Reserve Capacity Obligation Quantity of the facility at 45ºC (if applicable)".

22 RCP Support received no responses to this request. [22]

Slide 27: Calculation of Outage Rates and Equivalent Planned Outage Hours:

- Attendees raised no concerns about the proposal to move the calculation of Outage Rates and Equivalent Planned Outage Hours to an Appendix of the WEM Rules.
- Ms Laidlaw asked attendees to review the proposed methodology for calculation of Equivalent Planned Outage Hours, Equivalent Forced Outage Hours, Planned Outage Rate and Forced Outage Rate for Scheduled Generators and Non-Scheduled Generators (provided in the workshop handout) and email RCP Support with details of any questions or concerns.

  (Synergy advised that it has no issues with the calculations at first review.)

Slide 28: Other issues:

- Ms Laidlaw noted RCP Support had received legal advice that two candidate issues for the Issues List (Issues 17 and 33) could be addressed as part of this Rule Change Proposal.
- Ms Laidlaw requested that Synergy provide RCP Support with some additional detail on Synergy's suggestion, offered in previous feedback, regarding the implications for this Rule Change Proposal of the Bluewaters decision.

  (In its response, Synergy noted the Rule Change Panel was considering changes to several clauses referred to in the Bluewaters decision. Synergy considered that the interpretation of these clauses by the Supreme Court was a source of 'truth' to Market Participants and any inadvertent or unexplained changes to that source of truth represented a risk that the interpretation was unclear and increased the risk of dispute. Ultimately, such disputes were economically inefficient costs in the WEM.

  Synergy therefore considered that the relevant clauses should not be altered without significant consideration being given to the possibility and likely effect of any consequential, and/or inadvertent, changes being made to the judicial interpretation provided in the Bluewaters decision.

  Synergy also suggested that the Rule Change Panel, if it amended any clauses that were subject to dispute during the Bluewaters case, clarifies the interpretation of the clause so that such disputes are less likely to arise in future.) [23]
- Mrs Papps noted that occasionally events occur (often IT-related) that do not directly involve an outage of Equipment List items but cause an outage of a Market Participant's Facility. Examples included a recent event where AEMO's AGC system dispatched an Alinta Facility to a lower level than its Dispatch Instruction; and an event involving an extended SCADA outage. There was some discussion about whether these occurrences should be classified as Consequential Outages. Ms Laidlaw advised these events were outside the scope of this Rule Change Proposal.
- Ms Laidlaw advised that Bluewaters' suggested removal of any requirement to log a Forced Outage for Trading Intervals covered by an approved Commissioning Test was outside the scope of this Rule Change Proposal. [24]

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[23] The Rule Change Panel considered the implications of the Bluewaters decision on the WEM outage arrangements as part of its assessment of Rule Change Proposal: Outage Planning Phase 2 – Outage Process Refinements (RC_2013_15). See the Final Rule Change Report for RC_2013_15 for further details, available at https://www.erawa.com.au/rule-change-panel/market-rule-changes/rule-change-rc_2013_15.

[24] The Rule Change Panel has since revised its position on this matter and has made additional changes to the proposed Amending Rules to implement Bluewaters' suggestion. See sections 6.3.3.3 and 6.3.3.5 of this report for further details.

Other Synergy feedback on the 17 January 2018 MAC workshop

In its feedback on the MAC workshop, Synergy also considered that:

- the definition of a Consequential Outage should remain unchanged, because amending it (e.g. by adding a limb to account for the effects of late changes to Triggering Outages) would make it more prescriptive and not cover all situations;
- a Market Participant should be able to request a Consequential Outage before the outage and to submit or amend a Consequential Outage request after the fact; and
- a Consequential Outage should remain able to be requested even if not linked directly to other outages, e.g. because a short network interruption can cause a generating unit to suffer a much longer outage.

5.4.3 MAC Consultation during 2018-2019

14 February 2018 MAC meeting

With respect to Action 31/2017, Mr Maticka noted that AEMO had started work on the question of how to account for late logging of Forced Outages in settlement, but had found it to be less straightforward than originally expected. Mr Maticka confirmed that AEMO expected to provide RCP Support with a rough order of magnitude estimate for the preferred options by 1 March 2018.

Ms Laidlaw provided a further update on the Rule Change Proposal. The following points were discussed.

- In response to a question from Mr Stevens, Ms Laidlaw clarified that the 'start-up time' proposed to be included in the period of an Outage was the time that would be required for the generating unit to synchronise with the grid.
- Ms Laidlaw noted the discussion at the 17 January 2018 workshop on the definition of MSOC. Ms Laidlaw asked Mr Sharafi whether AEMO might need to be able to dispatch the emergency capacity of a Scheduled Generator (i.e. any additional output that can be provided for short periods in emergency situations only) using its future automated dispatch engine (Action 2/2018).
- Mr Peake suggested that the DSOC of a generating unit was set at 41 degrees and that a Market Generator was not permitted to exceed that limit. Ms Ng did not believe that DSOCs were temperature-limited. Ms Margaret Pyrchla (representing Western Power) agreed to investigate the question and report back to the MAC (Action 3/2018).
- There was some discussion about how and whether Market Generators were exempted from network penalties if they exceeded their DSOC at the request of System Management. Ms Laidlaw noted that the MAC had received advice in the past that Western Power did not normally penalise Market Generators in these circumstances.

14 March 2018 MAC meeting

With respect to Action 31/2017, the Chair noted that RCP Support was reviewing information provided by AEMO regarding options for changes to account for late logging of Forced Outages in settlement.

With respect to Action 2/2018, Mr Sharafi advised that AEMO uses the emergency capacity of Scheduled Generators if necessary, and will continue to do so if needed in future.
Ms Laidlaw clarified that the action item related to whether in future Market Generators will

need to include their emergency capacity in their dispatch offers to ensure that AEMO's new automated dispatch system was aware of the output levels to which each Scheduled Generator was dispatched. Mr Sharafi agreed to consult with his colleagues in the National Electricity Market (**NEM**) and provide a further update to the MAC.

Mr Frost gave a presentation on how Western Power sets the DSOC for a generating unit and the role of temperature in its determination process (Action 3/2018).[25] Mr Frost advised that a single DSOC applied for a generating unit at all times of the year. There was some discussion about whether it would be more efficient to change the DSOC concept to allow the maximum permitted output level to vary by season, month or even time of day.

9 May 2018 MAC meeting

Ms Laidlaw noted that AEMO had provided an update to RCP Support on Action 31/2017. AEMO considered two options for ensuring that the late logging of a Forced Outage by a Generator would result in the appropriate recovery of any unwarranted constrained off compensation:

1. allow for the recalculation of Theoretical Energy Schedule (**TES**) values for settlement adjustments; or
2. allow AEMO to import a file into the settlement adjustment process to nullify the constraint payment.

AEMO preferred the first option as the second option created operational and system risks. AEMO estimated the first option would require about 1-2 months for a developer and 6-8 months of testing, plus some overheads.

Ms Laidlaw noted that she had discussed a potentially cheaper third option with the Economic Regulation Authority's (**ERA's**) Compliance team. Under this option, if a Market Participant did not comply with its Dispatch Instruction and was not non-compliant under clause 7.10.1 of the WEM Rules because it had logged a Forced Outage, but had logged that Forced Outage late, then the ERA would be able to include the relevant Facility and Trading Intervals in the file provided to AEMO under clause 7.10.8 of the WEM Rules. This would cause the Out of Merit quantities for the Facility to be set to zero for the relevant Trading Intervals and prevent the payment of any constrained off compensation. Ms Laidlaw expected that this option would be recommended as it would not require any changes to AEMO's market systems.[26]

With respect to Action 2/2018, Ms Laidlaw noted AEMO's advice that the NEM used a 'maximum capacity' value, which represented the highest possible output from the generator. Market Generators could include this level of capacity in their Dispatch Offers, and were responsible for ensuring that their Dispatch Offer quantities reflected their capabilities at any time. There was general agreement that the action item could now be closed.

13 June 2018 MAC meeting

Perth Energy asked the MAC to consider reprioritising Rule Change Proposal: Implementation of 30-Minute Balancing Gate Closure (RC_2017_02), which led to a MAC discussion about the priority of all open Rule Change Proposals, including this Rule Change Proposal (RC_2014_03) and Rule Change Proposal: Outage Planning Phase 2 – Outage

[25] A copy of Western Power's presentation is available on the Rule Change Panel's website.

[26] The Rule Change Panel has since decided not to progress changes to allow the late reporting of Forced Outages. See section 6.4.2.2 of this report for further details.

Process Refinements (RC_2013_15). The MAC agreed that RC_2014_03 and RC_2013_15 should be processed close to one another to avoid unnecessary IT costs.

The Chair noted that a large amount of work had already been undertaken for RC_2014_03, including a workshop and several MAC presentations. However, it had since become clear that there were some potential overlaps between the outage-related Rule Change Proposals and the WEM Reform Program, so RCP Support questioned what elements of those proposals should be progressed and what should be deferred to the WEM Reform Program.

The following points were discussed.

- Mr Stevens asked how far the outage-related Rule Change Proposals had progressed. Ms Laidlaw replied that RCP Support was working on a CFFS for RC_2014_03 when AEMO advised of the potential conflict between the proposal and the WEM Reform Program. RCP Support was waiting on AEMO to advise what the points of conflicts were and what elements of the proposals would not be practical to progress at this time.
- Mr Stevens suggested that RC_2014_03 (and some other Rule Change Proposals) should proceed if they would bring net benefits over the next 2-4 years, even if they were eventually replaced by the Minister's reforms.

  Mr Maticka noted that a review of outage definitions fell within the scope of the WEM Reform Program. Mr Maticka also noted that AEMO was currently working on a project to transition the remaining Western Power systems used by System Management to AEMO. AEMO expected to complete this project by mid-2019, and until it was complete, would need to request Western Power to make any changes to SMMITS that were required to implement RC_2014_03. This could delay the transition process and result in large additional costs. AEMO intended to talk to Western Power about what it would cost to make the necessary amendments to SMMITS and how that work might affect the transition project.
- Mr Stevens asked whether the outage-related Rule Change Proposals included changes to Commissioning Test processes. Mr Maticka replied that AEMO needed to undertake further analysis because some elements of the proposals that did not require IT changes could be easier to progress. However, at this stage AEMO was unable to commit to any time frames associated with the outage-related Rule Change Proposals.
- Mr Stevens asked when AEMO would complete its evaluation of the outage-related Rule Change Proposals. Ms Laidlaw advised that AEMO had committed to provide its evaluation results to RCP Support by 29 June 2018.
- There was some discussion about the costs and benefits of making the proposed outage changes before the transition of systems from Western Power to AEMO and/or before the implementation of the Minister's broader reforms; and about the issues that were delaying the progression of the proposals.

The MAC agreed that RC_2014_03 should retain its High urgency rating, subject to clarification of the interactions with the WEM Reform Program.

8 August 2018 MAC meeting

Ms Laidlaw and Mr Clayton James (of AEMO) gave a presentation to the MAC on the work being undertaken by RCP Support and AEMO to determine what components of RC_2013_15 and this Rule Change Proposal could be progressed without conflict with AEMO's System Management System Transfer (**SMST**) project and the WEM Reform Program.

The following points were discussed.

- Mr Peake considered the terms ‘outage’ and ‘de-rating’ needed to be defined in the WEM Rules. Mr Peake noted that Perth Energy had been asked to report full Forced Outages in situations where it was late to start up its generating unit. Mr Peake considered that a full Forced Outage should not be required in these cases.
- In response to a question from Ms Ng, Mr James clarified that the WEM Reform Program’s proposed review of outage definitions applied to both current and future market arrangements. AEMO’s intention was to consider what was needed to support a constrained network access environment in Tranche 1 of the WEM Reform Program, and then bring forward any parts that can be implemented before 2022. Ms Ng suggested that the definition of a Consequential Outage might change with the implementation of constrained network access.

12 September 2018 MAC meeting

Ms Laidlaw noted that AEMO was yet to advise when it could make resources available to consider the IT implementation options for this Rule Change Proposal. However, AEMO had contacted Western Power about exploring options to do minor work on SMMITS to support the implementation of RC_2013_15 before the transfer of SMMITS to AEMO as part of the SMST project.

RCP Support intended to prioritise development of a CFFS for RC_2013_15, in the expectation that this would allow AEMO sufficient time to undertake the investigation of IT options for this Rule Change Proposal (RC_2014_03).

5 February 2019 MAC meeting

Mr Maticka noted that Mrs Papps had asked at the previous MAC meeting about the implications of recalculating TES quantities after the current 15 Business Day deadline. Mr Maticka advised that AEMO can and actually had re-run the calculations in the past for various reasons. The Market Participant Interface displays the latest TES calculation results and AEMO also keeps records of previous calculations.

Mr Maticka queried whether a change to allow the recalculation of TES should be included in the Issues List, given that it was a fairly straight forward technical implementation. Mrs Papps suggested that a Rule Change Proposal be considered if the IT costs were not as high as previously thought.

Ms Laidlaw noted that AEMO recently provided advice to RCP Support on options to support the late logging of Forced Outages, and in particular, on options to ensure that any unwarranted constrained off compensation was recovered through the settlement adjustment process. AEMO had proposed an option involving the recalculation of TES, which RCP Support had discounted due to its high cost. Mr Maticka and Ms Laidlaw agreed to review the assumptions behind the two estimates at a discussion on this Rule Change Proposal that was scheduled for 8 February 2019 (Action 2/2019).

30 April 2019 MAC meeting

With respect to Action 2/2019, Mr Maticka provided a clarification of the IT cost estimates provided by AEMO to RCP Support in 2018 and to the MAC on 5 February 2019 to support the recalculation of TES after the current 15 Business Day deadline. Mr Maticka advised that the original estimate provided to RCP Support included costs for regression testing that were not included in the quote provided to the MAC. Mr Maticka considered that the original quote

would be accurate if the TES changes were made in isolation, but if the changes were made in conjunction with other changes that also required a full regression test then the incremental cost would be quite small.

29 July 2019 MAC meeting

Ms Laidlaw noted that after further discussion with AEMO on this Rule Change Proposal, RCP Support had revised the previous straw man proposal for the management of ex-ante Consequential Outages. Ms Laidlaw sought the preferences of the MAC on whether RCP Support should hold a workshop to discuss the revised straw man (and other aspects of the Rule Change Proposal) before or after the publication of a CFFS. There was general agreement from MAC members to hold the workshop before the publication of a CFFS.

5.4.4 25 October 2019 MAC Workshop

RCP Support held a second MAC workshop for this Rule Change Proposal on 25 October 2019. A summary of the workshop is provided below. Further details, including workshop discussion notes and minutes, are available on the Rule Change Panel's website.

The purpose of the workshop was to:

- provide an update on the original Rule Change Proposal issues and the new related issues identified by the Rule Change Panel; and
- discuss a number of specific issues to inform the development of a CFFS for the Rule Change Proposal.

Slides 4-6: Removal of authorised notice requirement:

- Attendees agreed that while they would prefer to submit a Consequential Outage request directly into SMMITS than to submit a Forced Outage followed by an email to AEMO, the direct entry option should not be implemented if it has a materially higher implementation cost.

Slides 7-12: Logging Forced and Consequential Outages in advance:

- In response to a question from Mr Fairclough, Ms Laidlaw clarified that a Market Generator who acted in accordance with the Triggering Outage notifications[27] issued by AEMO would be deemed to be acting in compliance with the WEM Rules and would not be exposed to a Forced Outage due to late changes to a Triggering Outage.
- Ms Laidlaw clarified that Triggering Outage notifications would not be used when the impact of network constraints on specific generators could not be predicted in advance. There was some discussion about the circumstances under which a generator that was subject to a regional cap would be eligible for a Consequential Outage, and the market impacts of unexpected changes to the output of large Non-Scheduled Generators due to network outages.

Slides 13-14: Logging Forced and Consequential Outages in advance – options for notification mechanism:

- Attendees discussed the three options for a Triggering Outage notification mechanism presented in the discussion slides. The following points were discussed:
    - Attendees raised no concerns about the increase in Dispatch Advisories (**DAs**) if Option 2 or Option 3 was implemented, noting that the format of the DAs could be

[27] Note that the Rule Change Panel has changed this term to "Triggering Outage Notice" in the proposed Amending Rules.

standardised to help participants identify Triggering Outage notifications and manage them differently if they chose.

- Mr James noted that one of the drawbacks of using the DA mechanism was that Triggering Outages can be approved several months before they commence. Using a DA in these situations would not provide participants with an ongoing view of upcoming Triggering Outages. Mr Paul Arias (of Bluewaters) agreed that the timing of such notifications might be an issue for Bluewaters.

  Ms Laidlaw considered that an ideal solution would include both notifications and a reporting mechanism like that suggested by AEMO in Option 3. However, if a notification mechanism alone could provide the required information then it might be difficult to justify the additional costs of a PASA like reporting mechanism.

- Mr Brad Huppatz (of Synergy) considered that the greater concern was about the timeliness of notifications relating to late changes and the obligations on Market Generators to respond.

- Mr James and Mr Fairclough suggested the implementation of a combination of Options 2 and 3. This would involve AEMO issuing DAs as per Option 2 but also looking to include some of the information in the PASA tool that exists today. The combined mechanism could be reviewed after a period to assess its effectiveness. If Market Participants preferred the DAs the PASA information could be removed; alternatively, if the PASA reports were providing Market Participants with sufficient longer-term information then AEMO would stop issuing DAs for Triggering Outages scheduled more than a week in the future.

  Mr Fairclough suggested that the WEM Rules should be structured to allow AEMO to remove the requirement for longer-term DAs without the need for a rule change. Mr James suggested this could be done by specifying the notification mechanism in a WEM Procedure.

  Ms Laidlaw noted that while both mechanisms would provide useful information to Market Participants, the information would probably have a slightly different structure and purpose, with the Triggering Outage notifications containing information that was unlikely to be included in a weekly PASA report. Ms Laidlaw noted that the WEM Rules would not prevent AEMO from publishing any additional information on Triggering Outages that it considered would be useful to Market Participants.

Attendees were generally supportive of the introduction of a Triggering Outage notification mechanism, and did not suggest any other implementation options.

Slide 15: Logging Forced and Consequential Outages in advance – Triggering Outage notification content and timing:

- In response to a question from Mr James, Ms Laidlaw clarified that Triggering Outage notifications would only be issued for changes that affect the foreseeable constraints associated with the Triggering Outage.
- Mr Sam Lei (of Alinta) and Mr Huppatz raised concerns about situations where generators are subject to large and unpredictable constraints during a network outage. Ms Laidlaw reiterated that Triggering Outage notifications would not be issued for this type of network outage. There was some discussion about the problems created by these outages and whether/when the impacts on generators may need to be planned more accurately to avoid unacceptable market volatility.

- There was some discussion about the factors that cause uncertainty about the impact of network outages on generators. Mr James noted that a Market Generator that was affected by a network outage in a way that could not be accurately foreseen would still be able to request a Consequential Outage ex-post. Ms Laidlaw agreed, but noted that some uncertainty existed around whether in future all such constraints would qualify as Consequential Outages.
- Attendees raised no concerns about the proposed Triggering Outage notification content and timing requirements.

Slides 16-17: Logging Forced and Consequential Outages in advance – revised proposal:

- Mr Fairclough and Mr James confirmed that AEMO would not incur any additional IT costs to allow ex-ante submission of Consequential Outage requests, regardless of the method chosen for the submission of these requests.
- Mr Arias sought clarification on what would happen if a Market Generator submitted an ex-ante Consequential Outage request that AEMO failed to approve ex-ante, expressing concern that the request might lapse and need to be resubmitted. Mr Fairclough replied that AEMO would always endeavour to approve such requests ex-ante if possible.
- Ms Laidlaw noted that changes to a Triggering Outage could cause a Consequential Outage request that had been approved ex-ante to become invalid. It was likely that to reduce implementation costs these Consequential Outage requests would be rejected, and the Market Generator would need to submit a new Consequential Outage request if necessary. It would be up to each Market Generator to decide whether the potential administrative overhead of having to submit a Consequential Outage request several times was warranted.
- Mr Lei noted that the revised proposal required Market Generators to update their Balancing Submissions to reflect Triggering Outage notifications “as far as possible”, and asked for details of the relevant timeframes. Ms Laidlaw replied that the Amending Rules for RC_2013_15 covered most of the relevant timing considerations (e.g. the need to allow at least 30 minutes to respond, and to allow for gate closure and machine start-up times).
- Attendees raised no concerns with:
    - the proposed requirement for Market Generators to take Triggering Outage notifications into account in their Balancing Submissions as far as possible;
    - the lack of any obligations to submit or approve Consequential Outage requests ex-ante; and
    - the proposed rules for the submission and approval of Consequential Outages set out in slide 17.

Slides 18-19: Logging Forced and Consequential Outages in advance – late changes to Triggering Outages:

- Attendees discussed the question of how much notice the market needs of late changes to Triggering Outages, including:
    - a delay to the start of a Triggering Outage;
    - the late cancellation of a Triggering Outage; and
    - early return to service from a Triggering Outage.

- The following points were discussed:
  - Ms Laidlaw noted that a Scheduled Generator was expected to return to the Balancing Market as soon as practicable after a late notification of a change to a foreseeable constraint, taking response time, gate closure limits and start-up times into account as contemplated in new section 7A.2A (contained in the Amending Rules for RC_2013_15).
  - Mr Lei asked what the compliance implications would be if a Market Generator was emailed a DA at 5:00 AM advising of late changes to a foreseeable constraint, but failed to read the email or update its Balancing Submissions. Ms Laidlaw replied that Market Generators are already expected to monitor DAs and comply with any directions issued by AEMO in a DA.
  - Ms Laidlaw noted that a Non-Scheduled Generator affected by a late change to a foreseeable constraint can be returned to service early without notice to the market because its capacity is not declared as unavailable in its Balancing Submissions (even if its forecast quantities are set to zero). There was some discussion about how AEMO manages the removal from service and return to service of a Non-Scheduled Generator that is subject to a foreseeable constraint.
  - Ms Laidlaw questioned whether the Balancing Gate Closure restrictions that apply to Scheduled Generators returning to the Balancing Market should also apply to Non-Scheduled Generators in these situations.
  - In response to a question from Mrs Papps, Ms Laidlaw confirmed that Market Generators are now allowed to update their Balancing Submissions after Balancing Gate Closure to provide a more accurate forecast of their expected output.

    Mrs Papps questioned whether a Market Generator could use this option to reflect the late removal of a foreseeable constraint on a Non-Scheduled Generator. Ms Laidlaw and Mr Arias considered that an update to reflect a cancelled outage was a slightly different concept and likely to have a greater impact than a normal forecast adjustment.
  - Mr Arias considered that the uncertainty imposed on Market Generators by unexpected changes to large Non-Scheduled Generator outages created risks that would be incorporated into market prices. Mr Fairclough suggested that this effect should be balanced against the Non-Scheduled Generators' ability to reduce the Balancing Price.

    Mr James suggested that the situation might be different for notifications received before versus after Balancing Gate Closure. Mr Arias clarified that his comments only related to notifications received after Balancing Gate Closure.
  - Mr James noted that it was not simple for AEMO to automate the release of a constraint after the end of a Triggering Outage. There was some discussion about how AEMO manages the return to service of Non-Scheduled Generators (e.g. by limiting the ramp rates of Facilities to avoid Power System Security issues). Mr Fairclough confirmed that AEMO generally releases the constraints on a Non-Scheduled Generator as soon as the relevant Triggering Outage has ended. There was further discussion about options to take market impacts as well as security concerns into account when managing the return of Non-Scheduled Generators from outages.

- Ms Laidlaw noted that questions about the minimum notice period for a late change to a Triggering Outage, and the return of a Non-Scheduled Generator to the Balancing Market after a late change to a foreseeable constraint, would be included in the CFFS for the Rule Change Proposal.

Slide 20: Logging Forced and Consequential Outages in advance – Triggering Outage notifications for foreseeable constraints caused by Forced Outages:

- Attendees raised no concerns about the proposals to:
    - clarify the obligation on Rule Participants to notify AEMO if they become aware that their Outage Facility will suffer a Forced Outage in the near future; and
    - provide AEMO with an option to issue Triggering Outage notifications for network Forced Outages that it considers will have a material market impact.
- Mr Lei asked whether a Market Generator would be obliged to update the start and end times of its Consequential Outage to reflect when the Triggering Outage actually started and ended. Ms Laidlaw replied that if AEMO issued a Triggering Outage notification updating a foreseeable constraint start or end time then the Market Generator may need to amend a previously submitted and/or approved Consequential Outage request. For this reason, Market Generators were likely to prefer to submit these requests after the foreseeable constraint had started, and possibly after it had ended.

Slides 21-25: Capacity-adjusted outage quantity calculation: RCOQ vs Capacity Credits:

- Mr Huppatz asked if a requirement to publish maximum site temperature data could be included in the Rule Change Proposal. At least some of this data was sourced from Western Power's SCADA systems and Mr Huppatz was unsure whether Synergy was permitted access under the current confidentiality regime. Attendees generally agreed it would be helpful for a Market Generator to have access to this information for its Facilities.[28]
- Attendees raised no concerns about:
    - the updated proposal to calculate capacity-adjusted outage quantities (as set out in slide 25); or
    - the proposed removal of the requirement to report Forced Outages for failures during an approved Commissioning Test.

Slides 26-33: Quantity of de-rating for Scheduled and Non-Scheduled Generators:

- Attendees raised no concerns with the proposed approach to reporting outage quantities for hybrid Non-Scheduled Generators (as set out in Option 4 on slide 31).
- Ms Laidlaw noted that the Rule Change Panel had reviewed the issue raised by Alinta during the second submission period for RC_2013_15 about the administrative burden of outage reporting for large Non-Scheduled Generators, but did not consider that an increase in the size of individual wind turbines warranted further changes to the materiality threshold. Mrs Papps reiterated her view that the outage reporting requirements for large Non-Scheduled Generators would be administratively

[28] "The maximum daily ambient temperature at the site of each generating system monitored by a relevant SCADA system for the Trading Day" is specified under clause 7.13.1(cB) of the WEM Rules. While AEMO has no obligation to publish this information, it is currently assigned a confidentiality status of Public. Imposing an obligation on AEMO to publish the information is outside the scope of this Rule Change Proposal. However, RCP Support has suggested to Synergy that Synergy contact AEMO to discuss the options for its provision on a regular basis.

burdensome. Ms Laidlaw noted that under the current WEM Rules, Market Generators are required to schedule an outage if a single wind turbine is out of service. [29]

- Attendees raised no other concerns with the updated proposal for recording outage quantities for Scheduled Generators and Non-Scheduled Generators set out in the appendix of the discussion slides.

Slide 34: Use of outage quantities in the WEM Rules and clarification of timeframes:

- Ms Laidlaw noted that no material changes had been made to the proposal for the use of outage quantities in the WEM Rules that was discussed at the 17 January 2018 MAC workshop. Ms Laidlaw advised that the CFFS would include:
    - an updated table showing which outage quantities (unadjusted vs capacity-adjusted) will be used for which purposes; and
    - details of the proposed Planned Outage Rate, Forced Outage Rate and Equivalent Planned Outage Hours calculations.
- Attendees raised no concerns with the proposed approach to address the presented issues relating to the use of outage quantities in the WEM Rules and the clarification of timeframes for providing outage information to AEMO.

Slide 36: Outage definitions:

- Attendees raised no concerns about the intention to only consider the following outage definition issues as part of this Rule Change Proposal:
    - Consequential Outages caused by non-Equipment List network equipment;
    - Forced Outages occurring during an approved Commissioning Test; and
    - (if required) expansion of the Consequential Outage definition to replace clauses 7A.2A.3 and 7A.2A.4.

Slide 37: Outage definitions – Consequential Outages caused by non-Equipment List network equipment:

- Attendees generally agreed that a Consequential Outage should be able to be caused by an outage of any equipment that is part of a registered Network.
- Mr Frost considered that specifying details of secondary systems in the Equipment List could be very difficult and a more generic, less prescriptive approach should be taken.
- There was some discussion about previous events and whether they should qualify as Consequential Outage triggers. Attendees agreed that a recent SCADA system outage should be eligible, but did not agree that a recent bushfire event, where Balancing Portfolio Facilities were re-dispatched to avoid a concentration of generation near Southern Terminal, should qualify.
- Ms Laidlaw advised that RCP Support would seek legal advice on whether the Rule Change Panel could, as part of this Rule Change Proposal, extend the definition of a Consequential Outage to cover an outage of any equipment forming part of a registered Network.[30] There was some discussion about whether such a definition could prove

[29] The Amending Rules for RC_2013_15, which commenced on 1 February 2020, introduced a materiality threshold for the reporting of Non-Scheduled Generator outages (in new clause 3.18.1A). See section 7.2.2.1 and Appendix B.3.1.3 of the Final Rule Change Report for RC_2013_15 for further details.

[30] Following the 25 October 2019 workshop the Rule Change Panel obtained legal advice confirming that the ineligibility of a distribution-connected generator for Consequential Outages because the Network equipment connecting it to the SWIS was not included on the Equipment List constituted a manifest error in the WEM Rules that could be addressed as part of this Rule Change Proposal. See section 6.4.1 of this report for further details.

ambiguous; however, Mr Fairclough considered that AEMO would be able to manage any potential ambiguity.

Slide 38: Outage definitions – replacement of clauses 7A.2A.3 and 7A.2A.4:

- Ms Laidlaw asked attendees to consider whether the definition of a Consequential Outage needed to be extended to cover the impacts of late changes to Triggering Outages, or whether new clauses 7A.2A.3 and 7A.2A.4 (updated to account for Triggering Outage notifications where necessary) were adequate. Ms Laidlaw noted that this question would be included in the CFFS.
- Mr Arias suggested that the late cancellation of a Consequential Outage that had been approved ex-ante could cause Net STEM Shortfall problems for a Scheduled Generator. Ms Laidlaw agreed to check whether there was a problem, and if so, how it could be resolved.[31]

Slide 40: Timing requirements for Forced Outages in SMMITS:

- Ms Laidlaw asked attendees for their views on:
    - what deadline (if any) should apply to AEMO changing its decision on a Consequential Outage request; and
    - whether a Market Generator should be able to apply to change a Forced Outage to a Consequential Outage after the 15-day limit, and if so, what process should be used.
- Attendees agreed that AEMO's powers to convert a Consequential Outage to Forced Outage should not be subject to any specific deadline apart from the natural limit imposed by the settlement adjustment cycle.
- Mr Arias noted that a Market Generator may not have all the information it needs to support a Consequential Outage request by the 15-day submission limit. Mr Arias therefore considered that Market Generators should be able to submit Consequential Outage requests after this time, and that no specific deadline should apply (again except for the limit imposed by the settlement adjustment cycle).
- Mr Arias considered that notices of disagreement should not be used in these situations because they could lead to double handling of the relevant information. After some discussion, attendees expressed support for the following process:
    - If a Market Generator cannot obtain the information it needs to support a Consequential Outage request by the 15-day limit, then it reports a Forced Outage.
    - If the Market Generator subsequently obtains the required information, then it may submit a late Consequential Outage request to AEMO.
    - AEMO approves or rejects the Consequential Outage request as soon as practicable.
    - If AEMO rejects the request, or is unable to process the request by the time of the last settlement adjustment, then the Forced Outage remains in effect.

[31] Following the workshop, RCP Support and Mr Arias discussed this question further and agreed that the Scheduled Generator would not be adversely impacted. This is because under clause 4.12.6(b) any approved Consequential Outages that appear in the Scheduling Day outage schedule (i.e. the schedule produced under clause 7.3.4) will reduce the Market Participant's RCOQ, regardless of whether the Consequential Outages are subsequently rejected or cancelled. The reduced RCOQ will prevent the Market Participant from being liable for a Net STEM Shortfall payment.

- If AEMO approves the request, then the Forced Outage is deleted, and the updated outage details are used in the next settlement adjustment.

Slide 41: Timing requirements for Forced Outages in SMMITS – Scheduled Generators and Non-Scheduled Generators:

- Mr Lei and Mr Arias agreed that the current 15-day limit for the provision of final Forced Outage details in SMMITS was reasonable, because meter readings were usually available well before this time.
- Mr Huppatz considered that a 1 Business Day deadline for the initial entry of Forced Outage details in SMMITS would be quite onerous. Mr Huppatz acknowledged the value of providing information to the market about Forced Outages that were still ongoing, but questioned the urgency of updating SMMITS with details of Forced Outages that have already ended, particularly for Non-Scheduled Generators.
- Mrs Papps considered that the requirement would also be quite onerous for the logging of Forced Outages for deviations from Dispatch Instructions. Mrs Papps did not think that Alinta would be able to meet a 1 Business Day deadline for these updates, which were currently submitted periodically in batches.
- In response to a question from Ms Laidlaw, Mr Arias advised that a Market Generator was usually aware that it had failed to comply with its Dispatch Instructions before it saw its meter readings, because it would have received an email about the deviation from AEMO.
- Ms Laidlaw asked what problems a Market Generator might have reporting a larger, incomplete Forced Outage in SMMITS by the proposed deadline. Mrs Papps noted that sometimes it would be difficult on the first day of a Forced Outage to estimate how long the Facility would be unavailable. Ms Laidlaw agreed that it would need to be understood that the end time provided in the initial notification was only a 'best estimate'.
- Mr Lei suggested that in some circumstances a Market Generator might need a unit to cool down before the Market Generator could inspect it and form a reasonable estimate of its return to service time. Mr Huppatz agreed that it can take some time to determine the cause of a generator failure. Ms Laidlaw questioned whether a slightly longer deadline (e.g. 2-3 Business Days from the start of the outage) would make any significant difference to the accuracy of the initial estimates.
- In response to a comment from Mrs Papps, Ms Laidlaw clarified that the proposed requirement to keep a record of the reasons for changes to SMMITS outage records would only apply to changes made after the 15-day limit.
- Mrs Papps expressed interest in a discussion around whether there could be a materiality threshold applied to deviations from Dispatch Instructions. Mr Fairclough suggested that Tolerance Ranges fulfilled this function. Mrs Papps replied that Tolerance Ranges applied to AEMO's reporting obligations rather than a Market Generator's compliance obligations.
- Ms Laidlaw agreed that there were problems with the current rules around Tolerance Ranges and deviations from Dispatch Instructions, and suggested that a Rule Change Proposal be submitted to address the issue. However, Ms Laidlaw noted that this issue was outside the scope of this Rule Change Proposal.
- Mr Arias reiterated the concerns raised by other attendees about the administrative overheads of having to report Forced Outages for deviations from Dispatch Instructions

every day. Ms Laidlaw advised that RCP Support would consider whether there was a way to specify and apply a different reporting deadline to this type of Forced Outage.

Slide 42: Timing requirements for Forced Outages in SMMITS:

- Ms Laidlaw noted that RCP Support would work with AEMO to define the absolute deadline for late changes to an outage record in SMMITS, based on the deadlines for final Non-STEM settlement adjustments.
- Ms Laidlaw noted that the reasons for a late change to a Forced Outage record might include:
    - the replacement of the Forced Outage with a Consequential Outage;
    - late changes to meter readings; and
    - late notification of the need to report a Forced Outage following a compliance investigation.
- Attendees did not suggest any other reasons for late changes to a Forced Outage record.
- Attendees raised no concerns about:
    - the proposed requirement for Market Participants to keep records of the reasons for late changes to SMMITS outage records and to make those records available to AEMO or the ERA on request; or
    - the automated recalculation of Minimum TES to reflect late changes to outage records.
- Attendees did not identify any need to require Rule Participants to report Forced Outages of non-generator Outage Facilities in SMMITS prior to the current 15-day deadline.

Slides 43-47: Timing requirements for Consequential Outages in SMMITS:

- Attendees raised no concerns about the proposals for the management of Consequential Outages set out in slides 45-47.
- Attendees agreed that there was no need to specify a maximum duration for a Consequential Outage in SMMITS because Market Participants would have no problem determining when multiple Consequential Outage requests were needed to comply with the 15-day reporting deadline.
- Ms Laidlaw noted that the reasons for late changes to Consequential Outage records were similar to those for Forced Outages. Attendees did not suggest any additional reasons for late changes to Consequential Outage records.

Slide 48: Transitional requirements:

- Ms Laidlaw noted that the Rule Change Proposal was likely to require some transitional arrangements and RCP Support intended to seek input from AEMO on the transitional provisions that needed to be included in the Amending Rules.

5.5 Call for Further Submissions

On 6 January 2020, the Rule Change Panel published a CFFS on this Rule Change Proposal on the basis that:

- a significant period of time had passed since the IMO consulted on the Rule Change Proposal, during which the WEM Rules had undergone numerous changes; and
- stakeholders should be given an opportunity to provide feedback on some additional issues identified by the Rule Change Panel that affect the Rule Change Proposal before the development of the Draft Rule Change Report.

While the Rule Change Panel sought submissions on all aspects of the Rule Change Proposal, it sought specific feedback on 26 questions. These questions, which are summarised in Appendix C and discussed in greater detail in sections 6.3 and 6.4 of this report, generally reflected the outcomes of the 25 October 2019 MAC workshop.

The CFFS is available on the Rule Change Panel's website.

5.6 Submissions Received during the Further Submission Period

The further submission period was held between 6 January 2020 and 31 January 2020.[32] The Rule Change Panel received further submissions from AEMO, Alinta, Bluewaters (out of session), Perth Energy, Synergy and Western Power.

Bluewaters and Perth Energy were generally supportive of most of the Rule Change Proposal and the additional changes suggested in the CFFS. Alinta was also broadly supportive of the concepts outlined in the CFFS and considered that the proposed amendments represent an improvement over the current outage process, but reserved the right to further comment on several proposed changes once draft Amending Rules were available. Synergy noted that, while it was supportive of some of the proposed changes, it had concerns with the operational implications of others.

Bluewaters, Perth Energy and Synergy each raised concerns about the proposed timeframes for reporting Forced Outages.

Synergy reiterated its earlier objections to the proposed approach for determining outage quantities for Scheduled Generators that fail to comply with instructions. Synergy provided details of an alternative approach that it considered was more efficient and less discriminatory.

Alinta suggested that:

- Non-Scheduled Generators should not be subject to the delays that Scheduled Generators would experience when returning to service after a late change to a Triggering Outage (i.e. due to gate closure restrictions);
- clause 3.21.2A[33] should be amended to ensure that network outages affecting Constrained Access Facilities (that are dispatched using the GIA tool) are appropriately covered by the proposed Triggering Outage process; and

[32] The original deadline of 24 January 2020 was extended by a week in response to requests from Alinta and Synergy.

[33] Clause 3.21.2A states that an outage does not occur in respect of a Constrained Access Facility for the purposes of the WEM Rules where the Constrained Access Facility is dispatched in accordance with a Network Control Service Contract and the WEM Rules. Constrained Access Facilities (commonly referred to as GIA generators) are deemed to be dispatched under a Network Control Service Contract when they are constrained down using the GIA tool.

- Rule Participants should be able to report the reasons for late changes to their Forced and Consequential Outage details in SMMITS, rather than having to maintain separate records and make those records available to AEMO and the ERA on request.

Perth Energy considered that the processes and systems used by AEMO to adjust quantities for Non-Scheduled Generators due to constraints or outages should not distort market outcomes by undermining the economic merit order.

AEMO supported the IMO's assessment of its original proposal but offered only limited comment on the additional changes proposed by the Rule Change Panel, electing not to conduct any assessment against the Wholesale Market Objectives until draft rules were available. AEMO considered that other 'push type' publication methods may be more appropriate than DAs for Triggering Outage notifications, and raised concerns about the deadlines proposed for the issue of some Triggering Outage notifications.

AEMO, Perth Energy and Synergy all noted that delays in progressing the Rule Change Proposal have reduced the period before the start of the new market in October 2022, and recommended that the Rule Change Panel consider the likely payback period for the proposed amendments in its assessment of the Rule Change Proposal.

Western Power limited its response to three questions that were directly related to its Network Operator functions.

Copies of all further submissions received are available on the Rule Change Panel's website.

5.6.1 Feedback from Submitters on the Questions in the Call for Further Submissions

The feedback received from submitters on the explicit questions raised in the CFFS is summarised in Appendix C.

5.6.2 Submitters' Assessment of Proposal against the Wholesale Market Objectives

The assessment by submitting parties as to whether the Rule Change Proposal would better achieve the Wholesale Market Objectives is summarised below:

Table 5.2: Submitters' Assessment against the Wholesale Market Objectives (further submission period)

Submitter	Wholesale Market Objective Assessment
AEMO	No assessment provided.
Alinta	No assessment provided.
Bluewaters	Considered the proposed changes, in any form, will better facilitate all the Wholesale Market Objectives to some extent.
Perth Energy	Perth Energy considers the Rule Change Proposal as proposed to be amended in the CFFS is broadly consistent with the Wholesale Market Objectives, and would better achieve Wholesale Market Objectives (a) and (d), with one possible exception (i.e. if the processes implemented to adjust quantities for Non-Scheduled Generators due to constraints or outages distorts market outcomes by undermining the economic merit order).

Submitter	Wholesale Market Objective Assessment
Synergy	Synergy provided no general assessment, but considered that its recommended changes (including changes to allow Rule Participants to comply with various outage reporting timeframes on a reasonable or best endeavours basis, and to adopt Synergy's proposed approach for determining outage quantities for Scheduled Generators that fail to comply with instructions) would better facilitate the achievement of the Wholesale Market Objectives.
Western Power	No assessment provided.

5.7 The Rule Change Panel's Response to Submissions Received During the Further Submission Period

The Rule Change Panel's response to each of the specific issues raised in the further submission period is presented in Appendix D of this report. A more general discussion of the proposal, which addresses the main issues raised in further submissions and the Rule Change Panel's response to these issues, is available in sections 6.3 and 6.4 of this report.

5.8 Consultation Following the Call for Further Submissions

Following the close of the further submission period, RCP Support:

- met with AEMO on several occasions to:
  - seek clarification of comments made by AEMO in its further submission;
  - seek AEMO's views on several issues raised by other stakeholders in their further submissions;
  - seek clarification of an issue raised in System Management's first period submission;
  - seek clarification on the processes used by AEMO to manage the ramp down and ramp up of Non-Scheduled Generators (including GIA generators) before and after planned network outages;
  - discuss options for Triggering Outage notification mechanisms and deadlines;
  - seek feedback on transitional requirements and the drafting of the proposed Amending Rules;
  - seek clarification of details of AEMO's updated cost and time estimates for the Rule Change Proposal; and
- met with Alinta, Synergy and Western Power to seek clarification on issues raised and suggestions provided in their further submissions.

Further details relating to the matters discussed in these meetings are available in sections 6.3 and 6.4 and Appendix D of this report.

RCP Support also sought advice from the MAC regarding Consequential Outages and the control of Non-Scheduled Generators before and after triggering outages (as discussed in the remainder of this section 5.8).

5.8.1 MAC Consultation following the Further Submission Period

11 February 2020 MAC meeting

Ms Laidlaw sought advice from the MAC on the processes used to decommit a Non-Scheduled Generator before a Triggering Outage and to return the Non-Scheduled Generator to full operation at the end of the triggering outage.

Ms Laidlaw presented the following scenario for discussion:

- a Market Generator is notified that its Non-Scheduled Generator (>10 MW) will be unable to generate from 9:00 AM to 5:00 PM on a Trading Day due to a planned triggering outage; and
- the Triggering Outage takes place as scheduled.

The following points were discussed.

- MAC members confirmed that a Market Generator in this scenario would usually submit zero quantities in its Balancing Submissions for the period between 8:30 AM and 5:00 PM, but would not amend its offer price to cause the Non-Scheduled Generator to be dispatched off in merit.
- Ms Laidlaw noted previous advice from AEMO that it usually issued a Dispatch Instruction to shut the Non-Scheduled Generator down before the start of the Triggering Outage (normally in the preceding Trading Interval but sometimes earlier). Ms Laidlaw suggested that this Dispatch Instruction would be Out of Merit according to the WEM Rules, and no MAC members disagreed with this view.
- Mr Sharafi noted that generally both the Market Generator and AEMO were able to control the shutdown and ramp rate of the Non-Scheduled Generator. AEMO's preference was that the Market Generator shut down the Non-Scheduled Generator itself (i.e. without the issue of Dispatch Instructions). AEMO's current practice was to not calculate estimates or constraint payments for the periods in which the Non-Scheduled Generator was ramping down at the start of the outage or ramping up at the end of the outage.

  Mr Oscar Carlberg (of Alinta) noted that a Market Generator required accurate information about a Triggering Outage to shut down its Non-Scheduled Generator at the appropriate time and make its Balancing Submissions consistent with the Triggering Outage. To date Market Generators had not always had enough information to act in this way.
- In response to a question from Ms Laidlaw, Mr Shane Duryea (of Western Power) confirmed that requiring Market Generators to manage the return of their Non-Scheduled Generators at the end of a Triggering Outage (i.e. without the use of Dispatch Instructions) would not create a safety risk because Western Power had controls in place to prevent the Non-Scheduled Generator from starting up before it was safe to do so.
- There was general agreement that a Non-Scheduled Generator should not receive constrained off compensation for the Trading Interval(s) in which it was shutting down before the start of a Triggering Outage.
- Ms Laidlaw questioned whether the shutdown of a Non-Scheduled Generator before the start of a Triggering Outage could reduce the energy output of the Non-Scheduled Generator in the relevant Trading Interval(s) by enough to warrant estimating the

Non-Scheduled Generator's output for certification. Mr Carlberg considered that if a Non-Scheduled Generator was ramping down because of a network outage then it should receive an estimate, because its level of Certified Reserve Capacity should not be affected by a network outage over which it has no control.

- Mr Tom Frood (representing Market Generators) suggested that it was easier for AEMO to dispatch the Non-Scheduled Generators than for the Market Generators to manage the process, and questioned the reasons for AEMO's preference.

  Mr Sharafi acknowledged that in some situations, some Market Generators may not have the means to turn their Non-Scheduled Generators off.[34] Mr Frood added that not all Non-Scheduled Generators were manned on a 24/7 basis. Mr Duryea considered, and most MAC members agreed, that Market Generators needed to be able to turn off their Facilities.

  Mr Maticka considered there was also an issue about who should have control over a Non-Scheduled Generator. Mr Maticka understood that there was some obligation on the Market Generator to actually manage the Non-Scheduled Generator; otherwise it would be acting only as an investor and leaving the management of the Non-Scheduled Generator to AEMO, which might not produce the most optimal outcomes for the Market Generator.

- Mr Sharafi questioned whether not receiving an estimate for a 10-minute ramp down period would have a material impact on a Non-Scheduled Generator's certification. Mr Carlberg considered that a material risk existed in terms of certification, but reiterated his view that the Non-Scheduled Generator should not receive constrained off compensation. Ms Laidlaw noted previous advice from AEMO that the shutdown period can span multiple Trading Intervals.

- Ms Laidlaw asked whether a Non-Scheduled Generator should receive constrained off compensation and/or an estimate for certification if, at the end of a Triggering Outage, AEMO returned the Non-Scheduled Generator to service using Dispatch Instructions that restricted its ramp rate or target MW to limit the LFAS impact.

  Mr Sharafi replied that, in these situations, AEMO put a constraint on the ramp rate of the Non-Scheduled Generator. This was not expected to last for a long period of time, because eventually the Non-Scheduled Generator would reach the same output level, as if its ramp rate had not been constrained. Mr Sharifi considered that, while the purist view of the WEM Rules may say that the Non-Scheduled Generator was entitled to constrained off compensation, practically it was a very short period of time and the conditions under which the Non-Scheduled Generator was constrained are known because of the Triggering Outage. Mr Sharafi questioned whether applying the purist view of the rule was warranted.

- Ms Laidlaw noted that the current definition of a Consequential Outage did not cover Trading Intervals beyond the end of the Triggering Outage, as there was no network-related reason to restrict the output of a generator in those Trading Intervals. Ms Laidlaw asked whether in general (i.e. not just at the end of a Consequential Outage) a generator should receive a constraint payment if AEMO restricted its output to address a ramp rate issue; and whether the treatment should be different for Scheduled Generators and Non-Scheduled Generators.

[34] In subsequent discussions with RCP Support, AEMO clarified its position and agreed that it would be more practical for AEMO to control the process than Market Generators. See section 6.3.2.5 of this report for further details.

Mr Sharafi noted that the question only applied until the implementation of the new market arrangements. Ms Laidlaw agreed that large scale rule changes may not be warranted before October 2022. Mr Maticka considered that neither Scheduled Generators nor Non-Scheduled Generators should receive constrained off compensation in these situations.

Mr Kurz considered that these situations did not occur very often for the Bluewaters Facilities; and that he did not see any reason why a Non-Scheduled Generator should not receive an estimate in these situations. Mr Gaston did not consider that the cost of the changes required to remove constraint payments in these situations would be warranted, given the short timeframes involved.

The MAC did not offer any reason why Scheduled Generators and Non-Scheduled Generators should be treated differently in terms of constraint payments.

- There was some discussion about the management of Triggering Outages affecting GIA generators, and how the current practice of using the GIA tool and Operating Instructions to constrain a GIA generator during a Triggering Outage meant that the output of the generator was not estimated for the purposes of certification. Mr Carlberg noted that Alinta was keen for estimates to be provided when its GIA generators were subject to a Triggering Outage.[35]

  Ms Laidlaw noted that the relevant network equipment should be on the Equipment List and asked if there was any reason why the Triggering Outage processes proposed as part of this Rule Change Proposal would not work for GIA generators. There was further discussion about why and whether the Triggering Outage process should be different for GIA generators because of their different contractual relationship with Western Power.

  Mr Sharafi and Mr Maticka agreed to take the question on notice. Ms Laidlaw noted that clarity on the issue was urgently needed as it could affect the drafting for this Rule Change Proposal (Action 2/2020).

- Ms Laidlaw sought the views of MAC members on Synergy's suggestion that a Scheduled Generator that suffered a Forced Outage in a Trading Interval should be ineligible for constraint payments in that Trading Interval; and in particular whether they would support the idea if it materially reduced implementation costs for this Rule Change Proposal.

Feedback received from MAC members and observers on questions raised during the 11 February 2020 MAC meeting

RCP Support received feedback from Alinta and Bluewaters on the questions raised during the 11 February 2020 MAC discussion.

In respect of the scenario presented for discussion:

- Both respondents considered that the quantities in the Non-Scheduled Generator's Balancing Submissions should reflect the information provided in the Triggering Outage notification.
- Alinta considered that AEMO should manage the ramp down of the Facility via either Operating Instructions or Dispatch Instructions, consistent with the status quo. Further, the Triggering Outage period (and the Consequential Outage period) should cover the

[35] On 13 May 2020, Alinta submitted Rule Change Proposal: Estimates for GIA facilities (RC_2020_03) to address its concerns about the provision of estimates for GIA generators. The Final Rule Change Report for RC_2020_03 was published on 23 June 2020 and the Amending Rules commenced on 24 June 2020.

ramp down period, and this should prevent the Facility from being considered Out of Merit and receiving constraint payments.

However, Bluewaters considered that the Market Generator should manage the ramp down of the Facility through its Balancing Submission prices, by offering prices that ensured the Facility was dispatched down in accordance with the BMO.

- Alinta considered that the Facility should be ineligible for constraint payments during the ramp down period, but eligible for a Consequential Outage and estimates. Bluewaters considered that the Facility should be ineligible for both a Consequential Outage and constraint payments, but agreed with Alinta that the Facility's output should be estimated. Alinta considered that a retrospective Operating Instruction should be issued only if it was required to prevent constraint payments.
- Alinta considered that the ramp up period should not be included in the Triggering Outage or Consequential Outage periods, and that if AEMO determined that the ramp up of the Facility needed to be controlled to limit the LFAS impact, and issued one or more Dispatch Instructions that limited the energy output of the Facility, the Facility would be dispatched Out of Merit and should receive both estimates and constraint payments.

Alinta considered that a Non-Scheduled Generator should be ineligible for estimates during a Planned Outage or Forced Outage, but receive both estimates and constraint payments if its output is restricted following the outage to avoid an LFAS problem.

Alinta also considered that a Non-Scheduled Generator that experiences a Consequential Outage caused by a network Forced Outage should be eligible for estimates but not constraint payments.

More generally, both Alinta and Bluewaters considered that if AEMO needed to dispatch a Scheduled Generator or Non-Scheduled Generator Out of Merit to prevent an unmanageable ramp rate discrepancy, the Facility should be eligible for constraint payments.

Alinta and Bluewaters also supported Synergy's suggestion that a Scheduled Generator that suffered a Forced Outage in a Trading Interval should be ineligible for constraint payments in that Trading Interval.

Consultation with AEMO on Action Item 2/2020

On 16 March 2020 AEMO provided the following response to RCP Support in relation to Action 2/2020:

> *"AEMO does not consider that the triggering outage process should be different for GIA generators. Rather the Triggering Outage Notification proposed rules may need to consider the treatment of GIA generators under the existing outages rules. For example, in the event that the GIA tool constrains a GIA generator under MR 3.21.2A there is no GIA generator outage and therefore no Triggering Outage event in the context of the Rule Change Proposal RC_2014_03. AEMO is happy to discuss this further with RCP Support during the drafting of the rules concerning RC_2014_03."*

RCP Support subsequently held several discussions with AEMO to better understand how GIA generators are managed during network constraints and the criteria used by AEMO to determine whether a Non-Scheduled Generator is eligible for a Consequential Outage. The Rule Change Panel has taken the matters raised by AEMO in these discussions into account in the development of the proposed Triggering Outage provisions. [36]

[36] See section 6.3.2.2 of this report for further details.

5.9 Public Forums and Workshops

The Rule Change Panel did not hold a public forum or workshop for this Rule Change Proposal.

6. The Rule Change Panel's Draft Assessment

6.1 Assessment Criteria

In preparing its Draft Rule Change Report, the Rule Change Panel must assess the Rule Change Proposal in light of clauses 2.4.2 and 2.4.3 of the WEM Rules.

Clause 2.4.2 of the WEM Rules states that the Rule Change Panel "*must not make Amending Rules unless it is satisfied that the Market Rules, as proposed to be amended or replaced, are consistent with the Wholesale Market Objectives*". Additionally, clause 2.4.3 of the WEM Rules states that, when deciding whether to make Amending Rules, the Rule Change Panel must have regard to:

- any applicable statement of policy principles the Minister has issued to the Rule Change Panel under clause 2.5.2 of the WEM Rules;
- the practicality and cost of implementing the proposal;
- the views expressed in submissions and by the MAC; and
- any technical studies that the Rule Change Panel considers necessary to assist in assessing the Rule Change Proposal.

In making its draft decision, the Rule Change Panel has had regard to each of the matters identified in clauses 2.4.2 and 2.4.3 of the WEM Rules as follows:

- the Rule Change Panel's assessment of the Rule Change Proposal against the Wholesale Market Objectives is available in section 0 of this report;
- the Rule Change Panel notes that there has not been any applicable statement of policy principles from the Minister in respect of this Rule Change Proposal;
- the Rule Change Panel's assessment of the practicality and cost of implementing the Rule Change Proposal is available in section 6.8 of this report;
- a summary of the views expressed in submissions and by the MAC is available in section 5 of this report. The Rule Change Panel's response to these views is available in sections 6.3 and 6.4, Appendix B and Appendix D of this report; and
- the Rule Change Panel does not believe a technical study in respect of this Rule Change Proposal is required and therefore has not commissioned one.

The Rule Change Panel's assessment is presented in the following sections.

6.2 Factors Affecting this Rule Change Proposal

Based on its preliminary assessment of the Rule Change Proposal, the Rule Change Panel concluded that the proposed Amending Rules, if updated to reflect the changes made to the WEM Rules since the submission of the Rule Change Proposal, are still valid to be considered via the rule change process.

However, the Rule Change Panel identified several issues warranting additional consideration.[37] These include:

- concerns that affect the proposed solutions to the original issues raised in the Rule Change Proposal, which are discussed in section 6.3 of this report; and

[37] Most of these issues were discussed with stakeholders at the 17 January 2018 and 25 October 2019 workshops and were included in the CFFS.

- several new but related issues, which are discussed in section 6.4 of this report.

The following factors contributed to the identification of these issues.

- **Consultation on Rule Change Proposal: Outage Planning Phase 2 – Outage Process Refinements (RC_2013_15):** The IMO submitted RC_2013_15 to implement a number of reforms to the WEM outage planning processes to improve their transparency, flexibility, consistency and efficiency. The Final Rule Change Report for RC_2013_15 was published on 26 August 2019 and the Amending Rules commenced on 1 February 2020.

  Consultation on RC_2013_15 raised several issues, such as the impact of late changes to network Planned Outages on Balancing Facilities, that fall within the scope of this Rule Change Proposal and have therefore been considered by the Rule Change Panel in its assessment of the Rule Change Proposal.

- **MAC Market Rules Issues List:** The Issues List includes two issues relating to the reporting of Forced Outages that fall within the scope of this Rule Change Proposal and have therefore been considered by the Rule Change Panel in its assessment of the Rule Change Proposal.[38]

- **ETS:** The Rule Change Panel also considered the work of ETIU as part of the ETS in its assessment of the Rule Change Proposal. ETIU is proposing material changes to the WEM outage and network constraint management processes as part of its Foundation Regulatory Frameworks work stream. The changes, which are proposed to be implemented in October 2022, include the removal of Consequential Outages, the replacement of SMMITS, and various changes that should greatly increase the visibility of network outages to Market Participants.

  While the Foundation Regulatory Frameworks changes do not alter the issues under consideration in this Rule Change Proposal, the reforms shorten the period over which benefits can accrue for solutions that require IT expenditure and are likely to be superseded in 2022. This reduces the net benefit of solutions that require IT expenditure and creates a preference for simple, low-cost interim solutions wherever possible.

6.3 Assessment of the Proposed Changes

This section presents the Rule Change Panel's assessment of the issues raised in the Rule Change Proposal and the amendments that were proposed by the IMO to address those issues.

The section is structured as follows:

- section 6.3.1 discusses several issues that relate to the submission and processing of Consequential Outage requests;
- section 6.3.2 discusses the IMO's proposal to allow a Consequential Outage to be requested or a Forced Outage to be reported before that outage begins;
- section 6.3.3 discusses the issues that relate to outage quantity reporting and the calculation of capacity-adjusted outage quantities;
- section 6.3.4 discusses the issues that relate to the use of outage quantities in the WEM Rules;

[38] See section 6.4.2.2 of this report for further details.

- section 6.3.5 discusses the IMO's proposed clarification of the timeframes for providing outage information to AEMO; and
- section 6.3.6 discusses the additional minor enhancements proposed by the IMO to improve the integrity and clarity of the relevant sections of the WEM Rules.

6.3.1 Amendments to the Consequential Outage Process

This Rule Change Proposal seeks to make several improvements relating to the submission and processing of Consequential Outages. The proposed amendments include:

- removal of the requirement for a Market Participant to provide an authorised notice to seek approval of a Consequential Outage (section 6.3.1.1);
- creation of an explicit requirement for AEMO to make a decision on a Consequential Outage request and notify the relevant Market Participant of the outcome as soon as practicable (section 6.3.1.2); and
- new provisions to allow AEMO to revise an earlier determination on a Consequential Outage request (section 6.3.1.3).

6.3.1.1 Removal of authorised notice requirement for Consequential Outages

During the processing of Rule Change Proposal: Consequential Outages – Relief from Capacity Refund and Unauthorised Deviation Penalties (RC_2010_23),[39] System Management suggested several additional clauses to strengthen governance with respect to the Consequential Outage process and establish increased accountability regarding a Market Participant's Outage submissions to System Management. The additional clauses were incorporated into the Amending Rules for RC_2010_23 and resulted in the following Consequential Outage process:

1. a Market Participant[40] that has experienced a Consequential Outage is required to log a Forced Outage in the first instance;
2. within 15 calendar days following the Trading Day on which the Consequential Outage commenced, if the relevant Market Participant wishes to have its Forced Outage converted to a Consequential Outage it must provide an authorised notice declaring that a Consequential Outage has occurred and providing relevant details (to the best of its knowledge) of the events that resulted in the Consequential Outage;
3. System Management must accept the information provided by the Market Participant unless it is aware of information to the contrary, and convert the Forced Outage to a Consequential Outage; and
4. System Management must retain the authorised notices that it receives.[41]

In 2014, the IMO conducted a review of the authorised notices received for Consequential Outages, and consulted with System Management to identify whether a more efficient Consequential Outage process was possible. During this consultation, it was identified that, where a Market Participant provides the information required in an outage notification

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39 Alinta submitted RC_2010_23 to prevent the situation where a Market Participant who had experienced a Consequential Outage would be liable for Capacity Cost Refunds and unauthorised deviation penalties. The Amending Rules for RC_2010_23 commenced on 1 May 2011. Full details are available on the Rule Change Panel's website at: https://www.erawa.com.au/rule-change-panel/market-rule-changes/rule-change-rc_2010_23.

40 The additional obligations suggested by System Management and implemented by the IMO applied only to Market Participants, even though it is technically possible (albeit very rare) for an item of Network equipment to suffer a Consequential Outage.

41 Prior to the transfer of system management functions to AEMO, System Management was also required to provide copies of the authorised notices to AEMO on request and at least once every six months.

specified in clause 3.21.4, System Management was able to determine whether, and to what extent, a Consequential Outage has occurred without requiring an authorised notice from the affected Market Participant.

The IMO therefore proposed to remove the requirement for Market Participants to provide an authorised notice to System Management to request approval of a Consequential Outage. The intent was that Market Participants would be allowed to request Consequential Outages directly through SMMITS, rather than initially logging a Forced Outage that System Management later converted to a Consequential Outage.

The IMO proposed to amend clause 3.21.2, delete clauses 3.21.8, 3.21.10 and 3.21.11, and introduce proposed clauses[42] 3.21.2B and 3.21.2C,[43] to enable the following streamlined Consequential Outage process:

1. a Market Participant or Network Operator[44] requests a Consequential Outage directly through SMMITS; and
2. System Management approves or rejects the Consequential Outage in SMMITS on the basis of the information it has available to it.

Stakeholders supported the removal of the authorised notice requirement in first period submissions and in feedback provided to RCP Support after the 13 September 2017 MAC meeting.

The Rule Change Panel supports the proposed streamlined process, as it considers the authorised notice requirement places an unnecessary and inefficient administrative burden on both Rule Participants and AEMO. As such, the Rule Change Panel supports the proposed deletion of clauses 3.21.8, 3.21.10 and 3.21.11, which set out the authorised notice obligations. However, as discussed in sections 6.3.2.1 and 6.3.2.3 of this report, the Rule Change Panel proposes several additional changes to the proposed Amending Rules to more clearly distinguish between the initial 'real time' notification of a Forced or Consequential Outage, and the subsequent processing of the outage in SMMITS. These changes include:

- removing the proposed references to the request submission process from the definition of a Consequential Outage in proposed clause 3.21.2;
- introducing new clauses 3.21.10 – 3.21.14 to specifically deal with the formal submission of Consequential Outage requests; and
- moving the requirement for AEMO to approve or reject a Consequential Outage request from proposed clause 3.21.2B to new clause 3.21.15(a), and linking this requirement to the formally submitted request rather than the initial notification of an outage to AEMO.

New clause 3.21.13 deems a valid Consequential Outage request submitted by a Rule Participant to constitute a declaration by an Authorised Officer of the Rule Participant that the Consequential Outage has occurred. The Rule Change Panel proposes to include this clause to address any concerns that removing the requirement for a notice signed by an Authorised Officer might increase the submission of spurious Consequential Outage requests.

The Rule Change Panel notes that AEMO, while supporting removal of the authorised notice requirement, has questioned whether the cost of changing SMMITS to support direct entry of

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42 In this report, 'proposed clause' means the clause as proposed by the IMO in the Rule Change Proposal.

43 Proposed clauses 3.21.2B and 3.21.2C were labelled 3.21.2A and 3.21.2B in the original Rule Change Proposal, but have been renumbered to avoid confusion with existing clause 3.21.2A, which was added to the WEM Rules by the Minister after the submission of the Rule Change Proposal. See Appendix A of this report for further details.

44 The streamlined process was extended to allow for Consequential Outages of Network Outage Facilities.

Consequential Outage requests is warranted, given the expected removal of Consequential Outages from the WEM Rules in October 2022. AEMO has suggested the following alternative process to reduce implementation costs:

1. a Rule Participant submits a Forced Outage record in SMMITS and notifies AEMO by email that the record is in fact a request for a Consequential Outage;
2. AEMO approves or rejects the Consequential Outage request on the basis of the information it has available to it; and
3. if AEMO approves the Consequential Outage request it converts the Forced Outage record to a Consequential Outage record in SMMITS.

During a discussion of AEMO's alternative process at the 25 October 2019 MAC workshop, attendees agreed that, while they would prefer to submit a Consequential Outage request directly into SMMITS than to submit a Forced Outage followed by an email to AEMO, the direct entry option should not be implemented if it has a materially higher implementation cost.

The Rule Change Panel considers that the submission mechanism is an implementation choice that AEMO should make in consultation with Rule Participants, based on whether the administrative efficiency benefits of direct entry warrant the implementation cost. The WEM Rule requirements for the Rule Participant to submit a request, and for AEMO to approve or reject that request, are unaffected by the technical implementation details.

However, the Rule Change Panel notes that it will be more efficient for both AEMO and Rule Participants if a rejected Consequential Outage request can be 'converted' to a Forced Outage record, if as expected, AEMO decides to implement its alternative process. Attendees at the 17 January 2018 and 25 October 2019 workshops generally supported the automatic conversion of rejected Consequential Outage requests. The Rule Change Panel therefore also proposes to include new clause 3.21.16(b) to allow AEMO to deem a Consequential Outage request it has rejected to be a report of a Forced Outage.

The Rule Change Panel also agrees that Network Operators as well as Market Participants should be eligible for a Consequential Outage, and has drafted its additional changes to the proposed Amending Rules accordingly.

6.3.1.2 Obligations to process Consequential Outage requests and notify Rule Participants of decisions

Proposed clause 3.21.2B requires AEMO to determine whether an outage notified under proposed clause 3.21.4 (for an outage that has commenced) or proposed clause 3.21.4A (for an outage that is yet to commence) is a Consequential Outage, and to inform the relevant Rule Participant of its determination, as soon as reasonably practicable after being notified of the outage.

The Rule Change Panel agrees that AEMO should be subject to an explicit obligation to approve or reject a Consequential Outage request and notify the Rule Participant of its decision. However, as noted in section 6.3.1.1 of this report, the Rule Change Panel proposes to move this obligation to new clause 3.21.15(a) and associate it with the formal Consequential Outage request rather than any initial notification to AEMO under clause 3.21.4. The Rule Change Panel has also amended the proposed wording to:

- require AEMO to 'approve' or 'reject' the Consequential Outage request;
- require AEMO to approve or reject updated requests; and

- remove the unnecessary word “reasonably” from the expression “as soon as reasonably practicable”.

AEMO has raised no concerns about the additional changes proposed by the Rule Change Panel to this obligation.

During the discussion of the Rule Change Proposal at the 13 September 2017 MAC meeting, Mr Peake (Market Customers) and Mr Sharafi (System Management) agreed that AEMO should provide a Rule Participant with the reasons for any rejection of a Consequential Outage request. The Rule Change Panel agrees that an obligation to provide reasons for rejections would improve the integrity and transparency of the assessment process, and proposes to include new clause 3.21.16(a) in the proposed Amending Rules to place this obligation on AEMO.

6.3.1.3 Ability to revise decisions on Consequential Outage requests

Proposed clause 3.21.2C allows AEMO to revise an earlier Consequential Outage determination if the earlier determination was based on incorrect or superseded information, subject to an exception to account for the effects of late changes to Triggering Outages.[45]

The Rule Change Panel agrees that allowing AEMO to revise its decisions on Consequential Outages would allow AEMO to process Consequential Outage requests in a timely manner while preventing a perverse outcome if AEMO subsequently determines that an outage did not satisfy the criteria for a Consequential Outage.[46]

Rule Participants raised no concerns about the proposed change in either submissions or MAC discussions on the Rule Change Proposal.

The Rule Change Panel has retained the proposed option but proposes to relocate it to the list of AEMO’s obligations and powers in relation to assessing Consequential Outage requests in new clause 3.21.15 (i.e. to new clause 3.21.15(d)).

6.3.2 Logging of a Forced or Consequential Outage in Advance

The WEM Rules do not allow a Rule Participant to log a Forced Outage or Consequential Outage before the start of that outage. This Rule Change Proposal proposes to enable, but not require, a Rule Participant to:

- notify AEMO in advance if it considers its Outage Facility is likely to suffer a Forced Outage; and
- request a Consequential Outage as soon as it receives notification of an outage that will de-rate its Outage Facility.

The proposed amendments also allow, but do not require, AEMO to approve a Consequential Outage request in advance.

The Rule Change Proposal also includes related changes to:

- amend the notification requirements for a Rule Participant that is subject to a Forced Outage or Consequential Outage to include any other information AEMO requests to enable it to verify the details of the outage;

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[45] Specifically, the exception relates to where the determination applies to an outage that is deemed to be a Consequential Outage (under the proposed amendments to clause 3.21.2(c)) on the basis of the relevant Rule Participant’s reasonable expectation, 30 minutes before Balancing Gate Closure, that the outage would occur. See section 6.3.2.1 of this report for further details of the Rule Change Panel’s assessment of proposed clause 3.21.2(c).

[46] Although the value of the proposed change is limited by the inability to modify capacity-adjusted outage quantities that are recorded under clause 7.13.1A(b) after the 15 Business Day deadline. See section 6.4.3 of this report for further details.

- amend clause 4.25.3A to ensure that a Facility is exempted from a Reserve Capacity Test in a Trading Interval if the Market Participant has notified AEMO of a likely Forced Outage or Consequential Outage occurring in that Trading Interval; and
- amend clause 7.10.2(c)(i) to ensure that a Market Participant who has notified AEMO of a likely Forced Outage or Consequential Outage is not required to comply with the most recently issued Dispatch Instruction, Operating Instruction or Dispatch Order under clause 7.10.1.

The IMO considered that the ability for Market Participants to log Forced Outages and Consequential Outages in advance would improve the transparency of Facility availability and thereby improve the price signals to other Market Participants. The Rule Change Panel supports the IMO's intent but has several concerns about the effectiveness of the proposed arrangements.

The remainder of this section 6.3.2 discusses the Rule Change Panel's assessment of the proposed changes to support ex-ante Forced Outages and Consequential Outages, and the additional changes it has made to the proposed Amending Rules to address the concerns it has identified. The section is structured as follows:

- section 6.3.2.1 discusses concerns that the proposed arrangements for ex-ante Consequential Outages may not deliver the intended market benefits, and proposes an alternative mechanism to improve transparency around Triggering Outages;
- section 6.3.2.2 discusses the concept of Effective Capacity and whether a Facility that is prevented from generating by network or security constraints that are caused by a network outage has suffered an outage;
- section 6.3.2.3 discusses the proposed changes relating to the information provided to AEMO in outage notifications;
- section 6.3.2.4 considers the implications of late changes to Triggering Outages on Market Generators' Balancing Market obligations;
- section 6.3.2.5 considers how the dispatch of Non-Scheduled Generators affected by Triggering Outages should be managed to ensure efficient market outcomes;
- section 6.3.2.6 considers the obligations that should apply in respect of ex-ante Forced Outages;
- section 6.3.2.7 discusses what additional changes are needed to account for situations in which a Triggering Outage can affect the availability of a Scheduled Generator or Non-Scheduled Generator in Trading Intervals outside the period of a Foreseeable Constraint; and
- section 6.3.2.8 discusses the proposed amendments to clause 4.25.3A and the impacts of Forced Outages and Consequential Outages on Reserve Capacity Tests.

6.3.2.1 Certainty and transparency of Network Outages

This Rule Change Proposal includes several changes to allow a Consequential Outage to be requested and approved before the outage starts:

- proposed clause 3.21.4A allows a Rule Participant to notify AEMO if, in the Rule Participant's opinion, its Outage Facility is likely to be de-rated as a result of a Forced Outage or Consequential Outage (subject to AEMO's determination);

- proposed clause 3.21.2(b) extends the definition of a Consequential Outage to include an outage that AEMO has determined is a Consequential Outage at least 30 minutes before Balancing Gate Closure (for each relevant Trading Interval);
- proposed clause 3.21.2(c) extends the definition of a Consequential Outage to include an outage that AEMO determines the Rule Participant reasonably expected to occur and to be a Consequential Outage 30 minutes before Balancing Gate Closure (for each relevant Trading Interval);
- proposed clause 3.21.2A requires AEMO to determine whether an outage notified under clause 3.21.4A is a Consequential Outage, and to inform the Rule Participant of its determination, as soon as reasonably practicable after being notified of the outage – this may be before, during or after the outage occurs or was reasonably expected to occur; and
- proposed clause 3.21.2B allows AEMO to change a determination made under clause 3.21.2A (except for a determination made under clause 3.21.2(c)) if it considers that the original determination was based on incorrect information, or has been superseded by new or updated information.

The Rule Change Panel has the following concerns with the proposed changes to support ex-ante Consequential Outage requests:

- The Rule Change Panel notes that the proposed arrangements:
    - do not require AEMO to approve a Consequential Outage request or undertake any assessment of the Triggering Outage until after the outage has occurred;[47] and
    - do not include processes to manage the effects of late changes to Triggering Outages.

  A Market Generator who submits an ex-ante Consequential Outage request and makes its capacity unavailable in the Balancing Market could be exposed to a Forced Outage if AEMO assesses and rejects the request after the event because it is inconsistent with the final details of the Triggering Outage. This creates a risk for Market Generators that may outweigh the benefits of ex-ante submission.

  While proposed clause 3.21.2(c) seeks to mitigate the risk, its effectiveness is limited by AEMO's uncertainty about what a Market Generator knew and/or reasonably expected about a Triggering Outage at a point in time.
- The proposed arrangements provide only limited transparency benefits to other Market Participants, because:
    - Market Participants would only have visibility of an upcoming Consequential Outage if the affected Market Generator submitted an ex-ante Consequential Outage request (which is not mandatory); and
    - even where an ex-ante Consequential Outage request was submitted, no robust process would exist to notify Market Participants about the effects of late changes to that Triggering Outage (e.g. the early return of the Facility to the Balancing Market).

The Rule Change Panel assessed whether making additional changes to require early approval of ex-ante Consequential Outage requests would provide greater certainty for Market Generators about their Consequential Outages. However, the Rule Change Panel

[47] During a discussion of this Rule Change Proposal at the 13 September 2017 MAC meeting, Mr Dean Sharafi advised that AEMO did not intend to assess or approve any Consequential Outages until after the event, because the timing and impact of the triggering outage is uncertain until it happens.

concluded that the need to resubmit and reapprove requests in response to changes to Triggering Outages would increase administrative burden and likely require costly IT changes that are likely to be superseded in 2022 by the ETS reforms. Further, such changes would not necessarily improve the transparency of Triggering Outages for other Market Participants.

Alternative approach - Triggering Outage Notices and Foreseeable Constraints

AEMO has advised RCP Support that it expects to process no more than 70 'planned' Triggering Outages per year.[48]

Given this low volume of Triggering Outages and the expected ETS reforms, the Rule Change Panel proposes a simple, low-cost option to address the identified issues. The proposed mechanism requires AEMO to issue notifications to Market Participants and Network Operators (**Triggering Outage Notices**) that provide explicit details about the expected reduction in Effective Capacity[49] of a Scheduled Generator or Non-Scheduled Generator for a period due to a Triggering Outage (**Foreseeable Constraint**).[50] The purpose of Triggering Outage Notices is to provide greater certainty to Market Generators affected by a Foreseeable Constraint and improve transparency about the effects of Triggering Outages for all Rule Participants.

The proposed Triggering Outage Notice mechanism comprises the following elements:

- New clauses 3.20A.2 and 3.20A.3 require AEMO to issue a Triggering Outage Notice in respect of a Planned Outage that is a Triggering Outage as soon as practicable[51] after:
    - the acceptance, approval or rejection of a Triggering Outage request; and
    - the withdrawal of a Triggering Outage request or a notification of changes to the Triggering Outage that affect the associated Foreseeable Constraints.
- New clause 3.20A.1 requires a Triggering Outage Notice to include enough detail to provide an adequate audit trail and to allow Market Generators to form their Balancing Submissions and manage their Consequential Outage requests (where necessary). The required information includes:
    - a unique reference identifier for the Triggering Outage (likely to be the SMMITS reference id);
    - the date and time the notice is issued;
    - a description of the event that prompted the issue of the notice (e.g. approval of a Scheduled Outage), and the date and time that the event occurred; and
    - for each Foreseeable Constraint caused by the Triggering Outage: [52]
        - the Facility affected by the Foreseeable Constraint;

[48] Triggering outages can also be caused by Forced Outages of network equipment. However, for the reasons discussed in section 6.3.2.6 of this report, the Rule Change Panel has decided to limit the Triggering Outage Notice mechanism to triggering outages caused by Planned Outages of network equipment.

[49] The concept of Effective Capacity is discussed in section 6.3.2.2 of this report.

[50] Note that the CFFS referred to Triggering Outage Notices as Triggering Outage Notifications.

[51] AEMO has advised RCP Support that it expects to issue a Triggering Outage Notice within 60 minutes of any event whose timing it controls, barring rare exceptions that would usually be related to IT failures.

[52] A triggering outage may be the cause of multiple Foreseeable Constraints, e.g. the triggering outage may affect more than one generator or require a reduction in the Effective Capacity of a generator only at certain times during the outage period. For convenience a single Triggering Outage Notice can be used for all those Foreseeable Constraints.

- the date and time that the Foreseeable Constraint is expected to start and end; and
- the maximum MW level of sent out generation for the affected Facility during the period of the Foreseeable Constraint (e.g. 0 MW if the Facility will be disconnected from the network during the period).

- Market Generators will be required to reflect the information provided in Triggering Outage Notices in their Balancing Submissions. To achieve this outcome, the Rule Change Panel proposes to:
  - extend the definition of an External Constraint to include a Foreseeable Constraint;
  - amend clause 7A.2.4B (which deals with the contents of Balancing Submissions for Non-Scheduled Generators) to allow a Market Generator whose Non-Scheduled Generator is subject to a Foreseeable Constraint to specify appropriate estimates of its End of Interval (**EOI**) quantities in Balancing Submissions for:
    - the Trading Interval(s) immediately preceding the Foreseeable Constraint; and
    - the period of the Foreseeable Constraint;[53]
  - amend clause 7A.2.8A (which identifies capacity that should be declared as unavailable in Balancing Submissions) to:
    - limit the application of the clause to Balancing Facilities that are Scheduled Generators; and
    - require a Market Generator to use its best endeavours to ensure that any of its Scheduled Generator's capacity that is reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint is declared as unavailable in Balancing Submissions for the affected Trading Intervals; [54]
  - include new clause 7A.2.8B, which specifies the equivalent obligations for Non-Scheduled Generators to those specified in clause 7A.2.8A for Scheduled Generators (i.e. a Market Generator whose Non-Scheduled Generator is subject to a Foreseeable Constraint does not declare the capacity 'unavailable' in its Balancing Submissions but is required to reflect the expected capacity reduction in its estimated EOI quantities);
  - amend clause 7A.2.9A to specify equivalent obligations for the Balancing Portfolio to those specified for other Balancing Facilities in clauses 7A.2.8A and 7A.2.8B; and
  - amend clauses 7A.2A.1 and 7A.2A.2 to allow Scheduled Generator capacity that is reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint to be declared as unavailable in a Balancing Submission.
- New clause 3.21.12(f) requires a Market Generator, when submitting a Consequential Outage request for an outage caused by a Foreseeable Constraint, to include the unique reference identifier for the Foreseeable Constraint.
- New clause 3.21.15(b) requires System Management to approve a Consequential Outage request that is attributed to a Foreseeable Constraint if the request is consistent

[53] Without this amendment the Market Generator would be required to assume that the Non-Scheduled Generator would not be subject to a Dispatch Instruction limiting its output, when in reality that should be the Market Generator's expectation. See section 6.3.2.5 of this report for further details on the proposed dispatch of Non-Scheduled Generators affected by Foreseeable Constraints.

[54] Note that this may include Trading Intervals outside the period of the Foreseeable Constraint, as discussed in section 6.3.2.7 of this report.

with the latest information issued by System Management for the Foreseeable Constraint in a Triggering Outage Notice.

- AEMO will be required to publish any Triggering Outage Notices issued in the previous 12 months on the WEM Website[55] (under revised clause 10.5.1(k)).

The Rule Change Panel considers that Triggering Outage Notices provide most of the transparency benefits that the Rule Change Proposal sought to provide through ex-ante Consequential Outage requests. Stakeholders generally supported the introduction of a Triggering Outage Notice mechanism at the 25 October 2019 workshop, and raised no concerns about:

- the proposed Triggering Outage Notice content and timing requirements; or
- a requirement for Market Generators to take the information in Triggering Outage Notices into account in their Balancing Submissions as far as possible.

Stakeholders also raised no concerns about the proposed concepts in further submissions, with Alinta, Bluewaters and Perth Energy providing explicit support for the Triggering Outage Notice concept.

Operational and formal reporting obligations for Forced Outages and Consequential Outages

The use of Triggering Outage Notices has an impact on the notification requirements for Consequential Outages. The Rule Change Panel notes that, in practice, there are usually two distinct notification requirements for Forced Outages or Consequential Outages:

- the initial, operational requirement to notify AEMO about an outage 'as soon as practicable', using mechanisms specified by AEMO but likely to involve phone calls to the control room; and
- the requirement to formally report a Forced Outage or request a Consequential Outage in AEMO's outage management system (currently SMMITS).

While the two notifications can overlap, they serve different purposes, usually have different timeframes, and, for Consequential Outages, have different information requirements. To avoid confusion, the Rule Change Panel proposes some additional changes to more clearly distinguish between the 'operational' and 'reporting' obligations. These include:

- restricting clause 3.21.7 to Forced Outages and moving the provisions relating to submission of Consequential Outage requests to new clauses 3.21.10 (for outages that have started) and 3.21.11 (for ex-ante requests); and
- changes to proposed clause 3.21.7 to clarify that the requirement is to provide "full and final details" of the Forced Outage in AEMO's outage management system.

The operational requirement to notify AEMO "as soon as practicable" remains in clause 3.21.4, but is amended to explicitly require the notification to be provided in the manner prescribed in the relevant WEM Procedure. The Rule Change Panel notes that the WEM Procedure may prescribe different notification methods for different types of outages or Outage Facilities, depending on AEMO's operational needs.

The Rule Change Panel also proposes to include new clause 3.21.4B, which requires a Rule Participant to inform AEMO of any material change to an operational notification provided

[55] ETIU has advised that the Minister's proposed administrative amendments to the WEM Rules include replacing the term 'Market Web Site' with 'WEM Website'. The Rule Change Panel has used the new terminology in this report to maintain consistency with the expected amendments.

under clause 3.21.4 as soon as practicable after becoming aware of the change, again in the manner prescribed in the relevant WEM Procedure.

The Rule Change Panel notes that a Market Generator should not need to provide an 'operational' notification to AEMO for a Consequential Outage caused by a Foreseeable Constraint, because AEMO is already aware of the outage. It is also extremely unlikely that a Rule Participant will have advance notice of any other Consequential Outage unless that notice is provided by either AEMO or the Network Operator (who would also be required to notify AEMO). The Rule Change Panel therefore considers that there is no need for provisions to require ex-ante operational notifications for Consequential Outages.

A Market Generator may gain some benefit from the submission of an ex-ante Consequential Outage request if AEMO approves the request early enough for the Outage to reduce the Market Generator's RCOQ and STEM obligations (i.e. before the relevant Scheduling Day). The Rule Change Panel considers that AEMO may be willing to approve a Consequential Outage in this timeframe if it is associated with a Foreseeable Constraint, because the basis for approval is straightforward and requires no discretion.[56]

However, based on advice from AEMO, the Rule Change Panel considers it extremely unlikely that AEMO would, or in many cases should, approve a Consequential Outage request that is not associated with a Foreseeable Constraint before it begins, due to the inherent uncertainty of such outages and the associated risks of perverse outcomes[57] and unnecessary administrative overheads. For this reason, the Rule Change Panel proposes that a Rule Participant should only be permitted to submit an ex-ante Consequential Outage request if the outage is related to a Foreseeable Constraint.

The Rule Change Panel therefore proposes the following additional changes to the proposed Amending Rules:

- remove proposed clause 3.21.4A (which allows a Rule Participant to notify AEMO ex-ante of a likely Forced Outage or Consequential Outage) and move the operational obligation relating to upcoming Forced Outages to new clause 3.21.4(c);[58]
- replace proposed clauses 3.21.2(b) and 3.21.2(c) with new clauses 3.21.2(c) (to allow an outage that was caused by a Foreseeable Constraint to be deemed a Consequential Outage) and 3.21.2(d) (to allow an outage that will be caused by a Foreseeable Constraint to be deemed a Consequential Outage);
- restrict the ex-ante submission of Consequential Outage requests in AEMO's outage management system to outages associated with Foreseeable Constraints in new clause 3.21.11; and
- include new clause 3.21.14 to require a Rule Participant to update or withdraw its Consequential Outage request if it becomes aware that the information provided in the request is inaccurate or inconsistent with the latest information provided by AEMO for a relevant Foreseeable Constraint in a Triggering Outage Notice.

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56 However, it is also possible that AEMO will elect to wait until after the relevant Trading Day(s) to avoid any administrative overheads caused by late changes to the triggering outage.

57 For example, the unwarranted reduction of the RCOQ of a Market Participant due to a Consequential Outage that is approved before the Scheduling Day but withdrawn after the production of the ex-ante capacity-adjusted outage schedule for the Trading Day under clause 7.3.4.

58 See section 6.3.2.6 of this report for further discussion of ex-ante reporting of Forced Outages.

The Rule Change Panel notes that:

- AEMO will still be required to approve or reject a Consequential Outage request as soon as practicable, which could be before, during or after the outage; and
- if a Market Generator fails to update an approved Consequential Outage request to reflect a Foreseeable Constraint change under new clause 3.21.14, then AEMO will have the option to revise its decision under new clause 3.12.15(d).

Stakeholders raised no concerns about the proposed arrangements for submission and approval of ex-ante Consequential Outage requests at the 25 October 2019 workshop or in further submissions.

Options for implementation of Triggering Outage Notices

The proposed Triggering Outage Notice mechanism requires AEMO to identify planned Triggering Outages and issue Triggering Outage Notices for the to Rule Participants in a timely manner in response to a range of specified events.

The required notification mechanism is similar to the existing DA mechanism in that DAs are also emailed to a list of subscribers[59] and published on the WEM Website. During the 25 October 2019 MAC workshop, attendees discussed three options for the notification mechanism:

- implement a new mechanism, similar to the DA mechanism;
- use the current DA mechanism; and
- AEMO's recommended option, which involved:
    - for changes occurring less than seven days before the start of the Triggering Outage, using the existing DA mechanism; and
    - for changes occurring seven or more days before the start of the Triggering Outage, communicating details using "a revised PASA report or similar".

Based on the feedback provided at the workshop, the Rule Change Panel proposed to implement option 2 in the CFFS. The Rule Change Panel acknowledged that a bespoke mechanism for Triggering Outage Notices might provide additional benefits (e.g. the ability to maintain a distribution list for Triggering Outage Notices, or to provide summary reports on current and upcoming Foreseeable Constraints), but did not consider that the benefits of a bespoke mechanism would justify the additional cost for what is expected to be a short-term interim solution.

In its further submission, AEMO acknowledged that the preferred solution in the CFFS required a push-type notification issued through DAs, but after further consideration advised that it was of the view that there are other alternatives for issuing Triggering Outage Notices. AEMO noted that DAs usually pertain to real-time events, whereas the CFFS proposal would require Triggering Outage Notices to be issued well in advance of the event.

AEMO considered that other push-type publication methods may be more appropriate, and it was not necessary to prescribe the form of delivery of Triggering Outage Notices in the WEM Rules. AEMO noted that it was cognisant that the Rule Change Panel was considering simple and low-cost options.

[59] In practice any party, not just a Rule Participant, can subscribe to receive Dispatch Advisories.

In other further submissions:

- Perth Energy supported the proposed mechanism;
- Alinta noted that the definition of DA would need to be expanded if DAs were to be used for Triggering Outage Notices; and
- Bluewaters supported the principle of Triggering Outage Notices but raised concerns about the level of detail historically provided in DAs. [60]

In recognition of the concerns raised by AEMO and Alinta, the Rule Change Panel proposes to define Triggering Outage Notices as a distinct concept in the WEM Rules, rather than as a type of DA. However, to ensure that AEMO is able to use the existing DA mechanism to issue Triggering Outage Notices if this is the most cost-effective option, the Rule Change Panel also proposes to include new clause 3.20A.5 to allow, but not require, AEMO to:

- issue Triggering Outage Notices using the processes it uses to issue DAs; and
- meet its obligations to publish Triggering Outage Notices on the WEM Website using the processes it uses to publish DAs.

Since the further submission period, AEMO has advised RCP Support that it proposes to implement a more automated solution than was contemplated at the time of the 25 October 2019 workshop, which would not use any of the existing DA functionality. When queried on the rationale for implementing a more automated solution instead of using the existing DA mechanisms, AEMO advised that:

> "the approach proposed by the Rule Change Panel is not one that will ensure that AEMO will comply. Regardless of the system used, an automated notification will require changes and costs. Automations for the new DA User Interface are not yet in house. At that time, AEMO may be able to re-examine the best system. At this point in time, the approach is considered least-cost."

6.3.2.2 Effective Capacity and Triggering Outages that cause network or security constraints

During consultation on this Rule Change Proposal, stakeholders have on several occasions questioned under what circumstances a reduction of generator output caused by a network outage should qualify as a Consequential Outage. The specific scenario of concern is where a network outage leads to a constraint on a transmission line that requires the curtailment of one or more generators connected to that line, but where the generator(s) remain physically capable of generating under the constraint (**indirect constraint scenario**).[61] Stakeholders have advised RCP Support that AEMO no longer considers that generators experience an outage in an indirect constraint scenario.

Alinta and AEMO have also noted that when the GIA tool is used to constrain the output of a GIA generator because of a network outage, under clause 3.21.2A the generator is deemed not to have experienced an outage. In its further submission, Alinta suggested that clause 3.21.2A should be amended to ensure that network outages affecting GIA generators are appropriately covered by the proposed Triggering Outage Notice mechanism.

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[60] As discussed earlier in this section, the Rule Change Panel has specified the required contents of a Triggering Outage Notice in detail in the proposed Amending Rules, to ensure that Market Participants are provided with sufficient detail about the relevant Foreseeable Constraints.

[61] In contrast, there appears to be general agreement that a generator experiences an outage in scenarios where a network outage physically prevents the generator from sending out energy (e.g. where the generator is physically disconnected from the SWIS).

The Rule Change Panel considers that the question of whether generators experience a Consequential Outage in an indirect constraint scenario is a broader issue that is outside the scope of this Rule Change Proposal. However, the Rule Change Panel notes that where a planned network outage requires the output of a generator to be limited to a specific level for a specific period of time, the required outcomes in respect of market transparency, constrained off compensation and the provision of estimates for use in certification are the same as in a scenario where the generator was physically disconnected from the SWIS. [62] For this reason, the Rule Change Panel proposes to specify the requirements for Triggering Outage Notices in a way that does not depend on the occurrence of a Consequential Outage.

To this end, the Rule Change Panel proposes to include a new defined term "Effective Capacity" in the proposed Amending Rules. The Effective Capacity of a Scheduled Generator or Non-Scheduled Generator in a Trading Interval is that part of the maximum sent out capacity of the Facility that is not:

1. physically prevented from being used by AEMO to provide sent out generation because of an outage of an item of equipment that is part of a Network; or
2. prevented from being used by AEMO to provide sent out generation by network or security constraints that are the result of an outage of an item of equipment that is part of a Network (to cover indirect constraint scenarios).

The Rule Change Panel proposes to define the term Triggering Outage as:

> an outage of Network equipment that AEMO considers will (if it proceeds) reduce the Effective Capacity of a Scheduled Generator or Non-Scheduled Generator to a specific quantity for a specific period.

This definition means that the network outage does not need to cause a Consequential Outage to qualify as a Triggering Outage.

The Rule Change Panel proposes to define the term Foreseeable Constraint as:

> an expected reduction in the Effective Capacity of a Scheduled Generator or Non-Scheduled Generator to a specific MW level for a specific period because of a Triggering Outage, that is specified in a Triggering Outage Notice.

There is no requirement for a Foreseeable Constraint to cause a Consequential Outage.

The Rule Change Panel also notes that the proposed dispatch arrangements for Non-Scheduled Generators affected by Foreseeable Constraints, which are discussed in section 6.3.2.5 of this report, require AEMO to use Dispatch Instructions to apply a Foreseeable Constraint to a GIA generator, avoiding the problems identified by AEMO and Alinta regarding the operation of clause 3.21.2A.

6.3.2.3 Information requirements for Forced Outages and Consequential Outages

This Rule Change Proposal proposes to:

- move the list of information to be provided to AEMO for a Forced Outage or Consequential Outage from clause 3.21.4 to proposed clause 3.21.4B; and

[62] See section 6.3.2.5 of this report for further details of these outcomes.

- update the information list to:
    - modify the wording of the start and end time requirements to reflect that a notification can occur before an outage starts or after it ends; and
    - add a new requirement in proposed clause 3.21.4B(f) for "any other information necessary for verifying the details of the outage requested by System Management".

RCP Support discussed the proposed information requirements with AEMO, who advised that the requirement specified in proposed clause 3.21.4B(f) is only relevant to the formal submission of Consequential Outage requests. Additionally, AEMO confirmed that it does not require any 'other information' to verify Consequential Outage requests on a routine basis, although occasionally it might wish to seek additional, non-standard information from a Rule Participant to allow it to verify the details of a purported Consequential Outage.

AEMO also confirmed that the operational information requirements for Forced Outages and Consequential Outages are the same as the information requirements for reporting Forced Outages in SMMITS. The Rule Change Panel notes that a formal Consequential Outage request can have an additional information requirement (i.e. a request for an outage caused by a Foreseeable Constraint should also identify the relevant Triggering Outage).

The Rule Change Panel therefore proposes to remove proposed clause 3.21.4B(f) and move the information requirements for formal Consequential Outage requests from proposed clause 3.21.4B to a separate new clause 3.21.12. The information requirements listed in the two clauses are the same except that for a Consequential Outage caused by a Foreseeable Constraint, the information requirements include the unique identifier provided by System Management for the relevant Triggering Outage (in new clause 3.21.12(f)). [63]

The Rule Change Panel considered whether to replace proposed clause 3.21.4B(f) with new provisions allowing AEMO to seek additional information or clarification from a Rule Participant to verify the details of a purported Consequential Outage on an ad-hoc basis. However, given the short period between the deadline for submitting a Consequential Outage request (15 days) and the deadline for AEMO to make a final decision on that request (15 Business Days),[64] such provisions are unlikely to be workable, because a Rule Participant may not be reasonably able to provide additional information requested on an ad-hoc basis before the deadline for AEMO to make its decision.

For this reason, the Rule Change Panel is not proposing any new provisions to replace proposed clause 3.21.4B(f). AEMO has confirmed that it has no material concerns about the absence of such provisions in the proposed Amending Rules. [65]

The Rule Change Panel also proposes to:

- renumber proposed clause 3.21.4B to 3.21.4A;[66] and
- make consequential changes to clause 7.13.1G to update the sources of the 'real-time' Forced Outage and Consequential Outage details that are published on the WEM Website under clause 10.5.3.

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63 Stakeholders raised no concerns about providing Triggering Outage identifiers in Consequential Outage requests at the 25 October 2019 MAC workshop or in further submissions.

64 The Rule Change Panel's reasons for retaining these deadlines are discussed in sections 6.4.2.2 and 6.4.3 of this report.

65 The Rule Change Panel notes that AEMO will remain able to specify details of the information that it needs about the cause of a purported Consequential Outage in the relevant WEM Procedure.

66 To reflect the removal of proposed clause 3.21.4A, as discussed in section 6.3.2.1 of this report.

6.3.2.4 Late changes to Triggering Outages

If Market Generators are to be required to reflect Foreseeable Constraint details in their Balancing Submissions, the potential impacts of late changes to the underlying Triggering Outages (i.e. affecting Trading Intervals in the Balancing Horizon) need to be managed appropriately.

Under the current WEM Rules:

- a Rule Participant is not permitted to start a Planned Outage before the approved start time;
- an Outage Facility that fails to return to service by the end of its approved Planned Outage period is deemed to be subject to a Forced Outage; and
- a Rule Participant cannot submit a revised outage request that:
    - shifts the outage period beyond its previous boundaries (i.e. so that the outage either starts earlier or ends later); or
    - increases the quantity of de-rating,

    so that a Rule Participant wishing to make such changes must submit a new outage request that is subject to the normal submission deadlines.

The Rule Change Panel also notes that it would be perverse for a Rule Participant to advise AEMO of retrospective changes to a Planned Outage (e.g. to notify AEMO of a delay to the start of a Planned Outage after the approved start time has passed), because it would be too late for AEMO to use the information and so the capacity or capability would still have been effectively unavailable during the relevant period. Additionally, retrospective changes to Triggering Outages could not be managed using Triggering Outage Notices. Therefore, the Rule Change Panel proposes to amend clauses 3.18.2A(h), 3.18.9A and 3.19.2E to clarify that a Rule Participant cannot amend an outage request to:

- specify a new start time or quantity of de-rating after the previously proposed start time has passed; or
- specify a new end time that is in the past.

Collectively these provisions limit the types of changes that can be made to a Triggering Outage period and when those changes can be made. However, a Network Operator may still notify AEMO of any of the following changes, at any time before the start of the first Trading Interval that is affected by that change:

- a delay to the start of a Triggering Outage;
- the late cancellation of a Triggering Outage; or
- the early return to service from a Triggering Outage.

Assuming the implementation of Triggering Outage Notices, AEMO would be required (under new clause 3.20A.3) to issue a Triggering Outage Notice that updates the Foreseeable Constraint details “as soon as practicable”. However, the market may not have enough time to respond efficiently if the Triggering Outage Notice is issued too late.

For example, if a Triggering Outage Notice that indicates a delay to the start of a Scheduled Generator’s Foreseeable Constraint is issued after Balancing Gate Closure for the first Trading Interval in the original period, then for at least that Trading Interval the Market Generator will not have time to modify its Balancing Submissions to make the Scheduled Generator’s capacity available for dispatch. Additional Trading Intervals may also be

affected, depending on the Scheduled Generator's Equipment Limits (e.g. start-up time) and current operational state.

Similarly, if a Market Generator is notified that a Foreseeable Constraint will end earlier than previously expected, it may be prevented by either gate closure restrictions or the Facility's Equipment Limits from making a corresponding early return to the Balancing Market.

In general, for Scheduled Generators, there seems little point in issuing a Triggering Outage Notice to remove Trading Intervals from a Foreseeable Constraint for which Balancing Gate Closure has already passed or is just about to pass, because the affected Market Generator will not have time to make the relevant capacity available for dispatch in those Trading Intervals.[67]

To prevent the issuing of useless and potentially misleading Triggering Outage Notices, the Rule Change Panel proposes to include a new clause 3.20A.4 that prevents AEMO from issuing a Triggering Outage Notice under clause 3.20A.3 that affects a Foreseeable Constraint in respect of a Trading Interval if it is less than 30 minutes before Balancing Gate Closure for that Trading Interval.

For example, consider a Triggering Outage that is scheduled to start at 9:00 AM on a Trading Day and end at 5:00 PM on the same Trading Day, resulting in a Foreseeable Constraint for one generator:

- The Foreseeable Constraint could not be updated to start later if it was less than 30 minutes before Balancing Gate Closure for the first Trading Interval in the current constraint period (e.g. the 9:00 AM start time of the Foreseeable Constraint could not be set to a later time after 6:30 AM[68]).
- The Foreseeable Constraint could not be updated to remove a Trading Interval from the end of the constraint period if it was less than 30 minutes before Balancing Gate Closure for that Trading Interval (e.g. the end time could not be changed from 5:00 PM to 4:30 PM after 2:00 PM[69]).
- If the Triggering Outage was cancelled, then if it was at least 30 minutes before Balancing Gate Closure for the first Trading Interval in the constraint period (i.e. before 6:30 AM[70]) the Foreseeable Constraint would be cancelled; otherwise the Foreseeable Constraint would be modified to remove the Trading Intervals for which Balancing Gate Closure was at least 30 minutes away (e.g. if the Triggering Outage Notice was issued at 8:15 AM then the updated Foreseeable Constraint would run from 9:00 AM to 11:00 AM).[71]

The proposed restrictions on late changes to Foreseeable Constraints were discussed at the 25 October 2019 workshop, where there was some discussion about how they should apply to Scheduled Generators and Non-Scheduled Generators. In further submissions, Bluewaters and Perth Energy supported the proposed restrictions, while Alinta suggested that they should not apply to Non-Scheduled Generators.[72]

In the CFFS, the Rule Change Panel also sought stakeholder views on whether a Network Operator should be able to reduce the period of a Triggering Outage (for the purposes of its

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67 The implications of late Triggering Outage changes on Non-Scheduled Generator dispatch is discussed in section 6.3.2.5 of this report.

68 Note that the Amending Rules for RC_2017_02 will reduce the Balancing Gate Closure period from 2 hours to 90 minutes from 1 December 2020, shifting this deadline from 6:30 AM to 7:00 AM.

69 2:30 PM from 1 December 2020.

70 7:00 AM from 1 December 2020.

71 From 9:00 AM to 10:30 AM from 1 December 2020.

72 See section 6.3.2.5 of this report for further details about the application of the proposed restrictions to Non-Scheduled Generators.

performance statistics) if it notifies AEMO too late for AEMO to update the associated Foreseeable Constraints. Bluewaters considered that the Network Operator should not be permitted to make such changes. However, Western Power advised that it did not have performance incentives to reduce the period of its Planned Outages to a shorter period, and that such a change was unlikely to affect its actions.

In subsequent discussions with RCP Support, Western Power clarified that its performance statistics (specifically its Circuit Availability measure) include both Planned and Forced Outages, and so are affected by the duration of its Planned Outages. However, Western Power reiterated that it was in its interests to complete its Planned Outages as quickly as possible. Western Power also noted that often it was difficult to know that it would finish a Planned Outage early until the work was nearly (if not actually) completed, which limited how much advance notice it could provide to the market about the early completion of a Triggering Outage. Western Power's practice was to notify AEMO if it cancelled or delayed the start of a Planned Outage; and in situations where a Planned Outage ended early or late, it would notify AEMO and make a permission-to-return request. Such requests were only made by Western Power when there was a high level of certainty that the item of equipment would be returning, usually when the isolator had closed.

Although Western Power's performance standards are to some extent affected by the duration of its Planned Outages, the Rule Change Panel has no evidence to suggest that late changes to Triggering Outages are significantly distorting Western Power's Planned Outage statistics by allowing network capacity to be reported as available when it is effectively unavailable to the market. The Rule Change Panel considers that the likely costs of preventing such changes are difficult to justify in the absence of such evidence, and so has not made any additional changes to the proposed Amending Rules in this regard. [73]

6.3.2.5 Alignment of Foreseeable Constraints and Non-Scheduled Generator dispatch

The Rule Change Panel has additional concerns about the treatment of Non-Scheduled Generators affected by Triggering Outages. Market Generators cannot declare the capacity of a Non-Scheduled Generator as unavailable in a Balancing Submission,[74] and do not usually bid Non-Scheduled Generators out of and back into the Balancing Market at the start and end of a Triggering Outage in the same way as Scheduled Generators (i.e. by setting their offer prices at the relevant Price Caps to ensure they are dispatched off or on in merit).

Instead, for non-GIA Non-Scheduled Generators, AEMO usually enters a constraint into its System Operating Command and Control Centre User Interface that causes the Real Time Dispatch Engine to dispatch the Non-Scheduled Generator down out of merit in the Trading Interval(s)[75] prior to the start of the Triggering Outage. If the Triggering Outage is delayed, then AEMO delays the ramp down of the Non-Scheduled Generator accordingly.

When the Triggering Outage ends (including if it ends early), AEMO releases the constraints on the Non-Scheduled Generator and returns it to normal operation. In some cases, where the unrestricted ramping of the Non-Scheduled Generator would create an excessive LFAS burden, AEMO issues Dispatch Instructions that limit the Non-Scheduled Generator's ramp rate or target output to reduce the LFAS impact.

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73 The Rule Change Panel notes that the information proposed to be recorded in Triggering Outage Notices should provide a clearer picture of the extent to which the market is affected by late changes to triggering outages.

74 While Market Generators usually specify Balancing Submission quantities that match the triggering outage information provided by the Network Operator, these quantities are not actually used in the real-time dispatch process.

75 The ramp down would usually occur during the Trading Interval immediately preceding the start of the triggering outage. However, AEMO will occasionally reduce the output of a Non-Scheduled Generator more gradually over a longer period, where this is necessary to maintain Power System Security.

While the current approach can maximise the operation of Non-Scheduled Generators, it also:

- produces unexpected generation that is inconsistent with the Forecast BMO and Balancing Forecast, and impossible for other Market Participants to predict;
- fails to ensure that a Non-Scheduled Generator will receive estimates for the purposes of Reserve Capacity certification for all the Trading Intervals in which its output is reduced because of a Triggering Outage;
- can increase the need for AEMO to dispatch Non-Scheduled Generators out of merit to reduce the impact on LFAS, increasing the need for constrained off compensation; and
- discriminates in favour of Non-Scheduled Generators by allowing them to avoid the gate closure restrictions that apply to Scheduled Generators in similar circumstances.

For GIA generators, AEMO's advice indicates that Triggering Outages are usually managed by Western Power applying static constraints in the GIA tool, rather than by AEMO using Dispatch Instructions. In some cases, AEMO and the relevant Market Generator may be unaware of the exact timing of a Triggering Outage until after the event.

The use of the GIA tool to manage Triggering Outages creates much the same market issues as the current arrangements for non-GIA Non-Scheduled Generators, except that:

- since the commencement of the Amending Rules for RC_2020_03 on 24 June 2020, a GIA generator will always receive estimates for Trading Intervals in which its output is reduced by the GIA tool, including where the reduction is because of a Triggering Outage;[76] and
- because AEMO does not directly control the ramping of the GIA generator, the risk of constrained off compensation is reduced but the potential for adverse LFAS impacts is increased.

During the 25 October 2019 workshop, attendees had mixed views on whether the Balancing Gate Closure restrictions that apply to Scheduled Generators after a late change to a Triggering Outage should also apply to Non-Scheduled Generators. Some attendees considered that the uncertainty imposed on Market Participants by unexpected changes to large Non-Scheduled Generators output created risks that would be incorporated into market prices, while others suggested that this effect needed to be balanced against the Non-Scheduled Generators' ability to reduce the Balancing Price.

The views expressed on the matter in further submissions were also mixed. Alinta suggested that where a late change affected a Non-Scheduled Generator, AEMO should update the Foreseeable Constraint and return the Non-Scheduled Generator to service without delay (albeit gradually to avoid 'unrestricted ramping' issues). However, Perth Energy raised concerns about any dispatch mechanism that encouraged AEMO to make changes to the dispatch of energy outside the economic merit order, while Bluewaters considered that a principle of equitable treatment of Scheduled Generators and Non-Scheduled Generators should generally be sought in this situation.

Stakeholders have also offered mixed views on how Non-Scheduled Generator capacity should be removed from service before the start of a Triggering Outage and returned to service after the end of a Triggering Outage. During the 11 February 2020 MAC meeting, some members (including AEMO) suggested that a Market Generator should manage the

[76] Prior to the commencement of the Amending Rules for RC_2020_03, a GIA generator did not receive estimates for any of the Trading Intervals in which its output was reduced by the GIA tool.

process itself, either by physically controlling the output of the Facility or through the offer prices in its Balancing Submissions.[77] However, other MAC attendees considered that it would be more efficient for AEMO to continue to manage the process. Some attendees noted that they would incur material additional costs if they had to manage the physical shutdown of their Non-Scheduled Generators in these situations, because the Facilities often had no staff on site. [78]

In discussions with RCP Support following the 11 February 2020 MAC meeting, AEMO clarified its position and agreed that it would be more practical for it to control the process than Market Generators.

During the 11 February 2020 MAC meeting and in subsequent feedback provided to RCP Support:

- Most stakeholders agreed that a Non-Scheduled Generator should receive estimates but not constrained off compensation for the Trading Intervals prior to and during a Foreseeable Constraint in which its output was reduced.
- There was general agreement (except from AEMO) that a Non-Scheduled Generator whose output was constrained for security reasons (e.g. to prevent an excessive LFAS burden) after a Triggering Outage ended should be subject to the normal rules for dispatch out of merit and receive both estimates and constrained off compensation. AEMO considered that neither Scheduled Generators nor Non-Scheduled Generators should be eligible for compensation in such situations. [79]

The Rule Change Panel considers that the current processes for managing Non-Scheduled Generators that are affected by Triggering Outages undermine the Balancing Market Objectives and the broader Wholesale Market Objectives by dispatching Non-Scheduled Generators in a manner that is effectively independent of the BMO and ignores the principles underlying the Balancing Gate Closure and outage planning rules. The effects on the market can be material for larger Non-Scheduled Generators, and are expected to increase with the commissioning of the Yandin and Warradarge wind farms. The Rule Change Panel does not consider that the benefits of occasionally higher levels of Non-Scheduled Generator output are enough to outweigh such concerns.

For Triggering Outage Notices to achieve the intended transparency benefits:

- Foreseeable Constraint details for Non-Scheduled Generators should generally not be changed if it is too late for the market to respond; and
- the actual dispatch of Non-Scheduled Generators needs to be consistent with the Foreseeable Constraint details provided to the market.

For example, if:

- AEMO issued a Triggering Outage Notice stating that a Non-Scheduled Generator will be constrained to 0 MW until 4:00 PM; and
- the Triggering Outage ended early at 3:30 PM but AEMO was unable to issue a revised Triggering Outage Notice by the relevant deadline (currently 2.5 hours before 3:30 PM); then

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77 The use of offer prices to manage the ramp down and return to service of a Non-Scheduled Generator was also supported by Bluewaters in feedback provided to RCP Support following the 11 February 2020 MAC meeting.

78 Alinta also considered that AEMO should control the process in feedback provided to RCP Support following the 11 February 2020 MAC meeting.

79 However, AEMO did suggest in its further submission that a Non-Scheduled Generator should be able to obtain an estimate by extending the period of its Consequential Outage to cover the Trading Interval(s) after the triggering outage ends.

- the Foreseeable Constraint should remain unchanged and AEMO should not dispatch the Non-Scheduled Generator to a non-zero target before 4:00 PM.

The Rule Change Panel therefore proposes that the restrictions on late changes to Foreseeable Constraints in new clause 3.20A.4 apply to all Foreseeable Constraints, including those relating to Non-Scheduled Generators.

The Rule Change Panel also proposes to amend clauses 7.6.1C and 7.6.1D, and include new clause 7.6.1I, to explicitly require AEMO to issue Dispatch Instructions to turn down a Non-Scheduled Generator before the start of a Foreseeable Constraint and to limit its output for the duration of the Foreseeable Constraint, except where the Market Generator is taking a Planned Outage during part or all of the relevant period.[80] The Rule Change Panel considers that requiring AEMO to control these processes using Dispatch Instructions is preferable because it:

- avoids additional costs for Non-Scheduled Generators without permanent on-site staff;
- gives AEMO a better opportunity to modify ramp rates if this is necessary to maintain Power System Security;
- ensures consistent treatment of GIA generators and non-GIA generators;
- ensures that Non-Scheduled Generators receive estimates, but not constrained off compensation, for the periods in which their output is reduced because of the Foreseeable Constraint; and
- is closer to the future market design, under which it is expected that Non-Scheduled Generators will make their capacity available for dispatch and the Security Constrained Economic Dispatch engine will restrict their output as required in response to network constraints.

Specifically:

- clauses 7.6.1C and 7.6.1D have been amended to allow for AEMO to issue the required 'turn down' Dispatch Instruction(s), which would normally be out of merit;
- the header of new clause 7.6.1I clarifies that the obligations on AEMO only apply to periods within a Foreseeable Constraint (**applicable periods**) when the relevant capacity is not also subject to an approved Planned Outage;
- new clause 7.6.1I(a) requires AEMO to issue at least one 'turn down' Instruction to ensure that the Non-Scheduled Generator's output is reduced to the required level by the time the applicable period begins, while not reducing the output of the Facility before the applicable period more than necessary;
- new clause 7.6.1I(b) maintains the relevant limit on the Non-Scheduled Generator's output for the duration of the applicable period;
- new clause 7.6.1J clarifies that retrospective Operating Instructions must be issued for the relevant Trading Intervals to prevent the payment of unwarranted constrained off compensation; and
- to prevent any perverse outcomes, new clause 7.6.1K gives AEMO the option to not constrain the Non-Scheduled Generator if constraining the Facility would threaten Power System Security or Power System Reliability.

[80] AEMO has advised RCP Support that Market Generators manage the removal and return to service of Non-Scheduled Generator capacity for Planned Outages.

The Rule Change Panel notes that once the applicable period ends, the normal Dispatch Criteria apply and AEMO would usually issue a further Dispatch Instruction to release the constraint on the Non-Scheduled Generator.[81] If AEMO needs to slow the return of the Non-Scheduled Generator for security reasons, then the usual rules relating to out of merit dispatch would apply and the Non-Scheduled Generator would be eligible for constrained off compensation.[82]

AEMO has raised no specific concerns about the proposed changes to clauses 7.6.1C, 7.6.1D and new clauses 7.6.1I, 7.6.1J and 7.6.1K, although it expressed a general concern about potential implementation complexity.

The Rule Change Panel also proposes to amend clause 7.1.1 to include Foreseeable Constraints in the list of data that AEMO must use when issuing Dispatch Instructions to Balancing Facilities dispatched out of merit and providing Operating Instructions.

6.3.2.6 Ex-ante Forced Outages

Obligations to notify AEMO

Proposed clause 3.21.4A allows, but does not require, a Rule Participant to notify AEMO if, in the Rule Participant's opinion, its Outage Facility is 'likely' to be de-rated as a result of a Forced Outage.

Proposed clause 4.25.3A prevents AEMO from subjecting a Facility to a Reserve Capacity Test if the Market Participant has advised AEMO of a likely Forced Outage in accordance with clause 3.21.4A. Under proposed clause 7.10.2(c), a Market Generator is not required to comply with the most recently issued Dispatch Instruction, Operating Instruction or Dispatch Order for its Facility if it has reported a likely Forced Outage.

The proposed Amending Rules do not require the likely Forced Outage to actually occur, which could allow a Market Generator to avoid a Reserve Capacity Test or dispatch compliance obligations without having to report 'full and final details' of an actual Forced Outage in SMMITS. The Rule Change Panel considers that the exceptions specified in clauses 4.25.3A and 7.10.2(c) should only apply if a Forced Outage does in fact occur.

On the other hand, in some cases a Rule Participant will be fully aware that its Outage Facility is about to suffer a Forced Outage. For example:

- a Rule Participant is not ready to return its Outage Facility to service at the end of a Planned Outage and cannot obtain approval for an extension outage; or
- a Rule Participant needs to undertake urgent maintenance on an Outage Facility but is unable to obtain approval for a Planned Outage to undertake the work.

While Market Generators are already obliged to update their Balancing Submissions to reflect the imminent Forced Outages of their Balancing Facilities, Network Operators are not explicitly obliged to notify AEMO in these situations.

Attendees at the 25 October 2019 workshop raised no concerns about a proposal to oblige Rule Participants to notify AEMO if they become aware that their Outage Facility will suffer a Forced Outage in the near future.

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81 Assuming that the output of the Non-Scheduled Generator does not need to remain constrained for some reason (e.g. if the triggering outage runs over time and turns into a Forced Outage).

82 The Rule Change Panel notes that the question of whether Scheduled Generators or Non-Scheduled Generators should receive constraint payments when they are dispatched out of merit for security reasons (e.g. to prevent an LFAS shortage) is not within the scope of this Rule Change Proposal.

In further submissions, Perth Energy supported the suggested change, while Alinta and Bluewaters supported the application of similar obligations for Network Operators to the current obligations of Market Generators to reflect impending Forced Outages in their Balancing Submissions. However, Alinta noted that it did not support any material expansion of Market Generators' existing obligations to give ex-ante notice of Forced Outages.

Synergy supported the notion that Rule Participants should advise AEMO of impending Forced Outages. However, Synergy expressed concern that the terms "as soon as it became aware" and "in the future" were vague and open to interpretation. Synergy also considered that, in some situations, it may be more practical for a person who has become aware of an imminent Forced Outage to first focus on resolving the issue, rather than prioritising an immediate notification to AEMO. To allow for such situations, Synergy recommended that ex-ante Forced Outage notifications be provided on a best endeavours basis.

In its further submission, Western Power indicated that it already has a protocol in place to meet the proposed obligations. In subsequent discussions with RCP Support, Western Power confirmed that it already notifies AEMO about imminent Forced Outages of its Equipment List Facilities. Notwithstanding, Western Power raised no concerns about its ability to meet the proposed obligation. However, Western Power expressed similar concerns to Synergy about notification timeframes, and requested that the drafting of the obligation provided consideration for an exemption from providing such notification if it would compromise safety (e.g. *Electricity Network Safety Regulations 2019* or the Electricity Network Safety Management System AS5577).

The Rule Change Panel considers that Rule Participants should be required to notify AEMO if they become aware that their Outage Facility will suffer a Forced Outage from a specific time in the future. However, the Rule Change Panel does not consider it necessary to include explicit provisions in section 3.21 to allow a Rule Participant to notify AEMO about a Forced Outage that is only likely to occur.[83]

The Rule Change Panel therefore proposes to replace proposed clause 3.21.4A with a new clause 3.21.4(c). The new clause requires a Rule Participant, if it becomes aware that its Outage Facility will suffer a Forced Outage from a specific time in the future, to notify AEMO and provide the information specified in clause 3.21.4A (previously proposed clause 3.21.4B) as soon as practicable, in the manner prescribed in the relevant WEM Procedure (i.e. the Outage Procedure).

The Rule Change Panel also proposes to remove the references to clause 3.21.4A in proposed clauses 4.25.3A and 7.10.2(c).

In relation to concerns raised by stakeholders about the proposed obligation to report ex-ante Forced Outages:

- New clause 3.21.4(c) only requires a Rule Participant to report Forced Outages that it knows will begin at a specific time in the future (e.g. a Forced Outage caused by an overrun of a Planned Outage, which will start at the end of the approved Planned Outage period). There is no requirement for a Rule Participant to guess when a future Forced Outage might occur.
- The new clause requires the Rule Participant to notify AEMO as soon as practicable. The wording avoids the imposition of any unreasonable obligation (i.e. it would not be

[83] The Rule Change Panel notes that existing clause 7.11.9 already requires Rule Participants to inform AEMO as soon as practicable if they become aware of any circumstances that might reasonably be expected to result in AEMO issuing a DA.

'practicable' to risk damage to staff or equipment by notifying AEMO of an impending Forced Outage in preference to taking action to prevent that damage).

- Market Generators already have some obligations to provide information to AEMO about impending Forced Outages. For example, a Market Generator is already required to:
    - reflect the effect of an impending Forced Outage in its Balancing Submissions; and
    - inform AEMO as soon as practicable if it becomes aware that it cannot comply or fully comply with a Dispatch Instruction or Operating Instruction.

  The Rule Change Panel acknowledges that new clause 3.21.4(c) imposes a 'new' reporting obligation on Market Generators. However, the obligation is only new in terms of its timing, because a Market Generator is already required under clause 3.21.4 to notify AEMO as soon as practicable once a Forced Outage begins. The Rule Change Panel does not consider that, in the relatively rare cases where a Market Generator knows about a Forced Outage in advance, having to notify AEMO as soon as practicable rather than after the outage begins constitutes a material expansion of Market Generator obligations.

Triggering Outage Notices for Forced Outages

Even where a Network Operator notifies AEMO of an upcoming or current Forced Outage that is a Triggering Outage, the full details are not necessarily shared with Market Participants in a timely manner. The Rule Change Panel therefore considered whether the use of Triggering Outage Notices and Foreseeable Constraints should be extended to cover Forced Outages of network equipment that directly affect a Scheduled Generator or Non-Scheduled Generator.

Attendees at the 25 October 2019 workshop raised no concerns about giving AEMO an option to issue Triggering Outage Notices for network Forced Outages that it considered would have a material market impact.

In further submissions, Alinta supported the use of mandatory Triggering Outage Notices to cover network Forced Outages that directly affect Market Generators. However, AEMO suggested that consideration should be given as to whether the existing DA rules already provide the necessary transparency for many of the relevant network Forced Outage events. Submitters provided varying responses to the Rule Change Panel's request for feedback on whether Triggering Outage Notices for network Forced Outages should be optional or mandatory, and if mandatory, what materiality thresholds should apply (if any).

While extending Triggering Outage Notice obligations to Forced Outages could increase market transparency, the Rule Change Panel has identified some material concerns with the cost and practicality of this option after further consideration. Forced Outages are inherently much more uncertain events than Planned Outages, and the potential variety and frequency of changes to Forced Outage details are likely to make the timely and accurate determination of Foreseeable Constraints for Forced Outages much harder than for Planned Outages. The Rule Change Panel is concerned that a requirement to issue Triggering Outage Notices for Forced Outages could:

- significantly increase the administrative burden on AEMO and potentially require costly automation that could not be justified given the expected life of the relevant IT systems;
- significantly increase the administrative burden on Market Generators, if they were obliged to reflect the information provided in the Triggering Outage Notices in their Balancing Submissions; and

- increase the likelihood of generators being locked out of the Balancing Market due to a combination of inaccurate Foreseeable Constraints and the current gate closure restrictions.

Based on these concerns, the Rule Change Panel has decided not to extend the use of Triggering Outage Notices to cover network Forced Outages.

As noted in its further submission, AEMO is currently required under clause 7.11.5 to release a DA in the event of, or in anticipation of situations where:

- significant outages of generation, transmission or customer equipment are occurring or expected to occur (clause 7.11.5(d)); or
- AEMO expects to issue a Dispatch Instruction Out of Merit (clause 7.11.5(g)).[84]

The Rule Change Panel agrees that DAs can provide some of the desired transparency benefits of Triggering Outage Notices, although the information provided in DAs is often too high-level for Market Generators to use in their Balancing Submissions. The Rule Change Panel recommends that AEMO take advantage of the DA mechanism to maximise market transparency around the impact of impending and current network Forced Outages.

6.3.2.7 Consequential Outage periods that exceed the Foreseeable Constraint period

A Triggering Outage can affect the availability of a Scheduled Generator or Non-Scheduled Generator in Trading Intervals that fall outside the Triggering Outage period. For example:

- a Market Generator could receive notice of a reduction in the period of a Triggering Outage too late to return the relevant capacity to the Balancing Market; or
- a Scheduled Generator may have start-up requirements or other Equipment Limits that prevent it from returning to the Balancing Market after the end of a Triggering Outage, even if the Market Generator knows the end time of the Triggering Outage well in advance.

Proposed clause 3.21.2(c) allows an outage that has not commenced, and which has not been determined by System Management to be a Consequential Outage, to be deemed a Consequential Outage if the affected Rule Participant could reasonably expect, based on the information that was available to it 30 minutes before Balancing Gate Closure, that its Facility would be de-rated by a Consequential Outage.

As discussed in section 6.3.2.1 of this report, the intent of proposed clause 3.21.2(c) is to prevent a Rule Participant from being subject to a Forced Outage if an anticipated Consequential Outage did not occur, but its effectiveness is limited by a potential lack of certainty around what a Market Generator knew or reasonably expected about a Triggering Outage at a point in time.

The risks for Market Generators are reduced by two additional changes proposed by the Rule Change Panel earlier in this report:

- the replacement of proposed clauses 3.21.2(b) and 3.21.2(c) with new clauses 3.21.2(c) and 3.21.2(d), which extend the definition of a Consequential Outage to include an outage caused by a Foreseeable Constraint;[85] and

[84] Including, for the purposes of the clause, issuing a Dispatch Order to the Balancing Portfolio in accordance with clause 7.6.2, which will result in Out of Merit Dispatch of the Balancing Portfolio.

[85] See section 6.3.2.1 of this report for further details.

- the inclusion of new clause 3.20A.4, which prohibits AEMO from issuing a Triggering Outage Notice that affects a Foreseeable Constraint in respect of a Trading Interval if it is less than 30 minutes before Balancing Gate Closure for that Trading Interval.[86]

The first change ensures that Scheduled Generator capacity that has been made unavailable in Balancing Submissions is eligible for a Consequential Outage if the outage quantity and period are consistent with the details of a Foreseeable Constraint. The second change prevents System Management from altering Foreseeable Constraint details too late for the Market Generator to process the change and update its Balancing Submissions before Balancing Gate Closure.

However, even with these additional changes, the proposed Amending Rules do not cover all the situations in which a Market Generator could be left exposed to a Forced Outage due to a late change to a Triggering Outage (e.g. they do not account for the longer gate closure of Balancing Portfolio Facilities). The proposed Amending Rules are also silent about the treatment of start-up times and other Equipment Limits in Consequential Outages.

The potential exposure is to some extent addressed in section 7A.2A of the WEM Rules. Clauses 7A.2A.1 and 7A.2A.2 require Market Generators to notify System Management of a Forced Outage or Consequential Outage for any capacity subject to Capacity Credits that is declared unavailable in a Balancing Submission and not otherwise accounted for. Clause 7A.2A.4 provides an exemption from clauses 7A.2A.1 and 7A.2A.2 in respect of a Trading Interval if:

- the relevant capacity was previously subject to an approved Consequential Outage; and
- AEMO notified the Market Generator that the capacity was no longer subject to a Consequential Outage less than 30 minutes before the applicable gate closure for the Facility and/or too late for the Facility to resynchronise by the start of the Trading Interval.

However, clause 7A.2A.4 has the following limitations:

- the clause only applies to Consequential Outages that have been approved by AEMO;
- the clause only deals with late changes (e.g. it would not cover the need for start-up time unless it was associated with a late change); and
- while the clause exempts a Market Generator from having to report a Forced Outage or Consequential Outage, it does not ensure that the Facility is eligible for a Consequential Outage in the relevant Trading Interval.

Additionally, section 7A does not relate to Non-Scheduled Generators, because Non-Scheduled Generator Balancing Submissions do not include declarations of unavailable capacity. The main concern for a Non-Scheduled Generator is that, if the Facility's output is restricted in a Trading Interval because of a Triggering Outage, its output will be appropriately estimated for the purpose of determining its Relevant Level in subsequent Reserve Capacity Cycles.

A Non-Scheduled Generator is eligible for an estimate in a Trading Interval if it is either:

- issued a Dispatch Instruction to decrease its output Out of Merit in the Trading Interval; or
- subject to a Consequential Outage in the Trading Interval.

[86] See section 6.3.2.4 of this report for further details.

Where a Consequential Outage of a Non-Scheduled Generator is caused by a Foreseeable Constraint, the additional changes proposed in section 6.3.2.5 of this report should ensure that the Non-Scheduled Generator receives estimates for the Foreseeable Constraint period and the 'ramp down' Trading Interval(s) before the start of the Foreseeable Constraint period.[87] However, a Non-Scheduled Generator would not receive an estimate for a Trading Interval in which it was ramping up after a Foreseeable Constraint unless System Management dispatched it Out of Merit to avoid a security issue.

The Rule Change Panel proposes the following additional changes to the proposed Amending Rules to address the gaps that it has identified:

- include new clause 7A.2A.5, which provides an exemption from the obligations to report a Forced Outage or Consequential Outage under clauses 7A.2A.1 and 7A.2A.2 for a Trading Interval if:
    - the Market Participant previously expected that the relevant capacity would be unable to be dispatched by AEMO in the Trading Interval because of a Foreseeable Constraint; and
    - AEMO issued a Triggering Outage Notice that removed the basis for the Market Participant's expectation that the relevant capacity would be unable to be dispatched by AEMO in the Trading Interval because of the Foreseeable Constraint:
        - less than 30 minutes before the relevant gate closure for the Facility (which depends on whether the Facility is part of the Balancing Portfolio); or
        - at a time when the Facility was not synchronised and could not be synchronised by the start of the Trading Interval given the Facility's relevant Equipment Limits;[88]
- amend clauses 7A.2A.1 and 7A.2A.2 to make them subject to new clause 7A.2A.5; and
- include new clause 3.21.2B, to clarify that the period of a Consequential Outage may include:
    - any period immediately following the outage causing the Consequential Outage that is needed to return the relevant capacity or capability of the Outage Facility that is the subject of the Consequential Outage to service in accordance with the Outage Facility's Equipment Limits;
    - any Trading Interval excluded from the period of a Foreseeable Constraint for a Facility in the Balancing Portfolio in a Triggering Outage Notice that is issued less than 30 minutes before Synergy's gate closure for that Trading Interval; and
    - for an Intermittent Generator:
        - the Trading Interval immediately preceding the start of a Foreseeable Constraint for that Facility; and
        - the Trading Interval immediately following the end of a Foreseeable Constraint for the Facility,

      if the sent out generation of the Facility in those Trading Intervals is less than it would have been had the Foreseeable Constraint not occurred.

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87 Because AEMO will be required to issue Dispatch Instructions for these Trading Intervals under new clause 7.6.1I(a) that are deemed to be Out of Merit under new clause 7.6.1I(b).

88 New clause 7A.2A.5 is identical to clause 7A.2A.4 except that the exemption relates to a late change to a Foreseeable Constraint rather than a late change to an approved Consequential Outage or Commissioning Test Plan.

Concerns about the effects of a Triggering Outage extending outside its actual duration were discussed at the 17 January 2018 and 25 October 2019 workshops. During these workshops, attendees discussed the reasons why a Consequential Outage associated with a Triggering Outage might need to extend beyond the duration of the Triggering Outage. Attendees identified no other factors for consideration apart from reaction time, gate closure times, start-up times and other Equipment Limits, and the operational state of an Outage Facility. Attendees at the workshops raised no concerns about extending the definition of a Consequential Outage to account for these factors. However, Synergy, provided feedback to RCP Support after the 17 January 2018 workshop indicating that the Rule Change Panel should not amend the Consequential Outage definition to cover late changes to the Triggering Outage, because such changes would make the definition more prescriptive and not cover all situations.

Stakeholders raised no concerns in their further submissions about the additional changes to the proposed Amending Rules discussed in this section 6.3.2.7. The further submissions suggested no additional reasons why a Consequential Outage associated with a Triggering Outage might need to extend outside the period of the Foreseeable Constraint, although AEMO expressed explicit support for allowing the period of a Consequential Outage to extend outside the period of the Foreseeable Constraint to cover the associated ramp down and ramp up periods.

During a discussion held with RCP Support to clarify its further submission, Synergy indicated that it still had some residual concerns about the proposed clarification of the Consequential Outage definition causing perverse outcomes through being overly prescriptive. The Rule Change Panel acknowledges Synergy's concerns and proposes to liaise with stakeholders during the second submission period for this Rule Change Proposal to identify and address any remaining issues.

6.3.2.8 Outages and Reserve Capacity Tests

As discussed in section 6.3.2.6 of this report, the Rule Change Panel proposes to remove the reference to proposed clause 3.21.4A in clause 4.25.3A, which would have prevented AEMO from scheduling a Reserve Capacity Test if the Market Participant had notified AEMO of a likely Forced Outage or Consequential Outage under proposed clause 3.21.4A.

Clause 4.25.3A(b) currently prevents AEMO from subjecting a Facility to a Reserve Capacity Test if the Market Participant had advised AEMO of a Forced Outage or Consequential Outage for that Facility in accordance with clause 3.21.4. The Rule Change Panel notes that the prohibition will extend to Forced Outages that are reported before their commencement under new clause 3.21.4(c).

The Rule Change Panel notes that while the notification of an Outage that is only likely to occur should not be enough to prevent the scheduling of a Reserve Capacity Test, it would not be reasonable to schedule a Reserve Capacity Test for a Facility that was expected to be affected by a Triggering Outage. The Rule Change Panel therefore proposes an additional change to clause 4.25.3A to prevent the scheduling of a Reserve Capacity Test for a Facility that is subject to a Foreseeable Constraint.

In feedback provided to RCP Support after the 13 September 2017 MAC meeting, Bluewaters considered that, while a Consequential Outage request that was yet to be approved should not prevent the Facility from being subjected to a Reserve Capacity Test, a Reserve Capacity Test should be deemed invalid if the Facility suffered a Consequential Outage during the test.

The Rule Change Panel agrees that it would be unreasonable for a Facility to fail a Reserve Capacity Test because it suffered a Consequential Outage. The Rule Change Panel therefore proposes to amend clause 4.25.9 to require AEMO to deem a Reserve Capacity Test to be cancelled and discard the results if the Facility suffers a Consequential Outage during the test period.

Attendees at the 17 January 2018 workshop generally supported:

- restricting the proposed Reserve Capacity Test exemption to approved Consequential Outages; and
- discarding the results of a Reserve Capacity Test if the Facility suffered a Consequential Outage during the test period.

Stakeholders raised no concerns about the proposed additional changes to Reserve Capacity Test arrangements in their further submissions.[89]

6.3.3 Outage Quantity Reporting and Capacity-Adjusted Outage Quantity Calculation

This Rule Change Proposal proposes changes to address the following three issues identified by the IMO around the determination of outage quantities for Scheduled Generators and Non-Scheduled Generators:

- that the outage quantity calculation rules in clauses 3.21.5 and 3.21.6 are inappropriate for Non-Scheduled Generator outages;
- that the steps used in SMMITS to determine outage quantities for Scheduled Generators are inconsistent with the process described in clause 3.21.6; and
- that the use of RCOQ in the capacity-adjusted outage quantity calculations in clause 3.21.6 is impractical and inconsistent with actual practice.

The Rule Change Proposal also sought changes to clarify the obligations of Market Generators with respect to the actual quantity of an outage that is required to be logged.

While the Rule Change Panel agrees that these issues need to be addressed, it has some concerns with the proposed solutions and has made additional changes to the proposed Amending Rules to address these concerns. The remainder of this section 6.3.3:

- discusses the concerns identified by the Rule Change Panel (sections 6.3.3.1 to 6.3.3.4);
- describes the Rule Change Panel's additional changes to the proposed Amending Rules to address these concerns (section 6.3.3.5); and
- presents three examples to demonstrate the effect of the proposed additional changes on the determination of outage quantities for Scheduled Generators (section 6.3.3.6).

[89] The changes were not discussed at the 25 October 2019 workshop.

6.3.3.1 Calculation of outage quantities for Non-Scheduled Generators

In this Rule Change Proposal, the IMO explained why the outage quantity calculation rules for generating systems in clauses 3.21.5 and 3.21.6 are inappropriate for Non-Scheduled Generator outages. For example:

- the calculations use the Standing Data value specified in Appendix 1(b)(iv),[90] which is only defined for Scheduled Generators; and
- more critically, the calculations use the outage quantities reported by a Market Generator (**unadjusted outage quantities**) to determine the reduction in capacity from the Facility's RCOQ. The resulting outage quantities (**capacity-adjusted outage quantities**) are used for various purposes throughout the WEM Rules, such as the calculation of Capacity Cost Refunds. However, for a Non-Scheduled Generator with a zero RCOQ the calculation will always produce an outage quantity of zero, a result that fails to reflect the actual reduction in available capacity and leads to perverse outcomes, such as the use of spurious Planned Outage rates and Forced Outage rates for Reserve Capacity certification.

The IMO proposed to restrict the calculation of capacity-adjusted outage quantities under clause 3.21.6 to Scheduled Generators only, and use unadjusted outage quantities for Non-Scheduled Generators. Specifically, the IMO proposed to amend clause 3.21.5 to define the outage quantity for a Non-Scheduled Generator as "the reduction in capacity from the relevant Facility's Sent Out Capacity, measured as an average over the Trading Interval".

While fully supportive of the intent of the proposed amendments, the Rule Change Panel has the following concerns:

- While capacity-adjusted outage quantities are inappropriate for an Intermittent Generator, the WEM Rules allow for a small, non-intermittent generating system to be registered as a Non-Scheduled Generator and assigned Capacity Credits.[91] Such a Facility would have a non-zero RCOQ and so would also require the calculation of capacity-adjusted outage quantities for various purposes under the WEM Rules. [92]
- The definition in proposed clause 3.21.5 refers to a reduction in capacity from the relevant Non-Scheduled Generator's Sent Out Capacity. However, as discussed in greater detail in section 6.3.3.2 of this report, the 'Sent Out Capacity' of a Non-Scheduled Generator that is part of the Balancing Portfolio is undefined.

6.3.3.2 Calculation of outage quantities for Scheduled Generators

The steps used in SMMITS to determine outage quantities for Scheduled Generators are inconsistent with the process prescribed in clause 3.21.6. For example, a Market Generator is currently required to enter outage quantities into SMMITS on an as generated basis, not a sent out basis as specified in clause 3.21.6(a).

While the IMO did not explicitly articulate the discrepancies between the current process and clause 3.21.6 in the Rule Change Proposal, it proposed to amend clauses 3.21.5 and 3.21.6 to align them with the current SMMITS process.

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90 Appendix 1(b)(iv) requires, for a Scheduled Generator, "the dependence of capacity on temperature at the location of the facility".

91 A non-intermittent generating system with a rated capacity between 0.2 MW and 10 MW may be registered as a Non-Scheduled Generator, while a non-intermittent generating system with a rated capacity less than 0.2 MW can only be registered as a Non-Scheduled Generator.

92 To date no non-intermittent generating systems have been registered as Non-Scheduled Generators. However, ETIU has not confirmed that small non-intermittent generating systems will not be able to register as Non-Scheduled Generators and receive Capacity Credits in future; and has indicated that it is considering whether small storage facilities should be able to be registered as Non-Scheduled Facilities and receive Capacity Credits.

The SMMITS process, as set out in proposed clause 3.21.6, comprises the following steps:

1. The Market Generator enters the quantity of de-rating on an "as generated basis at 15 degrees".
2. SMMITS multiplies the "as generated, 15 degrees" outage quantity by a Facility-specific value (**Coefficient 1**) to produce a "sent out, 15 degrees" outage quantity. The proposed Amending Rules do not specify how this conversion occurs or how Coefficient 1 is determined for each Scheduled Generator.
3. SMMITS converts the "sent out, 15 degrees" outage quantity to a "sent out, 41 degrees" outage quantity by multiplying the former quantity by another Facility-specific value (**Coefficient 2**), defined in the proposed Amending Rules as "the ratio of Sent Out Capacity at 41 degrees to the Sent Out Capacity at 15 degrees for the Facility, as found in the Standing Data file for temperature dependence provided under Appendix 1(b)(iv) for that Facility".
4. SMMITS applies the calculations in clauses 3.21.6(b), 3.21.6(c) and 3.21.6(d) to determine the Forced Outage, Planned Outage and Consequential Outage capacity-adjusted outage quantities for the Trading Interval. The calculations use the MW equivalent of the number of Capacity Credits assigned to the Facility wherever the current WEM Rules prescribe the use of the Facility's RCOQ.

The Rule Change Panel has identified several concerns with the process for determining outage quantities set out in the proposed Amending Rules:

- The proposed calculations refer to the "Sent Out Capacity" of a Scheduled Generator at various temperatures, in conflict with the meaning of that defined term. Sent Out Capacity represents the maximum quantity that can be offered in a Balancing Submission for a Balancing Facility (including the Balancing Portfolio, for which a single Sent Out Capacity value is defined). As such, it does not make sense to refer to the Sent Out Capacity of a Scheduled Generator at "41 degrees", or the Sent Out Capacity of a Facility that is part of the Balancing Portfolio.
- The calculations in SMMITS assume that the Standing Data value specified in Appendix 1(b)(iii)[93] for a Scheduled Generator is the maximum sent out capacity of the Scheduled Generator at 15 degrees. However, the Appendix 1(b)(iii) values are used to determine Sent Out Capacity values. Tying the definition to a specific temperature can place an unjustifiable limit on the quantity that a Market Generator can offer into the Balancing Market, if its Scheduled Generator is able to generate higher quantities at other temperatures.
- Coefficient 2 is defined as the ratio of the Sent Out Capacity at 41 degrees to the Sent Out Capacity at 15 degrees for that Facility, "as found in the Standing Data for temperature dependence provided under Appendix 1(b)(iv)". However, the temperature dependence file specified in Appendix 1(b)(iv) is based on as generated output values, not sent out. The ratio of as generated maximum quantities at 41 degrees and 15 degrees could vary materially from the ratio of the corresponding sent out quantities because of auxiliary loads, and therefore should not be used to temperature-adjust sent out outage quantities.

[93] Appendix 1(b)(iii) requires, for a Scheduled Generator, "the sent out capacity of the generator, expressed in MW".

- The requirement to report "as generated" outage quantities, which are then converted to sent out quantities using an undefined parameter (Coefficient 1) adds unwarranted complexity and potential for error to the outage reporting process.
- More generally (and as discussed at the 13 September 2017 MAC meeting), there appears to be no practical reason to require outage quantities to be reported on a temperature-specific basis.

  If a Scheduled Generator experiences a partial outage, then the critical question is what capacity the Facility was or will be able to provide over the duration of the outage.[94]

  For a partial Planned Outage, a Market Generator will typically submit an outage quantity that reflects the Market Generator's expectation of the capacity it can provide throughout the duration of the outage, which will depend (at least in part) on its expectation of the maximum site temperature during the period. For example, if a Market Generator reasonably expects that the site temperature will not exceed 25 degrees during the outage, there is no incentive for the Market Generator to submit an outage quantity that reflects some additional amount by which the Facility's capacity would be reduced if the temperature did exceed 25 degrees.[95]

  Similarly, for a Forced Outage the relevant quantity is what the Scheduled Generator was actually able to provide, not a theoretical quantity that it may have been able to provide if the temperature had been higher.

  As discussed in further detail in section 6.3.3.3 of this report, capacity-adjusted outage quantities are likely to be lower when the maximum daily site temperature exceeds 41 degrees, reflecting the reduction of the Facility's RCOQ under clause 4.12.4(b)(i) in these circumstances. Nevertheless, the Rule Change Panel has identified no reason why site temperatures should affect the basis on which a Market Generator should record outage quantities in SMMITS (i.e. to reflect the actual quantities that the Facility was or will be able to provide over the outage period).

6.3.3.3 Use of RCOQ in capacity-adjusted outage quantity calculations

As mentioned above, clause 3.21.6 requires the calculation of outage quantities as reductions from the Facility's RCOQ. At the time the Rule Change Proposal was submitted, clause 3.21.6(e) required the IMO to provide System Management with the RCOQ for each Facility "as currently applicable".

However, the IMO noted in this Rule Change Proposal that it was unable to determine each Facility's RCOQ in advance of a Trading Interval. RCOQ is a variable quantity that may be affected by several factors, including staffing levels, outage quantities and daily site temperatures, some of which are impractical or impossible to determine in advance.

The IMO noted that, in practice, it provided System Management with the MW equivalent of the Capacity Credits held by each Facility, and System Management used those values instead of RCOQ in the calculations required under clause 3.21.6. The IMO proposed to amend clause 3.21.6 to align it with current practice by replacing RCOQ with the MW equivalent of the Facility's Capacity Credits. The IMO did not consider that the difference between the two values would result in significantly different outcomes for the purpose of calculating a Scheduled Generator's outage quantities or its Certified Reserve Capacity.

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[94] Note that the 'available' capacity of a Scheduled Generator or Non-Scheduled Generator is that part of the maximum sent out capacity of the Facility that is not subject to an outage.

[95] Obviously in this situation the Market Generator bears the risk that the temperature will exceed 25 degrees during the period and the Facility will be unable to meet its dispatch targets.

However, during a discussion of the proposed change at the 13 September 2017 MAC meeting, Synergy expressed concern that the replacement of RCOQ with the number of Capacity Credits in the outage quantity calculations could cause some interpretation issues, because RCOQ was used in several other places in the WEM Rules.[96]

While agreeing that it is impractical to use RCOQ as defined in the capacity-adjusted outage calculations, the Rule Change Panel identified two scenarios in which the use of Capacity Credits rather than RCOQ could produce inappropriate capacity-adjusted outage quantities that do not reflect a Facility's underlying Reserve Capacity Obligations.[97]

The first scenario is where a Scheduled Generator experiences an outage on a Trading Day when the maximum daily temperature at the site of the Facility exceeds 41 degrees. On such Trading Days the Scheduled Generator's RCOQ is limited to its default value "adjusted to an ambient temperature of 45 degrees". It would be inappropriate for the Scheduled Generator's capacity-adjusted outage quantities to exceed its reduced RCOQ value on such Trading Days, particularly in the event of a Forced Outage, where Capacity Cost Refunds would be payable.

The second scenario is where a Scheduled Generator is subject to an approved Commissioning Test Plan during a Trading Interval. Under the current WEM Rules, any capacity-adjusted outage quantities are set to zero in this situation, because the RCOQ of the Facility is reduced to zero under clause 4.12.6(c). This would no longer be the case if RCOQ was replaced by Capacity Credits in the capacity-adjusted outage quantity calculation.

Given that including an explicit adjustment for approved Commissioning Tests in the capacity-adjusted outage quantity calculation appeared likely to increase implementation costs, the Rule Change Panel considered the following effects of omitting this adjustment:

- If a Commissioning Test occurs during a Planned Outage, then the relevant Trading Intervals would contribute to the Scheduled Generator's Planned Outage rates and Refund Exempt Planned Outage Count. However, the Rule Change Panel does not consider this is a problem, because it can see no reason why the relevant Trading Intervals should be excluded from the Scheduled Generator's Planned Outage rates and Refund Exempt Planned Outage Count just because the Facility was undertaking a Commissioning Test.
- If a Commissioning Test occurs during an existing Forced Outage (e.g. where the Market Generator needs to run the Scheduled Generator before it can complete a major repair) then the Facility would no longer be exempt from Capacity Cost Refunds during the relevant Trading Intervals. The Rule Change Panel considers that this too is not a problem, because it can see no reason why the Scheduled Generator should be exempt from Capacity Cost Refunds in this situation.
- However, a Scheduled Generator would also incur Capacity Cost Refunds if it failed to meet its dispatch targets during a Commissioning Test and the Market Generator was obliged to report a Forced Outage. The Rule Change Panel considers that this would be an inappropriate outcome, because such failures are a normal and accepted part of Commissioning Tests, and the imposition of Capacity Costs Refunds would be unreasonable and in conflict with the intent of clause 4.12.6(c).

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96 Synergy reiterated its concern in feedback provided to RCP Support following the 13 September 2017 MAC meeting.

97 Based on advice provided by AEMO, the Rule Change Panel has concluded that the possibility of a Facility's RCOQ being affected by the factors listed in clauses 4.12.4(b)(ii) (where the Market Generator offers short-term overload capacity in its certification application) or 4.12.4(b)(iii) (adjustments to account for "staffing and other restrictions") is too remote to warrant further consideration.

The Rule Change Panel notes that on several occasions Bluewaters has raised concerns with RCP Support about the obligation to report Forced Outages for failures that occur during Commissioning Tests. RCP Support has discussed the obligation with AEMO and the ERA who have both advised that they have no need for such outages to be reported.

The advice provided by AEMO and the ERA, and the current exemption of Forced Outages during Commissioning Tests from Capacity Cost Refunds, has led the Rule Change Panel to conclude that the obligation to report a Forced Outage for a failure that occurs during an approved Commissioning Test is an unnecessary administrative burden on Market Generators and should be removed.

6.3.3.4 Clarification of outage quantity measurement requirements

The IMO proposed changes to clause 3.21.5 to clarify that the outage quantity to be reported for a Scheduled Generator or Non-Scheduled Generator was the "average reduction in capacity over the Trading Interval". The IMO considered that while this was not a new requirement, its explicit inclusion in the WEM Rules would avoid any potential confusion and ensure that all Market Generators provide consistent outage quantities.

The Rule Change Panel supports the provision of greater clarity on how outage quantities should be measured, but considers that further changes are needed to clarify how outage quantities should be determined for a Scheduled Generator that fails to comply with the instructions it receives from AEMO (e.g. trips off mid-Trading Interval, fails to synchronise when expected, or fails to ramp fast enough to achieve its expected output level).

Background

Clause 7.10.1 requires a Market Participant to comply with the most recently issued Dispatch Instruction, Operating Instruction or Dispatch Order applicable to its Registered Facility for the Trading Interval. Clause 7.10.2(c) provides an exemption from the requirement to comply with clause 7.10.1 if both of the following apply:

- the Market Participant has notified AEMO, in accordance with clause 3.21.4, that its registered Facility has been affected by a Forced Outage or Consequential Outage (clause 7.10.2(c)(i)); and
- the quantity of the Forced Outage or Consequential Outage notified is consistent with the extent to which the Market Participant did not comply with the most recently issued Dispatch Instruction, Operating Instruction or Dispatch Order applicable to its Registered Facility for the Trading Interval (clause 7.10.2(c)(ii)).

When a Market Generator reports a Forced Outage of a Scheduled Generator in the circumstances contemplated in clause 7.10.2(c), the reported outage quantity is used to:

- demonstrate compliance with clause 7.10.2(c)(ii);
- calculate Capacity Cost Refunds; and
- calculate the Available Capacity of the Facility for the Trading Interval.

Available Capacity is a calculated value used in the calculation of Minimum TES and constrained off compensation payments for Scheduled Generator Balancing Facilities and the Balancing Portfolio.[98] A Minimum TES value is calculated for each Balancing Facility

[98] Available Capacity is currently defined as "for a Trading Interval, the sent out capacity, in MW, of a Scheduled Generator or Non-Scheduled Generator that was not subject to an Outage notified to AEMO under clause 7.13.1A(b)". Clause 7.13.1A(b) refers to the ex-post schedule of capacity-adjusted outage quantities recorded by AEMO for a Trading Day by noon on the fifteenth Business Day following the day on which the Trading Day ends.

(including the Balancing Portfolio as a whole) for each Trading Interval, and represents the minimum MWh quantity that the Balancing Facility would be expected to generate in the Trading Interval if it was dispatched 'in merit'.

Subject to various exceptions, if the actual generation of a Balancing Facility in a Trading Interval is less than its Minimum TES then it will be eligible for constrained off compensation for its Downward Out of Merit Generation (or Portfolio Downwards Out of Merit Generation), calculated as its Minimum TES less its Sent Out Metered Schedule (or the sum of any Sent Out Metered Schedules for Facilities in the Balancing Portfolio). The compensation reflects the default assumption that the output of the Balancing Facility was reduced in response to an instruction from AEMO.

For a Scheduled Generator Balancing Facility, the Minimum TES is set to the lesser of a default value (based on its Balancing Submission, MW output level at the start of the Trading Interval and the Balancing Price) and its Available Capacity. The Available Capacity provides a ceiling for the Minimum TES value if the Facility is subject to an Outage during the relevant Trading Interval. The intent is to prevent constrained off compensation in situations where the output of the Facility was reduced not because of an instruction from AEMO, but because the Facility was incapable of generating any more than it did.

Similarly, the Minimum TES for the Balancing Portfolio is set to the lesser of the default value and the sum of the Available Capacities of the Facilities in the Balancing Portfolio for the relevant Trading Interval. However, in practice Available Capacities are unlikely to affect the calculation of constrained off compensation for the Balancing Portfolio, due to size of the Balancing Portfolio and the large number of Facilities it contains.

Outage quantity calculation options

The outage quantity determined for a Trading Interval in the situations contemplated in clause 7.10.2(c) depends on what is assumed about the 'reduction in capacity' during any period(s) within the Trading Interval where the Scheduled Generator did comply with its instructions (e.g. the period before the Facility tripped or failed to increase its output).

The Rule Change Panel has considered two options:

- **Option 1**: to assume that because outage quantities are assessed over a Trading Interval, and the Facility failed to comply with clause 7.10.1 for the full Trading Interval, the Facility should only be considered to have been available to the level physically demonstrated (i.e. assume that the capacity of the Facility was limited to its actual level of sent out generation at each point in time throughout the Trading Interval); or
- **Option 2**: to assume that the Facility was fully available during any period within the Trading Interval in which its output was consistent with its instructions (i.e. assume no reduction in capacity for those periods).

The Rule Change Panel notes that Option 2 will usually produce smaller outage quantities than Option 1, because Option 2 effectively gives a Scheduled Generator the benefit of the doubt regarding how much more it could have generated in the relevant Trading Interval.

For the Available Capacity ceiling on Minimum TES to work effectively for a Scheduled Generator, the Available Capacity needs to accurately reflect the MW equivalent of what the Facility actually sent out in the Trading Interval (i.e. the Sent Out Metered Schedule multiplied by 2). This is only achieved using Option 1.

The ERA has advised that, for a Forced Outage quantity to meet the requirements of clause 7.10.2(c)(ii), it must be large enough to reduce the Minimum TES of a Scheduled Generator

Balancing Facility to the level of its Sent Out Metered Generation to the extent possible under the current outage quantity rules. This would result in the prevention (or reduction as far as possible) of the payment of constrained off compensation for the relevant Trading Interval.

The Rule Change Panel notes that it is not always possible to reduce Minimum TES to the level of the Facility's Sent Out Metered Generation because Available Capacity is calculated by subtracting the total capacity-adjusted outage quantity for the Facility from its Sent Out Capacity. The capacity-adjusted outage quantities do not include any quantity by which the Sent Out Capacity of the Facility exceeds its RCOQ, so even if the Market Generator reports a full Forced Outage, the resulting Available Capacity may still be too high to fully prevent the payment of constrained off compensation.

The Rule Change Proposal seeks to modify the Available Capacity calculation to use unadjusted outage quantities instead of capacity-adjusted outage quantities.[99] If this change was implemented, the ERA's current position would be equivalent to Option 1.

Option 1 is also:

- very inexpensive to operate, in that the outage quantities are easily determined using Sent Out Metered Schedules;
- very easily auditable (e.g. by the ERA for compliance monitoring purposes); and
- suitable for Scheduled Generators in the Balancing Portfolio (for which detailed instruction history is not readily available) as well as other Scheduled Generators.

The straw man proposal for outage quantity determination presented at the 13 December 2017 MAC meeting was based on Option 1 for these reasons. However, during that meeting, Ms Wendy Ng expressed concerns that the proposed calculation method could overstate the outage quantity of a Scheduled Generator that, for example, tripped midway through a Trading Interval, as it did not always recognise that the full capacity of the Facility was available during the period preceding the trip. ERM Power and Synergy have reiterated Ms Ng's concerns on several occasions since the 13 December 2017 MAC meeting.

Given stakeholder concerns regarding Option 1, the Rule Change Panel sought feedback from stakeholders in the CFFS on viable alternatives that would be:

- easily auditable;
- able to provide appropriate Available Capacity values for use in Minimum TES calculations;
- reasonably inexpensive to implement and operate; and
- suitable for both Synergy and Independent Power Producer (**IPP**) Facilities.

Synergy suggested an alternative approach that involved:

- use of Option 2, which Synergy considered was more accurate and equitable than Option 1; and
- instead of relying on the values of Available Capacity and Minimum TES to prevent spurious constrained off compensation, making Scheduled Generators ineligible for any constrained off compensation in Trading Intervals in which they were subject to an Outage.

[99] See section 6.3.4 of this report for further details.

Synergy considered that Option 2:

- was a 'readily' auditable solution (while acknowledging that it was not 'easily' auditable and may require additional effort to administer); and
- satisfied the Rule Change Panel's condition for a solution that was reasonably inexpensive to implement and was suitable for both Synergy and IPP Facilities.

As discussed in section 6.3.4.3 of this report, the Rule Change Panel proposes to implement Synergy's suggestion to remove constrained off compensation for Scheduled Generators when they are subject to an Outage, a change that will remove the dependency on Available Capacity values to prevent the payment of spurious constrained off compensation. However, the Rule Change Panel considers that Option 2 is unlikely to satisfy the other solution criteria set out in the CFFS. For example:

- The Rule Change Panel is unaware of any readily available records of Balancing Portfolio Facility instructions that would provide an audit trail for compliance monitoring purposes, and expects that a requirement to maintain such records and make them available to the ERA would impose a material administrative burden on AEMO.
- Even for IPP Scheduled Generators, the outage quantity determination process would involve:
    - the reconstruction of a 'moment-by-moment' instruction histories for Facilities; and
    - comparison with 'moment-by-moment' SCADA readings,

    which is likely to require material implementation and ongoing operational costs, including those needed to manage complications arising from SCADA data quality issues, tolerance range considerations and Ancillary Service-related considerations.

The Rule Change Panel acknowledges that the more conservative (i.e. higher) outage quantities produced by Option 1 can increase a Market Generator's exposure to Capacity Cost Refunds, even though the effect is usually limited to a part of a single Trading Interval. However, despite this concern the Rule Change Panel is not convinced that the additional costs and complexity of Option 2 are warranted. Therefore, the Rule Change Panel considers that on balance Option 1 is preferable.

The Rule Change Panel notes that ETIU is currently considering this question in the context of the proposed new market implementation in October 2022 (which will remove the specific concerns relating to Scheduled Generators in the Balancing Portfolio), but also notes that the implementation of five-minute settlement in 2025 will materially reduce the impact of Option 1 on the size of Capacity Cost Refunds.

6.3.3.5 Summary of additional changes to the proposed Amending Rules

The Rule Change Panel has proposed a number of additional changes to the proposed Amending Rules to address the issues discussed in sections 6.3.3.1 to 6.3.3.4. A summary of the additional changes is provided below.

Stakeholders have been generally supportive of the additional changes described in this section, and have raised no concerns in MAC discussions, workshops or further submissions apart from the concerns around outage quantities for Scheduled Generator Forced Outages that are discussed in section 6.3.3.4 of this report.

Definition of maximum sent out capacity in Standing Data

The Rule Change Panel proposes to amend Appendix 1(b)(iii) and Appendix 1(e)(iiiA) to clarify the definitions of the Standing Data items used to record the maximum sent out capacity of a Scheduled Generator and a Non-Scheduled Generator. The proposed definition is:

> "the maximum MW quantity that can be sent out by the Facility on a sustainable basis under optimal conditions, taking into account the physical limits of the network connection".

The proposed definition is not associated with any specific temperature, as it is expected that different Facilities are likely to achieve their maximum sent out levels at different temperatures. For Non-Scheduled Generators, the optimal conditions would include the ideal levels of wind, temperature and/or irradiance, as applicable.

The Rule Change Panel proposes to refer to these Standing Data items directly (e.g. by reference to Appendix 1(b)(iii)) rather than introduce a new defined term. To avoid any potential confusion, the Rule Change Panel also proposes to:

- change the name of the existing defined term "Sent Out Capacity" to "Balancing Facility Maximum Capacity", to more accurately reflect the purpose of the term;
- amend clauses 6.17.9(b)(ii)(2), 6.17.10(b) and 7A.2.4A and the definition of Balancing Price-Quantity Pair to replace Sent Out Capacity with Balancing Facility Maximum Capacity; and
- amend clause 7A.2.10 and the definition of Internal Constraint to replace Sent Out Capacity with "sent out capacity" as the defined term is not relevant to the clause and definition.

The exclusion of overload capacity from the proposed definition prevents this capacity from being included in a Balancing Submission or dispatched through the normal automated dispatch process. However, AEMO has advised the Rule Change Panel that overload capacity is used very rarely and does not need to be dispatched through the normal Balancing Market process.

Outage quantity reporting requirements

The Rule Change Panel proposes several additional changes to proposed clause 3.21.5 to simplify and clarify the requirements for reporting outage quantities for Scheduled Generators and Non-Scheduled Generators. Under the revised clause, the quantity of de-rating for an outage notification for both Scheduled Generators and Non-Scheduled Generators will be the MW reduction in capacity from the relevant Facility's maximum sent out capacity, adjusted to account for any previous outage notifications for concurrent outages of the Facility.

The proposed additional changes include:

- removing any reference to temperature adjustment, as the quantities will not be entered on any temperature-specific basis;[100]

[100] Although a Market Generator's expectations of the site temperatures over an outage period may affect the quantity reported (especially for Planned Outages).

- adding new clause 3.21.5(a) to clarify that the 'maximum sent out capacity' of the Facility is the quantity specified under Appendix 1(b)(iii) (for Scheduled Generators) or Appendix 1(e)(iiiA) (for Non-Scheduled Generators) as applicable; and
- refining the proposed clarification on how outage quantities should be reported where the reduction in capacity varies over a Trading Interval, and moving it to new clause 3.21.5(b).

The Rule Change Panel notes that some hybrid Non-Scheduled Generators can have total nameplate capacities that exceed their maximum sent out capacities (e.g. a Facility with 150 MW of wind turbines, 50 MW of solar panels and a maximum sent out capacity that is limited by its Declared Sent Out Capacity to 150 MW). Such a Facility may experience a partial outage that still leaves enough capacity available for service to meet or exceed its maximum sent out capacity. The Rule Change Panel proposes to add new clause 3.21.5(c) to clarify that in these situations, the Market Generator should report an outage with a quantity of de-rating equal to 0 MW. [101]

The Rule Change Panel notes that ETIU has indicated that in future, outage quantities will be captured by reporting the remaining available capacity of the Facility rather than the quantity of de-rating. However, the Rule Change Panel considers that the two methods produce the same outcomes and the cost of changing to an 'available capacity' reporting approach would be difficult to justify at this time, a view generally supported by attendees at the 17 January 2018 MAC workshop.

Forced Outage quantities for Scheduled Generators

The Rule Change Panel proposes to add new clause 3.21.5A to require the use of Option 1 as discussed in section 6.3.3.4 of this report. The new clause specifies that a quantity of de-rating determined for a Scheduled Generator under clause 3.21.5 is deemed to satisfy the requirement in clause 7.10.2(c)(ii) (and therefore exempt the Market Participant from the requirement to comply with clause 7.10.1) if, and only if, the quantity is determined using the assumption that at all times throughout the relevant Trading Interval, the capacity of the Scheduled Generator that was not subject to an outage is equal to the Scheduled Generator's actual level of sent out generation. To meet this requirement, the total unadjusted outage quantity for the Trading Interval would need to equal:

maximum sent out capacity – (Sent Out Metered Schedule x 2).

Unadjusted outage quantities by Trading Interval

The Rule Change Panel proposes to create the following defined terms to describe the unadjusted outage quantities of a Scheduled Generator or Non-Scheduled Generator for a Trading Interval:

- Unadjusted Consequential Outage Quantity is the total quantity of de-rating recorded for any approved Consequential Outages for the Facility in AEMO's outage management system;
- Unadjusted Forced Outage Quantity is the total quantity of de-rating recorded for any Forced Outages for the Facility in AEMO's outage management system; and
- Unadjusted Planned Outage Quantity is the total quantity of de-rating recorded for any approved Planned Outages for the Facility in AEMO's outage management system.

[101] The Rule Change Panel anticipates that AEMO will require the Market Generator to describe the nature and extent of the outage as part of its outage notification or request for a Planned Outage.

Capacity-adjusted outage quantity calculation

The Rule Change Panel proposes to make additional changes to proposed clause 3.21.6 to:

- restrict the calculation of capacity-adjusted outage quantities to Scheduled Generators and non-intermittent Non-Scheduled Generators (identified using a new defined term "Non-Intermittent Generator");
- use formulas to specify the calculations;
- use new defined terms for the quantities being calculated for the Facility and Trading Interval (i.e. Capacity-Adjusted Consequential Outage Quantity, Capacity-Adjusted Forced Outage Quantity and Capacity-Adjusted Planned Outage Quantity);
- use the new defined terms Unadjusted Consequential Outage Quantity, Unadjusted Forced Outage Quantity and Unadjusted Planned Outage Quantity;
- remove the unnecessary conversion steps from as generated to sent out and from 15 degrees to 41 degrees;
- clarify that the 'maximum capacity' of the Facility used in the calculations is the quantity specified under Appendix 1(b)(iii) (for Scheduled Generators) or Appendix 1(e)(iiiA) (for Non-Scheduled Generators) as applicable; and
- replace RCOQ in the calculations with a variable DEF_RCOQ, which is defined as "the Reserve Capacity Obligation Quantity that would apply to the Non-Intermittent Generator in the Trading Interval assuming that the Non-Intermittent Generator was not subject to an Outage or an approved Commissioning Test in the Trading Interval".

The DEF_RCOQ variable, which is used to prevent capacity-adjusted outage quantities for a Non-Intermittent Generator from exceeding its reduced RCOQ on high-temperature Trading Days, had a slightly different definition in the CFFS. The CFFS definition was based on the maximum daily ambient site temperature for the Facility for the relevant Trading Day as follows:

- for temperatures up to and including 41 degrees, the number of Capacity Credits held by the Facility for the Trading Interval would be used; and
- for temperatures above 41 degrees, the number of Capacity Credits multiplied by (SOC_45/SOC_41) would be used, where SOC_45 and SOC_41 were the maximum sent out capacities of the Facility at 45 degrees and 41 degrees respectively, as specified in the information provided by the Market Generator for the relevant Reserve Capacity Cycle under clause 4.10.1(e)(i).

However, following the further submission period, AEMO advised that, while it maintains sent out temperature dependence information in WEMS for each Non-Intermittent Generator (including the values of SOC_45 and SOC_41) and uses this information to calculate RCOQ for high-temperature Trading Days, it does not always acquire this information under clause 4.10.1(e)(i).[102]

In the absence of an explicitly defined source for the required sent out temperature dependence information, the Rule Change Panel has decided to define DEF_RCOQ as the RCOQ of the Facility assuming no Outages or approved Commissioning Tests. This will still

[102] The Rule Change Panel also considered refining the definitions of the existing Standing Data items specified under Appendix 1(k)(i)(3) ("the Reserve Capacity Obligation Quantity of the facility at 41 degrees (if applicable)") and Appendix 1(k)(i)(4) ("the Reserve Capacity Obligation Quantity of the facility at 45 degrees (if applicable)") and using those values in the capacity-adjusted outage quantity calculations. However, AEMO recommended against this option as it was uncertain about the implications of changing the definitions in Appendix 1(k)(i)(3) and (4).

require an adjustment for high-temperature Trading Days, but place the obligation on AEMO to make the same adjustment as it uses for its RCOQ calculations.

The Rule Change Panel considers that the definition of DEF_RCOQ is sufficiently explicit for practical use, based on advice from AEMO that the determination of RCOQ for a Non-Intermittent Generator will not be affected by the operation of clauses 4.12.4(b)(ii) (where the Market Generator offers short-term capacity in its certification application) or 4.12.4(b)(iii) (adjustments to account for "staffing and other restrictions") during the remaining period until the start of the new market arrangements.

The ex-ante outage schedule required under clause 7.3.4 is generated before the maximum daily ambient site temperatures for the relevant Trading Day are known. The Rule Change Panel has therefore added new clause 7.3.5 to clarify that AEMO, when preparing outage schedules under clause 7.3.4, must assume that the maximum daily site temperature at the site of each Non-Intermittent Generator will not exceed 41 degrees during the relevant Trading Day.

Forced Outages during approved Commissioning Tests

The Rule Change Panel proposes to further amend the definition of a Forced Outage in proposed clause 3.21.1 to explicitly exclude outages of a Scheduled Generator that occur within a period in which the Facility is subject to an approved Commissioning Test and are caused by a failure of the Facility's equipment during that Commissioning Test. This removes an unnecessary obligation on Market Generators and prevents an inappropriate side effect of the proposed replacement of RCOQ in the capacity-adjusted outage quantity calculations.

The Rule Change Panel also proposes to amend clause 7.10.2 to explicitly exclude a Market Participant whose Facility experiences a failure during a Commissioning Test from compliance with clause 7.10.1. The change is required because the Market Generator will no longer be reporting a Forced Outage in these situations and so will no longer be excluded from the requirement to comply with clause 7.10.2 under clause 7.10.2(c).

6.3.3.6 Examples of proposed approach for Scheduled Generators

The following examples all relate to a single Scheduled Generator with:

- a nameplate capacity of 120 MW;
- a maximum sent out capacity (**MSOC**) of 110 MW, which occurs at 10 degrees;
- a maximum sent out capacity at 41 degrees of 100 MW;
- a maximum sent out capacity at 45 degrees of 97 MW; and
- 90 Capacity Credits.

In Trading Intervals where it is not subject to an Outage or an approved Commissioning Test, the Scheduled Generator has an RCOQ of:

- 90 MW if the maximum daily ambient site temperature is less than or equal to 41 degrees; and
- 90 x 97 / 100 = 87.3 MW if the maximum daily ambient site temperature exceeds 41 degrees.

Example 1 – Partial Planned Outage

In this example, the Market Generator requests a partial Planned Outage for the Scheduled Generator. During the outage period the Facility is not subject to any other Outages and the site temperature never exceeds 25 degrees.

The Market Generator determines that the Facility will still be able to provide 60 MW of sent out capacity over the duration of the outage, based on the maintenance work to be undertaken and the Market Generator's assumptions about maximum site temperatures over the outage period.

The Market Generator uses this information to calculate the quantity of de-rating for the Planned Outage (which will be the Unadjusted Planned Outage Quantity for the relevant Trading Intervals):

Unadjusted Planned Outage Quantity (**UPO**)
= MSOC – remaining available capacity
= 110 – 60
= 50 MW

For the outage schedules prepared under clause 7.3.4 for each Scheduling Day, AEMO calculates the Capacity-Adjusted Planned Outage Quantity for this Scheduled Generator as:

Capacity-Adjusted Planned Outage Quantity
= max(0, UPO – max(0, MSOC – DEF_RCOQ))
= max(0, 50 – max(0, 110 – 90))
= 30 MW

As the site temperature never exceeds 25 degrees, the final Capacity-Adjusted Planned Outage Quantity for this Scheduled Generator will remain 30 MW for each Trading Interval in the outage period.

Example 2 – Forced Outage (25 degrees):

In this example, the Scheduled Generator trips during a Trading Interval. The maximum daily ambient site temperature for the relevant Trading Day is 25 degrees and the Facility is not subject to any other Outages.

The interval readings for the Scheduled Generator show that it sent out 30 MWh during the Trading Interval.

The Market Generator calculates the quantity of de-rating (which will be the Unadjusted Forced Outage Quantity for the Trading Interval) in accordance with new clause 3.21.5A:

Unadjusted Forced Outage Quantity (**UFO**)
= MSOC – (Sent Out Metered Schedule x 2)
= 110 – (30 MWh x 2)
= 50 MW

AEMO calculates the Capacity-Adjusted Forced Outage Quantity for the Trading Interval as:

Capacity-Adjusted Forced Outage Quantity
= max(0, UFO – max(0, MSOC – DEF_RCOQ))
= max(0, 50 – max(0, 110 – 90))
= 30 MW

Example 3 – Forced Outage (43 degrees):

This example is the same as example 2, except that the maximum daily ambient site temperature is 43 degrees.

The Market Generator calculates the quantity of de-rating the same way as for example 2, resulting in an Unadjusted Forced Outage Quantity of 50 MW.

However, because the maximum daily ambient site temperature for the Scheduled Generator exceeded 41 degrees, AEMO's capacity-adjusted outage quantity calculation for the Trading Interval reflects the reduced Reserve Capacity Obligations of the Scheduled Generator in these circumstances:

Capacity-Adjusted Forced Outage Quantity
= max(0, UFO – max(0, MSOC – DEF_RCOQ))
= max(0, 50 – max(0, 110 – 87.3))
= 27.3 MW

6.3.4 Use of Outage Quantities in the WEM Rules

The IMO considered that its proposed amendments to clause 3.21.5 would "ensure that meaningful Outage quantities will be calculated under this clause and provided to the IMO under clauses 7.3.4 and 7.13.1A of the WEM Rules, which are used for the purposes of certification and providing transparency to the market about the availability of Non-Scheduled Generators". The IMO also noted that "to ensure that the IMO can consider a Facility's availability when certifying Reserve Capacity under clause 4.11.1 of the WEM Rules, the IMO also requires Outage quantities to be provided on a sent out basis at 15 degrees Celsius for each Trading Interval" (i.e. unadjusted outage quantities).

Specifically, the Rule Change Proposal proposes to amend clause 7.13.1A(b) to require System Management to provide the IMO with the MW quantity of the reduction in a Facility's capacity for each Facility for each Trading Interval on a "sent out basis at 15 degrees" for both Scheduled Generators and Non-Scheduled Generators, in addition to the capacity-adjusted outage quantities already provided for Scheduled Generators.[103]

The Rule Change Proposal also proposes to amend the definition of Available Capacity to use the outage quantities provided under proposed clause 7.13.1A(b)(i) (i.e. the unadjusted "15 degrees" values) in the calculation for both Scheduled Generators and Non-Scheduled Generators.[104] However, the proposed Amending Rules do not explicitly indicate which of the unadjusted outage quantities provided under proposed clause 7.13.1A(b)(i) or capacity-adjusted outage quantities provided under proposed clause 7.13.1A(b)(ii) are to be used for other specific functions.

The Rule Change Panel supports the intent of the proposed changes, but considers that the additional changes discussed in the remainder of this section 6.3.4 are needed to provide greater clarity on the use of outage quantities and avoid unwarranted implementation costs.

6.3.4.1 Rationalisation of outage schedules

As noted in section 6.3.3.5 of this report, the Rule Change Panel has proposed some additional changes to the proposed Amending Rules to clarify the distinction between unadjusted outage quantities and capacity-adjusted outage quantities. The Rule Change

[103] The Rule Change Proposal referred to the capacity-adjusted outage quantities as "temperature adjusted values" or (in proposed clause 7.13.1A(b)) "as measured on a sent out basis at 41 degrees", but makes it clear that these values are the capacity-adjusted outage quantities already provided to the IMO.

[104] See section 6.3.3.4 of this report for a description of Available Capacity and its use in the WEM Rules.

Panel further proposes to clearly indicate throughout the WEM Rules the outage quantity type used for each function.

Currently, the outage quantities specified in the WEM Rules include:

- the outage quantities recorded by Trading Interval in the outage schedules for each Trading Day prepared by AEMO under clause 7.3.4 on the Scheduling Day (**ex-ante outage schedules**);
- the capacity-adjusted outage quantities by Trading Interval in the outage schedules for each Trading Day prepared by AEMO under clause 7.13.1A(b) 15 Business Days after the Trading Day (**ex-post outage schedules**); and
- the unadjusted outage quantities by outage recorded under clauses 7.13.1D to 7.13.1G and published by AEMO under clause 10.5.3 on the Market Web Site in near real time (**real-time outage details**).

The IMO proposed to amend clause 7.13.1A(b) to require the ex-post outage schedules to include both capacity-adjusted outage quantities (for Scheduled Generators only) and unadjusted outage quantities (for both Scheduled Generators and Non-Scheduled Generators). The IMO did not propose any changes relating to the provision of ex-ante outage schedules or real-time outage details.

The Rule Change Panel agrees that the current requirement for ex-ante outage schedules should be retained, because a snapshot of approved Non-Intermittent Generator outages for a Trading Day, taken at the start of the Scheduling Day, is still required to determine RCOQs and calculate Net STEM Shortfall values. The Rule Change Panel proposes to amend clause 7.3.4 to clarify that these schedules record capacity-adjusted outage quantities for Non-Intermittent Generators by Trading Interval.[105]

The Rule Change Panel supports the intent of the proposed changes to clause 7.13.1A(b), because it agrees that the capacity-adjusted outage quantities recorded in ex-post outage schedules are used for several purposes for which unadjusted outage quantities are more appropriate.[106] Additionally, during consultation on this Rule Change Proposal, the Rule Change Panel questioned whether the concept of a one-off ex-post outage schedule for a Trading Day that is prepared 15 Business Days after that Trading Day should be retained, because:

- the information for a Trading Day may be useful before the 15 Business Day deadline (e.g. to support a more accurate Outstanding Amount calculation);[107] and
- as discussed in sections 6.4.2.2 and 6.4.3 of this report, the Rule Change Panel was considering changes to allow Rule Participants to update their outage submissions after the 15 Business Day deadline.

The Rule Change Panel sought feedback in the CFFS on whether to replace the current requirement under clause 7.13.1A(b) for ex-post outage schedules with provisions that:

- define the unadjusted and capacity-adjusted outage quantity calculations for a Facility and Trading Interval;
- clarify where unadjusted versus capacity-adjusted outage quantities should be used; and

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105 As discussed in section 6.3.4.2 of this report, the Rule Change Panel does not consider that an ex-ante schedule of unadjusted outage quantities is warranted at this time.

106 See section 6.3.4.2 of this report for further details.

107 See section 6.4.2.1 of this report for further details.

- require AEMO to use the most up to date outage information available at the time for its calculations.

Stakeholders raised no concerns about the suggested changes in further submissions. However, AEMO has estimated high implementation costs for changes to:

- use unadjusted outage quantities for routine calculations such as Minimum TES for Scheduled Generators; and
- allow changes made to outage quantities after the current 15 Business Day deadline to be reflected in settlement calculations such as the calculation of constraint payments and Capacity Cost Refunds.

AEMO also recently provided new advice that the lifespan of any such changes would not persist beyond 1 October 2022, because the system changes would not be repurposed for the ETS reforms.

Given AEMO's advice, the Rule Change Panel has reviewed the benefits of the suggested changes and whether any of those benefits could be achieved in other, less expensive ways. The Rule Change Panel has concluded that the material benefits of these specific changes over the expected payback period are insufficient to warrant the incremental IT costs (around $120,000 including contingency).

The Rule Change Panel therefore proposes additional changes to the proposed Amending Rules to:

- reverse the IMO's proposed changes to clause 7.13.1A(b), and instead amend the clause to clarify that the ex-post outage schedules include capacity-adjusted outage quantities for Non-Intermittent Generators; and
- reverse the IMO's proposed change to use the unadjusted outage quantities specified under proposed clause 7.13.1A(b)(i) for the calculation of Available Capacity.[108]

The Rule Change Panel also proposes to amend clauses 7.13.1E and 7.13.1G to clarify that the outage quantities recorded under these clauses are the unadjusted quantities of de-rating recorded by Market Generators in SMMITS. The Rule Change Panel notes that the amendments to clauses 7.13.1E and 7.13.1G are clarifications only and should not require any changes to the current arrangements for recording and publishing real-time outage details under clauses 7.13.1D to 7.13.1G and 10.5.3.

6.3.4.2 Specification of outage quantity type in the WEM Rules

The Rule Change Panel has reviewed each provision of the WEM Rules that refers to outage quantities to determine the specific type of outage quantity (e.g. ex-ante or ex-post, unadjusted or capacity-adjusted) that should be used for that provision. A preliminary list was presented to attendees at the 17 January 2018 MAC workshop, and an updated list was included for comment in the CFFS. Stakeholders raised no concerns about the proposed allocations during the workshop or in further submissions.

In most cases the current use of capacity-adjusted outage quantities seems appropriate. For these cases, the Rule Change Panel proposes to amend the relevant clauses to clarify (but not change) how ex-ante and ex-post capacity-outage quantities are being used. The proposed changes include:

[108] The Rule Change Panel proposes to use a different mechanism to address the problem created by the use of capacity-adjusted outage quantities in the Available Capacity calculation – see section 6.3.4.3 of this report for further details.

- clause 4.12.6(b): clarify the obligation on AEMO to reduce the RCOQ of a Facility during Trading Intervals where there is a Capacity-Adjusted Consequential Outage Quantity or Capacity-Adjusted Planned Outage Quantity for the Facility in the relevant ex-ante outage schedule;
- clause 4.26.1(e)(i)(2): specify the use of ex-post capacity-adjusted outage quantities in the calculation of Spare(f,t), which is and input to the calculation of Trading Interval Refund Rates;
- clause 4.26.1(f)(i)(2): specify the use of ex-post Capacity-Adjusted Forced Outage Quantities in the calculation of the minimum refund factor RF floor, which is also used in the calculation of Trading Interval Refund Rates;
- clauses 4.26.1A(a)(ii)(1), 4.26.1C, 4.26.1D and 4.26.2(d), and the Glossary definitions Refund Exempt Planned Outage, Refund Exempt Planned Outage Count and Refund Payable Planned Outage: replace the concept of a Planned Outage being classified as a Refund Exempt Planned Outage or a Refund Payable Planned Outage with the concept of an ex-post Capacity-Adjusted Planned Outage Quantity being classified as a Refund Exempt Planned Outage Quantity or a Refund Payable Planned Outage Quantity;
- clause 4.26.1A(a)(ii)(1): specify the use of Capacity-Adjusted Forced Outage Quantities and Refund Payable Planned Outage Quantities in the calculation of Facility Reserve Capacity Deficit Refunds;
- clause 4.26.2: specify the use of ex-ante Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Forced Outage Quantities, and ex-post Capacity-Adjusted Forced Outage Quantities and Refund Payable Planned Outage Quantities in the calculation of Net STEM Shortfall for each Market Participant;
- clause 4.26.6(d)(i): specify the use of ex-post capacity-adjusted outage quantities in the calculation of CC(f,t), which in turn is used in the calculation of Facility Capacity Rebate values; and
- clause 6.3A.3(c): specify that the quantity provided to Market Participants for each Trading Interval under this clause (to assist them in determining their STEM offer obligations) is the sum of all ex-ante Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Trading Interval.

The Rule Change Panel has identified several cases where unadjusted outage quantities should, ideally, be used instead of capacity-adjusted outage quantities. However, given the high costs and short useful lifespan to include unadjusted outage quantities in ex-post outage schedules and to modify existing IT systems to use those outage quantities, the Rule Change Panel has adopted a pragmatic approach to the cases identified as follows:

- **LoadWatch Report (clause 3.23.1):** while the summary outage calculations in the weekly LoadWatch Report should arguably be based on unadjusted outage quantities, the Rule Change Panel sees no material benefit in changing the requirements for the report or specifying the current calculations in greater detail. The Rule Change Panel notes that ETIU has advised that it intends to remove the LoadWatch Report requirements from the WEM Rules as part of the ETS reforms.
- **Calculation of Maximum Supply Capability and other Scheduling Day information provided to Market Participants under clauses 6.3A.2(a), 6.3A.2(c) and 6.3A.2(d):** These calculations determine limits on how much energy a Market Participant is able to offer into the STEM, and so logically should use unadjusted outage quantities. However, the current calculations have no adverse impact on the operation of the STEM, so

amending them would be unlikely to deliver material benefits. The Rule Change Panel therefore proposes to amend clauses 6.3A.2(a), 6.3A.2(c) and 6.3A.2(d) to more clearly specify, but not alter, the current calculations.

- **Relevant Level Methodology (Appendix 9):** A Relevant Level is a forecast of an Intermittent Generator's capacity contribution during future periods of peak demand, based on that Facility's output during Trading Intervals in the previous five years. Relevant Levels are used in the assignment of Certified Reserve Capacity, and are determined using the Relevant Level Methodology in Appendix 9 of the WEM Rules.

  Appendix 9, Step 3(c) requires AEMO to identify past Trading Intervals where the Facility "was affected by a Consequential Outage as notified by System Management to AEMO under clause 7.13.1A". For each such Trading Interval, Step 6(a) requires AEMO to use "the schedule of Consequential Outages determined by System Management under clause 7.13.1A" and other relevant details "to estimate the quantity of energy that would have been sent out by the Facility had it not been affected by the notified Consequential Outage during the Trading Interval".

  While the current ex-post outage schedules include records for Intermittent Generator Consequential Outages, the (capacity-adjusted) outage quantities are always zero,[109] which limits their usefulness for Step 6(a). Further, as discussed in section 6.3.4.1 of this report, the Rule Change Panel proposes additional changes to clause 7.13.1A(b) to restrict the application of the clause to Non-Intermittent Generators.

  The Rule Change Panel therefore proposes to make the following additional changes to the proposed Amending Rules:

  - replace Step 3(c) with "the Facility was affected by a Consequential Outage"; and
  - replace Step 6(a) with "the Unadjusted Consequential Outage Quantity for the Candidate Facility for the Trading Interval".

  The Rule Change Panel notes that AEMO remains able to determine this information either directly from SMMITS or from the real-time outage schedules recorded under clauses 7.13.1F and 7.13.1G.

- **Calculation of Available Capacity and Minimum TES:** is discussed in section 6.3.4.3 of this report.
- **Calculation of Planned Outage rates, Forced Outage rates and Equivalent Planned Outage Hours for Intermittent Generators:** is discussed section 6.3.4.4 of this report.

The Rule Change Panel also proposes to remove an unnecessary reference to outages in clause 6.3A.2(b). Clause 6.3A.2(b) defines the Maximum Consumption Capability (one of the information items calculated by AEMO each Scheduling Day and provided to each Market Participant by 9:00 AM) as

> "the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be consumed during a Trading Interval by that Market Participant's Non-Dispatchable Loads and Interruptible Loads based on the Standing Data maximum consumption quantities for those Facilities and Non-Dispatchable Loads, less an allowance for Outages in the schedule maintained in accordance with clause 7.3.4".

The only outage quantities likely to be recorded for Loads are for Interruptible Loads (as Ancillary Service providers). The Rule Change Panel can see no benefit in reducing the

[109] See section 6.3.3.1 of this report for further a more detailed explanation of this issue.

Maximum Consumption Capability to account for these outages, and so proposes to remove the words “less an allowance for Outages in the schedule maintained in accordance with clause 7.3.4”. The Rule Change Panel does not expect that this amendment will require any additional changes to AEMO’s IT systems, because the ex-ante outage schedules prepared under clause 7.3.4 will only contain details of capacity-adjusted outage quantities for Non-Intermittent Generators.

6.3.4.3 Outage Quantities and Minimum Theoretical Energy Schedules

As discussed in section 6.3.3.4 of this report, using capacity-adjusted outage quantities to calculate Available Capacity values for Scheduled Generators can produce Minimum TES values that are too high to fully prevent the payment of unwarranted constrained off compensation.

Information provided by the ERA’s Compliance team indicates that the impact of this problem can be large. For example, in the 12 months to 31 March 2020, approximately $195,000 of constrained off compensation was paid to Scheduled Generators for Trading Intervals in which the Market Generator reported a full Forced Outage.

However, AEMO has estimated that the cost of implementing the IMO’s proposed solution to this problem (i.e. to calculate Available Capacity correctly using unadjusted outage quantities) would be high.

In its further submission, Synergy suggested an alternative solution would be to remove all constrained off compensation for a Scheduled Generator Balancing Facility for Trading Intervals in which the Scheduled Generator experienced an Outage. During the 11 February 2020 MAC meeting, RCP Support sought the views of MAC members on this suggestion, and specifically on whether they would support the idea if it materially reduced implementation costs. The two responses received for this request both expressed support for Synergy’s suggestion, and AEMO has since confirmed that the implementation costs for this solution would be materially lower.

Although Synergy’s solution is not ideal, because it may occasionally prevent a Scheduled Generator that experiences a partial Outage from receiving constrained off compensation that it would have received under the IMO’s proposed solution (i.e. where the Facility’s default Minimum TES value (as determined under clause 6.15.2(a)(i)) is less than its Available Capacity but more than its Sent Out Metered Schedule), the Rule Change Panel notes that:

- this problem is most likely to occur in relation to partial Planned Outages, so its potential impact can be reduced by only removing constrained off compensation in the event of a Forced Outage or Consequential Outage; and
- as advised by AEMO, the implementation costs would be lower.

Accordingly the Rule Change Panel proposes to implement Synergy’s solution and amend clause 6.16A.2(b) to set the Downwards Out of Merit Generation for a Balancing Facility in a Trading Interval to zero if the Balancing Facility is a Scheduled Generator that was subject to a Forced Outage or Consequential Outage in the Trading Interval. Setting the Downwards Out of Merit Generation value to zero will ensure that no constrained off compensation is paid to the Balancing Facility, regardless of its Minimum TES value.

The Rule Change Panel notes that Available Capacity is also used in the calculation of Minimum TES values for the Balancing Portfolio. However, as noted in section 6.3.3.4 of this report, inaccuracies in the calculation of Available Capacity for Balancing Portfolio Facilities

are unlikely to affect the calculation of constrained off compensation for the Balancing Portfolio, due to the size of the Balancing Portfolio and the large number of Facilities it contains.

While the Available Capacity calculation and associated calculation of Minimum TES values will remain unchanged, the impact on constrained off compensation for Scheduled Generator Balancing Facilities will be greatly reduced by the proposed changes to clause 6.16A.2(b). Nevertheless, to avoid any confusion about the meaning, use and limitations of the Available Capacity parameter, the Rule Change Panel proposes to:

- amend the Glossary definition of Available Capacity to change the name to "TES Available Capacity" (because the values are only used in TES calculations and do not accurately reflect the true available capacity of a Facility) and more clearly specify how the values are calculated for Scheduled Generators and Non-Scheduled Generators;
- amend clauses 6.15.2, 6.17.4(a) and 6.17.5A(a) to replace "Available Capacity" with "TES Available Capacity"; and
- amend clause 6.17.5A(a) to more clearly specify how TES Available Capacity values are used to calculate constrained off quantities for the Balancing Portfolio.

The Rule Change Panel also proposes to amend clause 6.15.3(b) to clarify that Minimum TES values are updated using ex-post capacity-adjusted outage quantities.

6.3.4.4 Outage Rates

The IMO indicated in this Rule Change Proposal that it intended to use the unadjusted outage quantities provided under proposed clause 7.13.1A(b)(i) to assess Non-Scheduled Generators' availability when certifying Reserve Capacity under clause 4.11.1. However, the outage rate calculations used for certifying Reserve Capacity are specified in the Outage Procedure rather than the WEM Rules, so the Outage Procedure would also require amendment to achieve the IMO's intent. The IMO proposed to work with System Management to review the Outage Procedure and make any necessary amendments.

The Outage Procedure includes the methodology for calculating the Forced Outage rate, Planned Outage rate, Planned Outage Hours and Equivalent Planned Derated Hours of a Facility for a given period. The values are used for Reserve Capacity certification and performance monitoring as follows:

- Clause 4.11.1(h) allows AEMO to assign a reduced level of Certified Reserve Capacity to a Facility if its Planned Outage rate and/or Forced Outage rate over the preceding 36 months exceeds the limits specified under clause 4.11.1D.
- Under section 4.27, AEMO is required to monitor the number of Equivalent Planned Outage Hours taken by each Scheduled Generator and Non-Scheduled Generator assigned Capacity Credits for the current Capacity Year; and may impose a performance monitoring regime on a Market Generator if the number of Equivalent Planned Outage Hours taken by a Facility in the preceding 12 months exceeds 1750 hours. Equivalent Planned Outage Hours is defined as the sum of Planned Outage Hours and Equivalent Planned Derated Hours.

During consultation on this Rule Change Proposal, the Rule Change Panel raised concerns about:

- deficiencies in the methodology specified in the Outage Procedure, the most material of which is that the calculations use capacity-adjusted outage quantities and are therefore unsuitable for Intermittent Generators; and
- whether, given that the calculations are used for Reserve Capacity certification and performance monitoring rather than power system operation, their definition in the Outage Procedure was appropriate.

Proposed changes to the calculations were discussed at the 17 January 2018 MAC workshop and presented for comment in the CFFS. Stakeholders raised no concerns at the workshop or in further submissions about the proposed changes to the calculations and their relocation to an appendix of the WEM Rules.

However, AEMO has indicated that the cost of the proposed changes to the outage rate calculations (and in particular to implement the proposed new calculations for Intermittent Generators) would be material; and that AEMO intends to replace all its outage-related systems as part of the ETS reforms, limiting the useful lifespan of any changes made to those systems.

In light of this advice, the Rule Change Panel conducted a review of Intermittent Generator outage rates, using the proposed calculation methodology and the real-time outage details published on the WEM Website. The results over the 36 months to 30 September 2020 indicate that Intermittent Generator outage rates are currently too low to trigger the operation of clause 4.11.1(h), making the lack of an appropriate outage rate calculation for Intermittent Generators acceptable in the short term.

The Rule Change Panel has therefore decided not to make any additional changes to the proposed Amending Rules to move the outage rate calculations to an appendix of the WEM Rules. However, the Rule Change Panel continues to be of the view that the current outage rate calculations are inappropriate for Intermittent Generators, and encourages AEMO to review and update the calculations set out in the Outage Procedure as soon as it is practicable to do so.

6.3.5 Clarification of Timeframes for Providing Outage Information to System Management

Clause 3.21.7 requires Rule Participants to provide “full and final details” of an Outage “no later than fifteen calendar days following the Trading Day”. The IMO considered that this drafting did not make it clear, for an Outage that spans multiple Trading Days, on which Trading Day the 15-day timeframe should start.

Further, the IMO considered that the obligation to provide “full and final details” of an Outage no later than 15 calendar days following the Trading Day on which the Outage commenced was impractical, as the information may not yet exist for Outages that extend for more than the 15 days. For example, if an Outage is expected to continue for 20 days, a Rule Participant cannot be expected to provide full and final details of the entire Outage before it has finished.

The IMO proposed to amend clause 3.21.7 to refer specifically to the particular Trading Day on which the outage occurred or continued to occur. The IMO considered this change would provide Rule Participants with the ability to update the Outage information for each affected

Trading Day on a rolling basis until the conclusion of the Outage, but retain the requirement to provide final details for each affected Trading Day within the 15-day timeframe.

The Rule Change Panel supports the intent of the proposed clarification, which is relevant to both clause 3.21.7 (in respect of Forced Outages) and new clause 3.21.17(a) (in respect of Consequential Outages).[110] However, the Rule Change Panel proposes some additional changes to further clarify the Rule Participant's obligations, so that:

- revised clause 3.21.7 requires the Rule Participant to provide full and final details of the information specified in clause 3.21.4A for a Forced Outage of its Outage Facility in AEMO's outage management system, in respect of each affected Trading Day, by the end of the day that is 15 calendar days after the day on which the affected Trading Day ends; and
- new clause 3.21.17(a) prohibits a Rule Participant from submitting or revising a request for a Consequential Outage in respect of a Trading Day after the end of the day that is 15 calendar days after the day on which the Trading Day ends.

Stakeholders have raised no concerns during consultation on this Rule Change Proposal about the proposed clarification of timeframes for providing outage information to AEMO.

6.3.6 Other Issues

This Rule Change Proposal includes a number of minor amendments to improve the clarity and integrity of the WEM Rules. The Rule Change Panel's assessment of the proposed minor amendments is summarised below.

Proposed Amendment	The Rule Change Panel's Assessment
Extend the definition of a Forced Outage in clause 3.21.1(b) to include, for the purposes of proposed clauses 3.21.2(b) and 3.21.2(c), any part of a Consequential Outage which will exceed its approved duration.	The Rule Change Panel does not consider the proposed amendment is necessary because a Consequential Outage is only approved for a specific outage period, and therefore any subsequent outage is not 'a part' of that Consequential Outage.
Minor wording enhancement to clause 3.21.3 to require System Management to keep a record of all Forced Outages and Consequential Outages of which it *becomes* aware, rather than all Forced Outages and Consequential Outages of which it *is* aware.	The Rule Change Panel supports the proposed enhancement.

[110] The Rule Change Panel notes that "full and final details" of Planned Outages are required well before the timeframes allowed for Forced and Consequential Outages.

Proposed Amendment	The Rule Change Panel's Assessment
Minor change to clause 7.10.2(c) (included but not shown in tracked changes in the original proposed Amending Rules) to extend the clause to cover situations where a Market Participant has notified AEMO that its Facility *will be* affected by a Forced Outage or Consequential Outage, rather than just situations where the Facility *has been* affected.	The Rule Change Panel supports the proposed enhancement.
Minor grammatical and formatting amendments to clauses 3.18.4A, 3.21.5, 3.21.6, 3.21.7, 3.21.8, 3.21.10, 3.21.11 and 3.21.12.	The Rule Change Panel has no concerns regarding the proposed amendments but notes that many of the proposed amendments have been superseded by either subsequent amendments to the WEM Rules (as discussed in Appendix A of this report) or additional changes proposed by the Rule Change Panel.

6.4 Additional Related Issues Identified by the Rule Change Panel

This section discusses several additional changes proposed by the Rule Change Panel to address new but related issues identified during the Rule Change Panel's assessment of this Rule Change Proposal. The section is structured as follows:

- section 6.4.1 discusses a manifest error in clause 3.21.2 that affects the eligibility of a distribution-connected generator for Consequential Outage;
- section 6.4.2 discusses additional issues relating to the reporting of Forced Outages in SMMITS;
- section 6.4.3 discusses additional issues relating to the request and approval of Consequential Outages in SMMITS;
- section 6.4.4 discusses the transitional provisions required for this Rule Change Proposal; and
- section 6.4.5 discusses several minor additional issues.

6.4.1 Consequential Outages Caused by Non-Equipment List Equipment

Current clause 3.21.2 sets out the definition of a Consequential Outage:

> 3.21.2. A Consequential Outage is an outage of either a Facility or item of equipment on the list described in clause 3.18.2 or a facility or generation system to which clause 3.18.2A relates for which no approval was received from System Management, but which System Management determines:
>
> (a) was caused by a Forced Outage to another Rule Participant's equipment and would not have occurred if the other Rule Participant's equipment did not suffer a Forced Outage; or

(b) was caused by a Planned Outage to a Network Operator's equipment and would not have occurred if the Network Operator's equipment did not undertake the Planned Outage,

but excludes any outage deemed not to be a Consequential Outage in accordance with clause 3.21.10.

While this Rule Change Proposal includes several proposed changes to clause 3.21.2, it retains the criterion that the outage is caused by a Forced Outage to another Rule Participant's equipment or a Planned Outage to a Network Operator's equipment.

During consultation on this Rule Change Proposal and RC_2013_15, several stakeholders raised concerns that the wording of this criterion excludes Market Participant outages caused by outages of Western Power network equipment that is not included on the Equipment List. This is because:

- a Planned Outage is defined as an outage that is approved by AEMO, and AEMO only approves Planned Outages for Outage Facilities (i.e. Equipment List Facilities and Self-Scheduling Outage Facilities); and
- a Forced Outage is also defined as an outage of an Outage Facility.

The main concern relates to outages of distribution-connected Scheduled Generators and Non-Scheduled Generators. These generators can suffer an outage due to an outage of equipment that is part of Western Power's distribution system but not required to be included on the Equipment List.

Additionally, some concerns have been raised about outages of transmission-connected generators caused by:

- failures of 'secondary' network systems (e.g. protection systems or communication systems) that are not currently included on the Equipment List;
- extended SCADA outages; and
- IT system errors (e.g. an event where a Scheduled Generator under AGC control was dispatched down in conflict with its formal Dispatch Instruction).

Attendees at the 25 October 2019 MAC workshop generally agreed that the WEM Rules should allow for a Consequential Outage to be caused by an outage of any equipment that is part of a registered Network. Alinta and AEMO provided explicit support for the suggestion in their further submissions.

The Rule Change Panel considers that the current wording of clause 3.21.2 constitutes a manifest error in the WEM Rules. This is because it does not make sense for distribution-connected generators to be ineligible for Consequential Outages simply because the relevant network equipment is not included on the Equipment List, particularly given the implications for the assignment of Certified Reserve Capacity to small Intermittent Generators. The Rule Change Panel also notes that Consequential Outage requests for distribution-connected generators have been submitted by Market Generators and approved by System Management since market start.

The Rule Change Panel proposes to make an additional change to clause 3.21.2(b) to extend the Consequential Outage criteria to include an outage that was caused by any outage of an item of equipment that is part of a Network, including a Forced Outage or a Planned Outage, and would not have occurred if the item of equipment did not experience the outage.

The main effect of the change is to ensure that distribution-connected generators are eligible for Consequential Outages, since most transmission-connected generators are included on the Equipment List and so the relevant transmission system equipment must also be included on the Equipment List under clause 3.18.2(c)(i).[111]

The Rule Change Panel notes that events that relate to the failure of something that qualifies as part of a Network will be covered by the proposed Consequential Outage definition. However, legal advice provided to the Rule Change indicates that intangible assets such as software would not fall within the definition of a transmission system or distribution system, and so would not qualify as "an item of equipment that is part of a Network". Further, to account for a new category of items (intangible assets) in the definition of a Consequential Outage would be a substantial change that is outside the scope of this Rule Change Proposal.

6.4.2 Reporting Forced Outages in SMMITS

Currently clause 3.21.4 requires a Rule Participant whose Outage Facility suffers a Forced Outage to inform AEMO of the outage "as soon as practicable". Clause 3.21.7 states that, notwithstanding the requirements of clause 3.21.4, the Rule Participant must provide full and final details of the relevant Forced Outage to System Management no later than 15 calendar days following the Trading Day.

The Outage Procedure requires the information specified under clause 3.21.4 to be provided by telephone as soon as practicable in the first instance, and "confirmed via AEMO's IT system" (i.e. SMMITS), also as soon as practicable.[112]

Rule Participants cannot modify their outage details for a Trading Day in SMMITS after the 15-day deadline, and no mechanism exists to update the schedule of capacity-adjusted outage quantities for a Trading Day used for settlement once they have been created by AEMO under clause 7.13.1A(b) on the fifteenth Business Day following the day on which the Trading Day ends.

During its assessment of this Rule Change Proposal, the Rule Change Panel considered the following issues with the current arrangements for reporting Forced Outages:

- issues arising from the absence of an explicit requirement to update SMMITS with the details of a Forced Outage before the 15-day deadlines (section 6.4.2.1);
- MAC Market Rules Issues List issues 17 and 33 (section 6.4.2.2); and
- a request from Collgar Wind Farm (**Collgar**) for clarification on the obligations to notify AEMO of a Forced Outage or Consequential Outage for capacity declared unavailable in a Balancing Submission (section 6.4.2.3).

6.4.2.1 Delays in reporting Forced Outages in SMMITS

While Rule Participants usually notify AEMO of a Forced Outage by telephone as soon as they become aware of the outage,[113] there is no explicit requirement to update SMMITS

111 Clause 3.18.2(c)(i) requires the Equipment List to include any part of a transmission system (however defined by AEMO) that could limit the output of a generation system that AEMO has included on the Equipment List.

112 As discussed in section 6.3.2.1 of this report, the Rule Change Panel proposes to make some additional changes to the proposed Amending Rules to more clearly distinguish between the more 'operational' obligations under clause 3.21.4 and the (usually) subsequent 'reporting' obligations under clause 3.21.7. The proposed changes include the introduction of new clause 3.21.4B, which requires a Rule Participant to inform AEMO of any material change to an operational notification provided under clause 3.21.4 as soon as practicable after becoming aware of the change, in the manner prescribed in the Outage Procedure.

113 The Rule Change Panel notes that in some cases (e.g. where the Forced Outage relates to the failure of a Scheduled Generator to meet its Dispatch Instruction targets) the Rule Participant may not be aware of the Forced Outage until after it has ended.

before the 15-day deadline. The Rule Change Panel notes that the prompt entry of Forced Outage details into SMMITS could provide material benefits in two cases:

- if a Scheduled Generator or Non-Scheduled Generator experiences an extended Forced Outage, the prompt reporting of the Forced Outage in SMMITS (with an estimated end time) would provide visibility of the outage to the market through the real-time outage details published on the WEM Website; and
- timely reporting of Forced Outages for Scheduled Generators with Capacity Credits could improve the accuracy of AEMO's Outstanding Amount calculations by providing a more accurate estimate of the Capacity Cost Refunds incurred for each Facility.

The Rule Change Panel has not identified any material benefits from the earlier entry of other types of Forced Outage.

Attendees at the 25 October 2019 MAC workshop discussed the potential benefits of earlier entry of Forced Outage details in SMMITS, and provided feedback on a straw man proposal for Scheduled Generators and Non-Scheduled Generators. In response to concerns raised by attendees at the workshop, the Rule Change Panel presented a less onerous straw man for consideration in the CFFS, which:

- required a Market Generator whose Scheduled Generator or Non-Scheduled Generator suffered a Forced Outage that lasts 24 hours or more to report the Forced Outage in SMMITS within 24 hours of its commencement;
- required a Market Generator to report a Forced Outage of a Non-Intermittent Generator with Capacity Credits in SMMITS (in respect of a Trading Day):
    - by the end of the third Business Day after the day on which the Trading Day ends, if the Market Generator did not require access to its Meter Data Submissions to determine the quantity of de-rating; and
    - otherwise, by the earlier of the 15-day deadline and the end of the third Business Day after the day on which it receives the required Meter Data Submissions; [114]
- maintained the current 15-day deadline for reporting Forced Outages of other Outage Facilities; and
- required a Rule Participant, if it had reported a Forced Outage in SMMITS and then obtained more accurate information about the end time or outage quantity, to update SMMITS to reflect the more accurate information by the end of the next Business Day.

AEMO raised no concerns with the proposed deadlines in its further submission, while Alinta was supportive of the intent but wished to assess the proposed changes more fully once the proposed Amending Rules were available. However, other stakeholders raised a number of material concerns about the proposed changes.

Perth Energy considered that, where Forced Outages are recorded ex-post, stricter deadlines could impose additional administrative burden on Rule Participants with no associated benefits in terms of market outcomes.

Although supportive of the Rule Change Panel's intent, Synergy considered that the proposed reporting deadline for Forced Outages with an outage period exceeding 24 hours was an administrative burden that would create unnecessary exposure to compliance breaches. Synergy considered that Market Generators might not be able to adhere to the

[114] The proposed timing for Forced Outages of generators with Capacity Credits was intended to limit the administrative burden on Market Generators by allowing them to group most of their Forced Outage reporting into no more than two batches per week.

24-hour timeframe for various reasons, including staffing availability, competing priorities and the time required to investigate the cause of the outage. Synergy considered that the risk of non-compliance may cause scenarios where Market Generators tentatively report Forced Outages in SMMITS within 24 hours based on limited information to avoid non-compliance, which would reduce the intended transparency benefits; and that allowing Market Generators to comply with the proposed timeframe on a reasonable endeavours basis would minimise Synergy's concerns.

Synergy also raised several concerns about the proposed requirement to update Forced Outage records in SMMITS within one Business Day of obtaining more accurate information about the outage, and suggested that this requirement should only apply on a reasonable endeavours basis.

Bluewaters also raised concerns about increased administrative burden (in part because of the current restrictions on the update of Forced Outage records in SMMITS) and the difficulties of providing reliable information about the cause and likely end time of an outage within the proposed 24-hour period. Additionally, Bluewaters raised a concern that the proposed change "could result in significant financial losses to the Generator from STEM purchases if the Generator can return to service within the next day".

Following the further submission period, RCP Support met with Bluewaters to discuss its STEM-related concern. Bluewaters explained that, when a Market Generator reports a Forced Outage in SMMITS with an end date far enough in the future, the capacity-adjusted outage quantities are included in the ex-ante outage schedule and reduce the Maximum Supply Capability of the Market Generator, limiting the capacity it can offer into the STEM. If the Market Generator has no load of its own to serve, and its Maximum Supply Capability is less than its Net Bilateral Position for a Trading Interval, then the STEM Auction process (and specifically the operation of Appendix 6(c)) will force the Market Generator to buy the shortfall from the STEM, potentially at a much higher price than it would pay in the Balancing Market.

While in theory the Market Generator could choose to not make a STEM Submission in this situation, this is not a satisfactory solution for several reasons.[115] The Rule Change Panel agrees with Bluewaters that a Market Generator should not be obliged to incur financial losses through mandatory STEM purchases because of a Forced Outage. The Rule Change Panel notes that ETIU has also identified the problem and proposes to address it as part of the ETS reforms, by amending the STEM process to allow a Market Participant to specify the maximum price at which it is willing to purchase energy to cover its Net Bilateral Position. [116]

Due to the issues raised by stakeholders and the inability to address the specific concern raised by Bluewaters in the short term, the Rule Change Panel has decided not to implement the suggested 24-hour deadline for reporting extended Forced Outages in SMMITS. However, the Rule Change Panel notes that Market Generators will still have 'operational' reporting obligations for their Forced Outages under revised clause 3.21.4 and new clause 3.21.4B; and recommends that AEMO share this information with Rule Participants (e.g. through market notices or DAs) to improve market transparency where it considers a Forced Outage has a potentially material impact on market outcomes.

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115 For example, most Market Generators have systems and processes in place (including Standing STEM Submissions) to ensure that they always make a STEM Submission, to avoid incurring Net STEM Shortfall costs – amending these processes to prevent a STEM Submission in some cases would involve material costs and risks. Additionally, not making a STEM Submission would force all of the Market Generator's exposure to the Balancing Market, denying the Market Generator the opportunity to cover some of its exposure through the STEM.

116 The proposed amendments are contained in the "Consolidated Draft Amending Rules for WEM Reforms "Tranche 1"", released by ETIU for public consultation on 24 July 2020.

In response to concerns raised by stakeholders about increasing administrative burden and compliance risk, RCP Support sought advice from AEMO about the materiality of the prudential risks created by delays in reporting Forced Outage in SMMITS, and therefore whether the proposed deadlines for reporting Forced Outages of generators with Capacity Credits were reasonable, too lenient or unnecessarily burdensome.

In its response, AEMO advised that "there may be a risk that the longer timelines proposed (e.g. three Business Days after receiving meter data and up to 15 Business Days) is too lenient". AEMO noted that the potential materiality of prudential risk created by delays in reporting Forced Outages in SMMITS depends on the size and duration of the Forced Outage and the liquidity of the Market Generator, but the longer the timeframes for reporting Forced Outages in SMMITS, potentially the greater the risk.

However, AEMO also noted that many if not most Forced Outages for Scheduled Generators are already being logged in the proposed timeframes; and considered that it was not clear whether mandating the deadlines proposed in the CFFS would improve the accuracy of the Outstanding Amount calculation.

After further assessment, the Rule Change Panel considers that stricter deadlines for reporting Forced Outages in SMMITS are only justified in the infrequent situations where a Forced Outage could have a material impact on the Market Generator's Trading Margin (i.e. could cause the Trading Margin to become negative). For this reason, the Rule Change Panel has decided not to implement the stricter SMMITS reporting deadlines presented in the CFFS.

Instead, the Rule Change Panel proposes to include new clauses 3.21.8 and 3.21.9, which allow AEMO to set tighter reporting deadlines for Forced Outages of a specific Non-Intermittent Generator if AEMO considers that it requires more timely Forced Outage information to monitor whether the Market Generator's Trading Margin is less than zero.

6.4.2.2 MAC Market Rules Issues List (Issues 17 and 33)

MAC members nominated two issues that are relevant to this Rule Change Proposal for inclusion on the initial Issues List:

- Issue 33: ERM Power noted that SMMITS does not allow Forced Outages to be amended after their initial entry. ERM Power considered that this can have the distortionary effect of a Market Generator not logging a Forced Outage in SMMITS until it has absolute certainty that the details are correct, in some cases delaying entry up to the 15-day deadline.

  ERM Power considered that if a Market Generator could cancel or amend its Forced Outage information, it would likely provide more accurate and transparent signals to the market of what capacity is really available to the system and assist AEMO in its generation planning.

- Issue 17: Bluewaters noted that a Market Generator is not allowed to retrospectively log a Forced Outage in SMMITS after the 15-day deadline, even if the Market Generator is subsequently found to be in breach of the WEM Rules for not logging the Forced Outage in time. This can result in under-reporting of Forced Outages and the incorrect use of information for settlement.

  Bluewaters recommended a rule change to enable Market Generators to retrospectively log a Forced Outage after the 15-day deadline. Further, if a Market Generator is found to

be in breach of the WEM Rules by not logging a Forced Outage by the deadline, it should be required to log the outage.

MAC members were generally supportive of the changes proposed by ERM Power and Bluewaters during MAC discussions of the two issues and in subsequent feedback provided to RCP Support.

The Rule Change Panel notes that other changes would also be required to ensure that a late-reported Forced Outage is processed appropriately (e.g. to recover any spurious constrained off payments and correctly calculate Capacity Cost Refunds). RCP Support consulted extensively with AEMO over the consultation period for this Rule Change Proposal to determine the most cost-effective changes that could achieve the desired outcomes.

In the CFFS, the Rule Change Panel sought feedback on additional changes to the proposed Amending Rules that would:

- require a Rule Participant, if it has reported a Forced Outage in SMMITS and then obtains more accurate information about the end time or outage quantity, to update SMMITS to reflect the more accurate information by the end of the next Business Day;
- without limiting the obligations to report Forced Outages in SMMITS by the proposed deadline for that Outage Facility type, [117] allow a Rule Participant to report a Forced Outage up to 9 months after the Trading Day on which the Forced Outage started (for example if it determines after the 15-day deadline that it should have reported a Forced Outage);
- require a Rule Participant to keep records of its reasons for reporting a Forced Outage or making changes to a Forced Outage after the 15-day deadline, and to make those records available to AEMO or the ERA if requested;
- require the recalculation of Theoretical Energy Schedules for a Balancing Facility if there is a change to its Outage records; and
- require AEMO to use the most up to date outage information available at the time for its calculations, except where the use of ex-ante outage schedules is specified.

Further submissions generally supported the changes to allow Rule Participants to amend Forced Outage records after their initial entry, while raising some concerns about the proposed 1-Business Day deadline for updates. AEMO, Alinta and Bluewaters all supported the proposed 9-month deadline for late changes to Forced Outage details in SMMITS, although Alinta intended to assess the proposed change more fully once the proposed Amending Rules became available.

However, as discussed in section 6.3.4.1 of this report, the Rule Change Panel has decided not to make changes to allow updates to Forced Outage details in SMMITS after the current 15-day deadline, due to AEMO's high estimated implementation costs and advice that none of the relevant system changes would be repurposed for the ETS reforms. Further, as discussed in section 6.4.2.1 of this report, the Rule Change Panel has also decided to retain the existing 15-day deadline for reporting Forced Outages in SMMITS.

The Rule Change Panel notes that where a Market Generator fails to report a Forced Outage that relates to non-compliance with a Dispatch Instruction, Dispatch Order or Operating Instruction, the ERA will remain able to recover any spurious constraint payments by notifying AEMO of the Market Generator's non-compliance under clause 7.10.8. Further, while in principle a Market Generator who fails to report a Forced Outage should still incur

[117] See section 6.4.2.1 of this report for further details of the deadlines proposed in the CFFS.

Capacity Cost Refunds, advice from the ERA suggests that the impact on the market is relatively low. For example, for the 12 months ending on 31 March 2020 the ERA identified about 100 Trading Intervals where Market Generators failed to report a Forced Outage, with a total estimated value of Capacity Cost Refunds avoided of $14,000.

6.4.2.3 Clarification of "as soon as practicable" outage notification obligations

In its first period submission on RC_2013_15, Collgar requested a definition of "as soon as practicable" in relation to the requirement in clause 7A.2A.1 to ensure that a Market Generator has notified AEMO of a Forced Outage or Consequential Outage for capacity declared unavailable in a Balancing Submission.

The Rule Change Panel notes that clause 7A.2A.2 imposes similar obligations on Synergy with respect to the Balancing Portfolio.

The meaning of "as soon as practicable" in clauses 7A.2A.1 and 7A.2A.2 is to some degree governed by how in these situations AEMO requires the Market Generator to notify it of the Outage under clause 3.21.4. For example, if the Market Generator is required to call AEMO then "as soon practicable" is likely to be sooner than if the Market Generator is only required to report/request the Outage in SMMITS.

For this reason, the Rule Change Panel proposes to amend clauses 7A.2A.1 and 7A.2A.2 to clarify that the Market Generator is required to notify AEMO of the Forced Outage or Consequential Outage in the manner prescribed in the WEM Procedure specified in clause 3.21.18.

6.4.3 Requesting Consequential Outages in SMMITS

During consultation on this Rule Change Proposal, the Rule Change Panel considered the following additional issues relating to Consequential Outage requests:

- **Updates to Consequential Outage requests:** The Rule Change Panel considered that there may be circumstances in which a Rule Participant should be able to update a previously submitted Consequential Outage request, including after the standard 15-day deadline.
- **Conversion of a Forced Outage to a Consequential Outage:** On several occasions, most recently at the 25 October 2019 MAC workshop, Bluewaters has suggested that a Market Generator should be able to submit a Consequential Outage request after the current 15-day submission deadline. Bluewaters considered that later submissions should be allowed because a Market Generator may not have all the information it needs to support a Consequential Outage request by the 15-day deadline.
- **Rejection of a previously approved Consequential Outage:** The proposed Amending Rules for this Rule Change Proposal allow AEMO to revise an earlier Consequential Outage determination if the earlier determination was based on incorrect or superseded information. However, in some circumstances AEMO may not become aware that its earlier approval of a Consequential Outage request was based on incorrect information until after the relevant ex-post outage schedules have been generated.

In the CFFS, the Rule Change Panel sought stakeholder views on additional changes that would:

- allow a Rule Participant to update a previously submitted Consequential Outage request, including a previously approved request, after the 15-day deadline if the relevant

information (e.g. corrected meter readings) only becomes available later, subject to a final deadline of 9 months after the first Trading Day of the outage;

- allow a Rule Participant to submit a Consequential Outage request in respect of a Trading Day after the 15-day deadline (but no later than 9 months after the Trading Day) if the Rule Participant obtains evidence to support its request that was not available to the Rule Participant at the time of the deadline; and
- allow System Management to reject a previously approved Consequential Outage request up to 9 months after the first Trading Day of the outage, if it considers that the original determination was based on incorrect information, or has been superseded by new or updated information.

Stakeholders raised no concerns with the proposed additional changes, with Bluewaters expressing explicit support to the proposal to allow for the submission of Consequential Outage requests after the current 15-day deadline.

However, as discussed in section 6.3.4.1 of this report, the Rule Change Panel has decided not to make changes to the proposed Amending Rules to allow changes to Outage details in SMMITS after the current deadlines, due to AEMO's high estimated implementation costs and advice that none of the relevant system changes would be repurposed for the ETS reforms.

The Rule Change Panel therefore proposes to retain the current 15-day deadline for submission of a Consequential Outage request and (implied) 15-Business Day deadline for AEMO's decisions on Consequential Outage requests. [118] Specifically, the Rule Change Panel proposes to:

- include new clause 3.21.17 to specify the applicable deadlines for Rule Participants (3.21.17(a)) and AEMO (3.21.17(b));
- make the proposed obligations on Rule Participants to update their Consequential Outage requests under new clause 3.21.14 subject to the deadline specified in new clause 3.21.17(a); and
- make AEMO's proposed obligations and options to approve or reject Consequential Outage requests under new clause 3.21.15 subject to the deadline specified in new clause 3.21.17(b).

6.4.4 Transitional Requirements

The Rule Change Panel proposes to include new clauses 1.nn.1 to 1.nn.8[119] to:

- initialise the Triggering Outage Notice mechanism (section 6.4.4.1); and
- manage the transition from the current processes used to record outage quantities and calculate capacity-adjusted outage quantities to the new processes (section 6.4.4.2).

The transitional provisions in new section 1.nn are intended to commence 1-2 weeks before the other Amending Rules.

[118] The Rule Change Panel notes that AEMO has confirmed (most recently at the 25 October 2019 MAC workshop) that it is able to meet the current 15-Business Day deadline for decisions on Consequential Outage requests.

[119] The section number for the transitional provisions for this Rule Change Proposal will be finalised in consultation with ETIU before the publication of the Final Rule Change Report, to prevent any conflicts with transitional provisions made by the Minister over the next few months.

6.4.4.1 Initialisation of the Triggering Outage Notice mechanism

The Rule Change Panel intends the Triggering Outage Notice mechanism to be fully operational from the start of the Rule Change Commencement Day (**commencement day**), (i.e. the Trading Day on which the Amending Rules (apart from the transitional provisions) commence). Specifically, the Rule Change Panel intends that:

- the effects of Foreseeable Constraints are reflected in Balancing Submissions for the commencement day; and
- AEMO manages the dispatch of Intermittent Generators affected by Foreseeable Constraints on the commencement day in accordance with the requirements of new clause 7.6.1I.

To allow the necessary preparation to occur, the Rule Change Panel proposes to include new clause 1.nn.2, which requires Rule Participants (including AEMO) to start complying with the relevant new provisions as they relate to the commencement day and subsequent Trading Days from the start of the Trading Day before the commencement day (**preparation day**). Specifically, this will require AEMO to begin issuing Triggering Outage Notices that are needed for the commencement day onwards from the start of the preparation day, and for Market Generators to account for the Foreseeable Constraints in their Balancing Submissions.

At the start of the preparation day, AEMO may be aware of Triggering Outages affecting the commencement day or subsequent Trading Days for which AEMO would have already issued Triggering Outage Notices if the Amending Rules had been in effect. Proposed new clause 1.nn.3 requires AEMO to issue 'catch up' Triggering Outage Notices for any such Triggering Outages by 9:00 AM on the preparation day.[120]

6.4.4.2 Transition from old to new outage quantity calculations

As discussed in section 6.3.3.5 of this report, the Rule Change Panel proposes to:

- change the basis for recording quantities of de-rating for Non-Intermittent Generators from as generated, 15 degrees values to sent out, temperature-independent values, which will involve setting the SMMITS Coefficient 1 and Coefficient 2 parameters to 1; and
- make several refinements to the capacity-adjusted outage quantity calculation, including changes to the 'maximum capacity' and 'RCOQ' parameters.

To simplify and reduce the cost of transitioning to the new calculation method, the Rule Change Panel proposes that any outage schedule produced before 8:00 AM on the commencement day (including the ex-ante outage schedule produced for the commencement day) be calculated using the current rules, and any outage schedule produced after 8:00 AM on the commencement day (including any outage schedule required for an earlier Trading Day) be calculated using the new rules (new clause 1.nn.5). For example, if the commencement day was the Trading Day commencing on 1 February 2021, then: [121]

[120] Note that if AEMO issues a Triggering Outage Notice before 9:00 AM on the preparation day for a triggering outage under clause 1.nn.2 then it is not required to issue a catch up Triggering Outage Notice for that triggering outage under clause 1.nn.3.

[121] 1 February 2021 is used here only for illustration and is not the proposed commencement date for this Rule Change Proposal.

- the ex-ante outage schedule for the Trading Day commencing on 1 February 2021, which is generated between 8:00 AM and 8:30 AM on 31 January 2021, would be generated using the current rules;
- the ex-ante outage schedule for the Trading Day commencing on 2 February 2021, which is generated between 8:00 AM and 8:30 AM on 1 February 2021, would be generated using the new rules;[122] and
- any ex-post outage schedules generated after 8:00 AM on 1 February 2021 (which would include ex-post outage schedules for some Trading Days in January 2021) would be generated using the new rules.

From 8:00 AM on the commencement day onwards, Market Generators, when reporting or requesting outages, will enter quantities of de-rating in accordance with the new rules, even where the quantities relate to an earlier Trading Day. Proposed new clause 1.nn.4 ensures that the quantities of de-rating will be deemed to have been provided on that basis.

However, the proposed transition approach also means that AEMO will be producing outage schedules under the new rules from outage records entered under the old rules. The Rule Change Panel notes that as at 8:00 AM on the commencement day, SMMITS is expected to contain:

- outage records for periods for which some outage schedules have been produced (ex-ante and/or ex-post) and some are still to be produced; and
- outage records for future periods for which no outage schedules have been produced.

A mechanism to adjust the quantities of de-rating is needed for these outage records, because a quantity of de-rating entered for a Non-Intermittent Generator under the current rules may not be the 'correct' quantity under the new rules (i.e. it may not produce the intended capacity-adjusted outage quantity). The Rule Change Panel considers that to reduce implementation costs and ensure that the outage records are updated at the correct time:

- Market Generators should be responsible for determining and providing to AEMO the revised quantities of de-rating for their outage records; and
- AEMO should be responsible for updating the outage records in SMMITS at the appropriate time.

Proposed new clause 1.nn.6 allows a Market Generator to provide AEMO with a revised quantity of de-rating for an outage if:

- the Market Generator has submitted the relevant Outage Plan, Opportunistic Maintenance request, Consequential Outage request or Forced Outage details before the commencement day; and
- the outage period overlaps one or more Trading Days for which an ex-post outage schedule will be produced under the new rules. [123]

The Rule Change Panel anticipates that the revised quantities of de-rating will be provided to AEMO by email.

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[122] The Rule Change Panel notes that AEMO may need to restrict access to SMMITS for a short period before the start of the commencement day to prevent any changes to Non-Intermittent Generator quantities of de-rating while the changeover process is in progress.

[123] The Rule Change Panel notes that the option will apply to all Planned Outage and Consequential Outage requests, regardless of the status of the request, e.g. for Scheduled Outages the option will apply to an Outage Plan that is awaiting evaluation, an Outage Plan for an outage that has been included in AEMO's outage schedule but is yet to be approved, and an Outage Plan for a Scheduled Outage that AEMO has approved under clause 3.19.4.

Proposed new clause 1.nn.7 specifies that a revised quantity of de-rating must:

- vary from the previous quantity of de-rating by no more than is needed to account for the impact of the new rules on the determination of capacity-adjusted outage quantities; and
- be provided to AEMO early enough for AEMO to have time to update SMMITS before the revised quantities are needed to produce an ex-ante or ex-post outage schedule, i.e.:
    - for outages commencing before the end of the Trading Day following the commencement day (which may need to be included in the ex-ante or ex-post outage schedules produced on the commencement day), by 5:00 PM on the day before the last Business Day before the commencement day; and
    - for other outages, by noon on the commencement day.

The clause sets an earlier deadline for outages that may need to be included in the ex-ante or ex-post outage schedules produced on the commencement day. For example, assuming a Monday 1 February 2021 commencement day, revised quantities of de-rating for outages commencing before 8:00 AM on 3 February 2021 will need to be provided to AEMO by 5:00 PM on Thursday 28 January 2021.

Proposed new clause 1.nn.8 requires AEMO, if it receives a revised quantity of de-rating under clause 1.nn.6 that meets the requirements specified in clause 1.nn.7, to update SMMITS accordingly and use the revised quantity of de-rating when preparing ex-ante and ex-post outage schedules on or after the commencement day.

The Rule Change Panel notes that AEMO may need to restrict access to SMMITS for a short period around the start of the commencement day[124] to ensure a clean transition from the current rules to the new rules (e.g. to prevent any changes to Non-Intermittent Generator quantities of de-rating during the period when the Coefficient 1 and Coefficient 2 parameters are being modified) in a cost-efficient manner.

6.4.4.3 Consultation on transitional provisions

The Rule Change Panel sought feedback from stakeholders in the CFFS on what transitional provisions would need to be included in the Amending Rules for this Rule Change Proposal. In further submissions, AEMO considered that the Final Rule Change Report would need to specify the treatment of existing outages already approved and existing outage requests that have yet to be approved; while Alinta indicated that it would prefer to review the draft amendments in full before it assesses what transitional provisions are required.

RCP Support has discussed the proposed transitional provisions with AEMO, who has raised some questions about the interpretation of terminology and the need for additional IT changes to support the changeover. The Rule Change Panel will continue to work with AEMO during the second submission period to address AEMO's questions and minimise implementation costs.

6.4.5 Additional Minor Issues

The Rule Change Panel also proposes the following minor amendments to improve the clarity and integrity of the outage planning provisions in the WEM Rules:

- Clarification of materiality threshold in clause 3.18.1A:

[124] Similar to that proposed by AEMO for the 20-23 October 2020 cutover period for the SMST project, but for a shorter period.

The Rule Change Panel proposes additional changes to clarify that the materiality threshold for requesting/reporting outages in clause 3.18.1A applies only to Intermittent Generators, and not to non-intermittent Non-Scheduled Generators.

- Status of Intermittent Generator outages below the materiality threshold:

  The Rule Change Panel proposes additional changes to clause 3.21.1(a) to clarify that outages of Intermittent Generators falling below the materiality threshold specified in clause 3.18.1A are not Forced Outages.

- Removing references to multiple Outage Facilities from the list of Outage information requirements:

  Proposed clauses 3.21.4B(d)[125] and 3.21.4B(e)[126] refer to potentially multiple Outage Facilities, as do the corresponding clauses in the current WEM Rules.[127]

  While is it possible that a single event may affect several Outage Facilities, AEMO has advised RCP Support that it considers the references to multiple Outage Facilities in proposed clause 3.21.4B to be unnecessary and inconsistent with the operation of SMMITS and the current wording of the Outage Procedure. The Rule Change Panel therefore proposes to remove the references to multiple Outage Facilities in the relevant clauses (new clauses 3.21.4A(d) and 3.21.4A(e)) to simplify the drafting.

- Correction of manifest error in clause 4.26.1A(a):

  Currently clause 4.26.1A(a) specifies a value for the Reserve Capacity Deficit for a Facility under six different conditions, but fails to specify that the value is zero if none of the six conditions apply. The Rule Change Panel proposes an additional change to clause 4.26.1A(a) to include this specification.

- Other minor and administrative changes:
  - clauses 3.21.1, 3.21.2 and 3.21.4: use the defined term Outage Facility;
  - clause 3.21.1(aB): renumber to clause 3.21.1(aA) for consistency with the standard conventions for clause numbering in the WEM Rules;
  - clause 3.21.4A: update the list of information to be provided to AEMO for a Forced Outage or Consequential Outage (relocated from proposed clause 3.21.4B) to reflect that:
    - the outage may not have commenced at the time of notification; and
    - clause 3.21.5 only applies to submitting expected quantities of de-rating for Scheduled Generators and Non-Scheduled Generators;
  - clause 4.11.1(h) and definition of Equivalent Planned Outage Hours: amend the references to the Outage Procedure to reflect the renumbering of clause 3.21.12 to 3.21.18;
  - clauses 4.11.1, 4.25.3A, 4.26.1A, 4.26.1C, 4.26.1D, 4.26.6: minor changes to comply with standard drafting conventions for the WEM Rules;
  - clause 4.25.3A: use correct defined term Opportunistic Maintenance instead of Opportunistic Outage;

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125 "each Facility, item of equipment or generation system de-rated as a result the outage".

126 "for each Facility, item of equipment or generation system de-rated as a result of the outage, the expected quantity of de-rating by Trading Interval, where, if the Facility is a generating system, this quantity is to be submitted in accordance with clause 3.21.5".

127 Clauses 3.21.4(d) and 3.21.4(e).

- clause 4.26.6(e): use title case for the defined term Trading Interval;
- clauses 7.13.1D, 7.13.1F and 7.13.1G: amend to use consistent terminology to describe AEMO's outage management system;
- clause 7.13.1E: clarify that clause 7.13.1E(c)(i) covers Opportunistic Maintenance outages and well as Scheduled Outages;
- clause 7A.2.8A: remove redundant exclusion of the Balancing Portfolio;
- minor changes to several Glossary definitions to comply with standard conventions for the WEM Rules (e.g. removal of "means" at the start of definitions);
- Appendix 9 Step 3(c): include missing words "the Facility" at the start of the step; and
- Appendix 9 Step 6: remove superfluous word "notified" from "the notified Consequential Outage";

6.5 Additional Changes to the Proposed Amending Rules

The Rule Change Panel has identified several changes to the proposed Amending Rules in this Rule Change Proposal that are needed to reflect the changes made to the WEM Rules by the Minister and the Rule Change Panel since the submission of the Rule Change Proposal on 27 November 2014. A summary of these necessary changes is provided in Appendix A of this report.

The Rule Change Panel has also made some further changes to the proposed Amending Rules following the further submission period. These changes, which are shown in Appendix E of this report, are described in sections 6.3 (Assessment of the Proposed Changes) and 6.4 (Additional Related Issues Identified by the Rule Change Panel) of this report.

Some of the additional changes affect clauses that are being modified by the Amending Rules for Rule Change Proposal: Implementation of 30-Minute Balancing Gate Closure (RC_2017_02), which will commence on 1 December 2020. The Rule Change Panel has therefore applied the proposed additional changes to the WEM Rules as expected following the commencement of RC_2017_02.

The Rule Change Panel notes that on 12 October 2020 ETIU published a draft of the *Wholesale Electricity Market Amendment (Administrative Amendments) Rules 2020* (**Administrative Amendments**). The Administrative Amendments include changes to:

- replace the term 'Market Rules' with 'WEM Rules';
- replace the term 'Market Web Site' with 'WEM Website';
- replace the terms 'Market Procedure' and 'Power System Operation Procedure' with 'WEM Procedure'; and
- remove references to System Management (including merging relevant System Management Functions into AEMO functions in section 2.1A, and removing or modifying the System Operator framework in section 2.2) and replace them with references to AEMO as appropriate.

The Rule Change Panel has updated the proposed Amending Rules for this Rule Change Proposal to reflect the relevant changes from the Administrative Amendments. The Administrative Amendments are proposed to be made by the end of 2020 (before the publication of the Final Rule Change Report for this Rule Change Proposal) and commence

on 1 February 2021 (before the likely commencement date for this Rule Change Proposal). Therefore, while the relevant amendments are shown in tracked changes in section 7 of this report, the Rule Change Panel does not expect that they will need to be made as part of the Amending Rules for this Rule Change Proposal.

The Rule Change Panel also notes that the Minister has made changes to three clauses affected by this Rule Change Proposal (clauses 4.25.9, 4.26.1 and 7.6.1C) in the *WEM Amendment (Reserve Capacity Pricing Reforms) Rules 2019*, which commence on 1 October 2021. However, the amendments to these clauses in the proposed Amending Rules for this Rule Change Proposal do not affect the Minister's amendments.

6.6 Wholesale Market Objectives

The Wholesale Market Objectives 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.

The Rule Change Panel considers that the WEM Rules as a whole, if amended as proposed in section 7 of this report, will better achieve Wholesale Market Objectives (a), (b) and (c) and be consistent with the remaining Wholesale Market Objectives.

The Rule Change Panel's assessment is presented below.

Amendments to the Consequential Outage process

The removal of the requirement to provide an authorised notice to request approval of a Consequential Outage will promote economic efficiency by removing an unnecessary administrative burden on both Rule Participants and AEMO.

Ex-ante outages and the Triggering Outage Notice mechanism

The Triggering Outage Notice mechanism will promote economic efficiency by providing greater transparency about the impact of network outages on generator availability, likely improving the accuracy of Balancing Forecasts and Forecast BMOs, and streamlining the processing of Consequential Outages that are related to Foreseeable Constraints.

The dispatch arrangements for Non-Scheduled Generators that are affected by Foreseeable Constraints will:

- promote economic efficiency by:
    - improving market transparency by ensuring that the actual dispatch of Non-Scheduled Generators is consistent with the Foreseeable Constraint details provided to the market;

- reducing the potential need to dispatch generators out of merit to reduce the impact on LFAS; and
- reducing the loss of market transparency arising from the application of large static constraints in the GIA tool to manage network outages, by requiring such constraints to be managed in the same way as for other Intermittent Generators; and

- avoid discrimination against particular energy options and technologies by:
  - ensuring that Non-Scheduled Generators affected by Foreseeable Constraints are subject to the same gate closure restrictions and eligibility for constraint payments as Scheduled Generators in similar circumstances; and
  - ensuring appropriate and consistent outcomes for all Intermittent Generators (including GIA generators) that are affected by Foreseeable Constraints in terms of Balancing Submission obligations, constraint payments and the provision of estimates for use in Reserve Capacity certification.

The changes to prevent the scheduling of a Reserve Capacity Test for a Facility that is subject to a Foreseeable Constraint, and to discard the results of a Reserve Capacity Test if a Facility suffers a Consequential Outage during the test, will promote economic efficiency by preventing unwarranted reductions of Capacity Credits on the basis of invalid test results.

The obligation on Rule Participants to notify AEMO if they become aware that their Outage Facility will suffer a Forced Outage from a specific time in the future will promote the reliable supply of electricity by providing more timely and accurate information to AEMO about the availability of Outage Facilities.

Outage quantity reporting and capacity-adjusted outage quantity calculation

The removal of the obligation to report a Forced Outage for a failure that occurs during an approved Commissioning Test will promote economic efficiency by removing an unnecessary administrative burden on Market Generators.

The simplification of the basis for reporting quantities of de-rating for Non-Intermittent Generators will promote economic efficiency by reducing administrative burden on Market Generators and the potential for errors associated with reporting outage quantities in SMMITS.

In addition to correcting manifest errors, the changes to the capacity-adjusted outage quantity calculations will promote economic efficiency by reducing the likely administrative costs of the calculating capacity-adjusted outage quantities, while still ensuring appropriate outcomes for outages that occur on high-temperature days.

Use of outage quantities in the WEM Rules

The removal of constrained off compensation for Scheduled Generators that experience a Forced Outage or Consequential Outage in the relevant Trading Interval will promote economic efficiency by preventing unwarranted constraint payments to Market Generators.

Other issues identified by the Rule Change Panel

The extension of the Consequential Outage definition to cover outages caused by any Network equipment will avoid discrimination against distribution-connected generators and promote economic efficiency through the provision of more accurate inputs to Relevant Level calculations.

The ability for AEMO to set tighter SMMITS reporting deadlines for Forced Outages of a specific Non-Intermittent Generator will promote economic efficiency by improving the effectiveness of AEMO's prudential monitoring.

General competition effects

The proposed amendments will encourage competition among generators by reducing the costs and risks of participation in the market, through:

- improved market transparency from the provision of Triggering Outage Notices and more accurate Balancing Forecasts and Forecast BMOs;
- greater certainty about how to form Balancing Submissions for generators affected by Foreseeable Constraints, reducing the risks of exposure to Capacity Cost Refunds;
- clarification of obligations to report Forced Outages and Consequential Outages to AEMO and to record quantities of de-rating;
- removal of unnecessary obligations;
- improved clarity regarding the processes used to report Forced Outages and request Consequential Outages;
- prevention of potential reductions of Capacity Credits due to the impact of a network outage on Reserve Capacity Test results; and
- ensuring that distribution-connected generators are eligible for Consequential Outages.

Additionally, the improved transparency around Triggering Outages, obligations on AEMO to dispatch Intermittent Generators consistently with the Foreseeable Constraint details provided to the market and the transparency-related enhancements to the Consequential Outage process will encourage competition among generators by increasing confidence in the integrity of the outage planning and Balancing Market processes.

6.7 Protected Provisions, Reviewable Decisions and Civil Penalties

The proposed Amending Rules do not affect any Protected Provisions or Reviewable Decisions.

The proposed Amending Rules include changes to clause 3.21.4, which requires a Rule Participant to notify AEMO as soon as practicable of a Forced Outage or Consequential Outage affecting its Outage Facility. Clause 3.21.4 is currently subject to a Category C civil penalty. However, the Rule Change Panel considers no changes to the civil penalty are required, because the proposed amendments do not alter the general meaning and intent of the clause.

The Rule Change Panel does not consider that there is a need for any other clauses in the proposed Amending Rules to be subject to civil penalties.

6.8 Practicality and Cost of Implementation

6.8.1 Cost

Implications of the delayed progression of this Rule Change Proposal

AEMO, Perth Energy and Synergy all noted in further submissions that the extended delays in progressing this Rule Change Proposal have materially reduced the period between the likely commencement date for the proposed Amending Rules and the scheduled new market

commencement in October 2022. The submitters noted that this could reduce the useful life and net benefits of some of the proposed amendments.

In reaching its draft decision on this Rule Change Proposal, the Rule Change Panel has taken into account the effects of the delayed commencement and AEMO's IT system development plans on the expected useful life of the proposed amendments. As a result, the Rule Change Panel has decided not to progress several proposed amendments because, as discussed in sections 6.3 and 6.4 of this report, it considers their benefits over the expected life of the system changes are insufficient to warrant the implementation costs.

AEMO costs

AEMO did not provide an updated cost estimate in its further submission because revised drafting was not yet available, but noted that its previous 'rough order of magnitude' estimate for the Rule Change Proposal was $759,000.

Following the further submission period, RCP Support requested an updated cost estimate from AEMO for a revised draft of the proposed Amending Rules. The revised draft excluded several changes with low expected net benefits based on previous cost advice from AEMO.[128] On 26 May 2020, AEMO provided an updated cost estimate of $669,700.

RCP Support sought a more detailed breakdown of AEMO's cost estimate and confirmation of the longevity of the system changes (i.e. which changes would continue to be used after 1 October 2022). On 8 July 2020, AEMO provided a more detailed cost breakdown to RCP Support, and advised that it had updated its reform development plans, with the result that the lifespan of the proposed WEMS changes to calculate capacity-adjusted outage quantities from real-time outage details, and to support changes to outage records after the current 15-day limit (on which AEMO's cost estimate was based), would not persist past 1 October 2022 because these system changes would not be repurposed for reforms.

Based on this new advice, RCP Support provided AEMO with an updated draft that removed the amendments to allow changes to outage records after the 15-day limit, and retained the current ex-post outage schedules provided under clause 7.13.1A(b). AEMO advised RCP Support that the removal of these amendments should mean that the existing SMMITS functionality for capacity-adjusted outage schedules could be leveraged, but noted that a new process would be required to adjust the RCOQ_DEF values for Trading Days where the maximum site temperature exceeded 41 degrees.

AEMO considered that the temperature adjustment process should be automated to limit operational risk, given the time constraints for the process. AEMO noted that this approach was consistent with AEMO's intention to automate its currently manual process to adjust capacity-adjusted outage quantities for generators that are subject to approved Commissioning Tests as part of the SMST project.

On 17 August 2020, AEMO provided an updated cost estimate of $550,610, representing a reduction in system costs of $128,090 and new procedure change costs of $9,000. AEMO also advised that it still proposed to move the capacity-adjusted outage quantity calculations to WEMS, because this would be the least-cost implementation option.

A high-level summary of AEMO's cost estimate is presented in Table 6.1.[129]

[128] The excluded changes mainly related to the use of unadjusted outage quantities to calculate Available Capacity and Minimum TES, and the proposed changes to the calculation of outage rates.

[129] AEMO provided a more detailed breakdown of the costs to RCP Support on a confidential basis.

Table 6.1: AEMO Estimated Implementation Costs

	Costs	Contingency	Total
WEMS Changes	$218,830	$124,030	$342,860
System Management System Changes	$178,750	$20,000	$198,750
Procedures	$9,000		$9,000
Total	$406,580	$144,030	$550,610

AEMO noted that the contingency allowance for the WEMS changes (around 57% of the base cost) reflects the likelihood that higher-cost external resources will be required to deliver the WEMS changes given competing priorities over the next 6 to 12 months, but will only be spent if required.

The Rule Change Panel notes the following points regarding AEMO's cost estimate.

- A material proportion of the WEMS costs relates to changes to calculate ex-ante outage schedules and ex-post outage schedules in WEMS. AEMO advised that the main reason for moving the calculations to WEMS is to facilitate the determination of the correct RCOQ_DEF values on high-temperature days.

  The Rule Change notes that the obligation to account for high-temperature days in capacity-adjusted outage calculations has existed since 2007. While the IMO proposed to remove this obligation by replacing RCOQ in the calculations with the number of Capacity Credits held for the Facility, the Rule Change Panel does not support that change for the reasons set out in section 6.3.3.3 of this report.

  Therefore, the Rule Change Panel notes that this component of AEMO's cost estimate relates to an existing compliance obligation rather than implementation of the Amending Rules for this Rule Change Proposal.[130]

- Most of the remaining WEMS costs relate to the proposed change to set the Downwards Out of Merit Generation for a Scheduled Generator to zero if the Scheduled Generator suffers a Forced Outage or Consequential Outage in a Trading Interval. The Rule Change Panel considers that this change is likely to deliver net benefits over the period prior to October 2022, given the recent and potential future magnitude of spurious constrained off compensation associated with Scheduled Generators experiencing Forced Outages.

- The majority of the system management system costs and a small component of the WEMS costs relate to the changes to implement the proposed Triggering Outage Notice mechanism. Despite the reduced expected lifespan of the changes, the Rule Change Panel considers that the implementation costs are warranted as the proposed amendments are needed to provide transparency around material planned network outages, and to ensure the Balancing Market is operated in a consistent and transparent manner when such outages occur. Nevertheless, the Rule Change Panel recommends that AEMO reconsider whether its decision to not leverage the existing DA functionality, and the extent to which it proposes to automate the mechanism to minimise compliance

[130] The Rule Change Panel notes that the proposed Amending Rules in this report address the main concerns previously raised about the use of RCOQ in capacity-adjusted outage quantity calculations, e.g. by clarifying the temperature assumptions to be used for ex-ante outage schedules and removing the need to adjust the default values to account for Outages and approved Commissioning Tests.

risk, are warranted given the low expected volumes of Foreseeable Constraints and the shorter expected lifespan of the mechanism.

- Some of the remaining system management system costs are for transition to the new method of recording quantities of de-rating for generators in SMMITS. The Rule Change Panel considers that the estimated cost is acceptable, as the changes will improve administrative efficiency over their expected lifespan and should simplify the eventual transition to the outage reporting mechanism proposed for the new market in October 2022.

  However, the Rule Change Panel notes that the estimate includes transition costs relating to the creation of a new table of effective dated values for Coefficient 1 and Coefficient 2. Given the proposed transitional approach set out in section 6.4.4.2 of this report, the Rule Change Panel suggests that it may be possible to manage the transition without incurring the costs of the proposed table.[131]

- The remaining system management system costs are to implement the proposed changes to clauses 3.18.2A, 3.18.9A and 3.19.2E (to prevent retrospective changes to Planned Outage end times or quantities of de-rating). The Rule Change Panel considers that the estimated cost is acceptable given the associated transparency benefits, but notes that physically preventing adjustments to Planned Outage end times in SMMITS is not the only implementation option and could:
  - interfere with the current arrangements whereby Western Power field crews can notify AEMO of early returns to service by telephone in the first instance; and
  - require special arrangements to handle periods in which SMMITS is unavailable.

Other costs

Alinta and Western Power did not comment on implementation costs in their further submissions, while Bluewaters only mentioned that it expected to incur compliance costs.

Perth Energy noted that some of the Rule Change Panel's proposed amendments would require minor changes to Perth Energy's systems and processes, but it did not expect the cost of those changes to be material.

Synergy noted that updates to its trading system will be required to reflect some of the changes in the Rule Change Proposal, and that education to generation site staff and traders would also be required. However, Synergy was yet to ascertain the costs involved with these changes.

6.8.2 Practicality

In its further submission, AEMO estimated that it would require 6-9 months to implement all the changes proposed in the CFFS, including any required procedure changes. AEMO also noted that, as the changes would require AEMO to modify systems being transferred as part of the SMST project, the earliest AEMO would be able to commence modification of those systems was during the second half of 2020 (following a 3-month bedding in period after the SMST project was completed).

[131] The Rule Change Panel notes that this would likely require a short period during which Rule Participants would not be able to update SMMITS outage records, similar to (but shorter than) the period recently proposed for the implementation of the SMST project.

AEMO has since advised RCP Support that it will require 6 months from the publication of the Final Rule Change Report to implement the proposed Amending Rules in this Draft Rule Change Report.

In other further submissions:

- Perth Energy expected that the changes it would be required to undertake would be able to be completed within AEMO's timeframe for implementing the necessary changes to market systems and processes;
- Synergy noted that it was unable to determine the time required to implement all the changes (including the additional changes proposed in the CFFS), but would be better positioned to determine this once the draft Amending Rules were published; and
- Bluewaters considered that it was likely to complete the required governance and internal process updates in a matter of weeks.

The Rule Change Panel considers that a 6-month implementation period is very conservative in light of:

- the greatly reduced scope of the proposed amendments;
- AEMO's indication that the work will be done independently of other changes to its systems and using external resources if necessary; and
- the ability to use manual workarounds to implement at least some of the amendments for a short period if IT system changes are delayed.

The Rule Change Panel therefore proposes to commence the transitional provisions in section 1.nn at 8:00 AM on 15 June 2021, and the remaining Amending Rules at 8:00 AM on 29 June 2021, approximately 5 months after the expected publication of the Final Rule Change Report.

6.8.3 Amendments to Associated WEM Procedures

The Rule Change Panel notes that the proposed change will require amendments to the Outage Procedure.

7. Amending Rules

The Rule Change Panel proposes to implement the following Amending Rules (~~deleted text~~, added text, clauses that are included for context but not amended):

New section 1.nn, which specifies transitional provisions to support the commencement of RC_2014_03, is proposed to commence two weeks before the remainder of the Amending Rules.

1.nn. Transitional Provisions – Outage Improvements

1.nn.1. In this section 1.nn:

New Rules: Means the Amending Rules made in the Rule Change Panel's Final Rule Change Report for Rule Change Proposal: Administrative Improvements to the Outage Process (RC_2014_03), other than the Amending Rules with respect to this section 1.nn.

Post-Amended Rules: Means the WEM Rules as in force immediately after the New Rules come into effect.

Pre-Amended Rules: Means the WEM Rules as in force immediately before the New Rules come into effect.

Rule Change Commencement Day: Means the Trading Day when the New Rules come into effect (as determined by the Rule Change Panel under clause 2.8.12).

New clause 1.nn.2 requires AEMO to start issuing Triggering Outage Notices (that are needed for the Rule Change Commencement Day and onwards), and Market Generators to start taking Triggering Outage Notices into account in their Balancing Submissions, from the start of the Trading Day before the Rule Change Commencement Day.

1.nn.2. During the Trading Day before the Rule Change Commencement Day, notwithstanding that the Pre-Amended Rules continue to apply, each Rule Participant must perform all obligations imposed on that Rule Participant under the Post-Amended Rules, in relation to the Rule Change Commencement Day and subsequent Trading Days that, if the Post-Amended Rules were in force, the Rule Participant would have been required to perform under the Post-Amended Rules with respect to:

(a) Triggering Outage Notices issued under section 3.20A;

(b) Balancing Submissions submitted in accordance with section 7A.2; and

(c) a Dispatch Instruction or Operating Instruction issued under Chapter 7.

New clause 1.nn.3 ensures that Triggering Outage Notices will be issued by 9:00 AM on the day prior to the Rule Change Commencement Day for all Triggering Outages affecting the Rule Change Commencement Day and onwards that would have had a Triggering Outage Notice issued by that time under the New Rules.

1.nn.3. By 9:00 AM on the day prior to the Rule Change Commencement Day, AEMO must issue a Triggering Outage Notice for each:

(a) Scheduled Outage that is a Triggering Outage and is expected to cause a Foreseeable Constraint that ends after the start of the Rule Change Commencement Day; and

(b) Opportunistic Maintenance approved by AEMO in accordance with clause 3.19.4 that is a Triggering Outage and is expected to cause a Foreseeable Constraint that ends after the start of the Rule Change Commencement Day,

unless AEMO has already issued a Triggering Outage Notice in relation to the Triggering Outage in accordance with clause 1.nn.2.

New clauses 1.nn.4 and 1.nn.5 account for the resetting of the Coefficient 1 and Coefficient 2 parameters in SMMITS to 1 at the start of the Rule Change Commencement Day. From that time, outage quantities will be processed in accordance with the New Rules, including quantities relating to outage periods that may fall before the Rule Change Commencement Day.

1.nn.4. Any quantity of de-rating entered into AEMO's outage management system for a Non-Intermittent Generator on or after the Rule Change Commencement Day (including a quantity of de-rating for an outage period that started before the Rule Change Commencement Day) is deemed to be provided under the Post-Amended Rules.

1.nn.5. From the start of the Rule Change Commencement Day, AEMO must prepare any outage schedules required under clauses 7.3.4 and 7.13.1A(b) (including outage schedules for Trading Days falling before the Rule Change Commencement Day) in accordance with the Post-Amended Rules.

Some outage quantities provided for Non-Intermittent Generators before the Rule Change Commencement Day will be used by AEMO to prepare outage schedules under clauses 7.3.4 and 7.13.1A(b) after the New Rules come into effect. New clauses 1.nn.6 -1.nn.8 allow a Market Generator to revise the relevant outage quantities to account for the impact of the outage quantity calculation changes in the New Rules.

1.nn.6. Subject to clause 1.nn.7, where:

(a) a Market Participant has submitted:

i. an Outage Plan;

ii. a request for approval of Opportunistic Maintenance;

iii. a request for approval of a Consequential Outage; or

iv. details of a Forced Outage,

for a Non-Intermittent Generator in AEMO's outage management system before the Rule Change Commencement Day; and

(b) the relevant outage period overlaps one or more Trading Days for which AEMO is required to prepare an outage schedule under clause 7.13.1A(b) on or after the Rule Change Commencement Day,

then the Market Participant may provide to AEMO a revised quantity of de-rating for that outage.

1.nn.7. A revised quantity of de-rating provided by a Market Participant to AEMO for an outage under clause 1.nn.6 must:

(a) vary from the previous quantity of de-rating provided for the outage no more than is needed to account for the impact of the New Rules on the determination of Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities; and

(b) be provided to AEMO:

i. for outages commencing before the end of the Trading Day following the Rule Change Commencement Day, by 5:00 PM on the day before the last Business Day before the Rule Change Commencement Day; and

ii. for other outages, by noon on the Rule Change Commencement Day.

1.nn.8. If AEMO receives a revised quantity of de-rating for an outage under clause 1.nn.6 that meets the requirements specified in clause 1.nn.7, then AEMO must:

(a) replace the previously provided quantity of de-rating with the revised quantity of de-rating in AEMO's outage management system; and

(b) use the revised quantity of de-rating when preparing outage schedules under clauses 7.3.4 and 7.13.1A(b) on or after the Rule Change Commencement Day.

…

Clause 3.18.1A has been amended to exclude small Non-Intermittent Generators that may be registered as Non-Scheduled Generators from the exemption to request or report Outages below the materiality threshold.

3.18.1A. The obligations specified in this section 3.18 and sections 3.19 and 3.21 to request or report Outages do not apply to Market Participants in respect of an outage of ~~a Non-Scheduled~~ an Intermittent Generator if the average MW de-rating over the relevant Trading Interval is less than:

$$\min(0.1 \times \text{Nameplate\_Capacity}, 10)$$

where Nameplate_Capacity is the MW quantity provided for the ~~Non-Scheduled~~ Intermittent Generator under Appendix 1(e)(ii).

…

Clauses 3.18.2A(h), 3.18.9A and 3.19.2E have been amended to prevent retrospective changes to Planned Outages that remove Trading Intervals from the outage period or reduce the quantity of de-rating. (Note that adding Trading Intervals or increasing the quantity of de-rating is already not permitted at any time.)

3.18.2A.

…

(h) A Market Participant must not submit a revised notice of a proposed Planned Outage to ~~System Management~~ AEMO for a Self-Scheduling Outage Facility that proposes:

i. a new start time for the proposed Planned Outage that is earlier than the previous proposed start time;

ii. a new end time for the proposed Planned Outage that is later than the previous proposed end time; ~~or~~

iii. an increase in the quantity of de-rating~~.~~;

iv. a new start time or quantity of de-rating for the proposed Planned Outage, if the time of submission is later than the previous proposed start time; or

v. a new end time for the proposed Planned Outage that is earlier than the time of submission.

…

…

3.18.9A. A Market Participant or Network Operator must not submit a revised Outage Plan to ~~System Management~~ AEMO that proposes:

(a) a new start time for the proposed outage that is earlier than the previous proposed start time;

(b) a new end time for the proposed outage that is later than the previous proposed end time; ~~or~~

(c) an increase in the quantity of de-rating~~.~~;

(d) a new start time or quantity of de-rating for the proposed outage, if the time of submission is later than the previous proposed start time; or

(e) a new end time for the proposed outage that is earlier than the time of submission.

…

3.19.2E. A Market Participant or Network Operator must not submit a revised request for approval of Opportunistic Maintenance that proposes:

(a) a new start time for the Opportunistic Maintenance that is earlier than the previous proposed start time;

(b) a new end time for the Opportunistic Maintenance that is later than the previous proposed end time; ~~or~~

(c) an increase in the quantity of de-rating~~.~~;

(d) a new start time or quantity of de-rating for the Opportunistic Maintenance, if the time of submission is later than the previous proposed start time; or

(e) a new end time for the Opportunistic Maintenance that is earlier than the time of submission.

…

New section 3.20A sets out the requirements for Triggering Outage Notices. Note that one Triggering Outage Notice might relate to several Foreseeable Constraints.

3.20A. Triggering Outage Notices

3.20A.1. A Triggering Outage Notice issued by AEMO under this section 3.20A must include:

(a) a unique identifier for the Triggering Outage;

(b) the date and time that the Triggering Outage Notice is issued;

(c) a description of the event that prompted the issue of the Triggering Outage Notice;

(d) the date and time of the event that prompted the issue of the Triggering Outage Notice;

(e) for each Foreseeable Constraint caused by the Triggering Outage:

i. the identity of the Facility affected by the Foreseeable Constraint;

ii. the date and time that the Foreseeable Constraint is expected to commence;

iii. the date and time that the Foreseeable Constraint is expected to end; and

iv. the maximum MW level of sent out generation for the affected Facility during the period of the Foreseeable Constraint.

3.20A.2. AEMO must issue a Triggering Outage Notice in respect of a Triggering Outage as soon as practicable after it:

(a) schedules an Outage Plan for a Triggering Outage in its outage schedule;

(b) removes an Outage Plan for a Triggering Outage that is not yet approved from its outage schedule;

(c) approves a Scheduled Outage that is a Triggering Outage;

(d) rejects a request for approval of a Scheduled Outage that is a Triggering Outage; or

(e) approves a request for Opportunistic Maintenance that is a Triggering Outage.

3.20A.3. Subject to clause 3.20A.4, AEMO must issue a Triggering Outage Notice as soon as practicable after:

(a) AEMO rejects a previously approved Planned Outage that is a Triggering Outage;

(b) a Network Operator withdraws an Outage Plan for a Scheduled Outage that is a Triggering Outage;

(c) a Network Operator withdraws a previously approved request for Opportunistic Maintenance that is a Triggering Outage;

(d) a Network Operator submits a revised Outage Plan for a Scheduled Outage that affects a Foreseeable Constraint; or

(e) a Network Operator submits a revised request for Opportunistic Maintenance for a previously approved Planned Outage that affects a Foreseeable Constraint.

3.20A.4. AEMO must not issue a Triggering Outage Notice under clause 3.20A.3 that affects a Foreseeable Constraint in respect of a Trading Interval if it is less than 30 minutes before Balancing Gate Closure for that Trading Interval. If AEMO is prohibited under this clause 3.20A.4 from issuing a Triggering Outage Notice in respect of a Trading Interval, then AEMO must issue a Triggering Outage Notice that reflects the effect on Foreseeable Constraints of the event that prompted the Triggering Outage Notice in respect of those Trading Intervals, if any, for which it is 30 minutes or more before Balancing Gate Closure.

3.20A.5. AEMO may:

(a) issue Triggering Outage Notices using the processes it uses to issue Dispatch Advisories; and

(b) meet its obligations to publish Triggering Outage Notices on the WEM Website under clause 10.5.1(k) using the processes it uses to publish Dispatch Advisories.

3.21. Forced Outages and Consequential Outages

Clause 3.21.1 has been amended to:

- use the defined term ‘Outage Facility’
- exempt outages of Intermittent Generators that are below the materiality threshold defined in clause 3.18.1A
- remove the obligation to report a Forced Outage for a generator that suffers a failure during an approved Commissioning Test
- renumber clause 3.21.1(aB) to 3.21.1(aA) for consistency with the drafting conventions of the WEM Rules.

3.21.1. A Forced Outage is any outage of ~~either a Facility or item of equipment on the list described in clause 3.18.2 or a Facility or generation system to which clause 3.18.2A relates~~ an Outage Facility that has not received ~~System Management's~~ AEMO's approval, including:

(a) outages or de-ratings for which no approval was received from ~~System Management~~ AEMO, excluding ~~Consequential Outages;~~:

i. Consequential Outages;

ii. outages of an Intermittent Generator that under clause 3.18.1A are not required to be reported to AEMO; and

iii. outages of a Scheduled Generator that occur within a period in which the Facility is subject to an approved Commissioning Test and are caused by a failure of the Facility's equipment during that Commissioning Test;

(a~~B~~A) outages or de-ratings as a result of a direction from ~~System Management~~ AEMO under clause 2.28.3C;

(b) any part of a Planned Outage that exceeds its approved duration; and

(c) where the Market Participant or Network Operator does not follow a direction from ~~System Management~~ AEMO under clause 3.20.1 to return the equipment to service within the time specified in the appropriate contingency plan.

Clause 3.21.2 has been amended to:

- use the defined term 'Outage Facility'
- extend the definition of a Consequential Outage to cover an outage caused by an outage of equipment that is part of a Network but not included on the Equipment List
- extend the definition of a Consequential Outage to account for Foreseeable Constraints
- allow for the approval of a Consequential Outage request related to a Foreseeable Constraint in advance
- remove the reference to clause 3.21.10 as it is no longer required.

3.21.2. A Consequential Outage is an outage of ~~either a Facility or item of equipment on the list described in clause 3.18.2 or a facility or generation system to which clause 3.18.2A relates for which no approval was received from System Management~~ an Outage Facility that is not an approved Planned Outage, but which ~~System Management~~ AEMO determines:

(a) was caused by a Forced Outage to another Rule Participant's equipment and would not have occurred if the other Rule Participant's equipment did not suffer a Forced Outage; ~~or~~

(b) was caused by ~~a Planned Outage to a Network Operator's equipment and would not have occurred if the Network Operator's equipment did not undertake the Planned Outage,~~ any outage of an item of equipment that is

part of a Network, including a Forced Outage or a Planned Outage, and would not have occurred if the item of equipment did not experience the outage;

(c) was caused by a Foreseeable Constraint that affected the Outage Facility and that would not have occurred if the Foreseeable Constraint did not affect the Outage Facility; or

(d) will be caused by a Foreseeable Constraint that will affect the Outage Facility.

~~but excludes any outage deemed not to be a Consequential Outage in accordance with clause 3.21.10.~~

3.21.2A. An outage does not occur in respect of a Constrained Access Facility for the purposes of these ~~Market~~ WEM Rules where the Constrained Access Facility is dispatched in accordance with a Network Control Service Contract and these ~~Market~~ WEM Rules.

New clause 3.21.2B identifies circumstances in which the period of a Consequential Outage may extend beyond the period of the outage that caused the Consequential Outage.

3.21.2B. To avoid doubt, the period of a Consequential Outage may include:

(a) any period immediately following the outage causing the Consequential Outage that is needed to return the capacity or capability of the Outage Facility that is the subject of the Consequential Outage to service in accordance with the Outage Facility's Equipment Limits;

(b) any Trading Interval excluded from the period of a Foreseeable Constraint for a Facility in the Balancing Portfolio in a Triggering Outage Notice that is issued less than 30 minutes before the time specified in clause 7A.2.9(d) for that Trading Interval; and

(c) for an Intermittent Generator:

i. the Trading Interval immediately preceding the start of a Foreseeable Constraint for that Facility; and

ii. the Trading Interval immediately following the end of a Foreseeable Constraint for the Facility,

if the sent out generation of the Facility in those Trading Intervals is less than it would have been had the Foreseeable Constraint not occurred.

3.21.3. ~~System Management~~ AEMO must keep a record of all Forced Outages and Consequential Outages of which it ~~is~~ becomes aware.

Clause 3.21.4 has been revised to:

- explicitly distinguish between the initial notification of a Forced Outage or Consequential Outage to AEMO, using mechanisms specified by AEMO but likely to involve phone calls

to the Control Room, and the requirements to report/request outages in AEMO's outage management system, which are covered in other clauses

- require a Rule Participant to notify AEMO if it is aware that it is going to suffer a Forced Outage from a specific time in the future (e.g. if it is not going to be able to return from a Planned Outage on time)
- remove the requirement to notify AEMO of Consequential Outages related to Foreseeable Constraints (because AEMO is already aware of such outages)
- move the list of information to be provided to AEMO to new clause 3.21.4A.

~~3.21.4. If a Facility or item of equipment that is on the list described in clause 3.18.2 or a Facility or generation system to which clause 3.18.2A relates suffers a Forced Outage or Consequential Outage, then the relevant Market Participant or Network Operator must inform System Management of the outage as soon as practicable. Information provided to System Management must include:~~

~~(a) the time the outage commenced;~~

~~(b) an estimate of the time the outage is expected to end;~~

~~(c) the cause of the outage;~~

~~(d) the Facility or item of equipment or Facilities or items of equipment affected; and~~

~~(e) for each affected Facility or item of equipment, the expected quantity of any de-rating by Trading Interval, where, if the Facility is a generating system, this quantity is to be submitted in accordance with clause 3.21.5.~~

3.21.4. If a Market Participant or Network Operator becomes aware that its Outage Facility:

(a) has suffered a Forced Outage;

(b) has suffered an outage that the Market Participant or Network Operator considers is a Consequential Outage that is not attributable to a Foreseeable Constraint; or

(c) will suffer a Forced Outage from a specific time in the future,

then the Market Participant or Network Operator must notify AEMO and provide the information specified in clause 3.21.4A as soon as practicable, in the manner prescribed in the WEM Procedure specified in clause 3.21.18.

New clause 3.21.4A lists the information that must be provided to AEMO under clause 3.21.4 and, for Forced Outages, reported in AEMO's outage management system (the information requirements for a Consequential Outage request are covered separately in new clause 3.21.12). The current list in clause 3.21.4 has been updated to:

- reflect that the outage may not have commenced at the time of the notification
- simplify the drafting by removing the references to multiple Outage Facilities

- limit the reference to clause 3.21.5 to Scheduled Generators and Non-Scheduled Generators, because clause 3.21.5 does not cover de-ratings of other generating systems.

3.21.4A. The information a Market Participant or Network Operator must provide to AEMO under clause 3.21.4 is:

(a) the date and time the outage commenced or is expected to commence (as applicable);

(b) the date and time the outage ended or is expected to end (as applicable);

(c) the cause of the outage;

(d) the identity of the Outage Facility de-rated as a result of the outage; and

(e) the expected quantity of any de-rating by Trading Interval, which must be submitted in accordance with clause 3.21.5 where the Facility is a Scheduled Generator or Non-Scheduled Generator.

New clause 3.21.4B requires a Rule Participant to keep AEMO up to date about any material changes to the information previously provided regarding a Forced Outage or Consequential Outage. As for clause 3.21.4, the manner of providing this information is determined by AEMO (and might vary depending on the Outage Facility type).

3.21.4B. Where a Market Participant or Network Operator has informed AEMO of a Forced Outage or Consequential Outage under clause 3.21.4, the Market Participant or Network Operator must inform AEMO of any material change to the information provided as soon as practicable after becoming aware of that change, in the manner prescribed in the WEM Procedure specified in clause 3.21.18.

Clause 3.21.5 has been amended to specify the proposed requirements for reporting outage quantities for Scheduled Generators and Non-Scheduled Generators. The new subordinate clauses:

- specify the meaning of “maximum sent out capacity”
- clarify how the quantity of de-rating should be reported where the reduction in capacity varied during the Trading Interval (e.g. if a generator was affected by a Network Forced Outage in the middle of a Trading Interval)
- clarify how outage quantities should be reported for an Intermittent Generator with a nameplate capacity that exceeds its maximum sent out capacity.

3.21.5. The quantity of de-rating for an outage notification submitted to ~~System Management~~ AEMO for a Scheduled Generator or Non-Scheduled Generator is the MW reduction in capacity from the relevant Facility’s maximum sent out capacity ~~measured on a sent out basis at 41 degrees Celsius where the maximum capacity is as found in the Standing Data file for Temperature Dependence provided under Appendix 1(b) iv and converted to a sent out basis at 41 degrees Celsius. The remaining capacity, determined as the maximum capacity minus the~~

~~notified outage, must be available to System Management for dispatch.~~, adjusted to account for any previous outage notifications for concurrent outages of the Facility. When calculating the quantity of de-rating for an outage notification to be submitted to AEMO for a Scheduled Generator or Non-Scheduled Generator:

(a) the maximum sent out capacity of the Facility is the quantity specified for the Facility under Appendix 1(b)(iii) or Appendix 1(e)(iiiA) as applicable;

(b) if the reduction in capacity varies during a Trading Interval, then the quantity of de-rating for the Trading Interval is measured as the average MW reduction in capacity over the duration of the Trading Interval; and

(c) if the outage notification is in respect of an outage for an Intermittent Generator with a nameplate capacity (as specified for the Facility under Appendix 1(e)(ii)) exceeding its maximum sent out capacity, and the Intermittent Generator remains or will remain capable of achieving its maximum sent out capacity throughout the outage period, then the quantity of de-rating for the outage is deemed to be zero.

New clause 3.21.5A clarifies how outage quantities must be determined for Scheduled Generators that fail to comply with clause 7.10 1 due to a Forced Outage or Consequential Outage.

3.21.5A. A quantity of de-rating determined for a Scheduled Generator in accordance with clause 3.21.5 is deemed to satisfy the requirement in clause 7.10.2(c)(ii) if, and only if, the quantity is determined using the assumption that at all times throughout the relevant Trading Interval, the capacity of the Scheduled Generator that was not subject to an outage was equal to the Scheduled Generator's actual level of sent out generation.

Clause 3.21.6 has been amended to:

- clearly distinguish capacity-adjusted outage quantities from unadjusted outage quantities
- restrict the calculation of capacity-adjusted outage quantities to Non-Intermittent Generators
- implement the proposed changes to the calculations.

~~3.21.6. The following will apply for the purposes of clauses 7.3.4 and 7.13.1A (b):~~

~~(a) outage data will be entered by Market Participants in System Management's computer interface system on a sent out basis at 15 degrees Celsius. System Management will convert the outage data to a sent out basis at 41 degrees Celsius by multiplying the outage quantity at 15 degrees Celsius by the ratio of the maximum capacity at 41 degrees Celsius to the maximum capacity at 15 degrees Celsius for the Facility as found in the Standing Data file for temperature dependence provided under Appendix 1(b) iv on a generated basis for that facility. Market Participants will submit the outage data at 41 degrees Celsius as displayed by System Management's computer interface system;~~

~~(b) System Management will calculate the Forced Outage (on a sent out basis at 41 degrees Celsius) for a Facility in a Trading Interval as the greater of:~~

~~i zero and~~

~~ii the sum of all Forced Outages notified for that Facility minus the difference of the Facility maximum capacity and its Reserve Capacity Obligation Quantity;~~

~~(c) System Management will calculate the Planned Outage (on a sent out basis at 41 degrees Celsius) for a Facility in a Trading Interval as the greater of:~~

~~i. zero and~~

~~ii. the sum of all Planned Outages minus the greater of:~~

~~1. zero and~~

~~2. the maximum capacity of the Facility minus its Reserve Capacity Obligation Quantity minus the sum of all Forced Outages notified for the Facility before the adjustment in (b) above is made by System Management; and~~

~~(d) System Management will calculate the Consequential Outage (on a sent out basis at 41 degrees Celsius) for a Facility in a Trading Interval as the greater of:~~

~~i. zero and~~

~~ii. the sum of all Consequential Outages minus the greater of:~~

~~1. zero and~~

~~2. the maximum capacity of the Facility minus its Reserve Capacity Obligation Quantity minus the sum of all Forced Outages and the sum of all Planned Outages notified for the Facility before the adjustments in (b) and (c) above are made by System Management;~~

~~(e) [Blank]~~

~~(f) the maximum capacity used in this clause is the value defined in clause 3.21.5.~~

3.21.6. For a Non-Intermittent Generator, for a Trading Interval:

(a) the Capacity-Adjusted Forced Outage Quantity is:

CAFO = max(0, UFO - (MSOC - DEF_RCOQ))

(b) the Capacity-Adjusted Planned Outage Quantity is:

CAPO = max(0, UPO - max(0, MSOC - DEF_RCOQ - UFO))

(c) the Capacity-Adjusted Consequential Outage Quantity is:

CACO = max(0, UCO - max(0, MSOC - DEF_RCOQ - UFO - UPO))

where:

UFO is the Unadjusted Forced Outage Quantity for the Non-Intermittent Generator for the Trading Interval;

MSOC is the maximum sent out capacity of the Non-Intermittent Generator specified under Appendix 1(b)(iii) or Appendix 1(e)(iiiA) (as applicable) for the Trading Interval;

DEF RCOQ is the Reserve Capacity Obligation Quantity that would apply to the Non-Intermittent Generator in the Trading Interval assuming that the Non-Intermittent Generator was not subject to an Outage or an approved Commissioning Test in the Trading Interval;

UPO is the Unadjusted Planned Outage Quantity for the Non-Intermittent Generator for the Trading Interval; and

UCO is the Unadjusted Consequential Outage Quantity for the Non-Intermittent Generator for the Trading Interval.

Clause 3.21.7 has been amended to:

- remove the obligations relating to Consequential Outages (which have been moved to new clause 3.21.10)
- clarify that the obligation relates to the reporting of Forced Outages in AEMO's outage management system (currently SMMITS)
- distinguish between the obligation to provide 'operational' updates to AEMO under new clause 3.21.4B and the obligation to formally report a Forced Outage in AEMO's outage management system
- clarify the timing requirement in respect of each affected Trading Day.

~~3.21.7 Notwithstanding the requirements of clause 3.21.4 that a relevant Market Participant or Network Operator must inform System Management of a Forced Outage or Consequential Outage as soon as practicable, a Market Participant or Network Operator must provide full and final details of the relevant Planned Outage, Forced Outage or Consequential Outage to System Management no later than fifteen calendar days following the Trading Day.~~

3.21.7. Notwithstanding any prior obligations under clauses 3.21.4 and 3.21.4B to notify and provide information to AEMO, a Market Participant or Network Operator must report and provide full and final details of the information specified in clause 3.21.4A for a Forced Outage of its Outage Facility in AEMO's outage management system, in respect of each affected Trading Day, by the end of the day that is 15 calendar days after the day on which the affected Trading Day ends.

Clauses 3.21.8 to 3.21.11 have been replaced with new clauses 3.21.8 to 3.21.17.

~~3.21.8 If a Market Participant considers that one of its Facilities has suffered a Consequential Outage then the Market Participant may provide System~~

~~Management with a notice confirming details of the Consequential Outage no later than 15 calendar days following the Trading Day on which the Consequential Outage commenced. The notice must:~~

~~(a) be signed by an Authorised Officer of the Market Participant;~~

~~(b) confirm that a Consequential Outage has occurred; and~~

~~(c) provide details (to the best of its knowledge) of the events which resulted in the Consequential Outage.~~

~~3.21.9. In its determination of a Consequential Outage under clause 3.21.2, System Management must accept the information provided by a Market Participant under clause 3.21.8 unless the information is inconsistent with other information held by System Management.~~

~~3.21.10 If a Market Participant informs System Management of a Consequential Outage under clause 3.21.4, but does not provide System Management with a notice in accordance with clause 3.21.8, then the outage will be deemed not to be a Consequential Outage and System Management must not include the outage as a Consequential Outage in the schedule provided to AEMO in accordance with clause 7.13.1A(b).~~

~~3.21.11 System Management must retain the notices it receives under clause 3.21.8.~~

New clauses 3.21.8 and 3.21.9 allow AEMO to set tighter deadlines for the reporting of Forced Outages for Non-Intermittent Generators if AEMO considers it necessary to allow it to monitor whether a Market Participant's Trading Margin has fallen below zero.

3.21.8. AEMO may, by written notice to a Market Participant, amend the timeframe prescribed in clause 3.21.7 for a specified period for a Non-Intermittent Generator if AEMO considers that it requires more timely information in respect of Forced Outages from the Market Participant to determine whether the Market Participant's Trading Margin is less than zero.

3.21.9. If AEMO amends the timeframes prescribed in clause 3.21.7 under clause 3.21.8, the Market Participant is not required to comply with the timeframes in clause 3.21.7 for the period specified in the notice.

New clauses 3.21.10 and 3.21.11 allow a Rule Participant to submit a request for a Consequential Outage.

3.21.10. Subject to clause 3.21.17, if a Market Participant or Network Operator considers that its Outage Facility has suffered a Consequential Outage then it may submit a request for a Consequential Outage to AEMO.

New clause 3.21.11 allows Consequential Outages relating to Foreseeable Constraints to be submitted before the outage commences.

3.21.11. A Market Participant may submit a request for a Consequential Outage of its Outage Facility before the outage commences if the Market Participant receives a Triggering Outage Notice in respect of a Foreseeable Constraint that will result in the Outage Facility suffering a Consequential Outage.

New clause 3.21.12 lists the information that must be provided in a Consequential Outage request.

3.21.12. The information provided in a request submitted under clauses 3.21.10 or 3.21.11 must include:

(a) the date and time the outage commenced or is expected to commence (as applicable);

(b) the date and time the outage ended or is expected to end (as applicable);

(c) the cause of the outage;

(d) the Outage Facility de-rated as a result of the outage;

(e) the expected quantity of any de-rating by Trading Interval, which must be submitted in accordance with clause 3.21.5 where the Facility is a Scheduled Generator or Non-Scheduled Generator; and

(f) for an outage that is caused by a Foreseeable Constraint, the unique identifier provided by AEMO for the relevant Triggering Outage.

New clause 3.21.13 clarifies that a submitted Consequential Outage request will be deemed to be a declaration from an Authorised Officer of the Rule Participant that the Consequential Outage has occurred.

3.21.13. Where a Market Participant or Network Operator submits a request for a Consequential Outage under clauses 3.21.10 or 3.21.11, or revises such a request under clause 3.21.14(a), and that request (or revised request) complies with clause 3.21.12, then the request (or revised request) will be deemed to constitute a declaration by an Authorised Officer of the Market Participant or Network Operator that the Consequential Outage has occurred.

New clause 3.21.14 requires a Rule Participant to update a Consequential Outage request if it becomes aware that the information contained in the request is inaccurate.

3.21.14. Subject to clause 3.21.17(a), if a Market Participant or Network Operator submits a request for a Consequential Outage and subsequently becomes aware that the information provided in the request is inaccurate or inconsistent with the latest information issued by AEMO for a relevant Foreseeable Constraint in a Triggering Outage Notice, then the Market Participant or Network Operator must, as appropriate:

(a) revise the request to update the information; or

(b) withdraw the request,

as soon as practicable.

New clauses 3.21.15 and 3.21.16 set out AEMO's obligations and powers in relation to assessing Consequential Outage requests.

3.21.15. Subject to clause 3.21.17(b), AEMO:

(a) must approve or reject a request for a Consequential Outage submitted by a Market Participant or Network Operator, including an updated request, and inform the Market Participant or Network Operator of its decision as soon as practicable after the request is submitted;

(b) must approve a request for a Consequential Outage that is attributed to a Foreseeable Constraint if the information provided in the request is consistent with the latest information issued by AEMO for the Foreseeable Constraint in a Triggering Outage Notice;

(c) must accept the information provided in a request for a Consequential Outage that is not attributed to a Foreseeable Constraint as accurate unless the information is inconsistent with other information held by AEMO; and

(d) may reject a previously approved request for a Consequential Outage if AEMO considers that the original determination was based on incorrect information, or has been superseded by new or updated information.

3.21.16. If AEMO rejects a request for a Consequential Outage under clause 3.21.15 then it:

(a) must inform the relevant Market Participant or Network Operator of the reasons for its decision as soon as practicable; and

(b) may deem the request for a Consequential Outage to be a report of a Forced Outage.

New clause 3.21.17 sets out the absolute deadlines for making changes to Consequential Outage details in AEMO's outage management system.

3.21.17. Notwithstanding any other provision of this section 3.21:

(a) a Market Participant or Network Operator must not submit or revise a request for a Consequential Outage in respect of a Trading Day after the end of the day that is 15 calendar days after the day on which the Trading Day ends; and

(b) AEMO must make its final decision on whether to approve or reject a request for a Consequential Outage submitted by a Market Participant or Network Operator in respect of a Trading Day before the time that AEMO must record the relevant data for the Trading Day in the schedule required under clause 7.13.1A(b).

Clause 3.21.12 has been renumbered to clause 3.21.18.

3.21.1~~2~~8. ~~System Management~~ AEMO must document the procedure to be followed in determining and reporting Forced Outages and Consequential Outages in a ~~Power System Operation~~ WEM Procedure.

…

3.23 LoadWatch Data

The Rule Change Panel does not propose any changes to clause 3.23.1 as it considers it unnecessary to prescribe the outage calculations for LoadWatch in greater detail.

3.23.1. System Management must, by 12:00 PM on each Tuesday during a Hot Season, prepare and publish on the Market Web Site a LoadWatch Report, providing the following information for each Business Day of that week—

(a) System Management's estimate of—

i. daily maximum temperature;

ii. daily minimum temperature; and

iii. daily maximum load in MW; and

(b) other data published by System Management from time to time for the purpose of the LoadWatch Report.

Where available, System Management must also publish in the LoadWatch Report the following information for each Business Day of the previous week—

(c) maximum and minimum temperatures;

(d) total generation capacity and total Demand Side Management capacity;

(e) total MW quantity of Outages;

(f) total available generation capacity and total Demand Side Management capacity after accounting for total Outages;

(g) maximum Operational System Load Estimate; and

(h) total available generation capacity and total Demand Side Management capacity after accounting for total Outages and the maximum Operational System Load Estimate.

…

4.11. Setting Certified Reserve Capacity

Clause 4.11.1 has been amended to update the reference to the WEM Procedure (clause 4.11.1(h)) and improve consistency with the drafting conventions of the WEM Rules.

4.11.1. Subject to clauses 4.11.7 and 4.11.12, AEMO must apply the following principles in assigning a quantity of Certified Reserve Capacity to a Facility for the Reserve Capacity Cycle for which an application for Certified Reserve Capacity has been submitted in accordance with ~~clause~~ section 4.10:

(a) subject to clause 4.11.2, the Certified Reserve Capacity for a Scheduled Generator for a Reserve Capacity Cycle must not exceed AEMO's reasonable expectation of the amount of capacity likely to be available, after netting off capacity required to serve Intermittent Loads, embedded loads and Parasitic Loads, for Peak Trading Intervals on Business Days in the period from:

i. the start of December for Reserve Capacity Cycles up to and including 2009; or

ii. the Trading Day starting on 1 October for Reserve Capacity Cycles from 2010 onwards,

in Year 3 of the Reserve Capacity Cycle to the end of July in Year 4 of the Reserve Capacity Cycle, assuming an ambient temperature of 41^{o}C;

(b) where the Facility is a generation system (other than an Intermittent Generator), the Certified Reserve Capacity must not exceed the sum of the capacities specified in clauses 4.10.1(e)(ii) and 4.10.1(e)(iii);

(bA) where the Facility is a generation system, the Certified Reserve Capacity must not ~~exceed —~~ exceed:

i. where that Facility is a Constrained Access Facility, the Constrained Access Entitlement as at the date and time specified in clause 4.1.12(b); or

ii. otherwise, the level of unconstrained network access as referred to in clause 4.10.1(bA)(iii);

(bB) where two or more generation Facilities share a Declared Sent Out Capacity, the total quantity of Certified Reserve Capacity assigned to those Facilities must not exceed the Declared Sent Out Capacity;

(c) AEMO must not assign Certified Reserve Capacity to a Facility for a Reserve Capacity Cycle if:

i. for Reserve Capacity Cycles up to and including 2009 that Facility is not operational or is not scheduled to commence operation for the first time so as to meet its Reserve Capacity Obligations by 30 November of Year 3 of that Reserve Capacity Cycle;

ii. for Reserve Capacity Cycles from 2010 onwards that Facility is not operational or is not scheduled to commence operation for the first time so as to meet its Reserve Capacity Obligations by 1 October of Year 3 of that Reserve Capacity Cycle;

iii. that Facility will cease operation permanently, and hence cease to meet Reserve Capacity Obligations, from a time earlier than 1 August of Year 4 of that Reserve Capacity Cycle;

iv. that Facility already has Capacity Credits assigned to it under ~~clause~~ section 4.28C for the Reserve Capacity Cycle;

v. that Facility is an Interruptible Load and, based on applications accepted under clauses 2.29.5D and 2.29.5K (as applicable), the Facility will be associated with a Demand Side Programme for any period when Reserve Capacity Obligations would apply for the Facility for the Reserve Capacity Cycle; or

vi. that Facility is a Demand Side Programme and it has submitted under clause 4.10.1(f)(v) a minimum notice period for dispatch under clause 7.6.1C(e) of more than two hours.

(d) [Blank]

(e) [Blank]

(f) AEMO must not assign Certified Reserve Capacity to a Facility that is not expected to be a Registered Facility by the time its Reserve Capacity Obligations for the Reserve Capacity Cycle would take effect;

(g) in respect of a Facility that will be subject to a Network Control Service Contract, AEMO must not assign Certified Reserve Capacity in excess ~~of~~ of:

i. where that Facility is a Constrained Access Facility, the Constrained Access Entitlement as at the date and time specified in clause 4.1.12(b); or

ii. otherwise, the capacity that AEMO believes that Facility can usefully contribute given its location and any network constraints that are likely to occur;

(h) subject to clauses 4.11.1B and 4.11.1C, AEMO may decide not to assign any Certified Reserve Capacity to a Facility, or to assign a lesser quantity of Certified Reserve Capacity to a Facility than it would otherwise assign in accordance with this clause 4.11.1, ~~if~~ if:

i. the Facility has been in Commercial Operation for at least 36 months and has had a Forced Outage rate or a combined Planned Outage rate and Forced Outage rate greater than the applicable percentage specified in the table in clause 4.11.1D, over the preceding 36 months; or

ii. the Facility has been in Commercial Operation for less than 36 months, or is yet to commence Commercial Operation, and AEMO has cause to believe that over the first 36 months of Commercial Operation the Facility is likely to have a Forced Outage rate or a combined Planned Outage rate and Forced Outage rate

greater than the applicable percentage specified in the table in clause 4.11.1D,

where the Planned Outage rate and the Forced Outage rate for a Facility for a period are calculated in accordance with the ~~Power System Operation~~ WEM Procedure specified in clause ~~3.21.12~~ 3.21.18;

(i) the Certified Reserve Capacity assigned to a Facility is to be expressed to a precision of 0.001 MW;

(j) the Certified Reserve Capacity for a Demand Side Programme for a Reserve Capacity Cycle must not exceed either of the following ~~limits~~ limits:

i. AEMO's reasonable expectation of the amount of capacity likely to be available from that Facility during the periods specified in clause 4.10.1(f)(vi), after netting off capacity required to serve Minimum Consumption for each of the Facility's Associated Loads, from the Trading Day starting on 1 October in Year 3 of the Reserve Capacity Cycle to the end of July in Year 4 of the Reserve Capacity Cycle; and

ii. AEMO's reasonable expectation of the amount by which the Facility could reduce its consumption, measured as a decrease from the Facility's Relevant Demand, by the end of one Trading Interval in response to a Dispatch Instruction requiring it to reduce consumption from the beginning of the Trading Interval at the ramp rate proposed for the Facility under clause 4.10.1(f)(vii), for which purpose AEMO may have regard to the ramp rate proposed under clause 4.10.1(f)(vii) and any other information AEMO considers relevant.

…

Clause 4.12.6 has been amended to clarify what outage quantities are to be considered in the setting of the RCOQ.

4.12.6. Subject to clause 4.12.7, any initial Reserve Capacity Obligation Quantity set in accordance with clauses 4.12.4, 4.12.5, 4.28B.4, or 4.28C.11 is to be reduced once the Reserve Capacity Obligations take effect, as follows:

(a) if the aggregate MW equivalent to the quantity of Capacity Credits (as modified from time to time under the ~~Market~~ WEM Rules) for a Facility is less than the Certified Reserve Capacity for that Facility at any time (for example as a result of the application of clause 4.20.1, clause 4.20.14, clause 4.25.4 or clause 4.25.6), then AEMO must reduce the Reserve Capacity Obligation Quantity to reflect the amount by which the aggregate Capacity Credits fall short of the Certified Reserve Capacity;

(b) during Trading Intervals where there is a ~~Consequential Outage or a Planned Outage~~ Capacity-Adjusted Consequential Outage Quantity or

Capacity-Adjusted Planned Outage Quantity in respect of a Facility in the schedule maintained by ~~System Management~~ AEMO in accordance with clause 7.3.4, AEMO must reduce the Reserve Capacity Obligation Quantity for that Facility and that Trading Interval, after taking into account adjustments in accordance with clause 4.12.6(a), ~~to reflect the amount of capacity unavailable due to that outage~~ by that Capacity-Adjusted Consequential Outage Quantity or Capacity-Adjusted Planned Outage Quantity; and

(c) if the generating system, being a generating system referred to in clause 3.21A.2(a), is subject to a Commissioning Test Plan approved by ~~System Management~~ AEMO during a Trading Interval, then AEMO must reduce the Reserve Capacity Obligation Quantity for that Facility to zero during that Trading Interval.

…

Clause 4.25.3A has been amended to:

- use the correct defined term “Opportunistic Maintenance”
- prevent a Facility from being subject to a Reserve Capacity Test during a period when it is subject to a Foreseeable Constraint
- improve consistency with the drafting style of the WEM Rules.

4.25.3A. AEMO must not subject a Facility to a Reserve Capacity Test if:

(a) that Facility is undergoing a Scheduled Outage or Opportunistic ~~Outage~~ Maintenance which has been approved in accordance with ~~clause~~ section 3.19~~, or~~;

(b) the relevant Market Participant has advised ~~System Management~~ AEMO of a Forced Outage or Consequential Outage for that Facility in accordance with clause 3.21.4; ~~or~~

(c) that Facility is undergoing a Commissioning Test approved in accordance with ~~clause~~ section 3.21A~~.~~; or

(d) that Facility is subject to a Foreseeable Constraint.

…

Clause 4.25.9 has been amended to ensure that a Market Participant does not fail a Reserve Capacity Test because of a Consequential Outage.

4.25.9. In conducting a Reserve Capacity Test, ~~System Management~~ AEMO must:

(a) subject to clauses 4.25.9(b), 4.25.9(c) and 4.25.9(d), endeavour to conduct the Reserve Capacity Test without warning;

(b) allow sufficient time for the Market Participant to schedule fuel that it is not required under these ~~Market~~ WEM Rules to be stored on-site;

(c) allow sufficient time for switching a Facility from one fuel to an alternative fuel if operation using the alternative fuel is being tested;

(d) in the case of an Interruptible Load or a Demand Side Programme, give at least as much notice as is specified under clause 4.10.1(f)(v) to allow for arrangements to be made for the Facility to be triggered;

(e) ~~[Blank]~~deem the Reserve Capacity Test to be cancelled and discard the results if the Facility suffers a Consequential Outage during the test period;

(f) maintain adequate records of the Reserve Capacity Test to allow independent verification of the test results; and

(g) [Blank]

(h) issue an Operating Instruction to increase the Facility's output or decrease its consumption to a level specified by, or referred to in, the Operating Instruction.

…

Clause 4.26.1 has been amended to clarify which outage quantities are to be used when calculating the refund.

4.26.1. If a Market Participant holding Capacity Credits associated with a Facility fails to comply with its Reserve Capacity Obligations applicable to any given Trading Interval then the Market Participant must pay a refund to AEMO calculated in accordance with the following provisions.

(a) The Trading Interval Refund Rate for a Facility f in the Trading Interval t is determined as follows:

Trading Interval Refund Rate(f,t)=RF(f,t) × Y(f,t)

where:

i. Trading Interval Refund Rate (f,t) is the Trading Interval Refund Rate for a Facility f in the Trading Interval t;

ii. RF(f,t) is the refund factor for a Facility f in the Trading Interval t and is calculated in accordance with clause 4.26.1(c); and

iii. Y is the per interval capacity price associated with a Facility f in the Trading Interval t and is determined in accordance with clause 4.26.1(b).

(b) For a Facility f in the Trading Interval t, Y is determined as follows:

i. where Facility f is a Non-Scheduled Generator, Y equals zero if AEMO has determined that in Trading Interval t the Non-Scheduled Generator is in Commercial Operation under clause 4.13.10B and one of the following applies:

1. the Non-Scheduled Generator has operated at a level equivalent to its Required Level in at least two Trading

Intervals, adjusted to 100 percent of the level of Capacity Credits currently held; or

2. the Market Participant has provided AEMO with a report under clause 4.13.10C specifying that the Facility can operate at a level equivalent to its Required Level, adjusted to 100 percent of the level of Capacity Credits currently held;

ii. where Facility f is a Demand Side Programme, Y equals the DSM Reserve Capacity Price divided by 400;

iiA. where Facility f is an Intermittent Load, Y equals the Reserve Capacity Price divided by 12 then divided by the number of Trading Intervals in the relevant Trading Month the Trading Interval t falls in; and

iii. with the exception of clauses 4.26.1(b)(i), 4.26.1(b)(ii) and 4.26.1(b)(iiA), for a Facility f in the Trading Interval t, Y equals:

1. the Facility Monthly Reserve Capacity Price; divided by

2. the number of Trading Intervals in the relevant Trading Month the Trading Interval t falls in.

(c) The refund factor RF(f,t) for a Facility f in the Trading Interval t is the lesser of:

i. six; and

ii. the greater of the dynamic refund factor RF dynamic(t) as determined under clause 4.26.1(d) and the minimum refund factor RF floor(f,t) as determined under clauses 4.26.1(f) or 4.26.1(g) as appropriate.

(d) The dynamic refund factor RF dynamic(t) in the Trading Interval t is determined as follows:

$$\text{RF dynamic}(t) = 11.75 - \left(\frac{5.75}{750}\right) \times \sum_{f \in F} \text{Spare}(f,t)$$

where:

i. F is the set of Facilities for which Market Participants hold Capacity Credits in the Trading Interval t and f is a Facility within that set; and

ii. Spare(f,t) is the available capacity related to the Capacity Credits of the Facility f, which is not dispatched in the Trading Interval t determined in accordance with clause 4.26.1(e).

(e) For a Facility f in the Trading Interval t, Spare(f,t) is determined as follows:

i. where Facility f is a Scheduled Generator, the greater of zero and:

1. the MW quantity of Capacity Credits for Facility f in Trading Interval t; less

2. the ~~MW quantity of Outage~~ the sum of all Capacity-Adjusted Forced Outage Quantities, Capacity-Adjusted Planned

Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for Facility f ~~in~~ for Trading Interval t ~~as recorded~~ in the schedule maintained under clause 7.13.1A(b); less

3. the Sent Out Metered Schedule for Facility f in Trading Interval t multiplied by two so as to be a MW quantity;

ii. where Facility f is a Non-Scheduled Generator, zero; and

iii. where Facility f is a Demand Side Programme which has a Reserve Capacity Obligation Quantity in the Trading Interval t, Spare(f,t) is equal to:

$$\max\{0, \min\left(\text{RCOQ}(f,t), \left(\text{DSP Load}(f,t) - \text{DSP MinLoad}(f,t)\right)\right)\}$$

where:

1. [Blank]

2. RCOQ(f,t) is the Reserve Capacity Obligation for the Demand Side Programme f in the Trading Interval t;

3. DSP Load(f,t) is the Demand Side Programme Load for the Demand Side Programme f in the Trading Interval t as determined under clause 6.16.2 multiplied by two so as to be a MW quantity; and

4. DSP MinLoad(f,t) is the sum of the Minimum Consumption of each Associated Load of the Demand Side Programme f in MW in the Trading Interval t.

(f) Subject to clause 4.26.1(g), the minimum refund factor RF floor(f,t) in the Trading Interval t is determined as follows:

$$\text{RF floor}(f,t) = 1 - 0.75 \times \text{Dispatchable}(f,t)$$

where:

i. Dispatchable(f,t) for a Facility f in the Trading Interval t is its portion of capacity which is not subject to a Forced Outage over the 4320 previous Trading Intervals pt prior to and including the Trading Interval t and is determined as follows:

$$\text{Dispatchable}(f,t) = 1 - \left(\frac{\sum_{pt \in PT} \text{FO}(f,pt)}{\sum_{pt \in PT} \text{CC}(f,pt)}\right)$$

where:

1. PT is the set of 4320 Trading Intervals immediately prior to and including the Trading Interval t and pt is a Trading Interval within that set;

2. FO(f,pt) is the ~~quantity of Forced Outage~~ Capacity-Adjusted Forced Outage Quantity for a Facility f in the Trading Interval pt, as recorded in the schedule maintained under ~~accordance with~~ clause 7.13.1A(b); and

3. CC(f,pt) is the number of Capacity Credits a Market Participant holds for Facility f in the Trading Interval pt; and

(g) RF floor(f,t) is equal to one in the Trading Interval t for a Facility f to which any of the following applies:

i. the Facility is a Demand Side Programme;

ii. [Blank]

iii. the Facility is an Intermittent Generator to which clauses 4.26.1A(a)(ii)(2) or 4.26.1A(a)(ii)(3) applies; or

iv. the Facility is a Scheduled or Non-Scheduled Generator to which clauses 4.26.1A(a)(ii)(4) or 4.26.1A(a)(ii)(5) applies.

Clause 4.26.1A has been amended to:

- correct a manifest error in clause 4.26.1A(a), which currently fails to specify a value for the Reserve Capacity Deficit in the event that none of the specified conditions apply
- clarify which outage quantities are to be used in when calculating the Reserve Capacity Deficit
- improve consistency with the drafting conventions of the WEM Rules.

4.26.1A. AEMO must calculate the Reserve Capacity Deficit refund for each Facility ("**Facility Reserve Capacity Deficit Refund**") for each Trading Interval t as the lesser ~~of —~~ of:

(a) the product ~~of —~~ of:

i. the Trading Interval Refund Rate applicable to the Facility in Trading Interval t; and

ii. the Reserve Capacity Deficit in Trading Interval t,

where the Reserve Capacity Deficit for a Facility is equal to whichever of the following ~~applies —~~ applies, or to zero if none of the following apply:

1. ~~if the Facility is required to have submitted a Forced Outage under clause 3.21.4, or is a Scheduled Generator that has taken a Refund Payable Planned Outage, the total Forced Outage and Refund Payable Planned Outage in that Trading Interval measured in MW~~if the Capacity-Adjusted Forced Outage Quantity or Refund Payable Planned Outage Quantity for the Facility for Trading Interval t exceeds zero, the sum of the Capacity-Adjusted Forced Outage Quantity and Refund Payable Planned Outage Quantity for the Facility for Trading Interval t;

2. if the Facility is an Intermittent Generator which is not considered by AEMO to have been in Commercial Operation for the purposes of clause 4.26.1(b), the number of Capacity Credits associated with the relevant Intermittent Generator;

3. if the Facility is an Intermittent Generator which is considered by AEMO to have been in Commercial Operation for the purposes of clause 4.26.1(b), but for which Y does not equal zero in clause 4.26.1(b), the minimum ~~of —~~ of:

   i. RL- (2 x Max2); or

   ii. RL—A

   ~~where —~~where:

   RL is the Required Level, adjusted to 100 percent of the level of Capacity Credits currently held;

   Max2 is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the Trading Month the Trading Interval t falls in, as measured in Meter Data Submissions received by AEMO in accordance with section 8.4, that has been achieved since the date AEMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the Max2 applied by AEMO for the previous Trading Month; and

   A is the level of output (in MW) detailed in the most recent report provided by the Market Participant for the Facility under clause 4.13.10C,

4. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system referred to in clause 3.21A.2(b), the number of Capacity Credits associated with the relevant Facility;

5. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is not yet undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system referred to in clause 3.21A.2(b), the number of Capacity Credits associated with the relevant Facility; or

6. if the Facility is a Demand Side ~~Programme —~~ Programme:

   $$\max\left(0, \mathrm{RCOQ} - \max\left(0, (\mathrm{RD} - \mathrm{MinLoad})\right)\right)$$

   ~~where —~~where:

RCOQ is the Reserve Capacity Obligation Quantity determined for the Facility under clause 4.12.4;

RD is the Relevant Demand for the Facility determined in accordance with clause 4.26.2CA; and

MinLoad is the sum of the MW quantities of Minimum Consumption for the Facility's Associated Loads; and

(b) the Maximum Facility Refund for the Facility in the relevant Capacity Year, less all Facility Reserve Capacity Deficit Refunds applicable to the Facility in previous Trading Intervals falling in the same Capacity Year.

4.26.1B. AEMO must calculate the Generation Reserve Capacity Deficit Refund for each Market Participant for each Trading Interval as the sum of the Facility Reserve Capacity Deficit Refunds for the Trading Interval for each Facility registered to the relevant Market Participant, excluding any registered Demand Side Programmes.

Clause 4.26.1C has been amended to:

- classify a Capacity-Adjusted Planned Outage Quantity as a Refund Exempt Planned Outage Quantity or a Refund Payable Planned Outage Quantity, rather than classify a Planned Outage as a Refund Exempt Planned Outage or Refund Payable Planned Outage
- improve consistency with the drafting conventions of the WEM Rules.

4.26.1C. Where ~~System Management~~ AEMO has recorded a Capacity-Adjusted Planned Outage Quantity for a Scheduled Generator for a Trading Interval in the schedule maintained under clause 7.13.1A(b) ~~the Planned Outage of a Scheduled Generator in a Trading Interval~~, AEMO must determine that Capacity-Adjusted Planned Outage Quantity to ~~be —~~ be:

(a) if the Refund Exempt Planned Outage Count for the Facility, calculated over the 1000 Trading Days preceding the Trading Day in which the Trading Interval falls, is less than 8400—a Refund Exempt Planned Outage Quantity; or

(b) otherwise—a Refund Payable Planned Outage Quantity.

Clause 4.26.1D has been amended to:

- replace the concept of Refund Exempt Planned Outages and Refund Payable Planned Outage with the concept of Refund Exempt Planned Outage Quantities and Refund Payable Planned Outage Quantities
- improve consistency with the drafting conventions of the WEM Rules.

4.26.1D. The Economic Regulation Authority, in consultation with AEMO, must undertake a review, to be completed by 31 December 2020 of whether the limit for the Refund Exempt Planned Outage Count referred to in clause 4.26.1C should be modified to

better address the Wholesale Market Objectives. The review must include, at a minimum, an assessment ~~of —~~ of:

(a) variations in Planned Outage rates and Forced Outage rates of Scheduled Generators since the introduction of the limit on Refund Exempt Planned Outage~~s~~ Quantities;

(b) for each Scheduled Generator and each year since the introduction of the limit on Refund Exempt Planned ~~Outages —~~ Outage Quantities:

i. the number of Equivalent Planned Outage Hours for which Facility Reserve Capacity Deficit Refunds were payable; and

ii. the total amount of Facility Reserve Capacity Deficit Refunds associated with Refund Payable Planned Outage~~s~~ Quantities; and

(c) the level of participation by Scheduled Generators in the Reserve Capacity Mechanism in each year since the introduction of the limit on Refund Exempt Planned Outage~~s~~ Quantities; and

(d) changes in the mix of Scheduled Generators that have participated in the Reserve Capacity Mechanism in each year since the introduction of the limit on Refund Exempt Planned Outage~~s~~ Quantities.

4.26.1E. If the Economic Regulation Authority recommends changes in the review in clause 4.26.1D, the Economic Regulation Authority must submit a Rule Change Proposal to implement those changes.

Clause 4.26.2 has been amended to clarify which outage quantities are to be used in the calculation of the Net STEM Shortfall.

4.26.2. AEMO must determine the net STEM shortfall ("Net STEM Shortfall") in Reserve Capacity supplied by each Market Participant p holding Capacity Credits associated with a generation system in each Trading Interval t as:

SF(p,t) = Max(RCDF(p,t), RCOQ(p,t)—A(p,t))—RCDF(p,t)

where:

$$A(p,t) = \mathrm{Min}\big(RCOQ(p,t), CAPA(p,t)\big);$$

RCOQ(p,t) for Market Participant p and Trading Interval t is equal to:

(a) the total Reserve Capacity Obligation Quantity of Market Participant p's unregistered facilities that have Reserve Capacity Obligations, excluding Loads that can be interrupted on request; plus

(b) the sum of the product of:

i. the factor described in clause 4.26.2B as it applies to Market Participant p's Registered Facilities; and

ii. the Reserve Capacity Obligation Quantity for each Facility,

for all Market Participant p's Registered Facilities, excluding Demand Side Programmes,

CAPA(p,t) for Market Participant p and Trading Interval t is:

(c) equal to RCOQ(p,t) for a Trading Interval where the STEM Auction has been suspended by AEMO in accordance with section 6.10;

(d) subject to clause 4.26.2(c), the sum of:

i. the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant's Interruptible Loads; plus

ii. the MW quantity calculated by doubling that Market Participant's Net Contract Position in MWh for Trading Interval t, corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus

iii. the MW quantity calculated by doubling the total MWh quantity covered by the STEM Offers which were not scheduled and the STEM Bids which were scheduled in the relevant STEM Auction, determined by AEMO for that Market Participant under section 6.9 for Trading Interval t, corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus

iv. double the total MWh quantity to be provided as Ancillary Services as specified by AEMO in accordance with clause 6.3A.2(e)(i) for that Market Participant corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus

v. the greater of zero and (BSFO(p,t)—RTFO(p,t));

$$\mathrm{RCDF(p,t)} = \mathrm{RTFO(p,t)} + \mathrm{RTNREPO(p,t)};$$

$$\mathrm{RTNREPO(p,t)} = \sum_{\mathrm{f}\epsilon\mathrm{F}} \Big(\mathrm{Max}\big(0, \mathrm{NREPO(f,t)} - \mathrm{BSPO(f,t)}\big)\Big);$$

NREPO(f,t) is the ~~total MW quantity of~~ Refund Payable Planned Outage Quantity associated with Facility f for Trading Interval t;

BSPO(f,t) is the ~~total MW quantity of~~ Capacity-Adjusted Planned Outage Quantity associated with Facility f before the STEM Auction for Trading Interval t, as ~~provided to the AEMO by System Management in accordance with clause 7.3.4~~ recorded in the schedule maintained under clause 7.3.4;

F is the set of Scheduled Generators registered to Market Participant p, and f is a Facility within that set;

BSFO(p,t) is the total capacity-adjusted MW quantity of Forced Outage associated with Market Participant p before the STEM Auction for Trading Interval t, where this is the sum over all the Market Participant's Registered Facilities of the lesser of the Reserve Capacity Obligation Quantity of the Facility for Trading Interval t and the ~~MW~~ Capacity-Adjusted Forced Outage Quantity of the Facility for Trading Interval t as recorded in ~~accordance with section 7.3~~ the schedule maintained under clause 7.3.4; and

RTFO(p,t) is the total capacity-adjusted MW quantity of Forced Outage associated with Market Participant p in real-time for Trading Interval t, where this is the sum over all the Market Participant's Registered Facilities of the lesser of the Reserve Capacity Obligation Quantity of the Facility for Trading Interval t and the ~~MW~~ Capacity-Adjusted Forced Outage Quantity of the Facility for Trading Interval t as recorded in ~~accordance with~~ the schedule maintained under clause 7.13.1A(b).

…

Clause 4.26.6 has been amended to:

- clarify which outage quantities are to be used in the calculation of the Facility Capacity Rebate
- improve consistency with the drafting conventions of the WEM Rules.

4.26.6. The Facility Capacity Rebate in Trading Interval t for Facility f, being a Scheduled Generator or a Demand Side Programme for which a Market Participant holds Capacity ~~Credits —~~ Credits:

$$\mathrm{FCR}(\mathrm{f},\mathrm{t}) = \frac{\mathrm{CC}(\mathrm{f},\mathrm{t}) \times \mathrm{E}(\mathrm{f},\mathrm{t})}{\sum_{\mathrm{f}\in\mathrm{F}}\left(\mathrm{CC}(\mathrm{f},\mathrm{t}) \times \mathrm{E}(\mathrm{f},\mathrm{t})\right)} \times \mathrm{TAR}(\mathrm{t})$$

where—

(a) FCR(f, t) is the Facility Capacity Rebate for Facility f in the Trading Interval t;

(b) TAR(t) is the sum of all Trading Interval Capacity Cost Refunds for all Market Participants in Trading Interval t;

(c) F is the set of Facilities, being Scheduled Generators or Demand Side Programmes and f is a Facility within that set;

(d) CC(f, t) for a Facility f in a Trading Interval t is the Facility's capacity in t, which is not subject to an Outage, determined as ~~follows —~~ follows:

i. for a Scheduled Generator, the MW value of Capacity Credits less the ~~MW quantity of Outage~~ sum of all Capacity-Adjusted Forced Outage Quantities, Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for Facility f for Trading Interval t in the schedule maintained ~~as recorded~~ under clause 7.13.1A(b); and

ii. for a Demand Side Programme, the lesser ~~of —~~ of:

1. the Demand Side Programme Load multiplied by two so as to be a MW quantity less the sum of the Minimum Consumptions in MW for each of the Facility's Associated Loads; and

2. the Demand Side Programme's Reserve Capacity Obligation Quantity in t; and

(e) E(f, t) is the eligibility of Facility f in Trading Interval t, equal ~~to —~~ to:

i. one for any Facility which is a Scheduled Generator and the following ~~applies —~~ applies:

1. the Facility has a Sent Out Metered Schedule greater than zero in any one of the 1,440 Trading Intervals prior to and including Trading Interval t;

2. the sum of the Facility Reserve Capacity Deficit Refunds for Facility f, in Capacity Year y that the Trading Interval t falls in, for ~~trading intervals~~ Trading Intervals prior to and including Trading Interval t, is less than the Maximum Facility Refund for Facility f in Capacity Year y; and

3. the sum of the Generation Reserve Capacity Deficit Refund in Capacity Year y that the Trading Interval t falls in, for ~~trading intervals~~ Trading Intervals prior to and including Trading Interval t, is less than the Maximum Participant Generation Refund for for the Market Participant p which the Facility is registered to, in Capacity Year y; and

ii. one for any Facility which is a Demand Side Programme and the following ~~applies —~~ applies:

1. the Facility received a Dispatch Instruction to reduce consumption in any one of the 1,440 Trading Intervals prior to and including Trading Interval t;

2. the Reserve Capacity Obligation Quantity for the Demand Side Programme does not equal zero under clause 4.12.4(c); and

3. the sum of the Demand Side Programme Capacity Cost Refunds for Facility f, in Capacity Year y that the Trading Interval t falls in, for trading intervals prior to and including Trading Interval t, is less than the Maximum Facility Refund for Facility f in Capacity Year y; and

iii. zero otherwise.

…

Clause 6.3A.2 has been amended to:

- clarify which outage quantities are to be used in the calculation of the information provided to Market Participants
- remove the reference to Outages in clause 6.3A.2(b) because the relevant load-based Facilities are no longer required to report Outages relating to their energy consumption.

6.3A.2. By 9:00 AM on the Scheduling Day AEMO must have calculated and released to each Market Participant the following parameters to be applied by that Market

Participant in forming its STEM Submissions for each Trading Interval in the Trading Day:

(a) the Maximum Supply Capability where this equals the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be supplied during the Trading Interval based on the Standing Data of that Market Participant's Scheduled Generators and Non-Scheduled Generators and assuming the use of the fuel which maximises the capacity of each Facility:

i. less ~~an allowance for Outages~~ the sum of all Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Market Participant for that Trading Interval in the schedule maintained in accordance with clause 7.3.4 (where each outage quantity is Loss Factor adjusted and divided by 2); and

ii. less, for each Market Participant that is a provider of Ancillary Services, the estimated Loss Factor adjusted quantity of energy, in units of MWh, that could potentially be called upon by ~~System Management~~ AEMO from that Market Participant after 1:00 PM on the Scheduling Day to meet Ancillary Service requirements for each Trading Interval of the Trading Day,

where the Maximum Supply Capability may be higher than the actual capacity available during the Trading Interval;

(b) the Maximum Consumption Capability where this equals the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be consumed during a Trading Interval by that Market Participant's Non-Dispatchable Loads and Interruptible Loads based on the Standing Data maximum consumption quantities for those Facilities and Non-Dispatchable Loads~~, less an allowance for Outages in the schedule maintained in accordance with clause 7.3.4~~;

(c) for each Scheduled Generator and Non-Scheduled Generator that is registered as being able to run on Liquid Fuel only, the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be supplied during the Trading Interval based on the Standing Data of that Scheduled Generator or Non-Scheduled Generator less ~~an allowance for Outages~~ the sum of all Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Facility for that Trading Interval in the schedule maintained in accordance with clause 7.3.4 (where each outage quantity is Loss Factor adjusted and divided by 2);

(d) for each Scheduled Generator and Non-Scheduled Generator that is registered as being able to run on both Liquid Fuel and Non-Liquid Fuel, the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be supplied during the Trading Interval when run on each of Liquid Fuel and Non-Liquid Fuel based on the Standing Data of that Scheduled Generator or Non-Scheduled Generator less ~~an allowance for Outages~~ the

sum of all Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Facility for that Trading Interval in the schedule maintained in accordance with clause 7.3.4 (where each outage quantity is Loss Factor adjusted and divided by 2); and

(e) in the case of each Market Participant that is a provider of Ancillary Services:

i. the estimated Loss Factor adjusted quantity of energy, in units of MWh, that could potentially be called upon by ~~System Management~~ AEMO after 1:00 PM on the Scheduling Day to meet Ancillary Service requirements for each Trading Interval of the Trading Day; and

ii. the list of Facilities that ~~System Management~~ AEMO might reasonably expect to call upon to provide the energy described in clause 6.3A.2(e)(i).

Clause 6.3A.3 has been amended to clarify which outage quantities are to be used when calculating the parameters to inform Market Participant's STEM Submissions.

6.3A.3. By 9:05 AM on the Scheduling Day AEMO must have calculated and released to each Market Participant the following parameters for information in forming its STEM Submissions for each Trading Interval in the Trading Day:

(a) the total quantity of Capacity Credits held by that Market Participant for the Trading Day, in units of MW;

(b) the estimated Loss Factor adjusted quantity of energy that could potentially be called upon by ~~System Management~~ AEMO after 1:00 PM on the Scheduling Day to meet Ancillary Service requirements for each Trading Interval of the Trading Day, multiplied by 2, in units of MW;

(c) the ~~total quantity of Planned Outages and Consequential Outages~~ sum of all Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Market Participant for that Trading Interval in the schedule maintained in accordance with clause 7.3.4~~, in units of MW~~;

(d) the total quantity specified in any STEM submission Portfolio Supply Curve from that Market Participant that has been accepted by AEMO for that Trading Interval, multiplied by 2, in units of MW; and

(e) the total quantity specified in any STEM submission Ancillary Service Declaration from that Market Participant that has been accepted by AEMO for that Trading Interval, multiplied by 2, in units of MW.

…

Clause 6.15.2 has been amended to use the term “TES Available Capacity” instead of “Available Capacity”.

6.15.2. The Minimum Theoretical Energy Schedule in a Trading Interval equals:

(a) for a Balancing Facility which is a Scheduled Generator, the amount which is the lesser of:

i. the sum of:

…

ii. where the Balancing Facility is subject to an Outage, the maximum amount of sent out energy, in MWh, which could have been dispatched given the TES Available Capacity for that Trading Interval;

(b) for a Balancing Facility which is a Non-Scheduled Generator:

…

(c) for the Balancing Portfolio, the amount which is the lesser of:

i. the sum of:

…

ii. where a Facility in the Balancing Portfolio is subject to an Outage, the maximum amount of sent out energy, in MWh, which could have been dispatched given the sum of the TES Available ~~Capacity~~ Capacities of Facilities in the Balancing Portfolio for that Trading Interval.

Clause 6.15.3 has been amended to clarify that the schedule recorded under clause 7.13.1A(b) is a schedule of Capacity-Adjusted Outage Quantities.

6.15.3 AEMO must:

(a) calculate Maximum Theoretical Energy Schedules under clause 6.15.1 and Minimum Theoretical Energy Schedules under clause 6.15.2:

i. using Sent Out Metered Schedules determined using SCADA data and output estimates maintained in accordance with clause 7.13.1(cA), notwithstanding any requirement in clause 9.3.4 to use Meter Data Submissions received by AEMO; and

ii. as soon as practicable using applicable SCADA data maintained under clause 7.13.1(cA); and

(b) update Maximum Theoretical Energy Schedules and Minimum Theoretical Energy Schedules calculated under clause 6.15.3(a) as soon as practicable using the schedule of ~~Outages~~ Capacity-Adjusted Forced Outage Quantities, Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities maintained under clause 7.13.1A(b).

…

Clause 6.16A.2 has been amended to prevent the payment of constrained off compensation to a Scheduled Generator that has suffered a Forced Outage or Consequential Outage in a Trading Interval.

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:

i. 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 in respect of the Facility;

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:

1. any Downwards LFAS Enablement and, if the Facility is a Stand Alone Facility, any Backup Downwards 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)~~.~~; or

v. the Balancing Facility is a Scheduled Generator that was subject to a Forced Outage or Consequential Outage in the Trading Interval.

…

Clause 6.17.4 has been amended to use the term “TES Available Capacity” instead of “Available Capacity”.

6.17.4. Subject to clauses 6.17.5B and 6.17.5C, AEMO must attribute any Downwards Out of Merit Generation from a Balancing Facility that is a Scheduled Generator, in a Trading Interval, as follows:

(a) Constrained Off Quantity1 (CoffQ1) equals the lesser of:

i. the maximum energy less the minimum energy, if any, in MWh, which could have been dispatched down from the Facility’s

Balancing Price-Quantity Pair N, with a Loss Factor Adjusted Price (Price N), taking into account the TES Available Capacity and actual SOI Quantity of the Balancing Facility and the applicable Ramp Rate Limit, where N is determined from either of the following Balancing Price-Quantity Pairs or, if different, the one with the lower price:

1. the Balancing Price-Quantity Pair associated with the intersection of TES Available Capacity and the quantities in all Balancing Price-Quantity Pairs summed in order of lowest to highest price; and

2. the Balancing Price-Quantity Pair with a Loss Factor Adjusted Price lower than but closest to the Balancing Price; and

ii. the Downwards Out of Merit Generation for the Balancing Facility;

…

…

Clause 6.17.5A has been amended to:

- use the term “TES Available Capacity” instead of “Available Capacity”
- reflect that TES Available Capacity is defined for each Facility in the Balancing Portfolio, rather than for the Balancing Portfolio as a whole.

6.17.5A. Subject to clause 6.17.5C, AEMO must attribute any Downwards Out of Merit Generation from the Balancing Portfolio in a Trading Interval as follows:

(a) Portfolio Constrained Off Quantity1 (PCoffQ1) equals the lesser of:

i. the maximum energy less the minimum energy, if any, in MWh, which could have been dispatched down from the Balancing Portfolio’s Balancing Price-Quantity Pair N, with Price N, taking into account the sum of the TES Available ~~Capacity of~~ Capacities of the Facilities in the Balancing Portfolio, the MW level at the start of the Trading Interval and the Portfolio Ramp Rate Limit, where N is determined from either of the following Balancing Price-Quantity Pairs or, if different, the one with the lower price:

1. the Balancing Price-Quantity Pair associated with the intersection of sum of the TES Available ~~Capacity~~ Capacities and the quantities in all Balancing Price-Quantity Pairs summed in order of lowest to highest price; and

2. the Balancing Price-Quantity Pair with a price lower than but closest to the Balancing Price; and

ii. the Portfolio Downwards Out of Merit Generation;

…

…

Clauses 6.17.9 and 6.17.10 have been amended to use the term “Balancing Facility Maximum Capacity” instead of “Sent Out Capacity”.

6.17.9. AEMO must, other than for Facilities in the Balancing Portfolio, determine a Settlement Tolerance for each Scheduled Generator and Non-Scheduled Generator, where this Settlement Tolerance is equal to:

(a) for a Scheduled Generator for which an applicable Tolerance Range or Facility Tolerance Range has been determined by ~~System Management~~ AEMO, the applicable value determined by ~~System Management~~ AEMO under clause 2.13.6D, divided by two to be expressed as MWh; or

(b) for Facilities for which no applicable Tolerance Range or Facility Tolerance Range has been determined by ~~System Management~~ AEMO, the lesser of:

i. 3 MWh; and

ii. the greater of:

1. 0.5 MWh; and

2. 3% of the Facility’s ~~Sent Out~~ Balancing Facility Maximum Capacity divided by two to be expressed as MWh.

6.17.10. The Portfolio Settlement Tolerance equals the lesser of:

(a) 3 MWh; and

(b) 3% of the ~~Sent Out~~ Balancing Facility Maximum Capacity of the Balancing Portfolio divided by two to be expressed as MWh.

…

Clause 7.1.1 has been amended to add Foreseeable Constraints to the data that AEMO must use when issuing Dispatch Instructions and Operating Instructions.

7.1.1. ~~System Management~~ AEMO must maintain and, in accordance with section 7.6, use the following data set when issuing Dispatch Instructions to Demand Side Programmes, when issuing Dispatch Instructions to Balancing Facilities dispatched Out of Merit, and when providing Operating Instructions:

(a) Standing Data for Registered Facilities determined in accordance with section 2.34;

(b) Loss Factors determined in accordance with section 2.27;

(c) expected Scheduled Generator and Non-Scheduled Generator capacities by Trading Interval determined in accordance with clauses 3.17.5, 3.17.6 and 3.17.8;

(d) network configuration and capacity by Trading Interval determined in accordance with clauses 3.17.5, 3.17.6 and 3.17.8;

(e) forecasts of load and non-scheduled generation by Trading Interval determined in accordance with section 7.2;

(f) Ancillary Service Requirements for each Trading Interval determined in accordance with clause 7.2.4;

(g) schedules of approved Planned Outages by Trading Interval determined in accordance with section 3.19;

(h) Forced Outages and Consequential Outages by Trading Interval received from Network Operators in accordance with section 3.21;

(i) Scheduled Generator, Non–Scheduled Generator and Interruptible Load Forced Outages and Consequential Outages by Trading Interval received from Market Participants in accordance with section 3.21;

(j) ~~[Blank]~~details of Foreseeable Constraints;

(k) the Non-Balancing Dispatch Merit Order;

(l) Supplementary Capacity Contract data, if any; and

(m) Network Control Service Contract data, if any, received from a Network Operator in accordance with clauses 5.3A.3 and 5.3A.4.

…

Clause 7.3.4 has been amended to:

- use the new terminology for capacity-adjusted outage quantities
- clarify that the quantities are only calculated for Non-Intermittent Generators.

7.3.4. ~~System Management~~ AEMO must prepare a schedule of ~~Planned Outages, Forced Outages and Consequential Outages for each Registered Facility~~ Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for each Non-Intermittent Generator of which ~~System Management~~ AEMO is aware at that time ~~where Outages are calculated in accordance with clause 3.21.6~~, for each Trading Interval of a Trading Day, between 8:00 AM and 8:30 AM on the Scheduling Day prior to the Trading Day.

New clause 7.3.5 specifies the assumption AEMO should make about the maximum ambient site temperature at each site when preparing an ex-ante outage scheduled under clause 7.3.4.

7.3.5. ~~[Blank]~~When preparing a schedule under clause 7.3.4, AEMO must assume that the maximum daily ambient site temperature at the site of each Non-Intermittent Generator will not exceed 41 degrees Celsius during the relevant Trading Day.

…

AEMO has indicated its preference is to manage the turn down of a Non-Scheduled Generator before a planned Triggering Outage (rather than leaving this to the Market Participant to manage).

To facilitate this approach, clauses 7.6.1C and 7.6.1D have been amended, and new clauses 7.6.1I, 7.6.1J and 7.6.1K have been added, to require AEMO to issue the Dispatch Instructions needed to turn down a Non-Scheduled Generator before the start of a Foreseeable Constraint and limit its output for the duration of the Foreseeable Constraint.

Specifically:

- clauses 7.6.1C and 7.6.1D have been amended to allow for AEMO to issue the "turn down" Dispatch Instruction, which would normally be out of merit
- the header of new clause 7.6.1I clarifies that the obligations on AEMO only apply to periods within a Foreseeable Constraint period when the relevant capacity is not also subject to an approved Planned Outage
- new clause 7.6.1I(a) requires AEMO to issue a "turn down" Dispatch Instruction to ensure the Facility's output is reduced to the required level by the time the applicable period begins (while not reducing the output of the Facility before the applicable period more than necessary)
- new clause 7.6.1I(b) maintains the relevant constraint on the Facility for the duration of the Foreseeable Constraint
- new clause 7.6.1J clarifies that retrospective Operating Instructions should be issued for the relevant Trading Intervals to prevent the payment of constrained off compensation
- new clause 7.6.1K gives AEMO the option not to constrain the Facility if constraining the Facility would threaten Power System Security or Power System Reliability.

7.6.1C. In seeking to meet the Dispatch Criteria ~~System Management~~ AEMO must, subject to clauses 7.6.1D and 7.6.1I, issue Dispatch Instructions in the following descending order of priority:

(a) Dispatch Instructions to Balancing Facilities in the order and, subject to clause 7.7.6B, for the quantities that appear in the BMO, taking into account Ramp Rate Limits for that Facility;

(b) a Dispatch Instruction to a Balancing Facility Out of Merit but only to the next Facility or Facilities, and associated quantity in the BMO that ~~System Management~~ AEMO reasonably considers best meets the Dispatch Criteria, taking into account the associated Ramp Rate Limit for that Facility;

(c) a Dispatch Instruction to any Balancing Facility Out of Merit, taking into account the Ramp Rate Limit and non-ramp rate Standing Data limitations relevant to that Facility and any other relevant information available to ~~System Management~~ AEMO;

(d) subject to clauses 7.6.1E and 7.6.1F, a Dispatch Instruction in accordance with the Non-Balancing Dispatch Merit Order to a Demand Side

Programme which holds Capacity Credits, taking into account the DSP Ramp Rate Limit; and

(e) subject to clause 7.6.1E, a Dispatch Instruction in accordance with the Non-Balancing Dispatch Merit Order to a Demand Side Programme (whether or not it holds Capacity Credits) taking into account the DSP Ramp Rate Limit and non-ramp rate Standing Data limitations relevant to that Facility and any other relevant information available to ~~System Management~~ AEMO.

7.6.1D. ~~System Management~~ AEMO may only issue Dispatch Instructions under:

(a) clause 7.6.1C(b) in priority to clause 7.6.1C(a);

(b) clause 7.6.1C(c) in priority to clause 7.6.1C(b);

(c) clause 7.6.1C(d) in priority to clause 7.6.1C(c); and

(cA) clause 7.6.1C(e) in priority to clause 7.6.1C(d),

where ~~System Management~~ AEMO considers, on reasonable grounds, that it needs to do so in order to:

(d) ensure a High Risk Operating State or an Emergency Operating State is avoided; ~~or~~

(e) if the SWIS is in a High Risk Operating State or an Emergency Operating State, enable the SWIS to be returned to a Normal Operating State~~.~~; or

(f) comply with its obligations under clause 7.6.1I.

…

7.6.1I. If a Balancing Facility that is a Non-Scheduled Generator is subject to a Foreseeable Constraint, then for each contiguous period within the period of the Foreseeable Constraint in which the relevant capacity of the Balancing Facility is not subject to an approved Planned Outage ("**applicable period**"), subject to clause 7.6.1K, AEMO must:

(a) issue one or more Dispatch Instructions to the Balancing Facility, which must not impose any unnecessary restriction on the sent out generation of the Balancing Facility, to restrict its MW output level by the start of the applicable period to the MW limit specified for the Foreseeable Constraint in the relevant Triggering Outage Notice;

(b) not issue a Dispatch Instruction or Operating Instruction to the Balancing Facility for a Trading Interval in the applicable period that specifies a MW target output level greater than the MW limit specified for the Foreseeable Constraint in the relevant Triggering Outage Notice.

7.6.1J. A Dispatch Instruction issued under clause 7.6.1I(a) is deemed to meet the criterion in clause 7.7.11(a).

7.6.1K. AEMO is not required to comply with clauses 7.6.1I(a) or 7.6.1I(b) if AEMO reasonably considers that such compliance would threaten Power System Security or Power System Reliability.

…

7.10. Compliance with Dispatch Instructions and Operating Instructions

7.10.1. Subject to clause 7.10.2, a Market Participant must comply with the most recently issued Dispatch Instruction, Operating Instruction or Dispatch Order applicable to its Registered Facility for the Trading Interval.

Clause 7.10.2 has been amended to:

- account for the possibility that a Market Participant may notify AEMO about a Forced or Consequential Outage in advance
- remove the requirement for a Market Participant to report a Forced Outage if it suffers an equipment failure during an approved Commissioning Test.

7.10.2. A Market Participant is not required to comply with clause 7.10.1 if:

(a) such compliance would endanger the safety of any person, damage equipment or breach any applicable law;

(b) the Facility was physically unable to maintain the ramp rate specified in the Dispatch Instruction but:

i. the actual output of the Facility did not, at any time the Dispatch Instruction applied, vary from the output specified in the Dispatch Instruction by more than the applicable Tolerance Range or Facility Tolerance Range; and

ii. the average output over a Trading Interval of the Facility was equal to the output specified in the Dispatch Instruction;

(c) both of the following apply:

i. the Market Participant has notified ~~System Management~~ AEMO, in accordance with clause 3.21.4, that its Registered Facility has been affected, or will be affected, by a Forced Outage or Consequential Outage; and

ii. the quantity of the Forced Outage or Consequential Outage notified is consistent with the extent to which the Market Participant did not comply with the most recently issued Dispatch Instruction, Operating Instruction or Dispatch Order applicable to its Registered Facility for the Trading Interval;

(d) a Demand Side Programme was issued a Dispatch Instruction by ~~System Management~~ AEMO under clause 7.6.1C and its Reserve Capacity Obligation Quantity, as determined under clause 4.12.4(c) is or becomes zero; ~~or~~

(e) clause 7.7.3C excuses compliance~~.~~; or

(f) a Scheduled Generator that was subject to an approved Commissioning Test in the Trading Interval was unable to comply with clause 7.10.1 due to a failure of the Facility's equipment during the period approved for the Commissioning Test.

…

Clause 7.13.1A(b) has been amended to:

- use the new terminology for capacity-adjusted outage quantities
- clarify that the quantities are only calculated for Non-Intermittent Generators.

7.13.1A. ~~System Management~~ AEMO must record the following data for a Trading Day by noon on the fifteenth Business Day following the day on which the Trading Day ends:

(a) the MWh quantity of non-compliance by Synergy by Trading Interval; and

(b) the schedule of all ~~Planned Outages, Forced Outages and Consequential Outages~~ Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for Non-Intermittent Generators relating to each Trading Interval in the Trading Day by Market Participant and Facility.

…

Clause 7.13.1D has been amended to use consistent terminology to describe AEMO's outage management system.

7.13.1D. ~~System Management~~ AEMO must as soon as practicable after:

(a) ~~System Management~~ AEMO receives a request via ~~System Management's computer interface system~~ AEMO's outage management system for a Planned Outage of a Scheduled Generator or a Non-Scheduled Generator; or

(b) ~~System Management~~ AEMO becomes aware via ~~System Management's computer interface system~~ AEMO's outage management system of a change to the information described in clause 7.13.1E,

record any relevant new or amended information outlined in clause 7.13.1E.

Clause 7.13.1E has been amended to:

- reflect that the quantity currently provided under clause 7.13.1E(d) will now be provided under clause 3.18.6(b)
- extend the requirement under clause 7.13.1E(c) to cover requests for Opportunistic Maintenance.

7.13.1E The information required to be recorded by ~~System Management~~ AEMO under clause 7.13.1D must include:

(a) whether the request is for a Scheduled Outage or Opportunistic Maintenance;

(b) the information provided under clauses 3.18.6(a) ~~and 3.18.6(c)~~ – 3.18.6(g);

(c) the time and date when:

i. the Outage Plan or request for Opportunistic Maintenance was received by ~~System Management;~~ AEMO; and

ii. any amendment to the outage status occurred~~; and~~.

~~(d) the MW quantity of any de-rating to a Scheduled Generator or Non-Scheduled Generator, as measured on a sent out basis at 15 degrees Celsius.~~

Clause 7.13.1F has been amended to use consistent terminology to describe AEMO's outage management system.

7.13.1F. ~~System Management~~ AEMO must as soon as practicable after:

(a) ~~System Management~~ AEMO receives a notification of a Forced Outage via ~~its computer interface system~~ AEMO's outage management system or records in ~~its computer interface system~~ AEMO's outage management system that a Consequential Outage has occurred for a Scheduled Generator or a Non-Scheduled Generator; or

(b) ~~System Management~~ AEMO becomes aware via ~~System Management's computer interface system~~ AEMO's outage management system of any change to the information described in clause 7.13.1G,

record any relevant new or amended information outlined in clause 7.13.1G

Clause 7.13.1G has been amended to:

- reference the new clauses that specify the required information items
- update the reference to the clause under which AEMO determines that a Consequential Outage has occurred.

7.13.1G. The information required to be recorded by ~~System Management~~ AEMO under clause 7.13.1F must include:

(a) whether the outage is considered to be a Forced Outage or Consequential Outage;

(b) for a Forced Outage, the information ~~provided under clauses 3.21.4(a) - 3.21.4(d)~~ specified in clauses 3.21.4A(a) – 3.21.4A(e) that is provided by the relevant Market Participant or Network Operator;

(c) for a Consequential Outage, the information specified in clauses 3.21.12(a) – 3.21.12(e) that is provided by the relevant Market Participant or Network Operator; and

(~~c~~d) the time and date when:

i. the Forced Outage was first notified to ~~System Management~~ AEMO;

ii. the outage status was amended by ~~System Management~~ AEMO; and

iii. ~~System Management~~ AEMO recorded in ~~its computer interface system~~ AEMO's outage management system that a Consequential Outage occurred as ~~determined~~ approved under clause ~~3.21.2; and~~ 3.21.15(a).

~~(d) the MW quantity of any de-rating to a Scheduled Generator or Non-Scheduled Generator, as measured on a sent out basis at 15 degrees Celsius.~~

…

Clause 7A.2.4A has been amended to use the term "Balancing Facility Maximum Capacity" instead of "Sent Out Capacity".

7A.2.4A. A Balancing Submission for a Balancing Facility that is a Scheduled Generator must specify the following details for each Trading Interval covered in the Balancing Submission:

(a) a ranking of Balancing Price-Quantity Pairs covering available capacity; and

(b) a declaration of the MW quantity that will be unavailable for dispatch,

where the sum of:

(c) the quantities in the Balancing Price-Quantity Pairs; and

(d) the declared MW quantity of unavailable capacity,

must be equal to the ~~Scheduled Generator's Sent Out~~ Balancing Facility Maximum Capacity for the Scheduled Generator.

Clause 7A.2.4B has been amended to allow a Market Generator that is subject to a Foreseeable Constraint to specify appropriate estimates of its EOI quantities for the Trading Interval(s) immediately preceding the Foreseeable Constraint and for the period of the Foreseeable Constraint. Without this amendment the Market Generator would be required to assume that it would not be subject to a Dispatch Instruction limiting its output, when in reality that should be the Market Generator's expectation.

7A.2.4B. A Balancing Submission for a Balancing Facility that is a Non-Scheduled Generator must specify, for each Trading Interval covered in the Balancing Submission, a single Balancing Price-Quantity Pair with a MW quantity equal to

the Market Participant's best estimate of the Facility's output at the end of the Trading Interval (based on an assumption, for the purposes of this clause 7A.2.4B, that the Facility will not be subject to a Dispatch Instruction that limits its output during that Trading Interval except where the Dispatch Instruction is issued in relation to a Foreseeable Constraint in accordance with clause 7.6.1I).

…

Clause 7A.2.8A has been amended to:

- limit the application of the clause to Scheduled Generators (the slightly different obligations for Non-Scheduled Generators have been moved to new clause 7A.2.8B)
- remove the redundant exclusion of the Balancing Portfolio
- require capacity that is reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint to be declared as unavailable.

7A.2.8A. A Market Participant ~~(other than Synergy in respect of the Balancing Portfolio)~~ must, for each of its Balancing Facilities that is a Scheduled Generator, and for each Trading Interval in the Balancing Horizon, use its best endeavours to ensure that, at all times, any of the Facility's capacity that is:

(a) subject to an approved Planned Outage; ~~or~~

(b) subject to an outstanding request for approval of Opportunistic Maintenance~~,~~; or

(c) reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint,

is declared as unavailable in the Balancing Submission for the Facility and the Trading Interval, unless the Balancing Facility is expected to generate in accordance with an approved Commissioning Test in that Trading Interval.

New clause 7A.2.8B specifies the equivalent obligations for Non-Scheduled Generators to those specified in clause 7A.2.8A for Scheduled Generators.

7A.2.8B. A Market Participant must, for each of its Balancing Facilities that is a Non-Scheduled Generator, and for each Trading Interval in the Balancing Horizon, use its best endeavours to ensure that, at all times, any of the Facility's capacity that is:

(a) subject to an approved Planned Outage;

(b) subject to an outstanding request for approval of Opportunistic Maintenance; or

(c) reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint,

is excluded from the estimated MW quantity in the Balancing Submission for the Facility and the Trading Interval, unless the Balancing Facility is expected to

generate in accordance with an approved Commissioning Test in that Trading Interval.

…

Clause 7A.2.9A has been amended to require Synergy to make any capacity of its Scheduled Generators that is expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint unavailable in Balancing Submissions for the Balancing Portfolio.

7A.2.9A. Synergy must, to the extent it is able to update its Balancing Submissions subject to clauses 7A.2.9(d) to 7A.2.9(g) (as applicable), for each Scheduled Generator in the Balancing Portfolio, and for each Trading Interval in the Balancing Horizon, use its best endeavours to ensure that, at all times:

(a) any of the Scheduled Generator's capacity that is subject to an approved Planned Outage or reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint is declared as unavailable in the Balancing Submission for the Balancing Portfolio and that Trading Interval, except where that Scheduled Generator is expected to generate in accordance with an approved Commissioning Test; and

(b) any of the Scheduled Generator's capacity that is subject to an outstanding request for approval of Opportunistic Maintenance is declared as available in the Balancing Submission for the Balancing Portfolio and that Trading Interval.

…

Clause 7A.2.10 has been amended to remove the references to the former defined term "Sent Out Capacity".

7A.2.10. A Market Participant (other than Synergy in relation to the Balancing Portfolio) as soon as it becomes aware that a Balancing Submission for a Trading Interval for which Balancing Gate Closure has occurred is inaccurate:

(a) if the inaccuracy is due to an Internal Constraint, must make a new, accurate Balancing Submission so that the quantity in the Balancing Submission reflects the available ~~Sent Out Capacity~~ sent out capacity of that Facility and the Ramp Rate Limit is accurate but no prices are altered, in respect of that Trading Interval as soon as reasonably practicable;

(b) if the inaccuracy is due to an External Constraint, may make a new, accurate Balancing Submission so that the quantity in the Balancing Submission reflects the available ~~Sent Out Capacity~~ sent out capacity of that Facility and the Ramp Rate Limit is accurate but no prices are altered, in respect of that Trading Interval, as soon as reasonably practicable;

(c) if the inaccuracy is due to the Market Participant receiving an Operating Instruction, may make a new, accurate Balancing Submission that reflects the Operating Instruction; or

(d) if the inaccuracy is due to a variation of the availability of the intermittent energy source used by a Non-Scheduled Generator, may make a new, accurate Balancing Submission so that the quantity in the Balancing Submission reflects the Market Participant's best estimate of the Facility's output at the end of the Trading Interval and the Ramp Rate Limit is accurate but the price is not altered, in respect of that Trading Interval.

…

7A.2A. Accounting for Unavailable Capacity in a Balancing Submission

Clauses 7A.2A.1 and 7A.2A.2 have been amended to:

- reference the new exception clause 7A.2A.5
- clarify that the required notifications must be made in the manner prescribed in the relevant WEM Procedure
- extend the exclusions to cover Trading Intervals for which a Market Participant does not have an approved Consequential Outage but reasonably expects the relevant capacity to be unable to be dispatched by AEMO based on the Foreseeable Constraint information it has received.

7A.2A.1. Subject to clauses 7A.2A.3 ~~and~~, 7A.2A.4 and 7A.2A.5, a Market Participant (other than Synergy in respect of the Balancing Portfolio) must, as soon as practicable after each Trading Interval, for each of its Balancing Facilities that is an Outage Facility, ensure that it has notified ~~System Management~~ AEMO, in the manner prescribed in the WEM Procedure specified in clause 3.21.18, of a Forced Outage or Consequential Outage that relates to any capacity for which the Market Participant holds Capacity Credits that:

(a) was declared unavailable in the Facility's Balancing Submission for that Trading Interval; and

(b) was not ~~subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval,~~:

i. subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval; or

ii. reasonably expected to be unable to be dispatched by AEMO in that Trading Interval because of a Foreseeable Constraint,

unless the relevant capacity was declared unavailable in the Facility's Balancing Submission because the Market Participant reasonably expected that its Reserve Capacity Obligations for the Trading Interval would be reduced because the maximum site temperature for the applicable Trading Day would exceed 41 degrees Celsius.

7A.2A.2. Subject to clauses 7A.2A.3 ~~and~~, 7A.2A.4 and 7A.2A.5, Synergy must, as soon as practicable after each Trading Interval, for each Facility in the Balancing Portfolio that is an Outage Facility, ensure that it has notified ~~System Management~~ AEMO,

in the manner prescribed in the WEM Procedure specified in clause 3.21.18, of a Forced Outage or Consequential Outage that relates to any capacity for which Synergy holds Capacity Credits that:

(a) was declared unavailable in the Balancing Portfolio's Balancing Submission for that Trading Interval; and

(b) was not ~~subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval,~~:

i. subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval; or

ii. reasonably expected to be unable to be dispatched by AEMO in that Trading Interval because of a Foreseeable Constraint,

unless the relevant capacity was declared unavailable in the Balancing Portfolio's Balancing Submission because Synergy reasonably expected that its Reserve Capacity Obligations for the Trading Interval would be reduced because the maximum site temperature for the applicable Trading Day would exceed 41 degrees Celsius.

7A.2A.3. Clauses 7A.2A.1 and 7A.2A.2 do not apply in respect of a Trading Interval if:

(a) the relevant capacity was previously subject to an approved Planned Outage for the Trading Interval; and

(b) ~~System Management~~ AEMO notified the Market Participant of the rejection of the Planned Outage under clause 3.19.5:

i. less than 30 minutes before Balancing Gate Closure for the Trading Interval; or

ii. at a time when the Facility was not synchronised and could not be synchronised by the start of the Trading Interval given the Facility's relevant Equipment Limits.

7A.2A.4. Clauses 7A.2A.1 and 7A.2A.2 do not apply in respect of a Trading Interval if:

(a) the relevant capacity was previously subject to an approved Consequential Outage or Commissioning Test Plan for the Trading Interval; and

(b) ~~System Management~~ AEMO notified the Market Participant that the capacity was no longer subject to the Consequential Outage or Commissioning Test Plan for the Trading Interval:

i. less than 30 minutes before:

1. Balancing Gate Closure for the Trading Interval, for a Facility that is not in the Balancing Portfolio; or

2. the time specified in clause 7A.2.9(d) for the Trading Interval, for a Facility in the Balancing Portfolio; or

ii. at a time when the Facility was not synchronised and could not be synchronised by the start of the Trading Interval given the Facility's relevant Equipment Limits.

New clause 7A.2A.5 provides an exemption from the obligations under clauses 7A.2A.1 and 7A.2A.2 in the event of a late change to a Foreseeable Constraint.

7A.2A.5. Clauses 7A.2A.1 and 7A.2A.2 do not apply in respect of a Trading Interval if:

(a) the Market Participant previously expected that the relevant capacity would be unable to be dispatched by AEMO in the Trading Interval because of a Foreseeable Constraint; and

(b) AEMO issued a Triggering Outage Notice that removed the basis for the Market Participant's expectation that the relevant capacity would be unable to be dispatched by AEMO in the Trading Interval because of the Foreseeable Constraint:

i. less than 30 minutes before:

1. Balancing Gate Closure for the Trading Interval, for a Facility that is not in the Balancing Portfolio; or

2. the time specified in clause 7A.2.9(d) for the Trading Interval, for a Facility in the Balancing Portfolio; or

ii. at a time when the Facility was not synchronised and could not be synchronised by the start of the Trading Interval given the Facility's relevant Equipment Limits.

…

Clause 10.5.1 has been amended to require the publication of Triggering Outage Notices on the WEM Website.

10.5.1. AEMO must set the class of confidentiality status for the following information under clause 10.2.1 as Public and AEMO must make each item of information available from or via the ~~Market Web Site~~ WEM Website after that item of information becomes available to AEMO:

…

(k) any Market Advisories~~, and~~ Dispatch Advisories and Triggering Outage Notices released in the previous 12 months;

…

…

11. Glossary

…

The term Available Capacity has been renamed TES Available Capacity.

~~**Available Capacity**: Means, for a Trading Interval, the sent out capacity, in MW, of a Scheduled Generator or a Non-Scheduled Generator that was not subject to an Outage notified to AEMO under clause 7.13.1A(b).~~

…

The term Balancing Facility Maximum Capacity replaces Sent Out Capacity.

Balancing Facility Maximum Capacity:

(a) for a Balancing Facility, other than the Balancing Portfolio, that is:

i. a Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(b)(iii); and

ii. a Non-Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(e)(iiiA); and

(b) for the Balancing Portfolio, the sum of all of the Standing Data in Appendix 1(b)(iii) and Appendix 1(e)(iiiA) for each Facility in the Balancing Portfolio.

…

The definition of Balancing Price-Quantity Pair has been amended to replace the term Sent Out Capacity with Balancing Facility Maximum Capacity.

Balancing Price-Quantity Pair: ~~Means~~

(a) for a Scheduled Generator, the specified non-Loss Factor adjusted MW quantity at which a Market Participant is prepared to operate a Balancing Facility as at the end of a Trading Interval and the non-Loss Factor Adjusted Price, in $/MWh, at which the Market Participant is prepared to provide that quantity by the end of that Trading Interval;

(b) for a Non-Scheduled Generator the specified non-Loss Factor adjusted MW quantity at which a Market Participant is prepared to reduce its output as at the end of a Trading Interval and the non-Loss Factor Adjusted Price, in $/MWh, at which the Market Participant is prepared to provide that quantity by the end of that Trading Interval; and

(c) for the Balancing Portfolio, the specified MW quantity at which Synergy is prepared to have the Balancing Portfolio dispatched at as at the end of a Trading Interval and the Loss Factor Adjusted Price, in $/MWh, at which Synergy is prepared to provide from the ~~sum of all of its Sent Out Capacity for each Facility in~~ Balancing Facility Maximum Capacity of the Balancing Portfolio by the end of the Trading Interval.

…

Capacity-Adjusted Consequential Outage Quantity: For a Non-Intermittent Generator for a Trading Interval, the total MW capacity of the Non-Intermittent Generator for which Capacity Credits are assigned that is subject to an approved Consequential Outage for the Trading Interval, calculated in accordance with the formula in clause 3.21.6(c).

Capacity-Adjusted Forced Outage Quantity: For a Non-Intermittent Generator for a Trading Interval, the total MW capacity of the Non-Intermittent Generator for which Capacity Credits are assigned that is subject to a Forced Outage for the Trading Interval, calculated in accordance with the formula in clause 3.21.6(a).

Capacity-Adjusted Planned Outage Quantity: For a Non-Intermittent Generator for a Trading Interval, the total MW capacity of the Non-Intermittent Generator for which Capacity Credits are assigned that is subject to an approved Planned Outage for the Trading Interval, calculated in accordance with the formula in clause 3.21.6(b).

…

The new term Effective Capacity is used in the definitions of Triggering Outage and Foreseeable Constraint.

Effective Capacity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, that part of the maximum sent out capacity of the Facility specified under Appendix 1(b)(iii) or Appendix 1(e)(iiiA) (as applicable) that is not:

(a) physically prevented from being used by AEMO to provide sent out generation because of an outage of an item of equipment that is part of a Network; or

(b) prevented from being used by AEMO to provide sent out generation by network or security constraints that are the result of an outage of an item of equipment that is part of a Network.

…

The definition of Equivalent Planned Outage Hours has been amended to update the reference for the relevant WEM Procedure.

Equivalent Planned Outage Hours: ~~Means, in~~ In respect of a Facility, the sum of the "Planned Outage Hours" and the "Equivalent Planned Derated Hours" for the Facility as calculated in accordance with the ~~Power System Operation~~ WEM Procedure specified in clause ~~3.21.12~~3.21.18.

…

The definition of External Constraint has been extended to include Foreseeable Constraints.

External Constraint: ~~Means an event impacting the operation of the whole of the SWIS, or any significant part of it.~~

(a) an event impacting the operation of the whole of the SWIS, or any significant part of it; or

(b) a Foreseeable Constraint.

…

Foreseeable Constraint: An expected reduction in the Effective Capacity of a Scheduled Generator or Non-Scheduled Generator to a specific MW level for a specific period because of a Triggering Outage, that is specified in a Triggering Outage Notice.

…

The definition of Internal Constraint has been amended to remove the reference to the former defined term "Sent Out Capacity".

Internal Constraint: In relation to a Facility, ~~means~~ an event that is not an External Constraint and which adversely impacts the ~~Sent Out Capacity~~ sent out capacity of the Facility.

…

Non-Intermittent Generator:

(a) a Scheduled Generator; or

(b) a Non-Scheduled Generator that is not an Intermittent Generator.

…

Refund Exempt Planned Outage Quantity: ~~Means a~~ A Capacity-Adjusted Planned Outage Quantity of a Scheduled Generator for which a Facility Reserve Capacity Deficit Refund is not payable, as determined by AEMO under clause 4.26.1C.

Refund Exempt Planned Outage Count: ~~Means, in~~ In respect of a Scheduled Generator and a period of time, the sum over all Trading Intervals in that period ~~of —~~ of:

(a) zero, if the Trading Interval occurs before 8:00 AM on 1 June 2016 or if no Capacity Credits were associated with the Facility in the Trading Interval; or

(b) the ~~MW quantity of~~ Refund Exempt Planned Outage Quantity for the Facility in the Trading Interval, divided by the number of Capacity Credits associated with the Facility in the Trading Interval.

Refund Payable Planned Outage Quantity: ~~Means a~~ A Capacity-Adjusted Planned Outage Quantity of a Scheduled Generator for which a Facility Reserve Capacity Deficit Refund is payable, as determined by AEMO under clause 4.26.1C.

…

The term Sent Out Capacity has been renamed Balancing Facility Maximum Capacity.

~~**Sent Out Capacity:** Means:~~

~~(a) for a Balancing Facility, other than the Balancing Portfolio, that is:~~

~~i. a Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(b)(iii); and~~

~~ii. a Non-Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(e)(iiiA); and~~

~~(b) for the Balancing Portfolio, the sum of all of the Standing Data in Appendix 1(b)(iii) and Appendix 1(e)(iiiA) for each Facility in the Balancing Portfolio.~~

…

The term TES Available Capacity replaces Available Capacity.

TES Available Capacity: For a Trading Interval:

(a) for a Scheduled Generator, the maximum sent out capacity of the Facility in the Trading Interval (as specified under Appendix 1(b)(iii)) minus the sum of the Capacity-Adjusted Forced Outage Quantity, Capacity-Adjusted Planned Outage Quantity and Capacity-Adjusted Consequential Outage Quantity for the Facility in the Trading Interval; and

(b) for a Non-Scheduled Generator, the maximum sent out capacity of the Facility in the Trading Interval (as specified under Appendix 1(e)(iiiA)).

…

Triggering Outage: An outage of Network equipment that AEMO considers will (if it proceeds) reduce the Effective Capacity of a Scheduled Generator or Non-Scheduled Generator to a specific quantity for a specific period.

Triggering Outage Notice: A communication issued by System Management to Market Participants and Network Operators in accordance with clauses 3.20A.2 or 3.20A.3 to provide information specified in clause 3.20A.1 about the expected impact of a Triggering Outage on a Scheduled Generator or Non-Scheduled Generator.

Unadjusted Consequential Outage Quantity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, the total quantity of de-rating recorded for any approved Consequential Outages for the Facility in AEMO's outage management system.

Unadjusted Forced Outage Quantity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, the total quantity of de-rating recorded for any Forced Outages for the Facility in AEMO's outage management system.

Unadjusted Planned Outage Quantity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, the total quantity of de-rating recorded for any approved Planned Outages for the Facility in AEMO's outage management system.

…

Appendix 1: Standing Data

Appendix 1(b)(iii) and Appendix 1(e)(iiiA) have been amended to clarify their meaning.

…

(a) [Blank]

(b) for a Scheduled Generator:

i. evidence that the communication and control systems required by section 2.35 are in place and operational;

ii. the nameplate capacity of the generator, expressed in MW;

iiA. the minimum load at the connection point of the generator that will automatically trip off if the generator fails, expressed in MW;

iii. ~~the sent out capacity of the generator, expressed in MW~~the maximum MW quantity that can be sent out by the Facility on a sustainable basis under optimal conditions, taking into account the physical limits of the network connection;

…

…

(e) for a Non-Scheduled Generator:

i. evidence that the communication and control systems required by section 2.35 are in place and operational;

ii. the nameplate capacity of the generator, expressed in MW;

iiA. the minimum load at the connection point of the generator that will automatically trip off if the generator fails, expressed in MW;

iii. the ramp down rates;

iiiA. ~~the sent out capacity of the generator, expressed in MW~~the maximum MW quantity that can be sent out by the Facility on a sustainable basis under optimal conditions, taking into account the physical limits of the network connection;

…

…

…

Appendix 9: Relevant Level Determination

…

Step 3(c) has been amended to:

- correct a grammatical error
- remove the requirement for the Consequential Outage to have been reported in an ex-post outage schedule.

Step 3: For each Candidate Facility, identify any Trading Intervals in the period identified in step 1(b) where:

(a) the Facility, other than a Facility in the Balancing Portfolio, was directed to restrict its output under a Dispatch Instruction as provided in a schedule under clause 7.13.1(c); or

(b) the Facility, if in the Balancing Portfolio, was instructed by ~~System Management~~ AEMO to deviate from its Dispatch Plan or change its commitment or output as provided in a schedule under clause 7.13.1C(d); or

(c) the Facility was affected by a Consequential Outage ~~as notified by System Management to AEMO under clause 7.13.1A~~; or

(d) the Facility was directed to restrict its output under an Operating Instruction issued in accordance with a Network Control Service Contract, as provided in a schedule under clause 7.13.1(cC).

…

Step 6 has been amended to:

- refer to Unadjusted Consequential Outage Quantities in Step 6(a) (as the calculation relates to an Intermittent Generator)
- remove the superfluous word “notified” in the final sentence.

Step 6: For each Candidate Facility and Trading Interval identified in step 3(c) use:

(a) the ~~schedule of Consequential Outages determined by System Management under clause 7.13.1A~~ Unadjusted Consequential Outage Quantity for the Candidate Facility for the Trading Interval;

(b) the quantity determined for the Facility and Trading Interval in step 2; and

(c) the information recorded by ~~System Management~~ AEMO under clause 7.13.1C(a),

to estimate the quantity of energy (in MWh) that would have been sent out by the Facility had it not been affected by the ~~notified~~ Consequential Outage during the Trading Interval.

…

Appendix A. Summary of Drafting Updates to Reflect Changes to the WEM Rules since the Formal Submission of the Proposal

The Rule Change Panel has made the following changes to the proposed Amending Rules in the Rule Change Proposal to reflect the changes made to the WEM Rules since the publication of the Rule Change Proposal.

WEM Rule	Description of change
3.18.4A	Removed the proposed changes because they have been superseded by the Amending Rules for RC_2013_15 (i.e. the proposed change from "clause 3.18" to "section 3.18" has been made, and the word "derating" has been removed from the clause).
3.21.2	Amended to reflect the need to renumber proposed clause 3.21.2A and 3.21.2B (to 3.21.2B and 3.21.2C respectively) because clause 3.21.2A already exists, and to use the correct format for the labels of clause 3.21.2(c) (e.g. 'i.' rather than '(i)').
3.21.2A, 3.21.2B	Renumbered proposed clauses 3.21.2A and 3.21.2B to clauses 3.21.2B and 3.21.2C respectively, because a clause 3.21.2A has been added to the WEM Rules since the submission of this Rule Change Proposal. Updated cross-references within the clauses accordingly.
3.21.4A	Amended to reflect the need to renumber proposed clause 3.21.2A to 3.21.2B because clause 3.21.2A already exists.
3.21.6(e)	Removed proposed change because the clause, which required the IMO to provide RCOQs to System Management, was deleted when the System Management function was transferred to AEMO. The clause can be deleted if, as proposed, clause 3.21.6(f) is deleted.
3.21.9	Amended to reflect the need to renumber proposed clause 3.21.2A to 3.21.2B because clause 3.21.2A already exists.
3.21.12	Removed the proposed change (to add a full stop after the clause number) because it has been superseded by the Amending Rules for Rule Change Proposal: Removal of Market Operation Market Procedures (RC_2015_01), which commenced on 1 August 2019.
7.10.2(c)(i)	Amended to use to correct clause reference (clause 3.21.4A rather than clause 4.21.4A as shown in the Rule Change Proposal).
7.13.1G	Amended to reverse the erroneous removal of the semicolon at the end of clause 7.13.1G(b) and reflect the renumbering of proposed clause 3.21.2A to 3.21.2B.

Appendix B. Responses to Submissions Received in the First Submission Period

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
1	System Management	System Management is unsure of the need to provide additional sent out readings at 15 degrees to the IMO as this will require changes to both IMO and System Management systems. Given that the IMO is capable of doing the temperature conversions itself already, as it is based on Standing Data, we suggest that System Management continue to only provide 41 degrees values to the IMO.	See section 6.3.4.1 of this report.
2	System Management	System Management would also like to note that there are still other fundamental issues with Consequential Outages which remain unaddressed (such as the definition of an Outage and current issues with consistency in the application of the Consequential Outage rules). These outstanding issues will likely impact the effectiveness of this Rule Change Proposal. While these issues have been discussed with the IMO in relation to other Rule Change Proposals that are still in progress, they are fundamental to the approval and appropriateness of Consequential Outages.	RCP Support sought clarification from AEMO about System Management's original concerns and whether AEMO considered there were still fundamental issues with Consequential Outages that were not addressed by RC_2013_15 or Rule Change Proposal: Removal of constrained off compensation for Outages of network equipment (RC_2018_07), and were not proposed to be addressed by this Rule Change Proposal. AEMO advised that it was difficult to determine the specifics of System Management's original concerns given the age of the submission. However, AEMO noted that: • it had a general concern that the proposed Amending Rules were quite complex to implement operationally; and • there was still uncertainty around when a Facility is subject to a Consequential Outage (e.g. when it is indirectly affected by a network outage).

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
			The Rule Change Panel will continue to work with AEMO during the second submission period to clarify its concerns about the operational complexity of the proposed Amending Rules. See section 6.3.2.2 of this report regarding the issue of uncertainty about when a Facility affected by a Foreseeable Constraint experiences a Consequential Outage.

Appendix C. Summary of Feedback on the Questions in the Call for Further Submissions

No	Question	Feedback
4.1.1:[132] Certainty and Transparency of Network Outages		
1	Details of any concerns or suggestions regarding the proposed use of Triggering Outage notifications to provide Market Participants with greater certainty and transparency about the effects of Triggering Outages.	**AEMO**: raised no concerns about the high-level concept of Triggering Outage notifications but suggested that the transparency of Triggering Outages could also be achieved through the publication of Network Outages as part of the real-time outage data. Considered that DAs may not be the most appropriate mechanism and that AEMO should only be required to issue Triggering Outage notifications 'as soon as practicable' after the trigger event. **Alinta**: supported the use of Triggering Outages and the proposed information requirements. Considered that the definition of DAs would need to be expanded if they were used for Triggering Outage notifications. **Bluewaters**: supported the principle of Triggering Outage notifications but raised concerns about the level of detail historically provided in DAs. **Perth Energy**: supported the proposed mechanism.
4.1.2: Late Changes to Triggering Outages		
2	Details of any concerns or suggestions regarding the proposed restrictions on late changes to foreseeable constraints.	**AEMO**: had not identified any concerns or suggestions at that time. **Alinta**: suggested that, where a foreseeable constraint on a Non-Scheduled Generator is lifted within 2.5 hours of the relevant Trading Interval, System Management should lift the constraint gradually rather than leave the constraint unchanged.

[132] The number references in the heading rows in this Appendix and Appendix D indicate the relevant section of the CFFS.

No	Question	Feedback
		Bluewaters: supported the proposed restrictions. **Perth Energy**: supported the Rule Change Panel's further amendments to mitigate against the risk of Capacity Cost Refunds resulting from late changes to planned network outages.
3	Whether System Management should be required to ensure that the dispatch of Non-Scheduled Generators is consistent with their foreseeable constraints.	**AEMO**: expected that dispatch would normally be consistent with a foreseeable constraint, provided that the period of the foreseeable constraint did not include the ramp up and ramp down duration on either side of the Triggering Outage and that AEMO did not need to dispatch differently to maintain Power System Security. **Bluewaters**: supported the proposed requirement. **Perth Energy**: expressed hesitation to endorse any mechanism that encourages AEMO to make changes to the dispatch of energy outside the economic merit order, but did not provide details of specific concerns.
4	How Non-Scheduled Generator capacity should be removed from service before a Consequential Outage and returned to service after a Consequential Outage.	**AEMO**: provided details of its current approach, which is to dispatch Non-Scheduled Generators to ensure they have ramped down by the start of the first Trading Interval of the Triggering Outage; and where necessary, to limit the ramp rate of the Facility on its return to service. **Perth Energy**: expressed hesitation to endorse any mechanism that encourages System Management to make changes to the dispatch of energy outside the economic merit order, but did not provide details of specific concerns.
5	Whether a Network Operator should be able to reduce the period of a Triggering Outage (for the purposes of its performance statistics) if it notified System Management too	**AEMO**: had not identified any implications from the proposal at that time.

No	Question	Feedback
	late for System Management to update the associated foreseeable constraints.	**Bluewaters**: considered that, if consumers are unable to benefit from the re-dispatch of lower-cost generators (due to a late, within gate closure change), it can be argued that there has been no benefit from the change by the Network Operator, and therefore the statistics should reflect this as though the Triggering Outage had not been shortened. **Western Power**: advised that it did not have performance incentives to reduce the period of its Planned Outages to a shorter period, and that such a change was unlikely to affect its actions.
4.1.3: Ex-Ante Forced Outages		
6	Whether a Rule Participant should be obliged to notify System Management if it is aware that its Outage Facility will suffer a Forced Outage in the near future.	**AEMO**: had not identified any concerns with the proposed obligation at that time. **Alinta**: supported obliging a Network Operator to report, on an ex-ante basis, Forced Outages of its equipment that are Triggering Outages; and considered that the obligations should be proportional to the current obligations of Market Generators to reflect impending Forced Outages in their Balancing Submissions. Alinta did not support any material expansion of Market Generators' existing obligations to give ex-ante notice of Forced Outages. **Bluewaters**: supported the application of similar obligations to Network Operators to those that currently apply to Market Generators (in terms of their obligations to update their Balancing Submissions to reflect imminent Forced Outages). **Perth Energy**: supported the Rule Change Panel's further amendments to strengthen ex-ante outage reporting requirements for all types of outages to strengthen the market's ability to respond, including closer to real time.

No	Question	Feedback
		Synergy: supported the notion that Rule Participants should advise System Management of impending Forced Outages, but raised several concerns about the wording of the obligation and suggested it should be imposed on a best endeavours basis. **Western Power**: indicated that it already had a protocol in place to meet the proposed obligation.
7	Whether Triggering Outage notifications for network Forced Outages that are Triggering Outages should be optional or mandatory, and if mandatory, what materiality thresholds should apply (if any).	**AEMO**: suggested that consideration should be given as to whether the existing DA rules already provide the necessary transparency for many of these Network Forced Outage events. However, if Triggering Outages were extended to cover Forced Outages then AEMO considered this should be a mandatory obligation. **Alinta**: supported the proposal to extend the use of mandatory Triggering Outage notifications to cover network Forced Outages that directly affect Market Generators. Alinta suggested that if it was necessary to apply a materiality threshold it could be aligned with the threshold for Non-Scheduled Generator Forced Outage reporting requirements. **Bluewaters**: considered a deeper understanding of historical Outages would be required to determine an appropriate level while still providing the right transparency to the market.
4.1.4: Consequential Outage Periods that Exceed the Foreseeable Constraint Period		
8	Details of any additional reasons why a Consequential Outage associated with a Triggering Outage might need to extend outside the period of the foreseeable constraint.	**AEMO**: should be able to extend beyond the foreseeable constraint to cover ramp up and ramp down periods.

No	Question	Feedback
4.1.5: Ex-Ante Outages and Reserve Capacity Tests		
9	Details of any concerns about restricting the proposed exemption from a Reserve Capacity Test to situations where System Management has notified a Market Participant of a foreseeable constraint on its Facility, or where the Market Participant has notified System Management that its Facility will be subject to a Forced Outage in the relevant period.	**AEMO**: had not identified any concerns with the proposed restrictions at that time.
4.2.5: Outage Quantity Reporting and Capacity-Adjusted Outage Quantity Calculation – Summary of Potential Changes to the Proposed Amending Rules		
10	Details of any concerns or suggestions regarding the proposed definition for the maximum sent out capacity Standing Data items in Appendix 1(b)(iii) and Appendix 1(e)(iiiA) (i.e. “the maximum MW quantity that can be sent out by the Facility on a sustainable basis under optimal conditions, taking into account the physical limits of the network connection”).	**AEMO**: had not identified any concerns with the proposed definition at that time. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available. **Bluewaters**: supported the proposal.
11	Details of any concerns about the proposed changes to the method used for capturing unadjusted outage quantities for Scheduled Generators in SMMITS.	**AEMO**: no concerns raised. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available. **Bluewaters**: supported the proposal.
12	Details of any viable alternatives to the Rule Change Panel’s proposed approach for reporting unadjusted outage quantities for Scheduled Generators that have failed to comply with an instruction from System Management (e.g. where a Scheduled Generator trips off during a Trading	**AEMO**: supports the proposal to clarify the method of calculation and did not have any suggestions for alternative calculation methods. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available.

No	Question	Feedback
	Interval, fails to synchronise when expected or fails to achieve the output levels specified in its Dispatch Instructions).	**Synergy**: provided details of an alternative approach (described in section 6.3.3.4 of this report), which it considered was more efficient and avoided discrimination between Market Generators with different Dispatch Instructions.
13	Details of any concerns about the proposed changes to the method used for capturing unadjusted outage quantities for Non-Scheduled Generators in SMMITS.	**AEMO**: had not identified any concerns with the proposed changes at that time. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available.
14	Details of any concerns or suggestions about the proposed changes relating to the calculation of capacity-adjusted outage quantities.	**AEMO**: had not identified any concerns with the proposed changes at that time. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available.
15	Details of any concerns about the proposed removal of the requirement to report a Forced Outage because of a failure to comply with instructions during an approved Commissioning Test.	**AEMO**: had not identified any concerns with the proposed changes at that time. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available. **Bluewaters**: supported the proposal.
4.3: Use of Outage Quantities in the WEM Rules		
16	Details of any concerns or suggestions regarding the proposed allocation of outage quantity types to provisions of the WEM Rules.	**AEMO**: did not have any concerns with the proposed allocations of outage quantity types at that time. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available.

No	Question	Feedback
4.4: Outage Rates		
17	Details of any concerns or suggestions regarding the proposed Planned Outage Rate, Forced Outage Rate and Equivalent Planned Outage Hours calculations.	**AEMO**: did not have any concerns with the proposed calculations. Alinta: will assess more fully once the proposed Amending Rules are available.
4.5: Consequential Outages Caused by Non-Equipment List Equipment		
18	Whether clause 3.21.2 should be amended to extend the criteria for a Consequential Outage to include Triggering Outages of any item of equipment that is part of a Network, not just those items that are included on the Equipment List.	**AEMO** and **Alinta**: supported the proposed change.
4.6: Reporting Forced Outages in SMMITS		
19	Whether the time periods in the proposed obligation to report extended Forced Outages in SMMITS (i.e. to report within 24 hours if the outage period exceeds 24 hours) is appropriate or whether different time periods should be used.	**AEMO**: had not identified any concerns with the proposed changes at that time. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available. **Bluewaters**: raised several concerns, including increased administrative burden on Market Generators and perceived exposure to significant financial losses. **Perth Energy**: questioned the benefits of requiring stricter deadlines. Synergy: considered the obligation to comply with the proposed timeframe should be on a best endeavours basis.
20	Whether the proposed deadlines for reporting Forced Outages for Non-Intermittent Generators with Capacity Credits provide an appropriate balance between prudential	**AEMO**: had not identified any concerns with the proposed requirement at that time.

No	Question	Feedback
	risk and administrative burden; and if not, what deadlines would provide a better balance.	**Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available. **Perth Energy**: questioned the benefits of requiring stricter deadlines.
21	Details of any concerns about the proposed requirement to update existing Forced Outage records within 1 Business Day of receiving more accurate information about the end time or outage quantity.	**AEMO**: had not identified any concerns with the proposed deadlines at that time. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available. **Bluewaters**: expressed concerns about the current limitations of SMMITS in terms of ability to update Forced Outage records. **Perth Energy**: questioned the benefits of requiring stricter deadlines. **Synergy**: considered the obligation should be based on reasonable endeavours.
22	Details of any concerns about the proposed 9-month deadline for late changes to Forced Outage details in SMMITS.	**AEMO**: supported the proposed deadline, considering that it enabled the longest period for updates while allowing AEMO sufficient time to assess the outage. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available. **Bluewaters**: supported the proposed deadline.
23	Details of any reasons why stricter deadlines should be imposed on Outage Facilities that are not Scheduled Generators or Non-Scheduled Generators.	**AEMO**: had not identified any reason for stricter deadlines. **Alinta**: supportive of the intent but will assess more fully once the proposed Amending Rules are available.

No	Question	Feedback
4.7: Requesting Consequential Outages in SMMITS		
24	Under what circumstances (apart from the late submission of a Consequential Outage request as suggested by Bluewaters) would a Rule Participant need to be able to update a Consequential Outage after the normal 15-day deadline.	**AEMO**: considered this was a matter for Market Participants to respond to.
25	Details of any concerns about the proposed 9-month deadline for late changes to Consequential Outage requests in SMMITS.	**AEMO** and **Bluewaters**: supported the proposed deadline.
4.8: Transitional Requirements		
26	What transitional provisions would need to be included in the Amending Rules to support the implementation of this Rule Change Proposal.	**AEMO**: considered the Final Rule Change Report will need to specify the treatment of existing outages already approved and existing outage requests that have yet to be approved. **Alinta**: would prefer to review the draft amendments in full before it assesses what transitional provisions are required.

Appendix D. Responses to Submissions Received in the Further Submission Period

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
4.1.1: Certainty and Transparency of Network Outages (Question 1)			
1	AEMO	Improving the transparency of Triggering Outages could be achieved through several means, such as the publication of Network Outages as part of the already published real-time outage data.	The Rule Change Panel agrees that extending the publication of real-time outage details to include Network outages would improve market transparency. However, publication of SMMITS network outage details would not achieve the aims of the Triggering Outage Notice mechanism, because: • the network outage records do not always contain the required level of detail about Foreseeable Constraints; • simple publication of outage details would not actively notify Rule Participants about new Foreseeable Constraints and changes to Foreseeable Constraints; and • it is likely that Western Power will continue to report some 'on the day' changes to Triggering Outages by telephone in the first instance, with the eventual SMMITS update (and website publication) occurring too late for Market Generators to respond.
2	AEMO	AEMO acknowledges that the preferred solution proposed in the CFFS requires a push type notification in the form of 'Triggering Outage notifications' issued through DAs. After further consideration, AEMO is of the view that there are other alternatives for issuing these notifications. DAs usually pertain to real-time events, whereas the proposal in the CFFS	See section 6.3.2.1 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		will require Triggering Outage notifications to be issued well in advance of the event. AEMO's view is that other push type publication methods may be more appropriate, and it is not necessary to prescribe the form of delivery of Triggering Outage notifications in the WEM Rules. AEMO is cognisant that the Rule Change Panel is considering simple and low-cost options.	
3	AEMO	The CFFS states that AEMO will be required to issue a Triggering Outage notification 'at the time of' acceptance, approval or rejection of the Triggering Outage. There is likely to be a time delay between the trigger event (i.e. outage acceptance, approval or rejection) and AEMO's publication of the Triggering Outage notification. An automated solution would minimise the time delay. Irrespective of the solution, the notification is not likely to be issued at the exact same time as the outage acceptance, approval or rejection. In these circumstances, an 'as soon as practicable' timeframe or similar is preferred for issuing these notifications.	The Rule Change Panel agrees and has drafted new clauses 3.20A.2 and 3.20A.3 to require AEMO to issue a Triggering Outage Notice "as soon as practicable" after the relevant event.
4	Alinta	Alinta considers that the proposal to oblige Market Generators to reflect Triggering Outage notifications in their Balancing Submissions would require an expansion of the function of DAs compared to its current definition in the WEM Rules. This is because a DA would become a communication by which Market Generators must comply, whereas the Glossary of the WEM Rules currently defines a DA as a "communication by System Management to Market Participants and Network Operators that there has been, or is likely to be, an event that will require the dispatch of Demand	See section 6.3.2.1 of this report. While the Rule Change Panel does not propose to define Triggering Outage Notices as DAs, it notes that clause 7.11.7 requires Rule Participants to comply with directions that AEMO issues in any DA under clause 7.11.6(f).

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		Side Programmes or Facilities Out of Merit, or will restrict communication between System Management and any of the Market Participants or Network Operators".	
5	Bluewaters	The reliance on the existing DA mechanism will meet the minimum requirements for Market Generators. It should be noted however that the extent of information provided in DAs has historically been rather broad, for example providing broad ranges of MW quantity that may be subject to a constraint. This provides insufficient reliable information for Market Generators to respond to the notification. The descriptions used in DAs can also tend to be vague.	See section 6.3.2.1 of this report.
4.1.2: Late Changes to Triggering Outages (Questions 2-5)			
6	AEMO	Prior to the dispatch of a Non-Scheduled Generator, AEMO is unable to determine the ramp up and ramp down duration on either side of the Triggering Outage in advance as this will depend on the prevailing network conditions. Not including these ramping periods in the foreseeable constraint would in normal circumstances mean that AEMO's dispatch is consistent with the foreseeable constraints.	See section 6.3.2.5 of this report.
7	AEMO	AEMO notes that the CFFS also recognises that AEMO may need to dispatch differently to prevent the power system moving to an elevated operating state or where the power system is already in an elevated operating state. When this is necessary, AEMO's dispatch may not be consistent with the previously published foreseeable constraint.	The Rule Change Panel notes that new clause 7.6.1K allows AEMO to not comply with the proposed dispatch rules for Non-Scheduled Generator Foreseeable Constraints if AEMO reasonably considers that such compliance would threaten Power System Security or Power System Reliability.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
8	AEMO	It would be reasonable for a Non-Scheduled Generator to include the ramp up and ramp down periods in their Consequential Outage because these periods of ramping correspond directly to the Triggering Outage. That is, in absence of the Triggering Outage, and assuming no other unusual circumstances, the facility would have been operating as per normal.	See section 6.3.2.5 of this report.
9	Alinta	In the scenario where a foreseeable constraint is lifted within 2.5 hours of the relevant Trading Interval, Alinta suggests (as an alternative to dispatching Non-Scheduled Generators as if the constraint had not been lifted) that System Management instead lift the constraint on Non-Scheduled Generators gradually. This would avoid the issues presented by the 'unrestricted ramping' of Non-Scheduled Generators.	See section 6.3.2.5 of this report.
10	Perth Energy	The Rule Change Panel has elicited feedback on: • whether System Management should be required to ensure that the dispatch of Non-Scheduled Generators is consistent with their foreseeable constraints; and • how Non-Scheduled Generator capacity should be removed from service before a Consequential Outage and returned to service after a Consequential Outage. It highlighted that it would discuss these issues at an upcoming MAC meeting in February 2020. Perth Energy is hesitant to endorse any mechanism that encourages System Management to make changes to the dispatch of energy outside the economic merit order. We highlight that mechanisms to manipulate the market to account for network	See section 6.3.2.5 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		constraints (e.g. the GIA tool) are inconsistent with the fundamental design of the WEM, and ultimately lead to distortion, opaqueness and inequity in market outcomes.	
11	Perth Energy	Perth Energy has not been provided sufficient detail to assess the merits of any proposed process and/or system envisaged to be used for System Management to adjust quantities for Non-Scheduled Generators due to constraints or outages. If this distorts market outcomes by undermining the economic merit order (as the current GIA tool does), it will be inconsistent with the Wholesale Market Objectives.	See section 6.3.2.5 of this report.
12	Western Power	Western Power does not have performance incentives to reduce the period of its Planned Outages to a shorter period. However, one of Western Power's main objectives is to ensure the safe delivery of its Planned Works Program. In doing so, Western Power takes a risk-based approach when scheduling its Planned Outages and will only notify System Management of any changes to its Planned Outages if there is a high level of certainty of those changes occurring. For Triggering Outages, this may be a notification of a delay, late cancellation or early return to service. Western Power will continue to provide System Management with these notifications and will continually look for opportunities to improve the notification process.	See section 6.3.2.4 of this report.
4.1.3: Ex-Ante Forced Outages (Questions 6-7)			
13	AEMO	Consideration may need to be given as to whether the obligations introduced in RC_2013_15 (commencing 1 February 2020) concerning circumstances where a	See section 6.3.2.6 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		participant becomes aware or ought to have become aware that its Facility will be unavailable for service, cover the Forced Outage scenarios described in the CFFS.	
14	AEMO	If Triggering Outages are extended to Forced Outages, when drafting the proposed rules consideration will need to be given to the differences between the level of information available for these outages when compared to planned Triggering Outages.	See section 6.3.2.6 of this report.
15	Alinta	Alinta would not support a material expansion of Market Generators' existing obligations to give ex-ante notice of Forced Outages. Alinta reserves its right to make further comment on this issue in a future submission.	See section 6.3.2.6 of this report.
16	Bluewaters	The concept of mandatory notifications promotes greater transparency for the market and while it is noted in the CFFS that Market Generators are required to update their Balancing Submissions to reflect imminent Forced Outages, the reality of Forced Outages is that they are typically fluid. Expectations can be changing fast and frequently every 30 minutes. Trading and Operations teams will typically be stretched in these situations and the practicality of the existing obligation for Market Generators can still be uncertain. Applying similar obligations to Network Operators would continue to promote increased market transparency and particularly inform affected Market Generators, however as Bluewaters is acutely aware from managing its own outages, a mandatory obligation will not be able to pick up all emerging	See section 6.3.2.6 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		Forced Outages by their nature. In general however, the approach to align Network Operators' mandatory requirements to that of Market Generators is a positive step.	
17	Synergy	Synergy recognises the intent of the Rule Change Proposal and supports the notion that Rule Participants should advise System Management of impending Forced Outages. However, the wording that a Rule Participant should notify System Management "as soon as it becomes aware" of an upcoming Forced Outage is vague and up for interpretation. "In the future" has similar issues in that the timeframe is too vast. The implications on Rule Participants are also unknown in the event of these occurrences.	See section 6.3.2.6 of this report.
18	Synergy	Further, the incidence of a Forced Outage may be of a certain urgency. At such times, it may be more practical for a person who has become aware of the issue to first focus on resolving it rather than prioritising the immediate notification to System Management. Therefore, Synergy recommends that although notifications to System Management should be made an obligation, it should be managed on a best endeavours basis.	See section 6.3.2.6 of this report.
19	Western Power	Western Power has a protocol in place to notify System Management of potential threats to power system security. This includes notifications of the failure or imminent failure of items of network equipment. Western Power will provide a Forced Outage notification to System Management in response to an unplanned outage of an item of network equipment. For example, Western Power recently informed	See section 6.3.2.6 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		System Management of a bushfire occurring in the vicinity of its transmission lines where the transmission lines tripped multiple times due to the bushfire.	
4.2.5: Outage Quantity Reporting and Capacity-Adjusted Outage Quantity Calculation (Questions 10-15)			
20	Perth Energy	Perth Energy supports the Rule Change Panel's further amendments to: • allow unadjusted outage quantities to be submitted and then subtracted from the maximum Sent Out Capacity (as proposed to be amended) to determine the Available Capacity of a Scheduled Generator; and • move the calculation of outage rates (Equivalent Planned Outage Hours, Equivalent Forced Outage Hours, Planned Outage Rate and Forced Outage Rate) from a WEM Procedure to an appendix of the WEM Rules.	See sections 6.3.4.1, 6.3.4.3 and 6.3.4.4 of this report.
21	Perth Energy	Perth Energy notes the Rule Change Panel's difficulty in developing a cost-effective, viable alternative to determining the quantity of a Forced Outage where it has been unable to comply with a Dispatch Instruction. Ahead of anticipated changes to the dispatch systems and process as part of the ETS, Perth Energy will continue to seek practical, operational workarounds to reduce the impact of these circumstances.	Noted.
22	Synergy	Participants are obligated to log Forced Outages upon deviations from dispatch instructions from System Management. If this occurs, the Rule Change Panel has proposed that the Available Capacity is the average MW output over the Trading Interval.	See section 6.3.3.4 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		Synergy considered that the proposed amendment unfairly penalises Market Generators who have available capacity but are generating at a lower level due to dispatch instructions during the Trading Interval in which the outage occurs. Synergy provided an alternative approach (described in section 6.3.3.4 of this report) that it considered met the Rule Change Panel's requirements in a manner that was more efficient and less discriminatory.	
4.5: Consequential Outages Caused by Non-Equipment List Network Equipment (Question 18)			
23	Alinta	Alinta supports amending clause 3.21.2 to include in the criteria for a Consequential Outage Triggering Outages of an item of equipment that is part of a network not just those items that are included on the Equipment List, if these items can cause Triggering Outages above a reasonable threshold. Alinta considers that if a Facility's output is de-rated due to a Planned or Forced Outage of any item of equipment that is part of a network, then that Facility should be eligible to apply for a Consequential Outage, regardless of whether the relevant items of equipment are on the Equipment List. The market should also receive ex-ante notification of this Triggering Outage, where appropriate.	See sections 6.3.2.6 and 6.4.1 of this report.
24	Alinta	Alinta notes that under AEMO's current interpretation of clause 3.21.2A, Market Generators are also ineligible to apply for a Consequential Outage where a Planned or Forced Outage of network equipment de-rates the output of their Constrained Access Facilities (which has flow on impacts for	See section 6.3.2.2 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		certification of these Facilities). As a result, if either the proposed obligation for: • the Network Operator or System Management to issue a Triggering Outage notification; or • the Market Generator to reflect that notification in its Balancing Submission and Consequential Outage request, is linked with the likelihood of the outage to cause a 'Consequential Outage' as defined in the rules, then the Network Operator and System Management would be exempt from issuing the Triggering Outage notification where it relates to a Constrained Access Facility; and the affected Facility would not be required to transmit this information in its Balancing Submission. This would diminish RC_2014_03's effectiveness in its objective to improve transparency of Triggering Outages. To prevent this outcome, Alinta suggests that clause 3.21.2A be amended such that Market Generators are eligible to apply for Consequential Outages where a Planned or Forced Outage of network equipment causes a Triggering Outage of their Constrained Access Facilities.	
25	Western Power	Western Power considers that further investigation would be required to determine the materiality of the concerns raised in section 4.5 of the CFFS. In particular, the likelihood and/or frequency that an outage of network equipment would cause an outage of distribution-connected Scheduled Generators and Non-Scheduled Generators, and the likelihood and/or frequency that Western Power's secondary network systems	Following the close of the further submission period, RCP Support met with Western Power to better understand Western Power's concerns. RCP Support clarified that Question 18 of the CFFS did not relate to any proposed requirement for the inclusion of distribution network equipment or secondary network systems on the Equipment List.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		are likely to cause outages of transmission-connected generators. Western Power welcomes further engagement with the Rule Change Panel and Rule Participants to discuss the specifics of the concerns and any relevant case studies.	After some discussion, Western Power advised that it had no concerns about the suggestion extension of the criteria for a Consequential Outage. Western Power clarified that AEMO has systems in place for distribution-connected generators that can verify if the distribution-connected generators would be affected by a Network Outage. For secondary systems, Western Power would be able to notify AEMO if an outage of a secondary system would affect a Market Participant. It was noted that this would be a rare event.
4.6: Reporting Forced Outages in SMMITS (Questions 19-23)			
26	Alinta	Regarding the proposed requirement for a Rule Participant to keep records of its reasons for reporting a Forced Outage or making any changes to a Forced Outage record after the 15-day deadline, and to make those records available to AEMO or the ERA if requested; Alinta suggests that System Management allow Rule Participants to maintain these records within its outage reporting system. This would lower the administrative burden on Rule Participants by obviating the need for them to develop their own systems and clearly outline what information is required to ensure compliance.	See sections 6.3.4.1 and 6.4.2.2 of this report.
27	Bluewaters	The intent of information being accurate and timely in SMMITS is to inform the market to allow appropriate response. The intent of the proposals for 24 hour reporting provide the additional transparency for the market, however the first 24 hours of plant trips or issues are typically the most	See section 6.4.2.1 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		uncertain and hectic periods for the Market Generator. In most cases where a generator has suffered the type of Forced Outage this change is addressing, investigation into the cause of the failure and estimation of return to service wouldn't be possible during a 24-hour period. The proposed changes could result in significant financial losses to the Market Generator from STEM purchases if the generator can return to service within the next day. Furthermore, the administrative step being imposed is likely to add a further burden to the Market Generator in such a hectic period.	
28	Synergy	Although supportive of the principle, Synergy considers that imposing a 24 hour obligation to log an extended Forced Outage in SMMITS if the outage period exceeds 24 hours is an administrative burden and will create unnecessary exposure to compliance breaches. Market Generators may not be able to adhere to the 24 hour timeframe due to various reasons including staffing availability, competing priorities and time required to investigate the cause. For instance, if a Market Generator held expectations that a Facility would return within 23 hours, but it took slightly longer, the Market Generator would be subject to a breach. Synergy considers this scenario is not ideal and may expose the market to adverse scenarios where Rule Participants tentatively report Forced Outages in SMMITS within 24 hours based on limited information to avoid non-compliance. This behaviour would reduce the transparency benefits originally intended for Rule Participants as part of the rule change.	See section 6.4.2.1 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		Allowing Rule Participants to comply with the timeframe on a reasonable endeavours basis would minimise concerns.	
29	Bluewaters	The proposal to require updating existing Forced Outage quantities in SMMITS is again attempting to provide more information to the market, however Bluewaters understands that the current SMMITS configuration does not allow for amendments to existing outages. Changes to Forced Outages require a cancellation and re-entry and extensions to Forced Outages are required to be submitted as a new outage in SMMITS. An improvement to the functionality of SMMITS is key to ensuring the appropriate balance between transparency and administrative burden.	See section 6.4.2.1 of this report.
30	Synergy	Synergy is supportive of the general intent of the requirement (to update existing Forced Outage records within 1 Business Day of receiving more accurate information about the end time or outage quantity), but suggests that the obligation should be based on reasonable endeavours. This may lead to a more efficient outcome where Rule Participants are able to update existing Forced Outage records with their reasonable estimate of the end time within the designated timeframe. Rule Participants could then apply reasonable endeavours to update records upon receiving more accurate information with full and final details due within 15 days. By advocating a 'best endeavours' approach, Rule Participants may avoid being penalised for not updating records due to the inability to meet the strict 1 Business Day	See section 6.4.2.1 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		timeframe. It is difficult to plan for uncertainty and enacting such a prescriptive rule may become problematic.	
31	Synergy	(In respect of question 21) The wording of the proposed requirement is also open to interpretation and could be improved. For instance, at what point should '1 Business Day' start counting? If meter data is received at 3:00 PM on Monday but it was only determined to be accurate as at 4:00 PM on Tuesday, the Rule Participant would have technically received 'more accurate information' at 3:00 PM on Monday and would therefore be obligated to update existing Forced Outage records by 3:00 PM on Tuesday. Or, should the allowance for 1 Business Day to update records commence timing from 4:00 PM at which point it was determined that the information was accurate?	See section 6.4.2.1 of this report.
32	Synergy	(In respect of question 21) In addition, materiality should be considered to limit the administrative burden on Rule Participants. Rule Participants should not be required to comply to the timeframes above if the 'more accurate information' results in immaterial changes to the end time or the outage quantity. Synergy notes, however, that further thought as to what signifies as 'material' may be required.	See section 6.4.2.1 of this report.
33	Perth Energy	The Rule Change Panel has proposed a number of further amendments that aim to expedite the submission of outages. Perth Energy broadly supports the reporting of Outages as soon as practicable. For Forced Outages, a Rule Participant will be recording the Outage on an ex-post basis. This means that in most cases, there is no increased transparency, no	See section 6.4.2.1 of this report.

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		ability for other Rule Participants to respond, and consequently, no impact on market outcomes. Perth Energy is concerned that more strict deadlines may therefore impose additional administrative burden on Rule Participants, with no associated benefits.	
Other Issues			
34	AEMO	The timeframes for completion of the rule change process, together with AEMO's implementation timeframes, could result in the useful life of the proposed changes being relatively short prior to the scheduled new market commencement in October 2022. These timeframes should be considered when assessing the Rule Change Proposal against the Wholesale Market Objectives.	See section 6.8 of this report.
35	Perth Energy	The Rule Change Panel sought views on the merits of expected cost of changes to IT systems given the expected replacement of the outage system (SMMITS) as part of the Energy Transformation Strategy. Perth Energy considers the cost should be considered in the context of the shorter payback period (especially as reduced by its estimate of the extended time taken to finalise the Rule Change Proposal, and the six-month implementation timeframe (as stated in System Management's first period submission in 2015).	See section 6.8 of this report.
36	Synergy	Synergy understands that since the original submission of the Rule Change Proposal, a significant time has transpired, such that by the time in which the consultation process has finalised, the new market will be set to start in slightly over two years' time.	See section 6.8 of this report. RCP Support most recently discussed this Rule Change Proposal with ETIU on 3 August 2020. During this meeting, ETIU advised that it did not

Issue	Submitter	Comment/Issue Raised	Rule Change Panel's Response
		Although the Rule Change Panel has considered the work of ETIU as part of the ETS in the development of the CFFS, it is beneficial to examine further as to how these amendments are likely to be aligned with the outcomes of the new market start.	intend to deviate from the basic outage quantity concepts proposed for this Rule Change Proposal. The Rule Change Panel intends to assess the Minister's proposed amendments to the outage provisions in the WEM Rules during the second submission period to ensure that the proposed Amending Rules for this Rule Change Proposal are not incompatible with the Minister's amendments.

Appendix E. Further Amendments to the Proposed Amending Rules

The Rule Change Panel proposes to make some further amendments to the proposed Amending Rules following the further submission period. Note that the base drafting in this appendix assumes the Amending Rules for RC_2014_06 have commenced, and includes changes (specified in Appendix A of this report) made by the Rule Change Panel to the original proposed Amending Rules to account for the changes made to the WEM Rules since the publication of the Rule Change Proposal.

The further amendments are as follows (~~deleted text~~, added text, clauses that are included for context but not amended):

1.nn. Transitional Provisions – Outage Improvements

1.nn.1. In this section 1.nn:

New Rules: Means the Amending Rules made in the Rule Change Panel's Final Rule Change Report for Rule Change Proposal: Administrative Improvements to the Outage Process (RC_2014_03), other than the Amending Rules with respect to this section 1.nn.

Post-Amended Rules: Means the WEM Rules as in force immediately after the New Rules come into effect.

Pre-Amended Rules: Means the WEM Rules as in force immediately before the New Rules come into effect.

Rule Change Commencement Day: Means the Trading Day when the New Rules come into effect (as determined by the Rule Change Panel under clause 2.8.12).

1.nn.2. During the Trading Day before the Rule Change Commencement Day, notwithstanding that the Pre-Amended Rules continue to apply, each Rule Participant must perform all obligations imposed on that Rule Participant under the Post-Amended Rules, in relation to the Rule Change Commencement Day and subsequent Trading Days that, if the Post-Amended Rules were in force, the Rule Participant would have been required to perform under the Post-Amended Rules with respect to:

(a) Triggering Outage Notices issued under section 3.20A;

(b) Balancing Submissions submitted in accordance with section 7A.2; and

(c) a Dispatch Instruction or Operating Instruction issued under Chapter 7.

1.nn.3. By 9:00 AM on the day prior to the Rule Change Commencement Day, AEMO must issue a Triggering Outage Notice for each:

(a) Scheduled Outage that is a Triggering Outage and is expected to cause a Foreseeable Constraint that ends after the start of the Rule Change Commencement Day; and

(b) Opportunistic Maintenance approved by AEMO in accordance with clause 3.19.4 that is a Triggering Outage and is expected to cause a Foreseeable Constraint that ends after the start of the Rule Change Commencement Day,

unless AEMO has already issued a Triggering Outage Notice in relation to the Triggering Outage in accordance with clause 1.nn.2.

1.nn.4. Any quantity of de-rating entered into AEMO's outage management system for a Non-Intermittent Generator on or after the Rule Change Commencement Day (including a quantity of de-rating for an outage period that started before the Rule Change Commencement Day) is deemed to be provided under the Post-Amended Rules.

1.nn.5. From the start of the Rule Change Commencement Day, AEMO must prepare any outage schedules required under clauses 7.3.4 and 7.13.1A(b) (including outage schedules for Trading Days falling before the Rule Change Commencement Day) in accordance with the Post-Amended Rules.

1.nn.6. Subject to clause 1.nn.7, where:

(a) a Market Participant has submitted:

i. an Outage Plan;

ii. a request for approval of Opportunistic Maintenance;

iii. a request for approval of a Consequential Outage; or

iv. details of a Forced Outage,

for a Non-Intermittent Generator in AEMO's outage management system before the Rule Change Commencement Day; and

(b) the relevant outage period overlaps one or more Trading Days for which AEMO is required to prepare an outage schedule under clause 7.13.1A(b) on or after the Rule Change Commencement Day,

then the Market Participant may provide to AEMO a revised quantity of de-rating for that outage.

1.nn.7. A revised quantity of de-rating provided by a Market Participant to AEMO for an outage under clause 1.nn.6 must:

(a) vary from the previous quantity of de-rating provided for the outage no more than is needed to account for the impact of the New Rules on the determination of Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities; and

(b) be provided to AEMO:

i. for outages commencing before the end of the Trading Day following the Rule Change Commencement Day, by 5:00 PM on the day before

the last Business Day before the Rule Change Commencement Day; and

ii. for other outages, by noon on the Rule Change Commencement Day.

1.nn.8. If AEMO receives a revised quantity of de-rating for an outage under clause 1.nn.6 that meets the requirements specified in clause 1.nn.7, then AEMO must:

(a) replace the previously provided quantity of de-rating with the revised quantity of de-rating in AEMO's outage management system; and

(b) use the revised quantity of de-rating when preparing outage schedules under clauses 7.3.4 and 7.13.1A(b) on or after the Rule Change Commencement Day.

...

3.18.1A. The obligations specified in this section 3.18 and sections 3.19 and 3.21 to request or report Outages do not apply to Market Participants in respect of an outage of ~~a Non-Scheduled~~ an Intermittent Generator if the average MW de-rating over the relevant Trading Interval is less than:

$$\min(0.1 \times \text{Nameplate\_Capacity}, 10)$$

where Nameplate_Capacity is the MW quantity provided for the ~~Non-Scheduled~~ Intermittent Generator under Appendix 1(e)(ii).

...

3.18.2A.

…

(h) A Market Participant must not submit a revised notice of a proposed Planned Outage to ~~System Management~~ AEMO for a Self-Scheduling Outage Facility that proposes:

i. a new start time for the proposed Planned Outage that is earlier than the previous proposed start time;

ii. a new end time for the proposed Planned Outage that is later than the previous proposed end time; ~~or~~

iii. an increase in the quantity of de-rating~~.~~;

iv. a new start time or quantity of de-rating for the proposed Planned Outage, if the time of submission is later than the previous proposed start time; or

v. a new end time for the proposed Planned Outage that is earlier than the time of submission.

…

…

3.18.9A. A Market Participant or Network Operator must not submit a revised Outage Plan to ~~System Management~~ AEMO that proposes:

(a) a new start time for the proposed outage that is earlier than the previous proposed start time;

(b) a new end time for the proposed outage that is later than the previous proposed end time; ~~or~~

(c) an increase in the quantity of de-rating~~.~~;

(d) a new start time or quantity of de-rating for the proposed outage, if the time of submission is later than the previous proposed start time; or

(e) a new end time for the proposed outage that is earlier than the time of submission.

…

3.19.2E. A Market Participant or Network Operator must not submit a revised request for approval of Opportunistic Maintenance that proposes:

(a) a new start time for the Opportunistic Maintenance that is earlier than the previous proposed start time;

(b) a new end time for the Opportunistic Maintenance that is later than the previous proposed end time; ~~or~~

(c) an increase in the quantity of de-rating~~.~~;

(d) a new start time or quantity of de-rating for the Opportunistic Maintenance, if the time of submission is later than the previous proposed start time; or

(e) a new end time for the Opportunistic Maintenance that is earlier than the time of submission.

…

3.20A. Triggering Outage Notices

3.20A.1. A Triggering Outage Notice issued by AEMO under this section 3.20A must include:

(a) a unique identifier for the Triggering Outage;

(b) the date and time that the Triggering Outage Notice is issued;

(c) a description of the event that prompted the issue of the Triggering Outage Notice;

(d) the date and time of the event that prompted the issue of the Triggering Outage Notice;

(e) for each Foreseeable Constraint caused by the Triggering Outage:

i. the identity of the Facility affected by the Foreseeable Constraint;

ii. the date and time that the Foreseeable Constraint is expected to commence;

iii. the date and time that the Foreseeable Constraint is expected to end; and

iv. the maximum MW level of sent out generation for the affected Facility during the period of the Foreseeable Constraint.

3.20A.2. AEMO must issue a Triggering Outage Notice in respect of a Triggering Outage as soon as practicable after it:

(a) schedules an Outage Plan for a Triggering Outage in its outage schedule;

(b) removes an Outage Plan for a Triggering Outage that is not yet approved from its outage schedule;

(c) approves a Scheduled Outage that is a Triggering Outage;

(d) rejects a request for approval of a Scheduled Outage that is a Triggering Outage; or

(e) approves a request for Opportunistic Maintenance that is a Triggering Outage.

3.20A.3. Subject to clause 3.20A.4, AEMO must issue a Triggering Outage Notice as soon as practicable after:

(a) AEMO rejects a previously approved Planned Outage that is a Triggering Outage;

(b) a Network Operator withdraws an Outage Plan for a Scheduled Outage that is a Triggering Outage;

(c) a Network Operator withdraws a previously approved request for Opportunistic Maintenance that is a Triggering Outage;

(d) a Network Operator submits a revised Outage Plan for a Scheduled Outage that affects a Foreseeable Constraint; or

(e) a Network Operator submits a revised request for Opportunistic Maintenance for a previously approved Planned Outage that affects a Foreseeable Constraint.

3.20A.4. AEMO must not issue a Triggering Outage Notice under clause 3.20A.3 that affects a Foreseeable Constraint in respect of a Trading Interval if it is less than 30 minutes before Balancing Gate Closure for that Trading Interval. If AEMO is prohibited under this clause 3.20A.4 from issuing a Triggering Outage Notice in respect of a Trading Interval, then AEMO must issue a Triggering Outage Notice that reflects the effect on Foreseeable Constraints of the event that prompted the Triggering Outage Notice in respect of those Trading Intervals, if any, for which it is 30 minutes or more before Balancing Gate Closure.

3.20A.5. AEMO may:

(a) issue Triggering Outage Notices using the processes it uses to issue Dispatch Advisories; and

(b) meet its obligations to publish Triggering Outage Notices on the WEM Website under clause 10.5.1(k) using the processes it uses to publish Dispatch Advisories.

3.21. Forced Outages and Consequential Outages

3.21.1. A Forced Outage is any outage of ~~either a Facility or item of equipment on the list described in clause 3.18.2 or a Facility or generation system to which clause 3.18.2A relates~~ an Outage Facility that has not received ~~System Management's~~ AEMO's approval, including:

(a) outages or de-ratings for which no approval was received from ~~System Management~~ AEMO, excluding ~~Consequential Outages;~~:

i. Consequential Outages;

ii. outages of an Intermittent Generator that under clause 3.18.1A are not required to be reported to AEMO; and

iii. outages of a Scheduled Generator that occur within a period in which the Facility is subject to an approved Commissioning Test and are caused by a failure of the Facility's equipment during that Commissioning Test;

(a~~B~~A) outages or de-ratings as a result of a direction from ~~System Management~~ AEMO under clause 2.28.3C;

(b) any part of a Planned Outage that exceeds ~~or, for the purposes of clause 3.21.2(b) and (c), a Consequential Outage which will exceed~~ its approved duration; and

(c) where the Market Participant or Network Operator does not follow a direction from ~~System Management~~ AEMO under clause 3.20.1 to return the equipment to service within the time specified in the appropriate contingency plan.

3.21.2. A Consequential Outage is an outage of ~~a Facility or item of equipment on the list described in clause 3.18.2, or a Facility or generation system to which clause 3.18.2A relates, where~~ an Outage Facility that is not an approved Planned Outage, but which AEMO determines:

(a) ~~after receiving a notification under clause 3.21.4, System Management determines (under clause 3.21.2B) that the outage~~ was caused by a Forced Outage to another Rule Participant's equipment ~~or a Planned Outage to a Network Operator's equipment,~~ and would not have occurred if the ~~relevant equipment had not been affected by the Forced Outage or Planned Outage; or~~ other Rule Participant's equipment did not suffer a Forced Outage;

~~(b) after receiving a notification under clause 3.21.4A and at least 30 minutes before Balancing Gate Closure for the relevant Trading Interval or the first~~

~~relevant Trading Interval, System Management determines (under clause 3.21.2B) that the outage will be caused by a Forced Outage to another Rule Participant's equipment or a Planned Outage to a Network Operator's equipment; or~~

~~(c) after receiving a notification under clause 3.21.4A and as at 30 minutes before Balancing Gate Closure for the relevant Trading Interval or the first relevant Trading Interval:~~

~~i. the outage has not commenced;~~

~~ii. System Management has not determined (under clause 3.21.2B) that the outage will be caused by a Forced Outage to another Rule Participant's equipment or a Planned Outage to a Network Operator's equipment; and~~

~~iii. the affected Rule Participant reasonably expected, based on information that was available to it 30 minutes before Balancing Gate Closure, that the outage would occur and would be caused by a Forced Outage to another Rule Participant's equipment or a Planned Outage to a Network Operator's equipment.~~

(b) was caused by any outage of an item of equipment that is part of a Network, including a Forced Outage or a Planned Outage, and would not have occurred if the item of equipment did not experience the outage;

(c) was caused by a Foreseeable Constraint that affected the Outage Facility and that would not have occurred if the Foreseeable Constraint did not affect the Outage Facility; or

(d) will be caused by a Foreseeable Constraint that will affect the Outage Facility.

3.21.2A. An outage does not occur in respect of a Constrained Access Facility for the purposes of these ~~Market~~ WEM Rules where the Constrained Access Facility is dispatched in accordance with a Network Control Service Contract and these ~~Market~~ WEM Rules.

~~3.21.2B. System Management must determine whether an outage notified under clause 3.21.4 or 3.21.4A, is a Consequential Outage, and must inform the Market Participant or Network Operator of its determination, as soon as reasonably practicable after being notified of the outage. System Management may make its determination before, during or after the outage occurs or was reasonably expected to occur.~~

3.21.2B. To avoid doubt, the period of a Consequential Outage may include:

(a) any period immediately following the outage causing the Consequential Outage that is needed to return the capacity or capability of the Outage Facility that is the subject of the Consequential Outage to service in accordance with the Outage Facility's Equipment Limits;

(b) any Trading Interval excluded from the period of a Foreseeable Constraint for a Facility in the Balancing Portfolio in a Triggering Outage Notice that is issued less than 30 minutes before the time specified in clause 7A.2.9(d) for that Trading Interval; and

(c) for an Intermittent Generator:

i. the Trading Interval immediately preceding the start of a Foreseeable Constraint for that Facility; and

ii. the Trading Interval immediately following the end of a Foreseeable Constraint for the Facility,

if the sent out generation of the Facility in those Trading Intervals is less than it would have been had the Foreseeable Constraint not occurred.

~~3.21.2C. Subject to clause 3.21.9, if System Management considers that a determination under 3.21.2B was based on incorrect information, or has been superseded by new or updated information, then System Management may change the determination. For the avoidance of doubt, this clause 3.21.2C does not apply in respect of an outage that is a Consequential Outage under clause 3.21.2(c).~~

3.21.3. ~~System Management~~ AEMO must keep a record of all Forced Outages and Consequential Outages of which it becomes aware.

~~3.21.4. A Market Participant or Network Operator must notify System Management as soon as practicable after a Facility or item of equipment that is on the list described in clause 3.18.2, or a Facility or generation system to which clause 3.18.2A relates, is de-rated as a result of a Forced Outage or Consequential Outage. The notice must include the information specified in clause 3.21.4B.~~

~~3.21.4A. A Market Participant or Network Operator may notify System Management if a Facility or item of equipment that is on the list described in clause 3.18.2, or a Facility or generation system to which clause 3.18.2A relates, is (in the Market Participant's or Network Operator's opinion) likely to be is de-rated as a result of a Forced Outage or Consequential Outage, subject to System Management's determination under clause 3.21.2B. The notice must include the information specified in clause 3.21.4B.~~

~~3.21.4B. The information provided to System Management under clause 3.21.4 or 3.21.4A must include:~~

~~(a) the time the outage commenced or is expected to commence;~~

~~(b) an estimate of the time the outage ended or is expected to end;~~

~~(c) the cause of the outage;~~

~~(d) each Facility, item of equipment or generation system de-rated as a result of the outage; and~~

~~(e) for each Facility, item of equipment or generation system de-rated as a result of the outage, the expected quantity of any de-rating by Trading Interval,~~

where, if the Facility is a generating system, this quantity is to be submitted in accordance with clause 3.21.5; and

(f) any other information necessary for verifying the details of the outage requested by System Management.

3.21.4. If a Market Participant or Network Operator becomes aware that its Outage Facility:

(a) has suffered a Forced Outage;

(b) has suffered an outage that the Market Participant or Network Operator considers is a Consequential Outage that is not attributable to a Foreseeable Constraint; or

(c) will suffer a Forced Outage from a specific time in the future,

then the Market Participant or Network Operator must notify AEMO and provide the information specified in clause 3.21.4A as soon as practicable, in the manner prescribed in the WEM Procedure specified in clause 3.21.18.

3.21.4A. The information a Market Participant or Network Operator must provide to AEMO under clause 3.21.4 is:

(a) the date and time the outage commenced or is expected to commence (as applicable);

(b) the date and time the outage ended or is expected to end (as applicable);

(c) the cause of the outage;

(d) the identity of the Outage Facility de-rated as a result of the outage; and

(e) the expected quantity of any de-rating by Trading Interval, which must be submitted in accordance with clause 3.21.5 where the Facility is a Scheduled Generator or Non-Scheduled Generator.

3.21.4B. Where a Market Participant or Network Operator has informed AEMO of a Forced Outage or Consequential Outage under clause 3.21.4, the Market Participant or Network Operator must inform AEMO of any material change to the information provided as soon as practicable after becoming aware of that change, in the manner prescribed in the WEM Procedure specified in clause 3.21.18.

3.21.5. The quantity of de-rating for an ~~Outage~~ outage notification submitted to ~~System Management~~ AEMO for a Scheduled Generator or Non-Scheduled Generator is the MW reduction in capacity from the relevant Facility's maximum sent out capacity, adjusted to account for any previous outage notifications for concurrent outages of the Facility. When calculating the quantity of de-rating for an outage notification to be submitted to AEMO for a Scheduled Generator or Non-Scheduled Generator:

(a) for a Scheduled Generator, is the reduction in capacity from the relevant Facility's Sent Out Capacity, adjusted to 41 degrees Celsius using the information provided in the Standing Data file for temperature dependence provided under Appendix 1(b)(iv), and measured as an average over the Trading Interval. The remaining capacity, determined as the Sent Out

~~Capacity minus the notified outage, must be available to System Management for dispatch; and~~

~~(b) for a Non-Scheduled Generator, is the reduction in capacity from the relevant Facility's Sent Out Capacity, measured as an average over the Trading Interval.~~

(a) the maximum sent out capacity of the Facility is the quantity specified for the Facility under Appendix 1(b)(iii) or Appendix 1(e)(iiiA) as applicable;

(b) if the reduction in capacity varies during a Trading Interval, then the quantity of de-rating for the Trading Interval is measured as the average MW reduction in capacity over the duration of the Trading Interval; and

(c) if the outage notification is in respect of an outage for an Intermittent Generator with a nameplate capacity (as specified for the Facility under Appendix 1(e)(ii)) exceeding its maximum sent out capacity, and the Intermittent Generator remains or will remain capable of achieving its maximum sent out capacity throughout the outage period, then the quantity of de-rating for the outage is deemed to be zero.

3.21.5A. A quantity of de-rating determined for a Scheduled Generator in accordance with clause 3.21.5 is deemed to satisfy the requirement in clause 7.10.2(c)(ii) if, and only if, the quantity is determined using the assumption that at all times throughout the relevant Trading Interval, the capacity of the Scheduled Generator that was not subject to an outage was equal to the Scheduled Generator's actual level of sent out generation.

~~3.21.6. The following will apply for a Scheduled Generator for the purposes of clauses 7.3.4 and 7.13.1A(b):~~

~~(a) Outage data must be entered by Market Participants in System Management's system on an as generated basis at 15 degrees Celsius. System Management will convert the Outage data entered by Market Participants in System Management's computer interface system to a sent out basis at 15 and 41 degrees Celsius. System Management will convert the Outage data from 15 degrees on a sent out basis to a sent out basis at 41 degrees Celsius by multiplying the Outage quantity at 15 degrees Celsius on a sent out basis by the ratio of the Sent Out Capacity at 41 degrees Celsius to the Sent Out Capacity at 15 degrees Celsius for the Facility, as found in the Standing Data file for temperature dependence provided under Appendix 1(b)(iv) for that Facility.~~

~~(b) System Management must calculate the Forced Outage for a Facility in a Trading Interval as the greater of:~~

~~i. zero; and~~

~~ii. the sum of all Forced Outages notified for that Facility minus the difference between the Facility's Sent Out Capacity at 41 degrees~~

~~Celsius and the MW quantity corresponding to the number of Capacity Credits assigned to that Facility.~~

~~(c) System Management must calculate the Planned Outage for a Facility in a Trading Interval as the greater of:~~

~~i. zero; and~~

~~ii. the sum of all Planned Outages minus the greater of:~~

~~1. zero; and~~

~~2. the Sent Out Capacity at 41 degrees Celsius of the Facility minus the MW quantity corresponding to the number of Capacity Credits assigned to that Facility minus the sum of all Forced Outages notified for the Facility before the adjustment in clause 3.21.6(b) is made by System Management.~~

~~(d) System Management must calculate the Consequential Outage for a Facility in a Trading Interval as the greater of:~~

~~i. zero; and~~

~~ii. the sum of all Consequential Outages minus the greater of:~~

~~1. zero; and~~

~~2. the Sent Out Capacity at 41 degrees Celsius of the Facility minus the MW quantity corresponding to the number of Capacity Credits assigned to that Facility minus the sum of all Forced Outages and the sum of all Planned Outages notified for the Facility before the adjustments in clauses 3.21.6(b) and (c) are made by System Management.~~

3.21.6. For a Non-Intermittent Generator, for a Trading Interval:

(a) the Capacity-Adjusted Forced Outage Quantity is:

CAFO = max(0, UFO - (MSOC - DEF_RCOQ))

(b) the Capacity-Adjusted Planned Outage Quantity is:

CAPO = max(0, UPO - max(0, MSOC - DEF_RCOQ - UFO))

(c) the Capacity-Adjusted Consequential Outage Quantity is:

CACO = max(0, UCO - max(0, MSOC - DEF_RCOQ - UFO - UPO))

where:

UFO is the Unadjusted Forced Outage Quantity for the Non-Intermittent Generator for the Trading Interval;

MSOC is the maximum sent out capacity of the Non-Intermittent Generator specified under Appendix 1(b)(iii) or Appendix 1(e)(iiiA) (as applicable) for the Trading Interval;

DEF RCOQ is the Reserve Capacity Obligation Quantity that would apply to the Non-Intermittent Generator in the Trading Interval assuming that the Non-Intermittent Generator was not subject to an Outage or an approved Commissioning Test in the Trading Interval;

UPO is the Unadjusted Planned Outage Quantity for the Non-Intermittent Generator for the Trading Interval; and

UCO is the Unadjusted Consequential Outage Quantity for the Non-Intermittent Generator for the Trading Interval.

~~3.21.7. Notwithstanding the requirements of clause 3.21.4 that a relevant Market Participant or Network Operator must inform System Management of a Forced Outage or Consequential Outage as soon as practicable, a Market Participant or Network Operator must provide full and final details of the relevant Planned Outage, Forced Outage or Consequential Outage to System Management no later than 15 calendar days following each Trading Day on which the Outage occurred or continued to occur.~~

3.21.7. Notwithstanding any prior obligations under clauses 3.21.4 and 3.21.4B to notify and provide information to AEMO, a Market Participant or Network Operator must report and provide full and final details of the information specified in clause 3.21.4A for a Forced Outage of its Outage Facility in AEMO's outage management system, in respect of each affected Trading Day, by the end of the day that is 15 calendar days after the day on which the affected Trading Day ends.

~~3.21.8. [Blank]~~

~~3.21.9. In its determination of a Consequential Outage under clause 3.21.2B, System Management must accept the information provided by a Market Participant or Network Operator under clause 3.21.4 or 3.21.4A unless the information is inconsistent with other information held by System Management.~~

~~3.21.10. [Blank]~~

~~3.21.11. [Blank]~~

3.21.8. AEMO may, by written notice to a Market Participant, amend the timeframe prescribed in clause 3.21.7 for a specified period for a Non-Intermittent Generator if AEMO considers that it requires more timely information in respect of Forced Outages from the Market Participant to determine whether the Market Participant's Trading Margin is less than zero.

3.21.9. If AEMO amends the timeframes prescribed in clause 3.21.7 under clause 3.21.8, the Market Participant is not required to comply with the timeframes in clause 3.21.7 for the period specified in the notice.

3.21.10. Subject to clause 3.21.17, if a Market Participant or Network Operator considers that its Outage Facility has suffered a Consequential Outage then it may submit a request for a Consequential Outage to AEMO.

3.21.11. A Market Participant may submit a request for a Consequential Outage of its Outage Facility before the outage commences if the Market Participant receives a Triggering Outage Notice in respect of a Foreseeable Constraint that will result in the Outage Facility suffering a Consequential Outage.

3.21.12. The information provided in a request submitted under clauses 3.21.10 or 3.21.11 must include:

(a) the date and time the outage commenced or is expected to commence (as applicable);

(b) the date and time the outage ended or is expected to end (as applicable);

(c) the cause of the outage;

(d) the Outage Facility de-rated as a result of the outage;

(e) the expected quantity of any de-rating by Trading Interval, which must be submitted in accordance with clause 3.21.5 where the Facility is a Scheduled Generator or Non-Scheduled Generator; and

(f) for an outage that is caused by a Foreseeable Constraint, the unique identifier provided by AEMO for the relevant Triggering Outage.

3.21.13. Where a Market Participant or Network Operator submits a request for a Consequential Outage under clauses 3.21.10 or 3.21.11, or revises such a request under clause 3.21.14(a), and that request (or revised request) complies with clause 3.21.12, then the request (or revised request) will be deemed to constitute a declaration by an Authorised Officer of the Market Participant or Network Operator that the Consequential Outage has occurred.

3.21.14. Subject to clause 3.21.17(a), if a Market Participant or Network Operator submits a request for a Consequential Outage and subsequently becomes aware that the information provided in the request is inaccurate or inconsistent with the latest information issued by AEMO for a relevant Foreseeable Constraint in a Triggering Outage Notice, then the Market Participant or Network Operator must, as appropriate:

(a) revise the request to update the information; or

(b) withdraw the request,

as soon as practicable.

3.21.15. Subject to clause 3.21.17(b), AEMO:

(a) must approve or reject a request for a Consequential Outage submitted by a Market Participant or Network Operator, including an updated request, and

inform the Market Participant or Network Operator of its decision as soon as practicable after the request is submitted;

(b) must approve a request for a Consequential Outage that is attributed to a Foreseeable Constraint if the information provided in the request is consistent with the latest information issued by AEMO for the Foreseeable Constraint in a Triggering Outage Notice;

(c) must accept the information provided in a request for a Consequential Outage that is not attributed to a Foreseeable Constraint as accurate unless the information is inconsistent with other information held by AEMO; and

(d) may reject a previously approved request for a Consequential Outage if AEMO considers that the original determination was based on incorrect information, or has been superseded by new or updated information.

3.21.16. If AEMO rejects a request for a Consequential Outage under clause 3.21.15 then it:

(a) must inform the relevant Market Participant or Network Operator of the reasons for its decision as soon as practicable; and

(b) may deem the request for a Consequential Outage to be a report of a Forced Outage.

3.21.17. Notwithstanding any other provision of this section 3.21:

(a) a Market Participant or Network Operator must not submit or revise a request for a Consequential Outage in respect of a Trading Day after the end of the day that is 15 calendar days after the day on which the Trading Day ends; and

(b) AEMO must make its final decision on whether to approve or reject a request for a Consequential Outage submitted by a Market Participant or Network Operator in respect of a Trading Day before the time that AEMO must record the relevant data for the Trading Day in the schedule required under clause 7.13.1A(b).

3.21.1~~2~~8. ~~System Management~~ AEMO must document the procedure to be followed in determining and reporting Forced Outages and Consequential Outages in a ~~Power System Operation~~ WEM Procedure.

...

4.11.1. Subject to clauses 4.11.7 and 4.11.12, AEMO must apply the following principles in assigning a quantity of Certified Reserve Capacity to a Facility for the Reserve Capacity Cycle for which an application for Certified Reserve Capacity has been submitted in accordance with ~~clause~~ section 4.10:

(a) subject to clause 4.11.2, the Certified Reserve Capacity for a Scheduled Generator for a Reserve Capacity Cycle must not exceed AEMO's reasonable expectation of the amount of capacity likely to be available, after netting off capacity required to serve Intermittent Loads, embedded loads

and Parasitic Loads, for Peak Trading Intervals on Business Days in the period from:

i. the start of December for Reserve Capacity Cycles up to and including 2009; or

ii. the Trading Day starting on 1 October for Reserve Capacity Cycles from 2010 onwards,

in Year 3 of the Reserve Capacity Cycle to the end of July in Year 4 of the Reserve Capacity Cycle, assuming an ambient temperature of 41ºC;

(b) where the Facility is a generation system (other than an Intermittent Generator), the Certified Reserve Capacity must not exceed the sum of the capacities specified in clauses 4.10.1(e)(ii) and 4.10.1(e)(iii);

(bA) where the Facility is a generation system, the Certified Reserve Capacity must not ~~exceed —~~ exceed:

i. where that Facility is a Constrained Access Facility, the Constrained Access Entitlement as at the date and time specified in clause 4.1.12(b); or

ii. otherwise, the level of unconstrained network access as referred to in clause 4.10.1(bA)(iii);

(bB) where two or more generation Facilities share a Declared Sent Out Capacity, the total quantity of Certified Reserve Capacity assigned to those Facilities must not exceed the Declared Sent Out Capacity;

(c) AEMO must not assign Certified Reserve Capacity to a Facility for a Reserve Capacity Cycle if:

i. for Reserve Capacity Cycles up to and including 2009 that Facility is not operational or is not scheduled to commence operation for the first time so as to meet its Reserve Capacity Obligations by 30 November of Year 3 of that Reserve Capacity Cycle;

ii. for Reserve Capacity Cycles from 2010 onwards that Facility is not operational or is not scheduled to commence operation for the first time so as to meet its Reserve Capacity Obligations by 1 October of Year 3 of that Reserve Capacity Cycle;

iii. that Facility will cease operation permanently, and hence cease to meet Reserve Capacity Obligations, from a time earlier than 1 August of Year 4 of that Reserve Capacity Cycle;

iv. that Facility already has Capacity Credits assigned to it under ~~clause~~ section 4.28C for the Reserve Capacity Cycle;

v. that Facility is an Interruptible Load and, based on applications accepted under clauses 2.29.5D and 2.29.5K (as applicable), the Facility will be associated with a Demand Side Programme for any period when Reserve Capacity Obligations would apply for the Facility for the Reserve Capacity Cycle; or

vi. that Facility is a Demand Side Programme and it has submitted under clause 4.10.1(f)(v) a minimum notice period for dispatch under clause 7.6.1C(e) of more than two hours.

(d) [Blank]

(e) [Blank]

(f) AEMO must not assign Certified Reserve Capacity to a Facility that is not expected to be a Registered Facility by the time its Reserve Capacity Obligations for the Reserve Capacity Cycle would take effect;

(g) in respect of a Facility that will be subject to a Network Control Service Contract, AEMO must not assign Certified Reserve Capacity in excess ~~of~~ of:

i. where that Facility is a Constrained Access Facility, the Constrained Access Entitlement as at the date and time specified in clause 4.1.12(b); or

ii. otherwise, the capacity that AEMO believes that Facility can usefully contribute given its location and any network constraints that are likely to occur;

(h) subject to clauses 4.11.1B and 4.11.1C, AEMO may decide not to assign any Certified Reserve Capacity to a Facility, or to assign a lesser quantity of Certified Reserve Capacity to a Facility than it would otherwise assign in accordance with this clause 4.11.1, ~~if~~ if:

i. the Facility has been in Commercial Operation for at least 36 months and has had a Forced Outage rate or a combined Planned Outage rate and Forced Outage rate greater than the applicable percentage specified in the table in clause 4.11.1D, over the preceding 36 months; or

ii. the Facility has been in Commercial Operation for less than 36 months, or is yet to commence Commercial Operation, and AEMO has cause to believe that over the first 36 months of Commercial Operation the Facility is likely to have a Forced Outage rate or a combined Planned Outage rate and Forced Outage rate greater than the applicable percentage specified in the table in clause 4.11.1D,

where the Planned Outage rate and the Forced Outage rate for a Facility for a period are calculated in accordance with the ~~Power System Operation~~ WEM Procedure specified in clause ~~3.21.12~~ 3.21.18;

(i) the Certified Reserve Capacity assigned to a Facility is to be expressed to a precision of 0.001 MW;

(j) the Certified Reserve Capacity for a Demand Side Programme for a Reserve Capacity Cycle must not exceed either of the following ~~limits~~ limits:

i. AEMO's reasonable expectation of the amount of capacity likely to be available from that Facility during the periods specified in

clause 4.10.1(f)(vi), after netting off capacity required to serve Minimum Consumption for each of the Facility's Associated Loads, from the Trading Day starting on 1 October in Year 3 of the Reserve Capacity Cycle to the end of July in Year 4 of the Reserve Capacity Cycle; and

ii. AEMO's reasonable expectation of the amount by which the Facility could reduce its consumption, measured as a decrease from the Facility's Relevant Demand, by the end of one Trading Interval in response to a Dispatch Instruction requiring it to reduce consumption from the beginning of the Trading Interval at the ramp rate proposed for the Facility under clause 4.10.1(f)(vii), for which purpose AEMO may have regard to the ramp rate proposed under clause 4.10.1(f)(vii) and any other information AEMO considers relevant.

…

4.12.6. Subject to clause 4.12.7, any initial Reserve Capacity Obligation Quantity set in accordance with clauses 4.12.4, 4.12.5, 4.28B.4, or 4.28C.11 is to be reduced once the Reserve Capacity Obligations take effect, as follows:

(a) if the aggregate MW equivalent to the quantity of Capacity Credits (as modified from time to time under the ~~Market~~ WEM Rules) for a Facility is less than the Certified Reserve Capacity for that Facility at any time (for example as a result of the application of clause 4.20.1, clause 4.20.14, clause 4.25.4 or clause 4.25.6), then AEMO must reduce the Reserve Capacity Obligation Quantity to reflect the amount by which the aggregate Capacity Credits fall short of the Certified Reserve Capacity;

(b) during Trading Intervals where there is a ~~Consequential Outage or a Planned Outage~~ Capacity-Adjusted Consequential Outage Quantity or Capacity-Adjusted Planned Outage Quantity in respect of a Facility in the schedule maintained by ~~System Management~~ AEMO in accordance with clause 7.3.4, AEMO must reduce the Reserve Capacity Obligation Quantity for that Facility and that Trading Interval, after taking into account adjustments in accordance with clause 4.12.6(a), ~~to reflect the amount of capacity unavailable due to that outage~~ by that Capacity-Adjusted Consequential Outage Quantity or Capacity-Adjusted Planned Outage Quantity; and

(c) if the generating system, being a generating system referred to in clause 3.21A.2(a), is subject to a Commissioning Test Plan approved by ~~System Management~~ AEMO during a Trading Interval, then AEMO must reduce the Reserve Capacity Obligation Quantity for that Facility to zero during that Trading Interval.

...

4.25.3A. AEMO must not subject a Facility to a Reserve Capacity Test if:

(a) that Facility is undergoing a Scheduled Outage or Opportunistic ~~Outage~~ Maintenance which has been approved in accordance with ~~clause~~ section 3.19~~, or~~;

(b) the relevant Market Participant has advised ~~System Management~~ AEMO of a Forced Outage or Consequential Outage for that Facility in accordance with ~~clause~~ section 3.21.4~~ or 3.21.4A; or~~;

(c) that Facility is undergoing a Commissioning Test approved in accordance with ~~clause~~ section 3.21A~~.~~; or

(d) that Facility is subject to a Foreseeable Constraint.

…

4.25.9. In conducting a Reserve Capacity Test, ~~System Management~~ AEMO must:

(a) subject to clauses 4.25.9(b), 4.25.9(c) and 4.25.9(d), endeavour to conduct the Reserve Capacity Test without warning;

(b) allow sufficient time for the Market Participant to schedule fuel that it is not required under these ~~Market~~ WEM Rules to be stored on-site;

(c) allow sufficient time for switching a Facility from one fuel to an alternative fuel if operation using the alternative fuel is being tested;

(d) in the case of an Interruptible Load or a Demand Side Programme, give at least as much notice as is specified under clause 4.10.1(f)(v) to allow for arrangements to be made for the Facility to be triggered;

(e) ~~[Blank]~~deem the Reserve Capacity Test to be cancelled and discard the results if the Facility suffers a Consequential Outage during the test period;

(f) maintain adequate records of the Reserve Capacity Test to allow independent verification of the test results; and

(g) [Blank]

(h) issue an Operating Instruction to increase the Facility's output or decrease its consumption to a level specified by, or referred to in, the Operating Instruction.

...

4.26.1. If a Market Participant holding Capacity Credits associated with a Facility fails to comply with its Reserve Capacity Obligations applicable to any given Trading Interval then the Market Participant must pay a refund to AEMO calculated in accordance with the following provisions.

(a) The Trading Interval Refund Rate for a Facility f in the Trading Interval t is determined as follows:

Trading Interval Refund Rate(f,t)=RF(f,t) × Y(f,t)

where:

i. Trading Interval Refund Rate (f,t) is the Trading Interval Refund Rate for a Facility f in the Trading Interval t;

ii. RF(f,t) is the refund factor for a Facility f in the Trading Interval t and is calculated in accordance with clause 4.26.1(c); and

iii. Y is the per interval capacity price associated with a Facility f in the Trading Interval t and is determined in accordance with clause 4.26.1(b).

(b) For a Facility f in the Trading Interval t, Y is determined as follows:

i. where Facility f is a Non-Scheduled Generator, Y equals zero if AEMO has determined that in Trading Interval t the Non-Scheduled Generator is in Commercial Operation under clause 4.13.10B and one of the following applies:

1. the Non-Scheduled Generator has operated at a level equivalent to its Required Level in at least two Trading Intervals, adjusted to 100 percent of the level of Capacity Credits currently held; or

2. the Market Participant has provided AEMO with a report under clause 4.13.10C specifying that the Facility can operate at a level equivalent to its Required Level, adjusted to 100 percent of the level of Capacity Credits currently held;

ii. where Facility f is a Demand Side Programme, Y equals the DSM Reserve Capacity Price divided by 400;

iiA. where Facility f is an Intermittent Load, Y equals the Reserve Capacity Price divided by 12 then divided by the number of Trading Intervals in the relevant Trading Month the Trading Interval t falls in; and

iii. with the exception of clauses 4.26.1(b)(i), 4.26.1(b)(ii) and 4.26.1(b)(iiA), for a Facility f in the Trading Interval t, Y equals:

1. the Facility Monthly Reserve Capacity Price; divided by

2. the number of Trading Intervals in the relevant Trading Month the Trading Interval t falls in.

(c) The refund factor RF(f,t) for a Facility f in the Trading Interval t is the lesser of:

i. six; and

ii. the greater of the dynamic refund factor RF dynamic(t) as determined under clause 4.26.1(d) and the minimum refund factor RF floor(f,t) as determined under clauses 4.26.1(f) or 4.26.1(g) as appropriate.

(d) The dynamic refund factor RF dynamic(t) in the Trading Interval t is determined as follows:

$$\text{RF dynamic}(t) = 11.75 - \left(\frac{5.75}{750}\right) \times \sum_{f \in F} \text{Spare}(f,t)$$

where:

i. F is the set of Facilities for which Market Participants hold Capacity Credits in the Trading Interval t and f is a Facility within that set; and

ii. Spare(f,t) is the available capacity related to the Capacity Credits of the Facility f, which is not dispatched in the Trading Interval t determined in accordance with clause 4.26.1(e).

(e) For a Facility f in the Trading Interval t, Spare(f,t) is determined as follows:

i. where Facility f is a Scheduled Generator, the greater of zero and:

1. the MW quantity of Capacity Credits for Facility f in Trading Interval t; less

2. the ~~MW quantity of Outage~~ the sum of all Capacity-Adjusted Forced Outage Quantities, Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for Facility f ~~in~~ for Trading Interval t ~~as recorded~~ in the schedule maintained under clause 7.13.1A(b); less

3. the Sent Out Metered Schedule for Facility f in Trading Interval t multiplied by two so as to be a MW quantity;

ii. where Facility f is a Non-Scheduled Generator, zero; and

iii. where Facility f is a Demand Side Programme which has a Reserve Capacity Obligation Quantity in the Trading Interval t, Spare(f,t) is equal to:

$$\max\{0, \min\left(\text{RCOQ}(f,t), \left(\text{DSP Load}(f,t) - \text{DSP MinLoad}(f,t)\right)\right)\}$$

where:

1. [Blank]

2. RCOQ(f,t) is the Reserve Capacity Obligation for the Demand Side Programme f in the Trading Interval t;

3. DSP Load(f,t) is the Demand Side Programme Load for the Demand Side Programme f in the Trading Interval t as determined under clause 6.16.2 multiplied by two so as to be a MW quantity; and

4. DSP MinLoad(f,t) is the sum of the Minimum Consumption of each Associated Load of the Demand Side Programme f in MW in the Trading Interval t.

(f) Subject to clause 4.26.1(g), the minimum refund factor RF floor(f,t) in the Trading Interval t is determined as follows:

$$\text{RF floor}(f,t) = 1 - 0.75 \times \text{Dispatchable}(f,t)$$

where:

i. Dispatchable(f,t) for a Facility f in the Trading Interval t is its portion of capacity which is not subject to a Forced Outage over the 4320 previous Trading Intervals pt prior to and including the Trading Interval t and is determined as follows:

$$\text{Dispatchable}(f,t) = 1 - \left(\frac{\sum_{pt \in PT} FO(f,pt)}{\sum_{pt \in PT} CC(f,pt)}\right)$$

where:

1. PT is the set of 4320 Trading Intervals immediately prior to and including the Trading Interval t and pt is a Trading Interval within that set;

2. FO(f,pt) is the ~~quantity of Forced Outage~~ Capacity-Adjusted Forced Outage Quantity for a Facility f in the Trading Interval pt, as recorded in the schedule maintained under ~~accordance with~~ clause 7.13.1A(b); and

3. CC(f,pt) is the number of Capacity Credits a Market Participant holds for Facility f in the Trading Interval pt; and

(g) RF floor(f,t) is equal to one in the Trading Interval t for a Facility f to which any of the following applies:

i. the Facility is a Demand Side Programme;

ii. [Blank]

iii. the Facility is an Intermittent Generator to which clauses 4.26.1A(a)(ii)(2) or 4.26.1A(a)(ii)(3) applies; or

iv. the Facility is a Scheduled or Non-Scheduled Generator to which clauses 4.26.1A(a)(ii)(4) or 4.26.1A(a)(ii)(5) applies.

...

4.26.1A. AEMO must calculate the Reserve Capacity Deficit refund for each Facility ("**Facility Reserve Capacity Deficit Refund**") for each Trading Interval t as the lesser ~~of —~~ of:

(a) the product ~~of —~~ of:

i. the Trading Interval Refund Rate applicable to the Facility in Trading Interval t; and

ii. the Reserve Capacity Deficit in Trading Interval t,

where the Reserve Capacity Deficit for a Facility is equal to whichever of the following ~~applies —~~ applies, or to zero if none of the following apply:

1. ~~if the Facility is required to have submitted a Forced Outage under clause 3.21.4, or is a Scheduled Generator that has taken a Refund Payable Planned Outage, the total Forced Outage and Refund Payable Planned Outage in that Trading~~

~~Interval measured in MW~~if the Capacity-Adjusted Forced Outage Quantity or Refund Payable Planned Outage Quantity for the Facility for Trading Interval t exceeds zero, the sum of the Capacity-Adjusted Forced Outage Quantity and Refund Payable Planned Outage Quantity for the Facility for Trading Interval t;

2. if the Facility is an Intermittent Generator which is not considered by AEMO to have been in Commercial Operation for the purposes of clause 4.26.1(b), the number of Capacity Credits associated with the relevant Intermittent Generator;

3. if the Facility is an Intermittent Generator which is considered by AEMO to have been in Commercial Operation for the purposes of clause 4.26.1(b), but for which Y does not equal zero in clause 4.26.1(b), the minimum ~~of —~~ of:

   i. RL- (2 x Max2); or

   ii. RL—A

   ~~where —~~where:

   RL is the Required Level, adjusted to 100 percent of the level of Capacity Credits currently held;

   Max2 is the second highest value of the output for the Facility (MWh) achieved during a Trading Interval during the Trading Month the Trading Interval t falls in, as measured in Meter Data Submissions received by AEMO in accordance with section 8.4, that has been achieved since the date AEMO determined the Facility to be in Commercial Operation, where this value must be set equal to or greater than the Max2 applied by AEMO for the previous Trading Month; and

   A is the level of output (in MW) detailed in the most recent report provided by the Market Participant for the Facility under clause 4.13.10C,

4. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010 onwards, the Facility is undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system referred to in clause 3.21A.2(b), the number of Capacity Credits associated with the relevant Facility;

5. if, from the Trading Day commencing on 30 November of Year 3 for Reserve Capacity Cycles up to and including 2009 or 1 October of Year 3 for Reserve Capacity Cycles from 2010

onwards, the Facility is not yet undergoing an approved Commissioning Test and, for the purposes of permission sought under clause 3.21A.2, is a new generating system referred to in clause 3.21A.2(b), the number of Capacity Credits associated with the relevant Facility; or

6. if the Facility is a Demand Side ~~Programme —~~ Programme:

$$\max\left(0, \mathrm{RCOQ} - \max\left(0, (\mathrm{RD} - \mathrm{MinLoad})\right)\right)$$

~~where —~~ where:

RCOQ is the Reserve Capacity Obligation Quantity determined for the Facility under clause 4.12.4;

RD is the Relevant Demand for the Facility determined in accordance with clause 4.26.2CA; and

MinLoad is the sum of the MW quantities of Minimum Consumption for the Facility's Associated Loads; and

(b) the Maximum Facility Refund for the Facility in the relevant Capacity Year, less all Facility Reserve Capacity Deficit Refunds applicable to the Facility in previous Trading Intervals falling in the same Capacity Year.

...

4.26.1C. Where ~~System Management~~ AEMO has recorded a Capacity-Adjusted Planned Outage Quantity for a Scheduled Generator for a Trading Interval in the schedule maintained under clause 7.13.1A(b) ~~the Planned Outage of a Scheduled Generator in a Trading Interval~~, AEMO must determine that Capacity-Adjusted Planned Outage Quantity to ~~be —~~ be:

(a) if the Refund Exempt Planned Outage Count for the Facility, calculated over the 1000 Trading Days preceding the Trading Day in which the Trading Interval falls, is less than 8400—a Refund Exempt Planned Outage Quantity; or

(b) otherwise—a Refund Payable Planned Outage Quantity.

...

4.26.1D. The Economic Regulation Authority, in consultation with AEMO, must undertake a review, to be completed by 31 December 2020 of whether the limit for the Refund Exempt Planned Outage Count referred to in clause 4.26.1C should be modified to better address the Wholesale Market Objectives. The review must include, at a minimum, an assessment ~~of —~~ of:

(a) variations in Planned Outage rates and Forced Outage rates of Scheduled Generators since the introduction of the limit on Refund Exempt Planned Outage~~s~~ Quantities;

(b) for each Scheduled Generator and each year since the introduction of the limit on Refund Exempt Planned ~~Outages —~~ Outage Quantities:

i. the number of Equivalent Planned Outage Hours for which Facility Reserve Capacity Deficit Refunds were payable; and

ii. the total amount of Facility Reserve Capacity Deficit Refunds associated with Refund Payable Planned Outage~~s~~ Quantities; and

(c) the level of participation by Scheduled Generators in the Reserve Capacity Mechanism in each year since the introduction of the limit on Refund Exempt Planned Outage~~s~~ Quantities; and

(d) changes in the mix of Scheduled Generators that have participated in the Reserve Capacity Mechanism in each year since the introduction of the limit on Refund Exempt Planned Outage~~s~~ Quantities.

...

4.26.2. AEMO must determine the net STEM shortfall ("Net STEM Shortfall") in Reserve Capacity supplied by each Market Participant p holding Capacity Credits associated with a generation system in each Trading Interval t as:

SF(p,t) = Max(RCDF(p,t), RCOQ(p,t)—A(p,t))—RCDF(p,t)

where:

$$A(p,t) = \mathrm{Min}\big(\mathrm{RCOQ}(p,t), \mathrm{CAPA}(p,t)\big);$$

RCOQ(p,t) for Market Participant p and Trading Interval t is equal to:

(a) the total Reserve Capacity Obligation Quantity of Market Participant p's unregistered facilities that have Reserve Capacity Obligations, excluding Loads that can be interrupted on request; plus

(b) the sum of the product of:

i. the factor described in clause 4.26.2B as it applies to Market Participant p's Registered Facilities; and

ii. the Reserve Capacity Obligation Quantity for each Facility,

for all Market Participant p's Registered Facilities, excluding Demand Side Programmes,

CAPA(p,t) for Market Participant p and Trading Interval t is:

(c) equal to RCOQ(p,t) for a Trading Interval where the STEM Auction has been suspended by AEMO in accordance with section 6.10;

(d) subject to clause 4.26.2(c), the sum of:

i. the Reserve Capacity Obligation Quantities in Trading Interval t of that Market Participant's Interruptible Loads; plus

ii. the MW quantity calculated by doubling that Market Participant's Net Contract Position in MWh for Trading Interval t, corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus

iii. the MW quantity calculated by doubling the total MWh quantity covered by the STEM Offers which were not scheduled and the STEM Bids which were scheduled in the relevant STEM Auction, determined by AEMO for that Market Participant under section 6.9 for Trading Interval t, corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus

iv. double the total MWh quantity to be provided as Ancillary Services as specified by AEMO in accordance with clause 6.3A.2(e)(i) for that Market Participant corrected for Loss Factor adjustments so as to be a sent out quantity in accordance with clause 4.26.2A; plus

v. the greater of zero and (BSFO(p,t)—RTFO(p,t));

$$\mathrm{RCDF}(p,t) = \mathrm{RTFO}(p,t) + \mathrm{RTNREPO}(p,t);$$

$$\mathrm{RTNREPO}(p,t) = \sum_{f \epsilon F} \left(\mathrm{Max}\left(0, \mathrm{NREPO}(f,t) - \mathrm{BSPO}(f,t)\right)\right);$$

NREPO(f,t) is the ~~total MW quantity of~~ Refund Payable Planned Outage Quantity associated with Facility f for Trading Interval t;

BSPO(f,t) is the ~~total MW quantity of~~ Capacity-Adjusted Planned Outage Quantity associated with Facility f before the STEM Auction for Trading Interval t, as ~~provided to the AEMO by System Management in accordance with clause 7.3.4~~ recorded in the schedule maintained under clause 7.3.4;

F is the set of Scheduled Generators registered to Market Participant p, and f is a Facility within that set;

BSFO(p,t) is the total capacity-adjusted MW quantity of Forced Outage associated with Market Participant p before the STEM Auction for Trading Interval t, where this is the sum over all the Market Participant's Registered Facilities of the lesser of the Reserve Capacity Obligation Quantity of the Facility for Trading Interval t and the ~~MW~~ Capacity-Adjusted Forced Outage Quantity of the Facility for Trading Interval t as recorded in ~~accordance with section 7.3~~ the schedule maintained under clause 7.3.4; and

RTFO(p,t) is the total capacity-adjusted MW quantity of Forced Outage associated with Market Participant p in real-time for Trading Interval t, where this is the sum over all the Market Participant's Registered Facilities of the lesser of the Reserve Capacity Obligation Quantity of the Facility for Trading Interval t and the ~~MW~~ Capacity-Adjusted Forced Outage Quantity of the Facility for Trading Interval t as recorded in ~~accordance with~~ the schedule maintained under clause 7.13.1A(b).

…

4.26.6. The Facility Capacity Rebate in Trading Interval t for Facility f, being a Scheduled Generator or a Demand Side Programme for which a Market Participant holds Capacity ~~Credits —~~ Credits:

$$\mathrm{FCR}(\mathrm{f},\mathrm{t}) = \frac{\mathrm{CC}(\mathrm{f},\mathrm{t}) \times \mathrm{E}(\mathrm{f},\mathrm{t})}{\sum_{\mathrm{f}\in\mathrm{F}}\left(\mathrm{CC}(\mathrm{f},\mathrm{t}) \times \mathrm{E}(\mathrm{f},\mathrm{t})\right)} \times \mathrm{TAR}(\mathrm{t})$$

where—

(a) FCR(f, t) is the Facility Capacity Rebate for Facility f in the Trading Interval t;

(b) TAR(t) is the sum of all Trading Interval Capacity Cost Refunds for all Market Participants in Trading Interval t;

(c) F is the set of Facilities, being Scheduled Generators or Demand Side Programmes and f is a Facility within that set;

(d) CC(f, t) for a Facility f in a Trading Interval t is the Facility's capacity in t, which is not subject to an Outage, determined as ~~follows —~~ follows:

i. for a Scheduled Generator, the MW value of Capacity Credits less the ~~MW quantity of Outage~~ sum of all Capacity-Adjusted Forced Outage Quantities, Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for Facility f for Trading Interval t in the schedule maintained ~~as recorded~~ under clause 7.13.1A(b); and

ii. for a Demand Side Programme, the lesser ~~of —~~ of:

1. the Demand Side Programme Load multiplied by two so as to be a MW quantity less the sum of the Minimum Consumptions in MW for each of the Facility's Associated Loads; and

2. the Demand Side Programme's Reserve Capacity Obligation Quantity in t; and

(e) E(f, t) is the eligibility of Facility f in Trading Interval t, equal ~~to —~~ to:

i. one for any Facility which is a Scheduled Generator and the following ~~applies —~~ applies:

1. the Facility has a Sent Out Metered Schedule greater than zero in any one of the 1,440 Trading Intervals prior to and including Trading Interval t;

2. the sum of the Facility Reserve Capacity Deficit Refunds for Facility f, in Capacity Year y that the Trading Interval t falls in, for ~~trading intervals~~ Trading Intervals prior to and including Trading Interval t, is less than the Maximum Facility Refund for Facility f in Capacity Year y; and

3. the sum of the Generation Reserve Capacity Deficit Refund in Capacity Year y that the Trading Interval t falls in, for ~~trading intervals~~ Trading Intervals prior to and including Trading Interval t, is less than the Maximum Participant Generation

Refund for for the Market Participant p which the Facility is registered to, in Capacity Year y; and

ii. one for any Facility which is a Demand Side Programme and the following ~~applies —~~ applies:

1. the Facility received a Dispatch Instruction to reduce consumption in any one of the 1,440 Trading Intervals prior to and including Trading Interval t;

2. the Reserve Capacity Obligation Quantity for the Demand Side Programme does not equal zero under clause 4.12.4(c); and

3. the sum of the Demand Side Programme Capacity Cost Refunds for Facility f, in Capacity Year y that the Trading Interval t falls in, for trading intervals prior to and including Trading Interval t, is less than the Maximum Facility Refund for Facility f in Capacity Year y; and

iii. zero otherwise.

…

6.3A.2. By 9:00 AM on the Scheduling Day AEMO must have calculated and released to each Market Participant the following parameters to be applied by that Market Participant in forming its STEM Submissions for each Trading Interval in the Trading Day:

(a) the Maximum Supply Capability where this equals the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be supplied during the Trading Interval based on the Standing Data of that Market Participant's Scheduled Generators and Non-Scheduled Generators and assuming the use of the fuel which maximises the capacity of each Facility:

i. less ~~an allowance for Outages~~ the sum of all Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Market Participant for that Trading Interval in the schedule maintained in accordance with clause 7.3.4 (where each outage quantity is Loss Factor adjusted and divided by 2); and

ii. less, for each Market Participant that is a provider of Ancillary Services, the estimated Loss Factor adjusted quantity of energy, in units of MWh, that could potentially be called upon by ~~System Management~~ AEMO from that Market Participant after 1:00 PM on the Scheduling Day to meet Ancillary Service requirements for each Trading Interval of the Trading Day,

where the Maximum Supply Capability may be higher than the actual capacity available during the Trading Interval;

(b) the Maximum Consumption Capability where this equals the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be consumed during a Trading Interval by that Market Participant's Non-Dispatchable Loads and Interruptible Loads based on the Standing Data maximum consumption quantities for those Facilities and Non-Dispatchable Loads~~, less an allowance for Outages in the schedule maintained in accordance with clause 7.3.4~~;

(c) for each Scheduled Generator and Non-Scheduled Generator that is registered as being able to run on Liquid Fuel only, the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be supplied during the Trading Interval based on the Standing Data of that Scheduled Generator or Non-Scheduled Generator less ~~an allowance for Outages~~ the sum of all Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Facility for that Trading Interval in the schedule maintained in accordance with clause 7.3.4 (where each outage quantity is Loss Factor adjusted and divided by 2);

(d) for each Scheduled Generator and Non-Scheduled Generator that is registered as being able to run on both Liquid Fuel and Non-Liquid Fuel, the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be supplied during the Trading Interval when run on each of Liquid Fuel and Non-Liquid Fuel based on the Standing Data of that Scheduled Generator or Non-Scheduled Generator less ~~an allowance for Outages~~ the sum of all Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Facility for that Trading Interval in the schedule maintained in accordance with clause 7.3.4 (where each outage quantity is Loss Factor adjusted and divided by 2); and

(e) in the case of each Market Participant that is a provider of Ancillary Services:

i. the estimated Loss Factor adjusted quantity of energy, in units of MWh, that could potentially be called upon by ~~System Management~~ AEMO after 1:00 PM on the Scheduling Day to meet Ancillary Service requirements for each Trading Interval of the Trading Day; and

ii. the list of Facilities that ~~System Management~~ AEMO might reasonably expect to call upon to provide the energy described in clause 6.3A.2(e)(i).

6.3A.3. By 9:05 AM on the Scheduling Day AEMO must have calculated and released to each Market Participant the following parameters for information in forming its STEM Submissions for each Trading Interval in the Trading Day:

(a) the total quantity of Capacity Credits held by that Market Participant for the Trading Day, in units of MW;

(b) the estimated Loss Factor adjusted quantity of energy that could potentially be called upon by ~~System Management~~ AEMO after 1:00 PM on the

Scheduling Day to meet Ancillary Service requirements for each Trading Interval of the Trading Day, multiplied by 2, in units of MW;

(c) the ~~total quantity of Planned Outages and Consequential Outages~~ sum of all Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for that Market Participant for that Trading Interval in the schedule maintained in accordance with clause 7.3.4~~, in units of MW~~;

(d) the total quantity specified in any STEM submission Portfolio Supply Curve from that Market Participant that has been accepted by AEMO for that Trading Interval, multiplied by 2, in units of MW; and

(e) the total quantity specified in any STEM submission Ancillary Service Declaration from that Market Participant that has been accepted by AEMO for that Trading Interval, multiplied by 2, in units of MW.

…

6.15.2. The Minimum Theoretical Energy Schedule in a Trading Interval equals:

(a) for a Balancing Facility which is a Scheduled Generator, the amount which is the lesser of:

i. the sum of:

…

ii. where the Balancing Facility is subject to an Outage, the maximum amount of sent out energy, in MWh, which could have been dispatched given the TES Available Capacity for that Trading Interval;

(b) for a Balancing Facility which is a Non-Scheduled Generator:

…

(c) for the Balancing Portfolio, the amount which is the lesser of:

i. the sum of:

…

ii. where a Facility in the Balancing Portfolio is subject to an Outage, the maximum amount of sent out energy, in MWh, which could have been dispatched given the sum of the TES Available ~~Capacity~~ Capacities of Facilities in the Balancing Portfolio for that Trading Interval.

6.15.3 AEMO must:

(a) calculate Maximum Theoretical Energy Schedules under clause 6.15.1 and Minimum Theoretical Energy Schedules under clause 6.15.2:

i. using Sent Out Metered Schedules determined using SCADA data and output estimates maintained in accordance with clause 7.13.1(cA), notwithstanding any requirement in clause 9.3.4 to use Meter Data Submissions received by AEMO; and

ii. as soon as practicable using applicable SCADA data maintained under clause 7.13.1(cA); and

(b) update Maximum Theoretical Energy Schedules and Minimum Theoretical Energy Schedules calculated under clause 6.15.3(a) as soon as practicable using the schedule of ~~Outages~~ Capacity-Adjusted Forced Outage Quantities, Capacity-Adjusted Planned Outage Quantities and Capacity-Adjusted Consequential Outage Quantities maintained under clause 7.13.1A(b).

...

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:

i. 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 in respect of the Facility;

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:

1. any Downwards LFAS Enablement and, if the Facility is a Stand Alone Facility, any Backup Downwards 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)~~.~~; or

v. the Balancing Facility is a Scheduled Generator that was subject to a Forced Outage or Consequential Outage in the Trading Interval.

6.17.4. Subject to clauses 6.17.5B and 6.17.5C, AEMO must attribute any Downwards Out of Merit Generation from a Balancing Facility that is a Scheduled Generator, in a Trading Interval, as follows:

(a) Constrained Off Quantity1 (CoffQ1) equals the lesser of:

i. the maximum energy less the minimum energy, if any, in MWh, which could have been dispatched down from the Facility's Balancing Price-Quantity Pair N, with a Loss Factor Adjusted Price (Price N), taking

into account the TES Available Capacity and actual SOI Quantity of the Balancing Facility and the applicable Ramp Rate Limit, where N is determined from either of the following Balancing Price-Quantity Pairs or, if different, the one with the lower price:

1. the Balancing Price-Quantity Pair associated with the intersection of TES Available Capacity and the quantities in all Balancing Price-Quantity Pairs summed in order of lowest to highest price; and

2. the Balancing Price-Quantity Pair with a Loss Factor Adjusted Price lower than but closest to the Balancing Price; and

ii. the Downwards Out of Merit Generation for the Balancing Facility;

…

...

6.17.5A. Subject to clause 6.17.5C, AEMO must attribute any Downwards Out of Merit Generation from the Balancing Portfolio in a Trading Interval as follows:

(a) Portfolio Constrained Off Quantity1 (PCoffQ1) equals the lesser of:

i. the maximum energy less the minimum energy, if any, in MWh, which could have been dispatched down from the Balancing Portfolio's Balancing Price-Quantity Pair N, with Price N, taking into account the sum of the TES Available ~~Capacity of~~ Capacities of the Facilities in the Balancing Portfolio, the MW level at the start of the Trading Interval and the Portfolio Ramp Rate Limit, where N is determined from either of the following Balancing Price-Quantity Pairs or, if different, the one with the lower price:

1. the Balancing Price-Quantity Pair associated with the intersection of sum of the TES Available ~~Capacity~~ Capacities and the quantities in all Balancing Price-Quantity Pairs summed in order of lowest to highest price; and

2. the Balancing Price-Quantity Pair with a price lower than but closest to the Balancing Price; and

ii. the Portfolio Downwards Out of Merit Generation;

…

…

6.17.9. AEMO must, other than for Facilities in the Balancing Portfolio, determine a Settlement Tolerance for each Scheduled Generator and Non-Scheduled Generator, where this Settlement Tolerance is equal to:

(a) for a Scheduled Generator for which an applicable Tolerance Range or Facility Tolerance Range has been determined by ~~System Management~~

AEMO, the applicable value determined by ~~System Management~~ AEMO under clause 2.13.6D, divided by two to be expressed as MWh; or

(b) for Facilities for which no applicable Tolerance Range or Facility Tolerance Range has been determined by ~~System Management~~ AEMO, the lesser of:

i. 3 MWh; and

ii. the greater of:

1. 0.5 MWh; and

2. 3% of the Facility's ~~Sent Out~~ Balancing Facility Maximum Capacity divided by two to be expressed as MWh.

6.17.10. The Portfolio Settlement Tolerance equals the lesser of:

(a) 3 MWh; and

(b) 3% of the ~~Sent Out~~ Balancing Facility Maximum Capacity of the Balancing Portfolio divided by two to be expressed as MWh.

…

7.1.1. ~~System Management~~ AEMO must maintain and, in accordance with section 7.6, use the following data set when issuing Dispatch Instructions to Demand Side Programmes, when issuing Dispatch Instructions to Balancing Facilities dispatched Out of Merit, and when providing Operating Instructions:

(a) Standing Data for Registered Facilities determined in accordance with section 2.34;

(b) Loss Factors determined in accordance with section 2.27;

(c) expected Scheduled Generator and Non-Scheduled Generator capacities by Trading Interval determined in accordance with clauses 3.17.5, 3.17.6 and 3.17.8;

(d) network configuration and capacity by Trading Interval determined in accordance with clauses 3.17.5, 3.17.6 and 3.17.8;

(e) forecasts of load and non-scheduled generation by Trading Interval determined in accordance with section 7.2;

(f) Ancillary Service Requirements for each Trading Interval determined in accordance with clause 7.2.4;

(g) schedules of approved Planned Outages by Trading Interval determined in accordance with section 3.19;

(h) Forced Outages and Consequential Outages by Trading Interval received from Network Operators in accordance with section 3.21;

(i) Scheduled Generator, Non–Scheduled Generator and Interruptible Load Forced Outages and Consequential Outages by Trading Interval received from Market Participants in accordance with section 3.21;

(j) ~~[Blank]~~details of Foreseeable Constraints;

(k) the Non-Balancing Dispatch Merit Order;

(l) Supplementary Capacity Contract data, if any; and

(m) Network Control Service Contract data, if any, received from a Network Operator in accordance with clauses 5.3A.3 and 5.3A.4.

…

7.3.4. ~~System Management~~ AEMO must prepare a schedule of ~~Planned Outages, Forced Outages and Consequential Outages for each Registered Facility~~ Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for each Non-Intermittent Generator of which ~~System Management~~ AEMO is aware at that time ~~where Outages are calculated in accordance with clause 3.21.6~~, for each Trading Interval of a Trading Day, between 8:00 AM and 8:30 AM on the Scheduling Day prior to the Trading Day.

7.3.5. ~~[Blank]~~When preparing a schedule under clause 7.3.4, AEMO must assume that the maximum daily ambient site temperature at the site of each Non-Intermittent Generator will not exceed 41 degrees Celsius during the relevant Trading Day.

...

7.6.1C. In seeking to meet the Dispatch Criteria ~~System Management~~ AEMO must, subject to clause~~s~~ 7.6.1D and 7.6.1I, issue Dispatch Instructions in the following descending order of priority:

(a) Dispatch Instructions to Balancing Facilities in the order and, subject to clause 7.7.6B, for the quantities that appear in the BMO, taking into account Ramp Rate Limits for that Facility;

(b) a Dispatch Instruction to a Balancing Facility Out of Merit but only to the next Facility or Facilities, and associated quantity in the BMO that ~~System Management~~ AEMO reasonably considers best meets the Dispatch Criteria, taking into account the associated Ramp Rate Limit for that Facility;

(c) a Dispatch Instruction to any Balancing Facility Out of Merit, taking into account the Ramp Rate Limit and non-ramp rate Standing Data limitations relevant to that Facility and any other relevant information available to ~~System Management~~ AEMO;

(d) subject to clauses 7.6.1E and 7.6.1F, a Dispatch Instruction in accordance with the Non-Balancing Dispatch Merit Order to a Demand Side Programme which holds Capacity Credits, taking into account the DSP Ramp Rate Limit; and

(e) subject to clause 7.6.1E, a Dispatch Instruction in accordance with the Non-Balancing Dispatch Merit Order to a Demand Side Programme (whether or not it holds Capacity Credits) taking into account the DSP Ramp Rate Limit

and non-ramp rate Standing Data limitations relevant to that Facility and any other relevant information available to ~~System Management~~ AEMO.

7.6.1D. ~~System Management~~ AEMO may only issue Dispatch Instructions under:

(a) clause 7.6.1C(b) in priority to clause 7.6.1C(a);

(b) clause 7.6.1C(c) in priority to clause 7.6.1C(b);

(c) clause 7.6.1C(d) in priority to clause 7.6.1C(c); and

(cA) clause 7.6.1C(e) in priority to clause 7.6.1C(d),

where ~~System Management~~ AEMO considers, on reasonable grounds, that it needs to do so in order to:

(d) ensure a High Risk Operating State or an Emergency Operating State is avoided; ~~or~~

(e) if the SWIS is in a High Risk Operating State or an Emergency Operating State, enable the SWIS to be returned to a Normal Operating State~~.~~; or

(f) comply with its obligations under clause 7.6.1I.

…

7.6.1I. If a Balancing Facility that is a Non-Scheduled Generator is subject to a Foreseeable Constraint, then for each contiguous period within the period of the Foreseeable Constraint in which the relevant capacity of the Balancing Facility is not subject to an approved Planned Outage ("**applicable period**"), subject to clause 7.6.1K, AEMO must:

(a) issue one or more Dispatch Instructions to the Balancing Facility, which must not impose any unnecessary restriction on the sent out generation of the Balancing Facility, to restrict its MW output level by the start of the applicable period to the MW limit specified for the Foreseeable Constraint in the relevant Triggering Outage Notice;

(b) not issue a Dispatch Instruction or Operating Instruction to the Balancing Facility for a Trading Interval in the applicable period that specifies a MW target output level greater than the MW limit specified for the Foreseeable Constraint in the relevant Triggering Outage Notice.

7.6.1J. A Dispatch Instruction issued under clause 7.6.1I(a) is deemed to meet the criterion in clause 7.7.11(a).

7.6.1K. AEMO is not required to comply with clauses 7.6.1I(a) or 7.6.1I(b) if AEMO reasonably considers that such compliance would threaten Power System Security or Power System Reliability.

…

7.10.2. A Market Participant is not required to comply with clause 7.10.1 if:

(a) such compliance would endanger the safety of any person, damage equipment or breach any applicable law;

(b) the Facility was physically unable to maintain the ramp rate specified in the Dispatch Instruction but:

i. the actual output of the Facility did not, at any time the Dispatch Instruction applied, vary from the output specified in the Dispatch Instruction by more than the applicable Tolerance Range or Facility Tolerance Range; and

ii. the average output over a Trading Interval of the Facility was equal to the output specified in the Dispatch Instruction;

(c) both of the following apply:

i. the Market Participant has notified ~~System Management~~ AEMO, in accordance with clause 3.21.4 ~~or 3.21.4A~~, that its Registered Facility has been affected, or will be affected, by a Forced Outage or Consequential Outage; and

ii. the quantity of the Forced Outage or Consequential Outage notified is consistent with the extent to which the Market Participant did not comply with the most recently issued Dispatch Instruction, Operating Instruction or Dispatch Order applicable to its Registered Facility for the Trading Interval;

(d) a Demand Side Programme was issued a Dispatch Instruction by ~~System Management~~ AEMO under clause 7.6.1C and its Reserve Capacity Obligation Quantity, as determined under clause 4.12.4(c) is or becomes zero; ~~or~~

(e) clause 7.7.3C excuses compliance~~.~~; or

(f) a Scheduled Generator that was subject to an approved Commissioning Test in the Trading Interval was unable to comply with clause 7.10.1 due to a failure of the Facility's equipment during the period approved for the Commissioning Test.

…

7.13.1A. ~~System Management~~ AEMO must record the following data for a Trading Day by noon on the fifteenth Business Day following the day on which the Trading Day ends:

(a) the MWh quantity of non-compliance by Synergy by Trading Interval; and

(b) the schedule of all ~~Planned Outages, Forced Outages and Consequential Outages~~ Capacity-Adjusted Planned Outage Quantities, Capacity-Adjusted Forced Outage Quantities and Capacity-Adjusted Consequential Outage Quantities for Non-Intermittent Generators relating to each Trading Interval in the Trading Day by Market Participant and Facility ~~as measured on a sent out basis at:~~.

i. 15 degrees Celsius for Scheduled Generators and Non-Scheduled Generators; and

ii. 41 degrees Celsius for Scheduled Generators.

…

7.13.1D. System Management AEMO must as soon as practicable after:

(a) System Management AEMO receives a request via System Management's computer interface system AEMO's outage management system for a Planned Outage of a Scheduled Generator or a Non-Scheduled Generator; or

(b) System Management AEMO becomes aware via System Management's computer interface system AEMO's outage management system of a change to the information described in clause 7.13.1E,

record any relevant new or amended information outlined in clause 7.13.1E.

7.13.1E The information required to be recorded by System Management AEMO under clause 7.13.1D must include:

(a) whether the request is for a Scheduled Outage or Opportunistic Maintenance;

(b) the information provided under clauses 3.18.6(a) and 3.18.6(c) – 3.18.6(g);

(c) the time and date when:

i. the Outage Plan or request for Opportunistic Maintenance was received by System Management; AEMO; and

ii. any amendment to the outage status occurred; and.

(d) the MW quantity of any de-rating to a Scheduled Generator or Non-Scheduled Generator, as measured on a sent out basis at 15 degrees Celsius.

7.13.1F. System Management AEMO must as soon as practicable after:

(a) System Management AEMO receives a notification of a Forced Outage via its computer interface system AEMO's outage management system or records in its computer interface system AEMO's outage management system that a Consequential Outage has occurred for a Scheduled Generator or a Non-Scheduled Generator; or

(b) System Management AEMO becomes aware via System Management's computer interface system AEMO's outage management system of any change to the information described in clause 7.13.1G,

record any relevant new or amended information outlined in clause 7.13.1G

7.13.1G. The information required to be recorded by System Management AEMO under clause 7.13.1F must include:

(a) whether the outage is considered to be a Forced Outage or Consequential Outage;

(b) for a Forced Outage, the information ~~provided under clauses 3.21.4B(a) – 3.21.4(d)~~ specified in clauses 3.21.4A(a) – 3.21.4A(e) that is provided by the relevant Market Participant or Network Operator;

(c) for a Consequential Outage, the information specified in clauses 3.21.12(a) – 3.21.12(e) that is provided by the relevant Market Participant or Network Operator; and

(~~c~~d) the time and date when:

i. the Forced Outage was first notified to ~~System Management~~ AEMO;

ii. the outage status was amended by ~~System Management~~ AEMO; and

iii. ~~System Management~~ AEMO recorded in ~~its computer interface system~~ AEMO's outage management system that a Consequential Outage occurred as ~~determined~~ approved under clause ~~3.21.2B~~ 3.21.15(a).~~; and~~

~~(d) the MW quantity of any de-rating to a Scheduled Generator or Non-Scheduled Generator, as measured on a sent out basis at 15 degrees Celsius.~~

…

7A.2.4A. A Balancing Submission for a Balancing Facility that is a Scheduled Generator must specify the following details for each Trading Interval covered in the Balancing Submission:

(a) a ranking of Balancing Price-Quantity Pairs covering available capacity; and

(b) a declaration of the MW quantity that will be unavailable for dispatch,

where the sum of:

(c) the quantities in the Balancing Price-Quantity Pairs; and

(d) the declared MW quantity of unavailable capacity,

must be equal to the ~~Scheduled Generator's Sent Out~~ Balancing Facility Maximum Capacity for the Scheduled Generator.

7A.2.4B. A Balancing Submission for a Balancing Facility that is a Non-Scheduled Generator must specify, for each Trading Interval covered in the Balancing Submission, a single Balancing Price-Quantity Pair with a MW quantity equal to the Market Participant's best estimate of the Facility's output at the end of the Trading Interval (based on an assumption, for the purposes of this clause 7A.2.4B, that the Facility will not be subject to a Dispatch Instruction that limits its output during that Trading Interval except where the Dispatch Instruction is issued in relation to a Foreseeable Constraint in accordance with clause 7.6.1l).

...

7A.2.8A. A Market Participant ~~(other than Synergy in respect of the Balancing Portfolio)~~ must, for each of its Balancing Facilities that is a Scheduled Generator, and for each Trading Interval in the Balancing Horizon, use its best endeavours to ensure that, at all times, any of the Facility's capacity that is:

(a) subject to an approved Planned Outage; ~~or~~

(b) subject to an outstanding request for approval of Opportunistic Maintenance~~,~~; or

(c) reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint,

is declared as unavailable in the Balancing Submission for the Facility and the Trading Interval, unless the Balancing Facility is expected to generate in accordance with an approved Commissioning Test in that Trading Interval.

7A.2.8B. A Market Participant must, for each of its Balancing Facilities that is a Non-Scheduled Generator, and for each Trading Interval in the Balancing Horizon, use its best endeavours to ensure that, at all times, any of the Facility's capacity that is:

(a) subject to an approved Planned Outage;

(b) subject to an outstanding request for approval of Opportunistic Maintenance; or

(c) reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint,

is excluded from the estimated MW quantity in the Balancing Submission for the Facility and the Trading Interval, unless the Balancing Facility is expected to generate in accordance with an approved Commissioning Test in that Trading Interval.

...

7A.2.9A. Synergy must, to the extent it is able to update its Balancing Submissions subject to clauses 7A.2.9(d) to 7A.2.9(g) (as applicable), for each Scheduled Generator in the Balancing Portfolio, and for each Trading Interval in the Balancing Horizon, use its best endeavours to ensure that, at all times:

(a) any of the Scheduled Generator's capacity that is subject to an approved Planned Outage or reasonably expected to be unable to be dispatched by AEMO because of a Foreseeable Constraint is declared as unavailable in the Balancing Submission for the Balancing Portfolio and that Trading Interval, except where that Scheduled Generator is expected to generate in accordance with an approved Commissioning Test; and

(b) any of the Scheduled Generator's capacity that is subject to an outstanding request for approval of Opportunistic Maintenance is declared as available in the Balancing Submission for the Balancing Portfolio and that Trading Interval.

...

7A.2.10. A Market Participant (other than Synergy in relation to the Balancing Portfolio) as soon as it becomes aware that a Balancing Submission for a Trading Interval for which Balancing Gate Closure has occurred is inaccurate:

(a) if the inaccuracy is due to an Internal Constraint, must make a new, accurate Balancing Submission so that the quantity in the Balancing Submission reflects the available ~~Sent Out Capacity~~ sent out capacity of that Facility and the Ramp Rate Limit is accurate but no prices are altered, in respect of that Trading Interval as soon as reasonably practicable;

(b) if the inaccuracy is due to an External Constraint, may make a new, accurate Balancing Submission so that the quantity in the Balancing Submission reflects the available ~~Sent Out Capacity~~ sent out capacity of that Facility and the Ramp Rate Limit is accurate but no prices are altered, in respect of that Trading Interval, as soon as reasonably practicable;

(c) if the inaccuracy is due to the Market Participant receiving an Operating Instruction, may make a new, accurate Balancing Submission that reflects the Operating Instruction; or

(d) if the inaccuracy is due to a variation of the availability of the intermittent energy source used by a Non-Scheduled Generator, may make a new, accurate Balancing Submission so that the quantity in the Balancing Submission reflects the Market Participant's best estimate of the Facility's output at the end of the Trading Interval and the Ramp Rate Limit is accurate but the price is not altered, in respect of that Trading Interval.

...

7A.2A.1. Subject to clauses 7A.2A.3 ~~and~~, 7A.2A.4 and 7A.2A.5, a Market Participant (other than Synergy in respect of the Balancing Portfolio) must, as soon as practicable after each Trading Interval, for each of its Balancing Facilities that is an Outage Facility, ensure that it has notified ~~System Management~~ AEMO, in the manner prescribed in the WEM Procedure specified in clause 3.21.18, of a Forced Outage or Consequential Outage that relates to any capacity for which the Market Participant holds Capacity Credits that:

(a) was declared unavailable in the Facility's Balancing Submission for that Trading Interval; and

(b) was not ~~subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval,~~:

i. subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval; or

ii. reasonably expected to be unable to be dispatched by AEMO in that Trading Interval because of a Foreseeable Constraint,

unless the relevant capacity was declared unavailable in the Facility's Balancing Submission because the Market Participant reasonably expected that its Reserve Capacity Obligations for the Trading Interval would be reduced because the maximum site temperature for the applicable Trading Day would exceed 41 degrees Celsius.

7A.2A.2. Subject to clauses 7A.2A.3 ~~and~~, 7A.2A.4 and 7A.2A.5, Synergy must, as soon as practicable after each Trading Interval, for each Facility in the Balancing Portfolio that is an Outage Facility, ensure that it has notified ~~System Management~~ AEMO, in the manner prescribed in the WEM Procedure specified in clause 3.21.18, of a Forced Outage or Consequential Outage that relates to any capacity for which Synergy holds Capacity Credits that:

(a) was declared unavailable in the Balancing Portfolio's Balancing Submission for that Trading Interval; and

(b) was not ~~subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval,~~:

i. subject to an approved Planned Outage, Consequential Outage or Commissioning Test Plan in that Trading Interval; or

ii. reasonably expected to be unable to be dispatched by AEMO in that Trading Interval because of a Foreseeable Constraint,

unless the relevant capacity was declared unavailable in the Balancing Portfolio's Balancing Submission because Synergy reasonably expected that its Reserve Capacity Obligations for the Trading Interval would be reduced because the maximum site temperature for the applicable Trading Day would exceed 41 degrees Celsius.

7A.2A.3. Clauses 7A.2A.1 and 7A.2A.2 do not apply in respect of a Trading Interval if:

(a) the relevant capacity was previously subject to an approved Planned Outage for the Trading Interval; and

(b) ~~System Management~~ AEMO notified the Market Participant of the rejection of the Planned Outage under clause 3.19.5:

i. less than 30 minutes before Balancing Gate Closure for the Trading Interval; or

ii. at a time when the Facility was not synchronised and could not be synchronised by the start of the Trading Interval given the Facility's relevant Equipment Limits.

7A.2A.4. Clauses 7A.2A.1 and 7A.2A.2 do not apply in respect of a Trading Interval if:

(a) the relevant capacity was previously subject to an approved Consequential Outage or Commissioning Test Plan for the Trading Interval; and

(b) ~~System Management~~ AEMO notified the Market Participant that the capacity was no longer subject to the Consequential Outage or Commissioning Test Plan for the Trading Interval:

i. less than 30 minutes before:

1. Balancing Gate Closure for the Trading Interval, for a Facility that is not in the Balancing Portfolio; or

2. the time specified in clause 7A.2.9(d) for the Trading Interval, for a Facility in the Balancing Portfolio; or

ii. at a time when the Facility was not synchronised and could not be synchronised by the start of the Trading Interval given the Facility's relevant Equipment Limits.

7A.2A.5. Clauses 7A.2A.1 and 7A.2A.2 do not apply in respect of a Trading Interval if:

(a) the Market Participant previously expected that the relevant capacity would be unable to be dispatched by AEMO in the Trading Interval because of a Foreseeable Constraint; and

(b) AEMO issued a Triggering Outage Notice that removed the basis for the Market Participant's expectation that the relevant capacity would be unable to be dispatched by AEMO in the Trading Interval because of the Foreseeable Constraint:

i. less than 30 minutes before:

1. Balancing Gate Closure for the Trading Interval, for a Facility that is not in the Balancing Portfolio; or

2. the time specified in clause 7A.2.9(d) for the Trading Interval, for a Facility in the Balancing Portfolio; or

ii. at a time when the Facility was not synchronised and could not be synchronised by the start of the Trading Interval given the Facility's relevant Equipment Limits.

...

10.5.1. AEMO must set the class of confidentiality status for the following information under clause 10.2.1 as Public and AEMO must make each item of information available from or via the ~~Market Web Site~~ WEM Website after that item of information becomes available to AEMO:

…

(k) any Market Advisories, ~~and~~ Dispatch Advisories and Triggering Outage Notices released in the previous 12 months;

…

…

11. Glossary

…

~~**Available Capacity**: Means, for a Trading Interval and for a Scheduled Generator or Non-Scheduled Generator, the Sent Out Capacity, in MW, less the quantity, in MW, of any Outage notified to AEMO under clause 7.13.1A(b)(i).~~

…

Balancing Facility Maximum Capacity:

(a) for a Balancing Facility, other than the Balancing Portfolio, that is:

i. a Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(b)(iii); and

ii. a Non-Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(e)(iiiA); and

(b) for the Balancing Portfolio, the sum of all of the Standing Data in Appendix 1(b)(iii) and Appendix 1(e)(iiiA) for each Facility in the Balancing Portfolio.

…

Balancing Price-Quantity Pair: ~~Means~~

(a) for a Scheduled Generator, the specified non-Loss Factor adjusted MW quantity at which a Market Participant is prepared to operate a Balancing Facility as at the end of a Trading Interval and the non-Loss Factor Adjusted Price, in $/MWh, at which the Market Participant is prepared to provide that quantity by the end of that Trading Interval;

(b) for a Non-Scheduled Generator the specified non-Loss Factor adjusted MW quantity at which a Market Participant is prepared to reduce its output as at the end of a Trading Interval and the non-Loss Factor Adjusted Price, in $/MWh, at which the Market Participant is prepared to provide that quantity by the end of that Trading Interval; and

(c) for the Balancing Portfolio, the specified MW quantity at which Synergy is prepared to have the Balancing Portfolio dispatched at as at the end of a Trading Interval and the Loss Factor Adjusted Price, in $/MWh, at which Synergy is prepared to provide from the ~~sum of all of its Sent Out Capacity for each Facility in~~ Balancing Facility Maximum Capacity of the Balancing Portfolio by the end of the Trading Interval.

…

Capacity-Adjusted Consequential Outage Quantity: For a Non-Intermittent Generator for a Trading Interval, the total MW capacity of the Non-Intermittent Generator for which Capacity Credits are assigned that is subject to an approved Consequential Outage for the Trading Interval, calculated in accordance with the formula in clause 3.21.6(c).

Capacity-Adjusted Forced Outage Quantity: For a Non-Intermittent Generator for a Trading Interval, the total MW capacity of the Non-Intermittent Generator for which Capacity Credits are assigned that is subject to a Forced Outage for the Trading Interval, calculated in accordance with the formula in clause 3.21.6(a).

Capacity-Adjusted Planned Outage Quantity: For a Non-Intermittent Generator for a Trading Interval, the total MW capacity of the Non-Intermittent Generator for which Capacity Credits are assigned that is subject to an approved Planned Outage for the Trading Interval, calculated in accordance with the formula in clause 3.21.6(b).

…

Effective Capacity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, that part of the maximum sent out capacity of the Facility specified under Appendix 1(b)(iii) or Appendix 1(e)(iiiA) (as applicable) that is not:

(a) physically prevented from being used by AEMO to provide sent out generation because of an outage of an item of equipment that is part of a Network; or

(b) prevented from being used by AEMO to provide sent out generation by network or security constraints that are the result of an outage of an item of equipment that is part of a Network.

…

Equivalent Planned Outage Hours: ~~Means, in~~ In respect of a Facility, the sum of the "Planned Outage Hours" and the "Equivalent Planned Derated Hours" for the Facility as calculated in accordance with the ~~Power System Operation~~ WEM Procedure specified in clause ~~3.21.12~~3.21.18.

…

External Constraint: ~~Means an event impacting the operation of the whole of the SWIS, or any significant part of it.~~

(a) an event impacting the operation of the whole of the SWIS, or any significant part of it; or

(b) a Foreseeable Constraint.

…

Foreseeable Constraint: An expected reduction in the Effective Capacity of a Scheduled Generator or Non-Scheduled Generator to a specific MW level for a specific period because of a Triggering Outage, that is specified in a Triggering Outage Notice.

…

Internal Constraint: In relation to a Facility, ~~means~~ an event that is not an External Constraint and which adversely impacts the ~~Sent Out Capacity~~ sent out capacity of the Facility.

…

Non-Intermittent Generator:

(a) a Scheduled Generator; or

(b) a Non-Scheduled Generator that is not an Intermittent Generator.

…

Refund Exempt Planned Outage Quantity: ~~Means a~~ A Capacity-Adjusted Planned Outage Quantity of a Scheduled Generator for which a Facility Reserve Capacity Deficit Refund is not payable, as determined by AEMO under clause 4.26.1C.

Refund Exempt Planned Outage Count: ~~Means, in~~ In respect of a Scheduled Generator and a period of time, the sum over all Trading Intervals in that period ~~of —~~ of:

(a) zero, if the Trading Interval occurs before 8:00 AM on 1 June 2016 or if no Capacity Credits were associated with the Facility in the Trading Interval; or

(b) the ~~MW quantity of~~ Refund Exempt Planned Outage Quantity for the Facility in the Trading Interval, divided by the number of Capacity Credits associated with the Facility in the Trading Interval.

Refund Payable Planned Outage Quantity: ~~Means a~~ A Capacity-Adjusted Planned Outage Quantity of a Scheduled Generator for which a Facility Reserve Capacity Deficit Refund is payable, as determined by AEMO under clause 4.26.1C.

…

~~**Sent Out Capacity:** Means:~~

~~(a) for a Balancing Facility, other than the Balancing Portfolio, that is:~~

~~i. a Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(b)(iii); and~~

~~ii. a Non-Scheduled Generator, the capacity provided as the Standing Data in Appendix 1(e)(iiiA); and~~

~~(b) for the Balancing Portfolio, the sum of all of the Standing Data in Appendix 1(b)(iii) and Appendix 1(e)(iiiA) for each Facility in the Balancing Portfolio.~~

…

TES Available Capacity: For a Trading Interval:

(a) for a Scheduled Generator, the maximum sent out capacity of the Facility in the Trading Interval (as specified under Appendix 1(b)(iii)) minus the sum of

the Capacity-Adjusted Forced Outage Quantity, Capacity-Adjusted Planned Outage Quantity and Capacity-Adjusted Consequential Outage Quantity for the Facility in the Trading Interval; and

(b) for a Non-Scheduled Generator, the maximum sent out capacity of the Facility in the Trading Interval (as specified under Appendix 1(e)(iiiA)).

…

Triggering Outage: An outage of Network equipment that AEMO considers will (if it proceeds) reduce the Effective Capacity of a Scheduled Generator or Non-Scheduled Generator to a specific quantity for a specific period.

Triggering Outage Notice: A communication issued by System Management to Market Participants and Network Operators in accordance with clauses 3.20A.2 or 3.20A.3 to provide information specified in clause 3.20A.1 about the expected impact of a Triggering Outage on a Scheduled Generator or Non-Scheduled Generator.

Unadjusted Consequential Outage Quantity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, the total quantity of de-rating recorded for any approved Consequential Outages for the Facility in AEMO's outage management system.

Unadjusted Forced Outage Quantity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, the total quantity of de-rating recorded for any Forced Outages for the Facility in AEMO's outage management system.

Unadjusted Planned Outage Quantity: For a Scheduled Generator or Non-Scheduled Generator for a Trading Interval, the total quantity of de-rating recorded for any approved Planned Outages for the Facility in AEMO's outage management system.

…

Appendix 1: Standing Data

…

(a) [Blank]

(b) for a Scheduled Generator:

i. evidence that the communication and control systems required by section 2.35 are in place and operational;

ii. the nameplate capacity of the generator, expressed in MW;

iiA. the minimum load at the connection point of the generator that will automatically trip off if the generator fails, expressed in MW;

iii. ~~the sent out capacity of the generator, expressed in MW~~the maximum MW quantity that can be sent out by the Facility on a sustainable

basis under optimal conditions, taking into account the physical limits of the network connection;

…

…

(e) for a Non-Scheduled Generator:

i. evidence that the communication and control systems required by section 2.35 are in place and operational;

ii. the nameplate capacity of the generator, expressed in MW;

iiA. the minimum load at the connection point of the generator that will automatically trip off if the generator fails, expressed in MW;

iii. the ramp down rates;

iiiA. ~~the sent out capacity of the generator, expressed in MW~~the maximum MW quantity that can be sent out by the Facility on a sustainable basis under optimal conditions, taking into account the physical limits of the network connection;

…

…

…

Appendix 9: Relevant Level Determination

…

Step 3: For each Candidate Facility, identify any Trading Intervals in the period identified in step 1(b) where:

(a) the Facility, other than a Facility in the Balancing Portfolio, was directed to restrict its output under a Dispatch Instruction as provided in a schedule under clause 7.13.1(c); or

(b) the Facility, if in the Balancing Portfolio, was instructed by ~~System Management~~ AEMO to deviate from its Dispatch Plan or change its commitment or output as provided in a schedule under clause 7.13.1C(d); or

(c) the Facility was affected by a Consequential Outage ~~as notified by System Management to AEMO under clause 7.13.1A~~; or

(d) the Facility was directed to restrict its output under an Operating Instruction issued in accordance with a Network Control Service Contract, as provided in a schedule under clause 7.13.1(cC).

…

Step 6: For each Candidate Facility and Trading Interval identified in step 3(c) use:

(a) the ~~schedule of Consequential Outages determined by System Management under clause 7.13.1A~~ Unadjusted Consequential Outage Quantity for the Candidate Facility for the Trading Interval;

(b) the quantity determined for the Facility and Trading Interval in step 2; and

(c) the information recorded by ~~System Management~~ AEMO under clause 7.13.1C(a),

to estimate the quantity of energy (in MWh) that would have been sent out by the Facility had it not been affected by the ~~notified~~ Consequential Outage during the Trading Interval.

…