WDR – POST-EVENT DISPATCH CONFORMANCE POLICY

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Version	Effective Date	Summary of Changes
0.1	n/a	Draft issued to the Wholesale Demand Response Consultative Group for comment
1.0	24/10/2021	Initial publication

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1. INTRODUCTION

1.1. Purpose and scope

This is the Post-event Dispatch Conformance Policy (**Policy**) which establishes the methodology by which AEMO will determine dispatch conformance under the Wholesale Demand Response Mechanism (**WDRM**), following a dispatch event for a *wholesale demand response unit* (**WDRU**).

This document is separate from the existing dispatch procedure (**SO_OP_3705**) because, unlike generator dispatch conformance, WDR dispatch conformance will be measured post-event only, as described in clause 3.8.23A of the National Electricity Rules (**NER**).

1.2. Definitions and interpretation

1.2.1. Glossary

Terms defined in the National Electricity Law (**NEL**) and the NER have the same meanings in this Policy, unless otherwise specified in this clause.

Defined terms in the NER are intended to be identified in this Policy by italicising them, but failure to italicise a defined term does not affect its meaning.

The words, phrases and abbreviations in the table below have the meanings set out opposite them when used in this Policy.

Term	Definition
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator Limited
AER	Australian Energy Regulator
BSQ	Baseline Settlement Quantity (MWh)
Dispatch Event	Starting when a WDRU receives a non-zero dispatch instruction, ending with the last non-zero dispatch instruction before a 0 MW instruction is received
DRSP	Demand Response Service Provider
DUID	Dispatchable Unit ID
ME	Metered Energy (MWh)
MW	MegaWatt
MWB	Dispatch Target (MW)
NEL	National Electricity Law
NER	National Electricity Rules
ROC	Rate of Change, or Ramp Rate of a Unit
Settlement Day	Settlement day occurs from 00:00 – 24:00
WDRSQ Zeroing	Baseline is equal to metered energy for settlement purposes
WDR	Wholesale Demand Response
WDRM	Wholesale Demand Response Mechanism
WDRU	Wholesale Demand Response Unit

1.2.2. Interpretation

The following principles of interpretation apply to this Policy, unless otherwise expressly indicated:

(a)   The NER and the NEL prevail over this Policy, to the extent of any inconsistency.

(b)   This Policy has effect only for the purposes set out in the NER.

(c)   This Policy is subject to the principles of interpretation set out in NEL Schedule 2.

(d)   References to time are references to Australian Eastern Standard Time.

(e)   A reference to a clause is a reference to a clause of the NER.

(f)   A reference to a section is a reference to a section of this Policy.

1.3.   Related documents

Title	Location
Wholesale Demand Response Guidelines (AEMO)	AEMO website
Wholesale Demand Response Participation Guidelines (AER)	Location pending finalisation of document
Dispatch Procedure SO_OP_3705	AEMO website
Baseline Methodology Register	Location pending finalisation of document

2. BACKGROUND

2.1. WDR dispatch

A WDRU is a *load* which has been classified by a *Demand Response Service Provider* (DRSP) in accordance with NER Chapter 2 as a WDRU, or two or more WDRUs that have been aggregated in accordance with NER clause 3.8.3.

A DRSP can provide *wholesale demand response* (WDR) by reducing the consumption of electricity or increasing the export of electricity with respect to the *baseline* at the connection point of a WDRU.

(a)   If a DRSP submits a dispatch bid in respect of a WDRU, the DRSP must comply with *dispatch instructions* from AEMO in accordance with NER clause 2.3.6(i).

(b)   A WDRU will be dispatched at the DUID level, and settlement will occur at the individual WDRU or connection point.

2.2. Dispatch conformance for other scheduled facilities

(a)   If an existing *scheduled generating unit, semi-scheduled generating unit, scheduled network service* or *scheduled load* fails to comply with *dispatch instructions*, AEMO must declare and identify them as non-conforming in accordance with NER clause 3.8.23.

(b)   The real-time monitoring, identification, declaration and management of non-conformance by AEMO of the above mentioned unit types is outlined in Dispatch Procedure SO_OP_3705.

2.3. WDR dispatch conformance

The rights and obligations of AEMO to monitor and manage WDR dispatch non-conformance are outlined in NER clause 3.8.23A.

(a)   A WDRU can be identified as non-conforming after *dispatch* has occurred per NER clause 3.8.23A(b).

(b)   When performing a WDR dispatch conformance assessment, AEMO may have regard to the *baseline* of a WDRU, *metering data*, *remote control equipment* or *remote monitoring equipment* and any other matter considered by AEMO to be relevant (NER clause 3.8.23A(h)).

(c)   AEMO requires that for a dispatch conformance assessment to be performed for a given WDR dispatch event, sufficient *metering data* to perform *settlements* and *baseline* calculations must be received.

(d)   As such, WDRU dispatch conformance assessment will occur at the time of *settlements* provided the required *metering data* has been received and a *baseline* calculation has been performed.

3. DISPATCH CONFORMANCE ASSESSMENT

Under NER clause 3.8.23A(a) AEMO may declare and identify a WDRU as non-conforming if it fails to respond to a *dispatch instruction* within a tolerable time and accuracy as determined by AEMO.

For each *trading interval* in which a WDRU receives a *dispatch instruction* AEMO will perform a dispatch conformance assessment post-event. As such, DRSPs are obliged to receive and immediately respond to *dispatch instructions* and any operational communications on a 24/7 basis.

(a) The dispatch conformance assessment will measure conformance with *dispatch instructions* at two levels:

   (i) Interval dispatch conformance for each *trading interval* in which a WDRU was dispatched; and

   (ii) Settlement day dispatch conformance for each settlement day on which a WDRU was dispatched for one *trading interval* or more, to any extent that AEMO considers this to be relevant as a subsidiary, supporting factor in the assessment.

(b) The inputs of the WDR dispatch conformance assessment are the following data points aggregated at the DUID level for each *trading interval* in which a WDRU was dispatched for energy:

   (i) Baseline settlement quantity (BSQ), expressed in MWh.

   (ii) Metered energy (ME), expressed in MWh.

   (iii) Dispatch target (MWB), expressed in MW.

3.1. Calculating interval conformance

The interval dispatch conformance assessment will calculate a MW error value for each *trading interval* in which a WDRU was dispatched.

The MW error will be equal to the amount of demand response provided by a WDRU compared to its dispatch target for a given interval.

(a) The formula that is used to calculate the interval MW error is:

$$MW\ error_n = MWB_n - ((BSQ_n - ME_n) \times 12)$$

   Excluding *trading intervals* where:

$$MWB_{n-1} = 0\ MW; \text{ or}$$
$$MWB_n = 0\ MW$$

Where:

   n is the *trading interval* in which a WDRU was dispatched

   $(BSQ_n - ME_n)$ is multiplied by 12 to convert to MW

(b) Excluded intervals:

   (i) The first *trading interval* of a WDRU dispatch event will be excluded from the interval dispatch conformance assessment to allow WDRUs time to ramp.

(ii) *Trading intervals* in which a WDRU has received a *dispatch instruction* of 0 MW will be excluded.

(c) The interval conformance error threshold determines whether a WDRU non-conformance flag is raised during a *trading interval* in which it received a non-zero *dispatch instruction*.

(d) Interval non-conformance will be flagged if the following threshold is triggered:

Table 1 Interval MW error non-conformance thresholds

	Threshold	Assessment
Underdelivery	MW error ≥ 6 MW	If the interval MW error is equal to or greater than 6 MW, non-conformance will be flagged for underdelivery
Overdelivery	MW error ≤ -6 MW	If the interval MW error is equal to or less than -6 MW, non-conformance will be flagged for overdelivery

3.2. Calculating settlement day conformance

For the WDRU settlement day dispatch conformance assessment, inputs from each *trading interval* in which a WDRU was dispatched are summed for each settlement day.

The assessment will calculate a settlement day ratio of total demand response provided by the WDRU to the total dispatch target received, summed over a settlement day.

(a) The formula that is used to calculate the settlement day ratio is:

$$settlement\ day\ ratio = \frac{\sum_{n=1}^{N}(BSQ_n - ME_n)}{\sum_{n-1}^{N}(\frac{MWB}{12})}$$

Excluding *trading intervals* where:

$$MWB_n = 0\ MW$$

Where:

n is the index of summation (from 1 to N)

N is the total number of *trading intervals* in a settlement day in which a WDRU was dispatched

MWB for each *trading interval* is divided by 12 to convert a MW value to MWh

(a)   The settlement day ratio threshold determines whether or not a dispatch non-conformance flag is raised for a WDRU for a settlement day.

(b)   Settlement day non-conformance will be flagged if the following thresholds are triggered:

Table 2   Settlement day ratio non-conformance thresholds

	Threshold	Assessment
Underdelivery	≤50%	If the settlement day ratio is equal to or less than 50%, non-conformance will be flagged for WDRU underdelivery
Overdelivery	≥150%	If the settlement day ratio is equal to or greater than 150%, non-conformance will be flagged for WDRU overdelivery

4. NON-CONFORMANCE FRAMEWORK
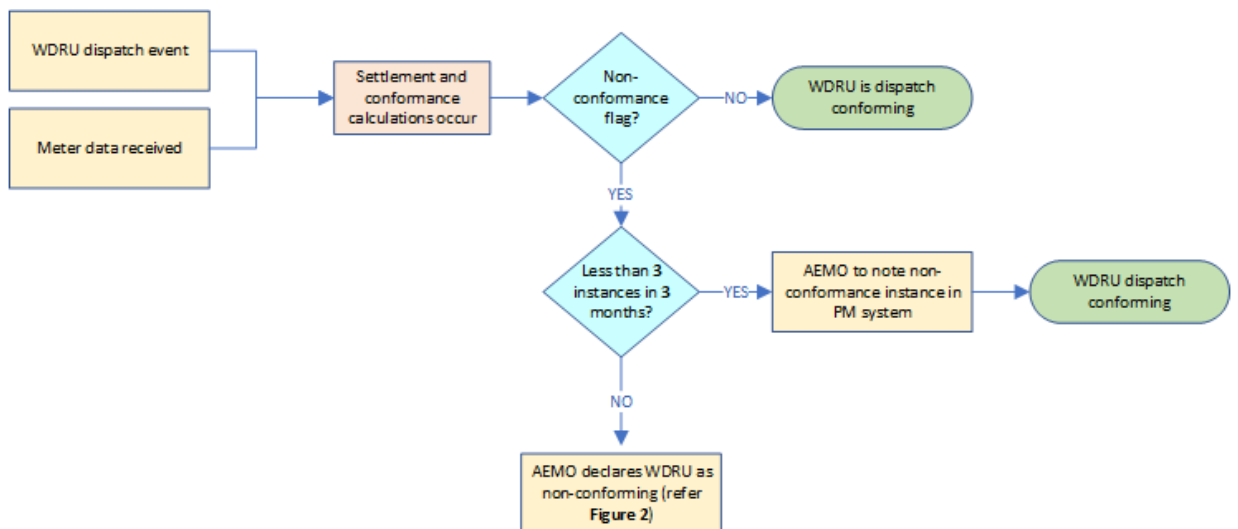
4.1. Declaration of non-conformance

Under NER clause 3.8.23A(a), AEMO may declare a WDRU as non-conforming if it fails to respond to *dispatch instructions* within a tolerable time and accuracy.

(a)   AEMO determines that for a WDRU to be declared non-conforming, dispatch non-conformance must be flagged for:

    (i)   three or more instances within three months; or

    (ii)   three or more instances over more than three months with no conformant dispatch having occurred during the period.

(b)   One of the following is considered to be a single instance of non-conformance:

    (i)   A settlement day non-conformance flag on a day where no or any number of interval MW errors flagged for intervals on that same settlement day; or

    (ii)   One or more interval MW error non-conformance flags on a day on which the settlement day flag did not trigger.

4.1.1. Initial instances of non-conformance

(a)   When one or more non-conformance flag(s) are raised, but there are insufficient instances for AEMO to declare the WDRU non-conforming, AEMO will:

    (i)   Log the instance(s) of non-conformance against the relevant DUID in the Portfolio Management System; and

   (ii)   The relevant DUID will continue to be considered dispatch conforming.

Figure 1   Initial instances of non-conformance

4.1.2. Repeated instances of non-conformance

(a) When repeated non-conformance flags are raised and a WDRU is to be declared non-conforming, AEMO will:

   (i) notify the relevant DRSP that the WDRU is non-conforming;

   (ii) request a reason from the DRSP in relation to the instances of non-conformance with *dispatch instructions*; and

   (iii) mark the relevant DUID as non-conforming in the Portfolio Management System.

(b) AEMO requires that a DRSP must respond to AEMO within five *business days* of AEMO sending a notification of a WDRU dispatch non-conformance declaration and a request for a reason.

(c) Upon receiving a response from a DRSP, AEMO will review the non-conformance event data and may determine whether the provided reason is sufficient to explain non-conformance instances.

(d) If, in AEMO's reasonable opinion, the response provided satisfies AEMO that the WDRU will conform to future *dispatch instructions*, AEMO will undertake the re-instatement of conformance process outlined in Section 4.5 of this document.

(e) Where AEMO is not satisfied that a WDRU will conform to future *dispatch instructions*, or a DRSP has failed to respond to AEMO within five *business days* of AEMO sending notification of a dispatch non-conformance declaration, AEMO will review the non-conformance data and determine whether repeated non-conformance is the result of issues at the:

   (i) DUID level, and follow the process outlined in Section 4.2; or

   (ii) Individual WDRU level for aggregated WDRUs, and follow the process outlined in Section 4.3.

Figure 2   Non-conformance declaration
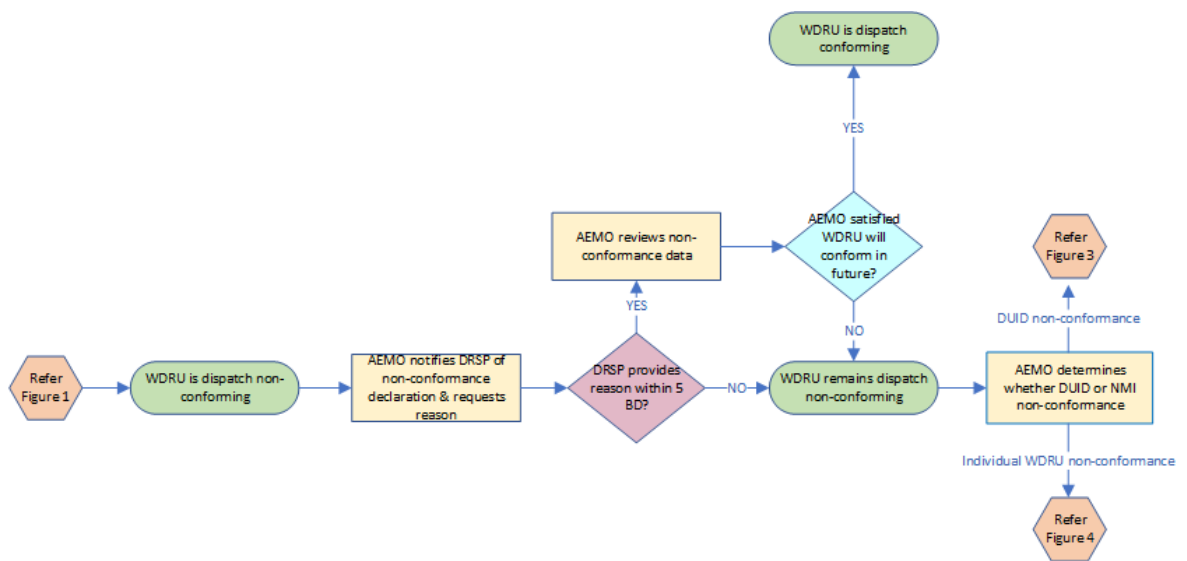
4.2. What happens when dispatch non-conformance is caused at the DUID level?

4.2.1. Request for a Modified DUID-Level MRC

(a) When AEMO identifies a DUID as dispatch non-conforming and is not satisfied that the WDRU will conform to future *dispatch instructions*, AEMO may request the relevant DRSP to submit a DUID-Level *maximum responsive component* (MRC) change request under NER clause 3.8.23A(c)(2).

(b) For a request under paragraph (a), AEMO will determine an alternative DUID-Level MRC value that satisfies AEMO that a WDRU will be able to meet future *dispatch instructions*. This decision may be based on data including, but not limited to:

   (i) *Baseline methodology* and baseline settlement quantity;

   (ii) Metered energy during and outside of WDR dispatch; and

   (iii) Telemetry data (if available).

(c) Following receipt of a request under paragraph (a), the DRSP must, within five *business days* of AEMO providing notification of the request:

   (i) submit the required DUID-Level MRC change request via the Portfolio Management System; and

   (ii) update its *dispatch bids* such that the *available capacity* does not exceed the alternative DUID-Level MRC as per AEMO's request,

(d) Following AEMO's approval of the DUID-Level MRC change request, dispatch conformance can be re-instated as per Section 4.5.

4.2.2. Notice to limit *available capacity*

(a) If a DRSP fails to submit a DUID-Level MRC change request within 5 *business days*, or continues to be non-conforming during dispatch following the submission of a DUID-Level MRC change request, AEMO may instate a notice as per NER clause 3.8.23A(e) requiring that the DRSP limit the *available capacity* of the non-confoming WDRU to a maximum limit defined by AEMO.

(b) Under NER clause 3.8.23A(f) the notice remains in place until the WDRU submits a DUID-Level MRC change request and AEMO deems the WDRU to be conforming again as per Section 4.5.

(c) Upon receiving a notice to limit WDRU *available capacity*, the DRSP must submit updated *dispatch bids* as specified in the notice as soon as practicable. The DRSP must provide AEMO notification that it has complied with this requirement within one *business day* of recceiving the notice.

4.2.3. WDRSQ zeroing

(a) If a DRSP does not comply with a notice under paragraph 4.2.2(a) to limit the *available capacity* of a non-conforming WDRU within one *business day*, the *baseline* for all WDRUs in the DUID will be set at the metered energy value, resulting in the wholesale demand response settlement quantity (WDRSQ) for any future *trading intervals* in which the WDRU is

dispatched being calculated to be zero, as set out in the Baseline Eligibility Compliance Metrics Policy under NER 3.10.2. The WDRU will remain WDRSQ zeroed until the DRSP complies with AEMO requests and is deemed dispatch conforming under Section 4.5.

Figure 3   DUID dispatch non-conformance
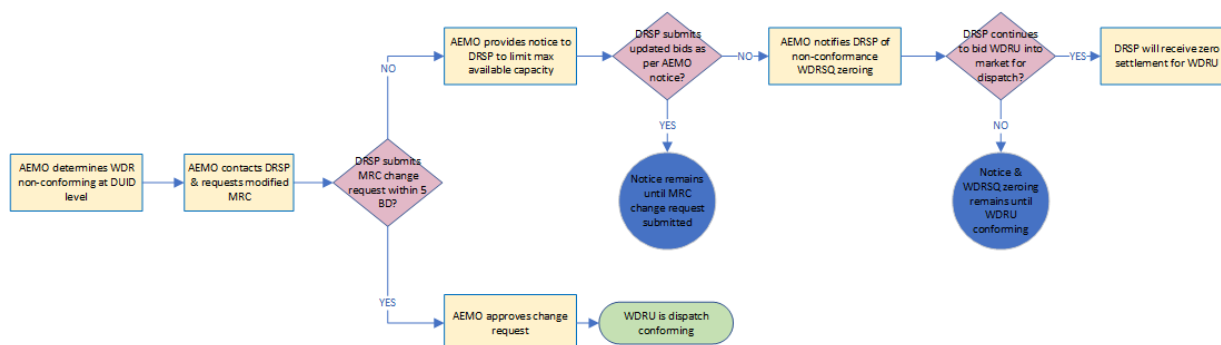
4.3. What happens when dispatch non-conformance is caused at the individual WDRU level?

4.3.1. Disaggregation request

Under NER 3.8.3(b3), AEMO has determined to impose standard terms and conditions, as set out in AEMO's Wholesale Demand Response Guidelines.

Section 2.2.2b(iii) of AEMO's Wholesale Demand Response Guidelines states that AEMO may require aggregated WDRUs be disaggregated as a result of continuing dispatch non-conformance.

(a)   When AEMO identifies one or more WDRU(s) in an aggregated WDRU is the cause of dispatch non-conformance and is not satisfied that the WDRU will conform to future *dispatch instructions*, AEMO may request the relevant DRSP submit a disaggregation request for the non-conforming WDRU(s).

(b)   Following receipt of a request under paragraph (a), the DRSP must, within five *business days* of AEMO providing notification of the request:

(i)   submit the required WDRU disaggregation request via the Portfolio Management System; and

(ii)   update its *dispatch bids* such that the *available capacity* of the relevant DUID reflects the requested disaggregation.

(c)   Following AEMO's approval of the disaggregation application, dispatch conformance can be re-instated as per Section 4.5.

(d)   If, in the DRSP's reasonable opinion, the non-conformance issues caused by one or more individual WDRU(s) can be resolved, the DRSP may choose to temporarily withdraw the WDRU(s) from the aggregation:

(i)   The individual WDRU(s) can be removed from an aggregation via the Portfolio Management System.

(ii)   The temporarily withdrawn WDRU(s) will not be considered in *settlements*.

(e)   Following the temporary withdrawal, the DRSP must update its *dispatch bids* according to the expected capacity change.

(f)   If a DRSP wishes to temporarily withdraw one or more WDRU(s) for longer than three months, it must provide AEMO with a sufficient reason to do so. However, AEMO will not consider a temporary withdrawal of greater than 12 months under any circumstance and will deem this a declassification, as a permanent withdrawal.

4.3.2.   WDRSQ zeroing

(a)   If a DRSP does not comply with a disaggregation request within five *business days*, or withdraws non-conforming individual WDRU(s) for longer than agreed, all WDRU baselines in the DUID will be set at the metered energy value, resulting in the WDRSQ for any future *trading intervals* in which the DUID is dispatched being calculated to be zero, as set out in the Baseline Eligibility Compliance Metrics Policy under NER 3.10.2.

(b)   The WDRU will remain WDRSQ zeroed until the DRSP complies with AEMO requests and is deemed dispatch conforming under Section 4.5.

Figure 4   Individual WDRU dispatch non-conformance
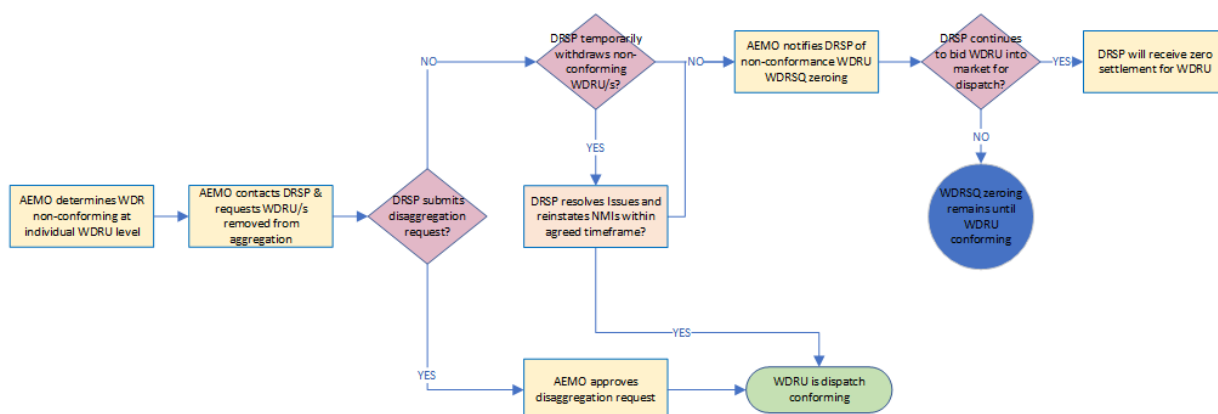
4.4.   Applying dispatch constraints to non-conforming WDRUs

(a)   If a non-conforming WDRU has created a risk to *power system security* under NER 3.8.1(a), 3.8.1(b)(4), 4.3.1(i), 4.3.1(j) and 4.3.2, 3.8.10(c)(2) regarding *network constraints*, or otherwise, then AEMO may dispatch constrain the WDRU to a value determined by AEMO, as appropriate to operate the *power system* securely.

4.5.   Reinstatement of dispatch conformance

(a)   Under NER clause 3.8.23A(d), a WDRU which has been declared non-conforming can be re-instated as conforming if:

(i)   AEMO is satisfied the WDRU will conform to future *dispatch instructions*; and

(ii)   the DRSP has responded to any AEMO requests for information and/or modification of:

(A)   DUID-Level MRC under Section 4.2.1; or

(B)   disaggregation under Section 4.3.1.

(b)   Upon AEMO determing that a WDRU is conforming, AEMO will:

   (i)   notify the DRSP of the WDRU dispatch conformance re-instatement;

   (ii)   update the WDRU's dispatch conformance status to conforming in the Portfolio Management System; and

   (iii)   revoke any notice to limit the *available capacity* of the WDRU provided under Section 4.2.2 or settlement suspension under Section 4.2.3 or 4.3.2.

(c)   Following a WDRU being declared non-conforming again, any instances where dispatch non-conformance is flagged will be treated as per Section 4.1.

4.6.   Reporting to the AER

(a)   Under NER clauses 3.8.23A(g) & (h), AEMO must report continued dispatch non-conformance and any relevant details regarding reported non-conformance to the AER. AEMO will conduct ad-hoc dispatch conformance reporting to the AER as required per the AER's Wholesale Demand Response Participation Guidelines.

5. REVIEW OF POLICY AND NON-CONFORMANCE THRESHOLDS

(a) This Policy, including the non-conformance error thresholds, will be reviewed regularly, at AEMO's discretion. Currently, at the time of publication of this Policy, AEMO anticipates that the first review will commence in October 2022.

(b) The purpose of the review is to ensure that AEMO's dispatch conformance process accurately identifies WDRUs that are repeatedly non-conforming with *dispatch instructions*, and assists AEMO and DRSPs to achieve improved dispatch outcomes.

(c) Market Participants will be consulted on any changes that are made to the Policy (*Rules consultation procedures* are not required).