

Affected Dispatch Interval Report

Trading Month October 2023

Prepared in accordance with
clause 7.11C.3 of the WEM Rules





1 Introduction

The Australian Energy Market Operator (AEMO) has prepared this report under clause 7.11C.3 of the Wholesale Electricity Market Rules (WEM Rules).

Clause 7.11C.3 of the WEM Rules requires AEMO to publish a report as soon as practicable after determining a Dispatch Interval is an Affected Dispatch Interval outlining:

- the reasons for determining that a Dispatch Interval was an Affected Dispatch Interval.
- whether that determination was correct; and
- what action will be taken to minimise the risk of a similar event in future.

In this report:

- the reporting period covers the period specified on the title page,
- terms that are capitalised but not defined have the meaning given in the WEM Rules; and,
- date references are to Trading Days, not calendar days, unless otherwise stated.

2 Affected Dispatch Interval(s)

This section provides details of the Dispatch Intervals AEMO has determined to be Affected Dispatch Intervals in accordance with 7.11C.2. In accordance with clause 7.11C.3(b) at the time of publication of this report AEMO considers the determination correct.

Trading Day	1 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	1/10/2023 8:35	1/10/2023 8:30
	1/10/2023 9:20	1/10/2023 9:15
	1/10/2023 9:25	1/10/2023 9:20
	1/10/2023 9:50	1/10/2023 9:45
	1/10/2023 9:55	1/10/2023 9:45
	1/10/2023 10:00	1/10/2023 9:45
	1/10/2023 10:25	1/10/2023 10:20
	1/10/2023 10:30	1/10/2023 10:20
	1/10/2023 10:45	1/10/2023 10:35
	1/10/2023 10:50	1/10/2023 10:45
	1/10/2023 10:55	1/10/2023 10:50
	1/10/2023 11:05	1/10/2023 11:00
	1/10/2023 11:15	1/10/2023 11:00
	1/10/2023 11:20	1/10/2023 11:10
Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop¹ response. This resulted in shortfalls in the RoCoF market, which in turn resulted in shortfall pricing of \$1,738 per MWs. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>	
Determination Outcome [7.11C.3(b)]	Correct	
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue re-occurring.	

Trading Day	1 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	1/10/2023 15:10	1/10/2023 15:05
	1/10/2023 15:15	1/10/2023 15:10

¹ The term "droop" refers to primary frequency response provided by Facilities.

Reasons for Determination [7.11C.3(a)]	<p>The Rate of Change of Frequency (RoCoF) requirement in place during these intervals was found to be erroneous. This resulted in shortfalls and shortfall pricing in the RoCoF ESS market.</p> <p>AEMO has determined these are Affected Dispatch Intervals due to dispatch outcomes being based on a manifestly incorrect RoCoF requirement, directly resulting in material impacts to Market Clearing Prices.</p>
Determination Outcome [7.11C.3(b)]	Correct
Actions Taken [7.11C.3(c)]	AEMO has improved the IT system functionality and operational processes around determination of the RoCoF requirement.

Trading Day	2 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	2/10/2023 10:30	2/10/2023 10:25
	2/10/2023 10:55	2/10/2023 10:50
	2/10/2023 11:20	2/10/2023 11:15
	2/10/2023 11:25	2/10/2023 11:20
	2/10/2023 11:30	2/10/2023 11:20
	2/10/2023 11:35	2/10/2023 11:20
	2/10/2023 11:40	2/10/2023 11:20
	2/10/2023 11:45	2/10/2023 11:20
	2/10/2023 11:50	2/10/2023 11:20
	2/10/2023 11:55	2/10/2023 11:20
	2/10/2023 12:00	2/10/2023 11:20
	2/10/2023 12:05	2/10/2023 11:20
	2/10/2023 12:10	2/10/2023 11:20
	2/10/2023 12:15	2/10/2023 11:20
2/10/2023 12:40	2/10/2023 12:35	
2/10/2023 13:40	2/10/2023 13:35	
2/10/2023 14:25	2/10/2023 14:20	
Reasons for Determination [7.11C.3(a)]	<p>During these intervals the contingency size parameter in WEMDE was determined by a manual override. The manual override was not associated with a Facility, meaning WEMDE was unable to correctly optimise for the given conditions. This resulted in shortfalls and shortfall pricing in the Contingency Raise market.</p> <p>AEMO determined these to be Affected Dispatch Intervals, as the contingency size parameter was manifestly incorrect due to not being associated with a Facility. This directly resulted in material impacts to Market Clearing Prices.</p>	
Determination Outcome [7.11C.3(b)]	Correct	
Actions Taken [7.11C.3(c)]	Training has been conducted with Power System Operations Controllers and operational processes updated on implementing manual overrides in WEMDE. In future, overrides on the contingency size parameter will be associated with specific Facility/s to allow the dispatch engine to correctly optimise outcomes.	

Trading Day	2 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	2/10/2023 18:30	2/10/2023 18:25
	2/10/2023 18:35	2/10/2023 18:30
	2/10/2023 18:40	2/10/2023 18:35
	2/10/2023 18:45	2/10/2023 18:40
	2/10/2023 18:50	2/10/2023 18:45
	2/10/2023 18:55	2/10/2023 18:50
	2/10/2023 19:00	2/10/2023 18:55
	2/10/2023 19:05	2/10/2023 19:00
	2/10/2023 19:10	2/10/2023 19:05
	2/10/2023 19:15	2/10/2023 19:10
	2/10/2023 19:20	2/10/2023 19:15
	2/10/2023 19:25	2/10/2023 19:20
	2/10/2023 19:30	2/10/2023 19:25
	2/10/2023 19:35	2/10/2023 19:30
	2/10/2023 19:40	2/10/2023 19:35
	2/10/2023 19:45	2/10/2023 19:40
2/10/2023 20:55	2/10/2023 20:50	
2/10/2023 22:25	2/10/2023 22:20	
Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and/or materially high prices in the Contingency Raise ESS market. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>	
Determination Outcome [7.11C.3(b)]	Correct	
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue occurring.	

Trading Day	4 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	4/10/2023 09:55	4/10/2023 09:50
	4/10/2023 10:40	4/10/2023 10:35
	4/10/2023 11:25	4/10/2023 11:20
Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and materially high prices in the RoCoF market. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfall).</p>	

	AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.
Determination Outcome [7.11C.3(b)]	Correct
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue occurring.

Trading Day	5 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	5/10/2023 20:10	5/10/2023 20:05
	5/10/2023 20:15	5/10/2023 20:10
	5/10/2023 20:20	5/10/2023 20:15
	5/10/2023 20:25	5/10/2023 20:20
	5/10/2023 20:30	5/10/2023 20:25
	5/10/2023 20:35	5/10/2023 20:25
	5/10/2023 20:40	5/10/2023 20:30
	5/10/2023 20:45	5/10/2023 20:30
	5/10/2023 20:50	5/10/2023 20:45
	5/10/2023 20:55	5/10/2023 20:50
	5/10/2023 21:00	5/10/2023 20:55
	5/10/2023 21:05	5/10/2023 20:55
	5/10/2023 21:10	5/10/2023 21:00
	5/10/2023 21:15	5/10/2023 21:05
	5/10/2023 21:20	5/10/2023 21:05
	5/10/2023 21:25	5/10/2023 21:15
	5/10/2023 21:30	5/10/2023 21:20
	5/10/2023 21:35	5/10/2023 21:25
	5/10/2023 21:40	5/10/2023 21:30
	5/10/2023 21:45	5/10/2023 21:40
	5/10/2023 21:50	5/10/2023 21:45
	5/10/2023 21:55	5/10/2023 21:50
	5/10/2023 22:00	5/10/2023 21:55
5/10/2023 22:05	5/10/2023 22:00	
5/10/2023 22:10	5/10/2023 22:05	
Reasons for Determination [7.11C.3(a)]	<p>Incorrect ramp rate limits were received from a Facility, resulting in WEMDE erroneously considering that facility unable to deliver ESS. This caused shortfalls and shortfall pricing in the Contingency Raise ESS market.</p> <p>AEMO determined these as Affected Dispatch Intervals, given dispatch outcomes were based on manifestly incorrect ramp rate limits, which directly resulted in material impacts on Market Clearing Prices.</p>	
Determination Outcome	Correct	

[7.11C.3(b)]	
Actions Taken [7.11C.3(c)]	Ramp rate limits were corrected, and validation processes / alarms have been implemented to identify and/or quickly mitigate a similar issue in future.

Trading Day	6 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	6/10/2023 20:30	6/10/2023 20:25
	6/10/2023 21:25	6/10/2023 21:20
	6/10/2023 21:55	6/10/2023 21:50
	6/10/2023 22:25	6/10/2023 22:20
	6/10/2023 22:30	6/10/2023 20:25
	6/10/2023 2:40	6/10/2023 2:35
Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and materially high prices in the Contingency Raise ESS market. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>	
Determination Outcome [7.11C.3(b)]	Correct	
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue occurring.	

Trading Day	7 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	7/10/2023 21:30	7/10/2023 21:25
	7/10/2023 22:55	7/10/2023 22:50
	7/10/2023 23:15	7/10/2023 23:10
Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and materially high prices in ESS markets. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirements (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>	

Determination Outcome [7.11C.3(b)]	Correct
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue occurring.

Trading Day	8 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	8/10/2023 19:50	8/10/2023 19:45
	8/10/2023 19:55	8/10/2023 19:50
	8/10/2023 20:20	8/10/2023 20:15
	8/10/2023 20:25	8/10/2023 20:20
	8/10/2023 21:10	8/10/2023 21:05
	8/10/2023 21:20	8/10/2023 21:15
	8/10/2023 21:35	8/10/2023 21:30
	8/10/2023 21:40	8/10/2023 21:30
	8/10/2023 22:25	8/10/2023 22:20
	8/10/2023 22:30	8/10/2023 22:25
	8/10/2023 22:15	8/10/2023 22:10
	8/10/2023 22:20	8/10/2023 22:15
9/10/2023 0:50	9/10/2023 0:45	

Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and materially high prices in the Contingency Raise ESS market. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>
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Determination Outcome [7.11C.3(b)]	Correct
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue occurring.

Trading Day	9 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	9/10/2023 9:05	9/10/2023 9:00
	9/10/2023 9:10	9/10/2023 9:05
Reasons for Determination [7.11C.3(a)]	Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and materially high prices in the Contingency Raise ESS market. Facilities providing ESS were still	

	<p>online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>
Determination Outcome [7.11C.3(b)]	Correct
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue occurring.

Trading Day	10 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	10/10/2023 10:00	10/10/2023 9:55
	10/10/2023 10:05	10/10/2023 10:00
	10/10/2023 10:20	10/10/2023 10:15
	10/10/2023 10:30	10/10/2023 10:25
	10/10/2023 10:35	10/10/2023 10:30
	10/10/2023 23:55	10/10/2023 23:50
Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and materially high prices in the Contingency Raise ESS market. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>	
Determination Outcome [7.11C.3(b)]	Correct	
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing an ESS Pre-Processing tolerance range, mitigating this issue occurring.	

Trading Day	11 October 2023	
Dispatch Interval(s)	Affected Dispatch Interval	Replacement Market Schedule Run
	11/10/2023 9:10	11/10/2023 9:05
	11/10/2023 9:15	11/10/2023 9:10
	11/10/2023 9:20	11/10/2023 9:15
	11/10/2023 9:25	11/10/2023 9:20
	11/10/2023 9:30	11/10/2023 9:25
	11/10/2023 22:40	11/10/2023 22:35



Reasons for Determination [7.11C.3(a)]	<p>Facilities providing ESS failed WEMDE Pre-Processing due to the Facilities' output being below their Minimum Enablement value of their submitted ESS trapezium due to droop response. This resulted in shortfalls and materially high prices in RoCoF market. Facilities providing ESS were still online and there were sufficient quantities of ESS to meet the requirement (i.e. no actual shortfalls).</p> <p>AEMO has determined these are Affected Dispatch Intervals as the market outcomes were based on manifestly incorrect information, directly resulting in material impacts to Market Clearing Prices.</p>
Determination Outcome [7.11C.3(b)]	Correct
Actions Taken [7.11C.3(c)]	A change to the WEMDE Pre-Processor was deployed to Production on 12 October 2023, introducing ad ESS Pre-Processing tolerance range, mitigating this issue occurring.