AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

WEMS 3.33 and RCM 1.13 Release Notes

October 2019

Important notice

PURPOSE

The Australian Energy Market Operator has prepared this document to provide information about the Wholesale Electricity Market System (WEMS) 3.33 (Build 3.33-1497-3) and Reserve Capacity Mechanism (RCM) 1.13 (Build 1.13-2976-2) release as at the date of publication.

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VERSION CONTROL

Version	Release date	Changes
1.0	03/10/2019	Initial Publication for WEMS 3.33 Market Trial Release

DOCUMENT APPROVAL

Name	Position	Date
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Contents

1. Introduction

1.1 Overview

These are the release notes for the Wholesale Electricity Market System (WEMS) 3.33 (Build 3.33-1497-3) and Reserve Capacity Mechanism (RCM) 1.13 (Build 1.13-2976-2).

This WEMS release includes:

- Improvements to the Forecast Balancing Merit Order (BMO) calculation;
- System changes required to implement RC_2018_06: Full Runway Allocation of Spinning Reserve Costs;
- An update to the Market Fee Calculation; and,
- Improvements to the Reserve Capacity Testing functionality.

The system changes under this release are described in the sections below.

1.2 Supporting documentation

The WEMS MPI User Guide[1] has been updated for this release and should be read in conjunction with these release notes.

1.3 WEMS and RCM version summary

Table 1 summarises the changes in version post this release deployment.

Table 1 WEMS and RCM version summary

Application	Current version	New version
WEMS	3.32 (Build 3.32-1480-3)	3.33 (Build 3.33-1497-3)
RCM	1.12 (Build 1.12-2974-1)	1.13 (Build 1.13-2976-2)

To view the current version of MPI, please navigate to Help > About in the MPI.

1.4 Abbreviations

Table 2 outlines the abbreviations used in this document.

Table 2 Abbreviations

Abbreviation	Expanded name
AEMO	Australian Energy Market Operator
BMO	Balancing Merit Order
MOSMI	Market Operator System Monitoring Interface
MPI	Market Participant Interface
PCS	Product Configuration Specification

[1] Available at https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Participant-information/Guides-and-useful-information

Abbreviation	Expanded name
RC	Reserve Capacity
RCM	Reserve Capacity Mechanism
SQL	Structured Query Language
WEMS	Wholesale Electricity Market System

1.5 Status legend

Table 3 outlines the issue statuses used in this document.

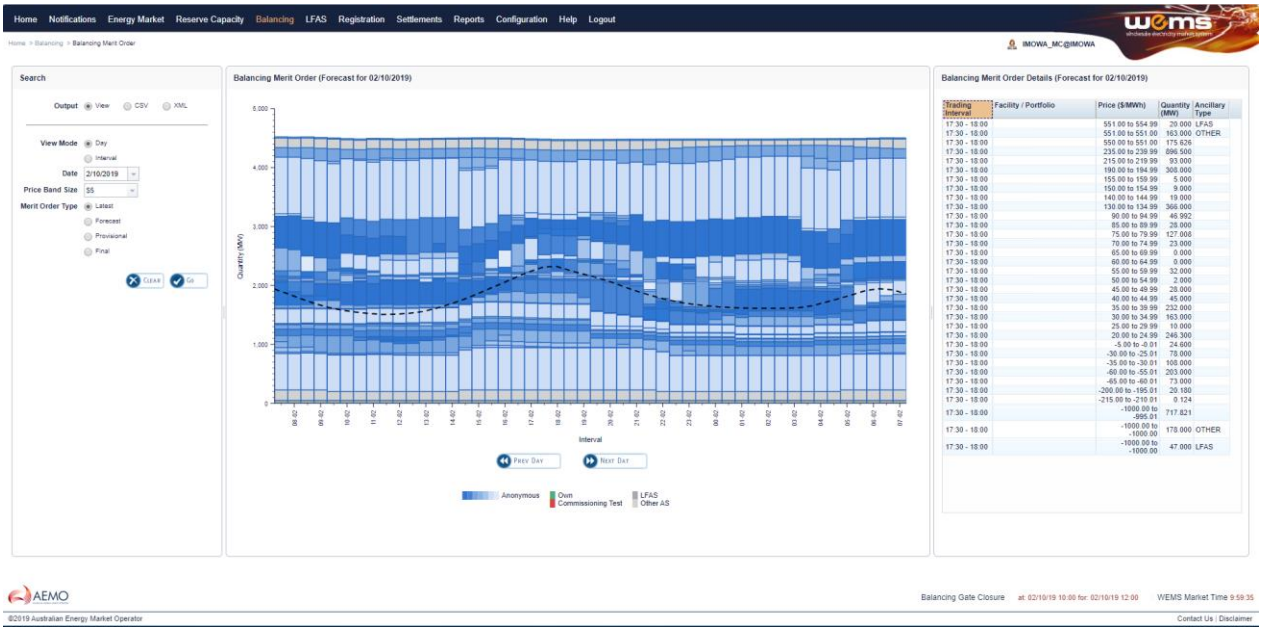
Table 3 Status Legend

Status	
●	Internal changes
●	Minimal or no impact to Market Participants
●	Needs Market Participants' attention. Potentially requires system or operational procedure changes.

2. Forecast BMO calculation improvement

The Forecast BMO is calculated every 30 minutes, with the calculation commencing at approximately two minutes after the end of the interval and results being published after the calculation is complete. This data is available to Market Participants though the MPI and via a web service call[2].

Figure 1 MPI > Balancing > Balancing Merit Order



AEMO monitors the performance of the Forecast BMO calculation, specifically the time it takes to complete. AEMO has an internally imposed threshold of 120 seconds for the calculation to complete, however, due to the increase in the volume of data required to be processed (due RC_2014_06[3] extending the Balancing Horizon at 1pm rather than 6pm) the calculation has recently been taking up to ~150 seconds to complete.

Accordingly, AEMO has optimised the BMO calculation query by moving to SQL format, rather than through Hibernate (object-relational management framework). In parallel, AEMO has taken the opportunity to optimise the response times of the Balancing Submissions web service.

These changes have been certified by the Market Auditor. There are no changes to Market Participant submissions or reports.

3. RC_2018_06: Full Runway Allocation of Spinning Reserve Costs

[2] Further details available in the WEMS Report and Web Service Specifications: https://www.aemo.com.au/-/media/Files/Electricity/WEM/Participant_Information/Guides-and-Useful-Information/2019/3-AEMO--WEMS-Report-Specification-v38.pdf

[3] https://www.erawa.com.au/rule-change-panel/market-rule-changes/rule-change-rc_2014_06

RC_2018_06[4] Full Runway Allocation of Spinning Reserve Costs came into effect on 1 September 2019. These changes impact the settlement calculation for the allocation of Spinning Reserve under clause 3.14.2 of the WEM Rules.

Under the current approach, the costs for Spinning Reserve Service are allocated to Market Generators based on a set of predetermined block ranges, with increasing costs for each block. All generators that fall within a block pay an equal share of that block's Spinning Reserve costs.

Under the proposed full runway approach, the Spinning Reserve costs will be allocated to each generator in a more granular way, according to the causer pays principle, with each generator paying Spinning Reserve costs in line with the generation of its facility (except for generators with an applicable capacity of 10 MW or less).

To enable the changes required by RC_2018_06[4], the settlement system has been update and the WA-WEMS PCS[5] (MPI -> Settlements -> Download Files -> PCS), Ancillary Service settlement calculations and PIR's will be updated as follows:

- Remove variables calculating a Markets Participants unadjusted share of Spinning Reserve Service costs (U_Share and TTU_Share).
- These are replaced with a Spinning Reserve Cost Allocation Share variable (SR_Share).
- Addition of Synchronisation Flags used in the calculation (Synch, Synch1, Synch2 … Synch12).

These changes have been certified by the Market Auditor.

These changes will apply for the September 2019 Non-STEM Settlement Statements that will be issued in November 2019 onwards.

4. Update to Market Fee calculation

AEMO has identified a historic error with the implementation of the Market Fee calculation [WEM Rule 9.13]. This issue will be reported in the 2018/19 WEM Market Audit report[6]. The issue has been summarised in the draft report as follows:

> *Market fees are a function of a participant's generation and load across all connections points in a given month.*
>
> *When calculating the load component, WEM Rule 9.13.1 requires that the calculation should sum the absolute value of all metered schedules for dispatchable, non-dispatchable and interruptible loads for a given participant for all trading intervals in a given month. Due to a system defect, the settlement calculation was summing the metered schedules and then taking the absolute values.*
>
> *The defect has two consequences:*
>
> - *In any given year, some participants will be paid less than they should have been charged while others would have been overcharged. The magnitude of the over and under-recoveries vary year on year. For example, AEMO has estimated that since market start, the maximum amount overcharged has ranged from $564 to $220K, while the maximum amount undercharged has ranged from -$407 to -$59K. During the audit year, the maximum amount overcharged was $83K and the maximum amount undercharged was -$23K.*

[4] https://www.erawa.com.au/rule-change-panel/market-rule-changes/rule-change-rc_2018_06

[5] https://wems.aemo.com.au/mpi/mpi-ui/settlements/settlementDownloads.action

[6] This will be published on AEMO's website on 28 October 2019 here: https://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Compliance-and-audit

- *The nature of the defect means that Market Customers with a higher proportion of non-dispatchable loads with generation would benefit the most (as their metered schedule input would have been underestimated), while Market Customers with a lower proportion of non-dispatchable loads generation would have been overcharged).*
- *AEMO's under-recovery of fees is reflected as an increase in the fee rate in the following year. This means that participants in a given year subsidies those participants that were undercharged in the previous year.*

This issue will be fixed in the settlements system. Instead of aggregating the positive meter schedule quantity (PMSQP) and negative meter schedule quantity (PMSQN) for each Participant the settlement system will now use the absolute value of the positive and negative meter schedule quantities to determine the Total Participant Monthly Load (TPMLOAD). This will result in the addition of a new variable, Participant Meter Schedule Quantity Absolute (PMSQA) that will be used instead of PMSQN and PMSQP. These changes have been certified by the Market Auditor.

These changes will apply for the September 2019 Non-STEM Settlement Statements that will be issued in November 2019 onwards. These changes will also apply for the Settlement Adjustment Process for Trade Months November 2018 to August 2019 in accordance with clause 9.19.4 of the WEM Rules.

5. Automatic notifications to Market Participants when passing a RC Test

When a Market Participant passes a Reserve Capacity Test for two Trading Intervals, a notification must be sent to the Market Participant. This process was previously completed by AEMO manually sending a notification by email. This release introduces the automation of this process, the Main Contact User will now receive an automatic email notification from the testing interface when a Facility passes a Reserve Capacity Test.

6. Resolved issues

In addition to the functionality above, the following issues have been resolved in this release.

Table 4 Resolved Issues

	Reference	Summary	Resolution
●	WEMS-7000	The automated email sent to a Market Participant when a second Reserve Capacity Test fails incorrectly references a 'Reduction in Capacity Credits'.	The reference to a 'Reduction in Capacity Credits' is removed from the automated email.
●	WEMS-7001	When a Market Participant fails two Reserve Capacity Tests, they may request a third Reserve Capacity Test. When AEMO triggered the third test in the testing interface the functionality was not working as expected.	AEMO is now able to trigger a third Reserve Capacity Test upon the request of a Market Participant.

	Reference	Summary	Resolution
●	WEMS-7009	A number of web services currently have redundant text in the response.	Removal of redundant test from web service response.
●	WEMS-6922	The settlement system produces settlement artefacts (Statements and PIR's) during the NSTEM processing jobs that are run for each Trading Month. During the normal processing steps of NSTEM Settlements, AEMO may be required to re-run processing steps and re-create settlement artefacts. In the current system implementation this results in duplicate settlement artefacts being produced for the same period. Currently these artefacts need to be manually removed from the database otherwise the duplicate artefacts will be displayed in the settlements portal.	This release introduces improved internal functionality for AEMO to automatically display only the latest created artefacts in the settlements portal for Market Participants to download.

Additional AEMO functionality has been introduced to complement the changes seen by Market Participants. This functionality is primarily in relation to the monitoring and alerting application MOSMI. These changes ensure AEMO can effectively managed its obligations to Market Participants as detailed in the WEM and GBB Participant Support Guide[7].

[7] Available on Participant Information section of the AEMO website http://www.aemo.com.au/Electricity/Wholesale-Electricity-Market-WEM/Participant-information/Guides-and-useful-information