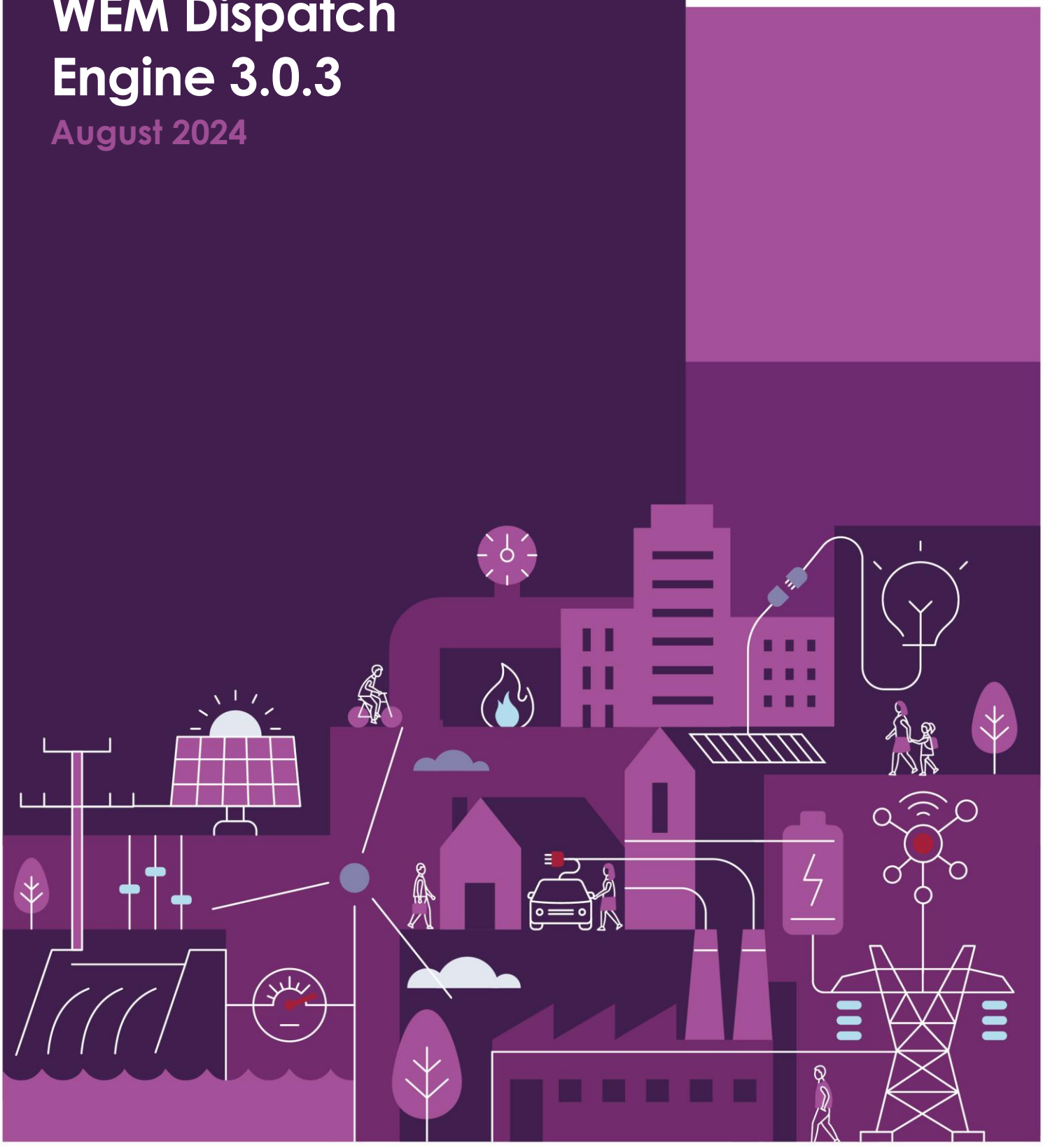
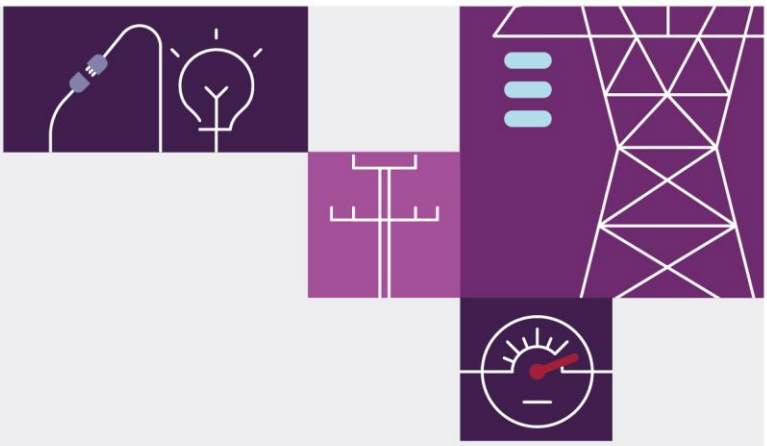
Release Notes: WEM Dispatch Engine 3.0.3

August 2024





Important notice

PURPOSE

The Australian Energy Market Operator has prepared this document to provide information about the WEM Dispatch Engine release as at the date of publication.

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Document version control

Version	Release date	Changes
1.0	12/08/2024	Initial Issue

Document approval

Name	Position	Date
Rick Dolling	Manager, WA Real-Time Market Monitoring	12/08/2024

Contents

1 Introduction

1.1 Overview

These are the release notes for the WEM Dispatch Engine 3.0.3 release. This WEMDE release includes updates to several settlement inputs and improvement for the forecasting of Underlying Demand.

The changes introduced in this release are described in the sections below.

1.2 Terms and abbreviations

The terms and abbreviations used in this document are outlined in Table 1.

Table 1 Terms and abbreviations

Abbreviation	Expanded name
DFCM	Dynamic Frequency Control Model
OCD	Over Constrained Dispatch
PaSS	Prudential and Settlement System
RTMS	Real-Time Market Submission
WEMDE	WEM Dispatch Engine

2 Congestion Rental corrected to only use constraintType “Network” [WEMDE-3]

During the solve of WEMDE the Congestion Rental is calculated for all Facilities. In accordance with clause 7.14.1 of the WEM Rules Congestion Rental should only be calculated for “Network” type constraints.

From 1 October 2023, Congestion Rental was incorrectly calculated when the constraintType field was “Other”, “NCESS” or “Network”. This has since been updated to only be calculated for “Network” type constraints.

AEMO will be updating all Congestion Rental values for all Primary Dispatch Intervals based on a review of the classification of the constraintType to ensure compliance with clause 7.14.1. This will be reflected in the Trading Day Report and Settlements but not in the solution files.

Further information was presented to the Real-Time Market Insights Forum on 16 May 2024[1]. AEMO will proactively engage Market Participants on this matter, for any questions please reach out to AEMO at wa.rtm@aemo.com.au.

3 Loss Factor Adjustment from RTMS with MIN/MAX price [WEMDE-66]

Where a Market Participant has made a Real-Time Market Submission with the code MIN/MAX for the offer price the price was incorrected capped at the Energy Offer Price Ceiling or Energy Price Floor before application of the Loss Factor.

This meant that where submissions were made with the MIN or MAX code and had a Loss Factor of greater than 1 the incorrect Loss Factor Adjusted Offer Price was calculated.

This has been corrected such that a value of MIN or MAX is interpreted as -99,999 or 99,999 respectfully and the Energy Offer Price Ceiling or Energy Price Floor are applied after Loss Factor Adjustment.

[1] https://aemo.com.au/-/media/files/stakeholder_consultation/working_groups/wa_meetings/real-time-market-insights-forum/2024-04-16-rtm-industry-insights-forum.pdf?la=en

4 Not In Service Capacity Updates [WEMDE-68]

Several changes to the Not In-Service Capacity calculation are present in this release related to Affected Dispatch Intervals.

In the instances where a Dispatch Interval is deemed to be an Affected Dispatch Interval AEMO replace the Dispatch Interval in line with MR 7.11B.1B

AEMO will be recalculating all historical Not In-Service Capacity Quantity values since 1 October upon release of WEMDE 3.0.3. This may result in modifications to Not In-Service Capacity Quantity values for intervals not deemed Affected Dispatch Intervals due to other resolved issues since the release of WEMDE 2.0.

5 Forecasting of Underlying Demand [WEMDE-84]

Underlying Demand is used in the DFCM as part of the definition of the relationship between system conditions and Contingency Raise Performance Factors and Contingency Raise Offset.

This had previously been calculated for forecast Dispatch Intervals as the sum of DPV and Forecast Unscheduled Operational Demand, however, this was missing the inclusion of scheduled withdrawal or auxiliary loads (behind the meter loads covered by generation). This release updates the calculation of Underlying Demand for to be:

$$UnderlyingDemand = FUOD + DPV + AuxLoad - SW$$

Where:

	Name	Case File Location	Notes
FUOD	Forecast Unscheduled Operational Demand		
DPV	Distributed Photovoltaic	SCADA → dispatchCondition.dpv	
AuxLoad	Auxilliary Load	SCADA → dispatchCondition.auxLoad	
SW	Scheduled Withdrawal	SCADA → dispatchCondition.scheduledWithdarawl	Scheduled withdrawal in the case file is the scheduled withdrawal from the previous Dispatch Interval in the Schedule

6 Incorrect Calculation of Inputs for FCESS Uplift Payments [WEMDE-90/WEMDE-127]

Two errors were identified in the inputs to the FCESS Uplift payment calculations (MR 9.10.3C to 9.10.3G):

- Loss Factor Adjusted Offer Price
- Enablement Minimum

The corrected values will be applied to all settlement runs since 1 October 2023 through the Adjustment Process in accordance with the settlement cycle timeline.

6.1 Loss Factor Adjusted Offer Price

Where a Facility had a combination of injection and withdrawal offers the Loss Factor Adjusted Offer Price was calculated incorrectly. This was due to incorrectly offsetting the Enablement Minimum by the sum of the withdrawal quantities.

The Enablement Minimum used in the calculation is the Enablement Minimum as submitted via RTMS.

6.2 Enablement Minimum

The Enablement Minimum was previously incorrectly taken as the Enablement Minimum as submitted via RTMS. However, this should have been the value as updated by AEMO, if applicable, under MR 7.4.52.

7 Resolved Issues

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

Table 2 Resolved Issues

Reference	Summary	Resolution
● WEMDE-5	Incorrect EstimationUsed flag send to PaSS for FCESS Enablement	Updated to default to FALSE value
● WEMDE-8	Included ConstraintSetId in persistence to AEMO Database	N/A
● WEMDE-12	Trading Day Report Published with Incomplete Dataset	Trading Day Report will not complete publication if the underlying data set has failed to be returned. AEMO will then investigate and resolve before publication.
● WEMDE-52	WEMDE will fail to start solve if Grid Systems Service has error in mapping between WEMDE and SCADA points	WEMDE will proceed to solve and use default RHS if no data is received from Grid Systems Service
● WEMDE-79	Calculation of Reference Trading Price timed out	Increased timeout on calculation of Reference Trading Price
● WEMDE-80	Missing Loss Factors for Embedded Generators in Case File	Loss Factors not included
● WEMDE-81	dispatchCondition.dpv not included in all Case Files unless explicitly declared in a Constraint Set	dispatchCondition.dpv included in all case files for the use in the DFCM look-up
● WEMDE-88	SQL Timeout when writing SolutionConstraints to AEMO Database	Modification to the persistence methodology
● WEMDE-123	WEMDE Dispatch Interval set to “published” even though case data persistence failed	Modified logic to set published status to True to ensure all underlying data is present and persisted to AEMO database
● WEMDE-148	OCD Solve resulted in infeasible solution	During OCD solve slack variable bounds are rounded to avoid machine precision problems

Table 3 Status Legend

Status
● Internal AEMO changes. No impact to Market Participants.
● Additional functionality. Market Participants awareness only.
● Change to Market Participant functionality. Needs Market Participant attention.