

# Integrating Energy Storage Systems (IESS)

April 2024

Final Industry testing and market trials plan v1.1





# Important notice

## Purpose

The Industry testing and market trial plan sets out the approach and schedule for the Market Trial, which will support Integrating Energy Storage Systems (IESS) implementation.

## Disclaimer

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## Version control

Version	Release date	Changes
0.1	19/01/2024	Initial draft for discussion
1.0	16/02/2024	Final
1.1	02/04/2024	Updates for Market Trial

# Executive summary

The Australian Energy Market Operator (AEMO) and National Electricity Market (NEM) participants are currently implementing the Integrating Energy Storage Systems (IESS) and the program has entered its implementation phase.

The National Electricity Rules (NER) changes for IESS have amended or introduced new regulatory obligations on certain NEM participants and AEMO. They require significant updates or changes to market procedures and market and participants’ systems at various times. AEMO has a key coordination role, through collaboration with its industry working groups, to ready industry and itself for the various rule commencement and IT system “go-live” dates.

The IESS Industry Testing and Market Trial Plan was developed to align with the IESS Industry Testing and Market Trial Strategy. This document sets out the approach to developing the plan and defines how the IESS industry testing and market trial will be executed, including:

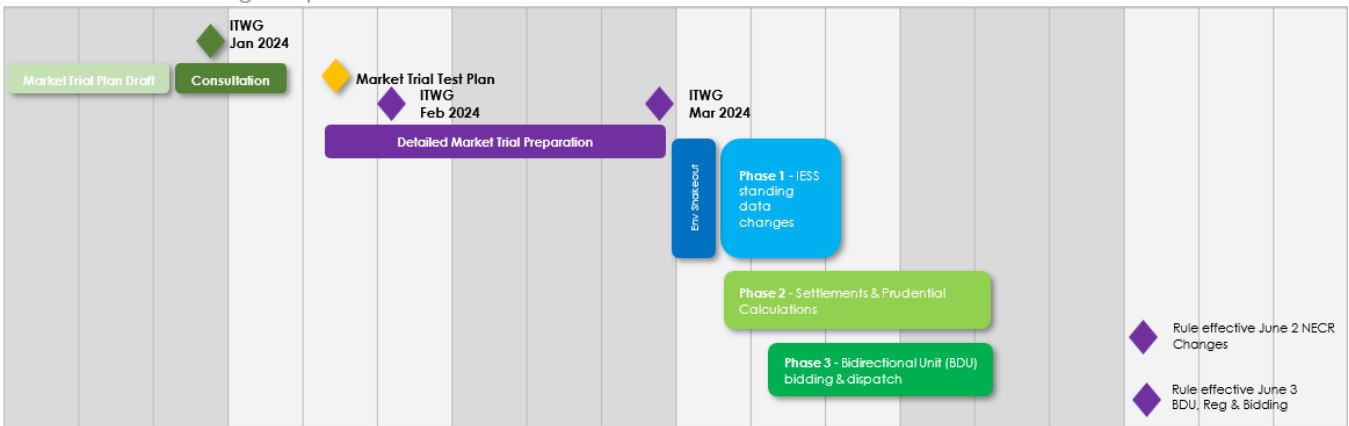
- Entry and exit criteria
- Detailed scope
- Market trial timeframe.

This document is complemented by the IESS Market Trial Test Workbook which sets out the list of scenarios and their steps for execution.

Please see below IESS Overview Market Trial Timeline:

2024	2024	2024	2024	2024	2024
JAN	FEB	MAR	APR	MAY	JUN

## IEE Market Trial Planning & Implementation



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# 1 Introduction

This chapter provides background information on AEMO’s Integrating Energy Storage Systems (IESS) implementation program, and sets out the purpose, scope, and approach to the development of this Industry Testing and Market Trial Plan (the ‘Plan’).


## 1.1 AEMO’s IESS implementation program

On Thu 02 December 2021 the Australian Energy Market Commission (AEMC) made a Final Determination on the Integrating Energy Storage Systems (IESS) rule. The change seeks to better integrate storage and aggregate systems into the National Electricity Market (NEM). On Thu 04 May 2023, the AEMC made a further rule (the Implementing IESS rule), which amends the IESS rule.<sup>1</sup> These IESS rules comprise of four distinct high-level changes, described in Table 1.

**Table 1 Changes introduced by the IESS rule**

Implementation date	Change	Description
<b>Fri 31 Mar 2023</b> <b>Completed &amp; implemented</b>	Small generation aggregators (SGA) providing FCAS	<b>Complete.</b> Aggregators of small generating and storage units can now provide ancillary services (if they choose to do so).
<b>Wed 09 Aug 2023</b> <b>Completed &amp; implemented</b>	Aggregated dispatch conformance (ADC)	<b>Complete.</b> <ul style="list-style-type: none"> <li>Aggregate Systems can choose to register for ADC.</li> <li>ADC provides an Aggregate System with the flexibility to conform to its dispatch instructions by dispatching energy at the connection point from any combination of its units (with some restrictions), rather than individually on a unit-by-unit basis.</li> <li>Includes minor changes for Battery Energy Storage Systems (BESS). AEMO will temporarily be using the ADC mechanism to monitor net dispatch conformance for a BESS across its scheduled generating unit/scheduled load pair, as a Target Aggregate.</li> </ul>
<b>Sun 02 Jun 2024</b>	IESS retail and settlement changes	Significant changes to the calculation method to be used for Non-Energy Cost Recovery (NECR): <ul style="list-style-type: none"> <li>Recovery calculations are to consider the gross (consumption separate from generation) energy amounts of all participants, rather than current approach using net energy (generation – consumption) of specific participant types.</li> <li>Major settlements database structure changes are required to enable the new calculations, these changes will flow into the Data Model and affect: <ul style="list-style-type: none"> <li>Participant reconciliation and reporting activities.</li> <li>AEMO data provision.</li> <li>Embedded network management changes to ensure that the parent has the appropriate gross energy volumes available for settlement.</li> </ul> </li> </ul>
<b>Sun 02 Jun 2024 (IRP)</b>	Registration	<ul style="list-style-type: none"> <li>Introduction of Integrated Resource Provider (IRP) participant type.</li> </ul>
<b>Mon 03 Jun 2024 (BDU)</b>	Registration for BDUs BDU dispatch and bidding and information provision	<ul style="list-style-type: none"> <li>Bidirectional unit (BDU) dispatch and bidding, with impacts for BDU participants and bidding system vendors/developers.</li> </ul>
<b>Mon 03 Jun 2024 (MTPASA IRP)</b>		<ul style="list-style-type: none"> <li>MT PASA Offers support submissions from IRP and DUID type BDU.</li> </ul>

<sup>1</sup> Australian Energy Market Commission, National Electricity Amendment (Implementing integrated energy storage systems) Rule 2023 No. 2



The IESS program covers the procedural, IT system and market readiness arrangements needed to implement the IESS rule including:

- Procedures – defines and implements the required changes to market procedures
- Systems – designs, develops, tests, and implements changes to AEMO’s market systems
- Readiness – coordinates, assists, and prepares AEMO and participants for the transition to IESS
- [Stakeholder engagement](#) – supports participants in their IESS implementation work.

AEMO’s IESS implementation program has entered the execution phase of the project. This paper is specific to the industry testing and market trial component of market readiness for the IESS June 2024 releases.

## 1.2 Purpose of the IESS industry testing and market trial plan

The purpose of the Plan is to set out the details for managing, coordinating, monitoring, and reporting on AEMO’s and NEM participants’ testing and trial activities and results.

As set out in AEMO IESS industry test and market trial strategy (the ‘Strategy’), the Plan will cover the following points:

- Test phase objectives
- Detailed scope of testing
- Prerequisite activities
- Entry and exit criteria
- Test cycle approach and dates
- Data management
- Defect management
- Test reporting requirements

## 1.3 Background documents

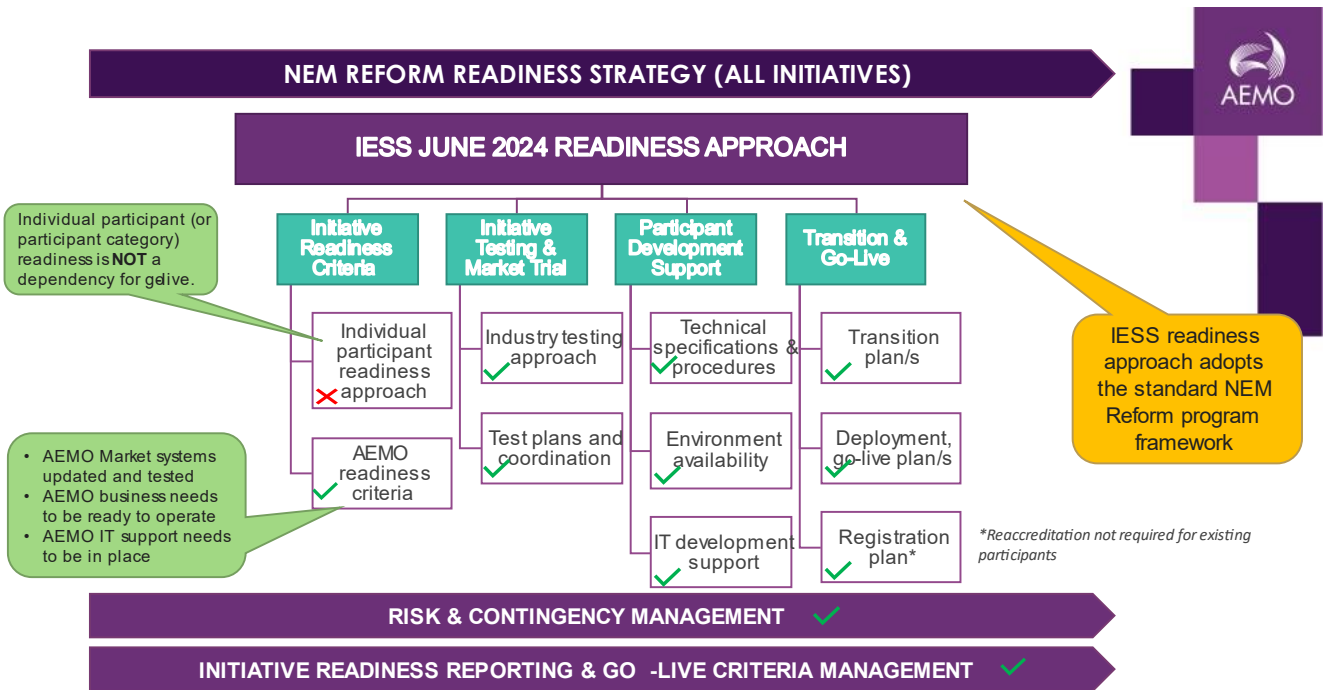
The following IESS related documents or web pages provide background to the IESS project:

- AEMC [IESS rule change](#)
- AEMC [Implementing IESS rule change](#)
- AEMO [IESS High Level Design and Implementation Strawperson](#)
- AEMO [IESS Participant Toolbox](#)
- AEMO [IT change and release management](#) (including links to EMMS and MSATS technical specifications)

## 1.4 Related documents

The Plan is one of several documents that support the [IESS readiness approach](#). Figure 1 shows the IESS high-level readiness approach and indicates the relationship between the various market testing, transition, and go-live plans. 0 lists these related documents which are to be read in conjunction with this document.

Figure 1 High-level IESS readiness approach





**Table 2 Relationship between the IESS industry test and market trial plan and other documents**

Related document	Description of relationship
<b>IESS participant impact assessment</b>	The <a href="#">IESS June 2024 Participant Impact Assessment</a> provides the high-level impacts of the IESS rule change.
<b>IESS readiness approach</b>	The <a href="#">IESS readiness approach</a> is the overarching plan to guide AEMO and NEM participants' IESS readiness activities and operational preparedness, including consideration of industry testing and market trial.
<b>Industry test and market trial strategy</b>	The IESS <a href="#">industry test and market trial strategy</a> defines the approach, scope, process and responsibilities and high-level schedule of the industry testing and market trial phase for IESS. The Industry test and market trial plan sets out how the strategy will be achieved.
<b>BDU transition and cutover plan</b>	The <a href="#">BDU transition and cutover plan</a> provides information to support participants in the process to cutover from BESS to BDU. It also details the prerequisites, forward notice and steps required to cutover. The IESS industry testing and market trial will support participants in their BDU cutover preparations.
<b>IRP transition plan</b>	The <a href="#">IRP transition plan</a> provides information to support relevant participants in their transition to the Integrated resource provider registration category. The IESS industry testing and market trial will support participants in their IRP transition preparations.
<b>NCC transition plan</b>	The <a href="#">NMI classification code transition plan</a> set out the activities, dependencies, and timeframes for AEMO to transition the existing distribution-connected generators (and generation side of distribution-connected storage) to the DGENRATR NMI Classification Code. The IESS industry testing and market trial will support participants in their NMI classification code transition preparations.
<b>IESS June 2024 go-live plan</b>	The <a href="#">IESS June 2024 go-live plan</a> provides alignment of participants' and AEMO's system deployments, including for the introduction of new NCCs, data model changes and bidding format changes.
<b>IESS Market Trials Test Workbook</b>	Data requirements will be detailed in the Test Workbook, which can be downloaded from the <a href="#">IESS participant toolbox</a> . Data requirements will be identified for each test scenario as part of the test scenario development, see <a href="#">Section 2</a> Approach to developing the IESS industry test and market trial plan.

## 1.5 Audience

The Plan is primarily intended for all NEM participants affected by the IESS market reforms, particularly their:

- Test managers
- Test leads
- Test analysts (system integration, UAT, industry testing and market trial)
- Project managers.

Secondary audiences within these businesses including:

- Development managers
- IT operations teams
- Change controllers
- Operations teams
- Business and functional SMEs.

## 2 Approach to developing the IESS industry test and market trial plan

The Plan is being developed in consultation with industry. AEMO utilises the [Industry Testing Working Group](#) (ITWG) for input to the Strategy and Plan. The Strategy sets out the high-level considerations that should be met when developing the Plan. These and other elements of the Plan were further discussed through the Industry Testing Working Group. Table 3 provides a summary of the opportunities for input by industry.

**Table 3 IESS industry testing and market trial plan: Consultation timeline**

<b>Industry Testing Working Group (ITWG) – Nov</b>	Thu 30 Nov 2023
<b>First draft circulated to ITWG for review and comment</b>	Fri 19 Jan 2024
<b>Industry Testing Working Group (ITWG) – Jan</b>	Wed 24 Jan 2024
<b>ITWG Feedback on first draft due</b>	Fri 02 Feb 2024
<b>Final version published</b>	Fri 16 Feb 2024
<b>Industry Testing Working Group (ITWG) – Feb</b>	Thu 29 Feb 2024
<b>Industry Testing Working Group (ITWG) – March</b>	Wed 27 Mar 2024

### 2.1 IESS market trial objective

The objective of the IESS market trial is to carry out multi-party end-to-end testing of business process scenarios to confirm that the functionality that will be available from IESS rule commencement is fit for purpose and operating as expected.

### 2.2 IESS industry testing and market trial strategy: Key points

The Plan builds on the principles set out in the Strategy. The following principles were confirmed in the Strategy as starting positions for the Plan:

#### General

- AEMO’s pre-production environment will be used as the Market Trial test environment.
- Practitest will be used as the test management tool.
- Data requirements will be identified for each test scenario as part of the test scenario development. These data requirements will be detailed in the Test Workbook, which can be downloaded from the [IESS participant toolbox](#).
- AEMO will provide participants a checklist for readiness. It is expected that participants will have internally completed this checklist prior to Market Trial.
- Each NEM participant is responsible for their own preparedness in respect of the above matters and should account for such items within their respective organisational testing programs.



## IESS settlement

- Settlement runs and results will be available to all participants.
  - **Please note** that Settlement runs and results will only be available for BESS **prior to** the transition to BDU operations in pre-production.
- The settlement processing of invoices will be backdated using a mock go-live date of Sun 11 Feb 2024.

## BDU registration, dispatch and bidding

- Existing participants with registered BESS who've submitted their BDU transition registration paperwork by Fri 08 Mar 2024 will be able to test transitioning their BESS to a BDU in the market trial.
- Participants will be responsible for identifying data from their systems that fulfils those data requirements. It is suggested that participants consider which DUID/s are appropriate for each test case.

## 3 Detailed scope of testing

The scope of and principles underlying the IESS market trial is set out in the Strategy (see section 2 of the Strategy for information on high-level scope). The scope of the IESS market trial includes market capability based technical, functional and business operational testing as follows:

- Market technical verification and validation
- Market functional verification and validation
- Market operational capability verification and validation
- Industry transition and cut-over process which will be tested as a component of cut-over planning
- Verify dispatch of BESS participant before and after cut-over to 1 DUID BDU model
- Functional verification of new BDU DUIDs

It should be noted that the following market test activities are **not** included in the market trial scope:

- Changes to NEM participants' supporting business systems that do not directly interact with AEMO's market systems (i.e., back-end systems). These are addressed by participants own test strategies.
- Any bilateral testing between participants. Participants can coordinate bilateral testing between themselves in parallel with industry testing, however reporting during industry testing will not refer to bilateral testing.
- Downstream business procedures for each industry participant.
- Testing of agreed non-critical business processes (unless otherwise agreed by the impacted participants).
- Accreditation.

Each NEM participant is responsible for their own preparedness in respect of the above matters and should account for such items within their respective organisational testing programs.


The purpose of the Plan is to identify the detailed scope for the IESS market trial. This scope was agreed as part of the Strategy and feedback was discussed in the Industry Testing Working Group. The detailed scope was built by initially reviewing the changes that would be implemented from the IESS rule commencement date.

### 3.1 Testing the IESS changes

Testing of all three phases (Retail data and testing, Settlements, BDU dispatch and bidding) will occur over the market trial period of April and May of 2024.

To provide participants with a comprehensive and realistic set of data for IESS settlement testing, the "commencement date" for settlement in pre-production will be backdated to allow settlement runs with a full set of metering data obtained during the pre-production refresh. Refer to section 5.5 Data Management for further information about the refresh.

A mock rule commencement date will be used to simulate go-live in the pre-production environment. The mock go-live will be Sun 11 Feb 2024 for IESS Settlements to simulate the production go-live of Sun 02 Jun 2024.



Mock simulated cutover from the existing 2-DUID model for BESS's to the new single DUID BDU model, will be done over two tranches during the market trial: simulated cutover 1 on Wed 01/05/2024 and simulated cutover 2 on Wed 15/05/2024. Further details can be found in section 3.2.3.

### 3.1.1 Retail data

The Retail system will produce settlement data for IESS Settlements system testing, using mock go-live data from Sun 11 Feb 2024 until Sat 24 Feb 2024. This will be executed in the market trial period from Wed 03 April 24 to Fri 24 May 2024, along with testing of:

- Changes to embedded network management, where netting of children from parent reads are moving to the Metering system.

### 3.1.2 Settlements

The Settlement system will be updated to support the new IESS changes. IESS functionality will be available in pre-production from IESS rule commencement using the mock go-live date Sun 11 Feb 2024:

- Changes to the NECR calculations reflecting the move from net energy to gross energy for settlement weeks post rule commencement and the database structure updates required to implement them.
- Changes to existing calculations for settlement weeks prior to rule commencement are not affected.
- Proposed testing methodology is to use a back dated mock pre-production rule commencement/Go-Live to enable use of existing meter data from the pre-production refresh to enable Post Go Live settlement week calculations.

### 3.1.3 Registration

The Registration system will be updated to support the new IESS changes. The standing data updates in pre-production will commence from Wed 03 Apr 2024:

- IRP registration category introduced
- SGAs moved into the new IRP category backdated to the mock go-live date for Sun 02 Jun 2024 (which is 11 Feb 2024)
- 'New IRS' participants (i.e., BDU providers registered after Dec 2021) have their IRP category automatically added to their registration. <sup>2</sup> This will be backdated to the mock go-live date for Mon 03 Jun 2024 (which is 11 Feb 2024).

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<sup>2</sup> NOTE: New IRS participant transition to IRP commences Mon 03 June 2024 but will be tested along with the other standing data changes backdated to mock 03 June 2024 go live date, Mon 12 Feb 2024.

### 3.1.4 BDU dispatch and bidding

The BDU dispatch and bidding system will be updated to support the new IESS changes. IESS BDU functionality will be available to use in pre-production from the simulated BDU cutover #1 date Wed 01 May 2024 or simulated BDU cutover #2 date of Wed 15 May 2024. AEMO will discuss which simulated cutover your BDU will be allocated to, noting that at least one battery per participant will be guaranteed in the cutover #1 if preferred. Appendix A3 has a detailed list of activities and timings, but at a high level

- Bidding must take place on the new BDU prior to the simulated cutover date (i.e., bid unavailable until cutover time on simulated cutover day).
- BDUs with 1DUID can bid and be dispatched from their cutover date and time.
- Existing BESS transition from 2DUID to 1 DUID.
- MT PASA Offers support submissions from IRP and DUID type BDU.

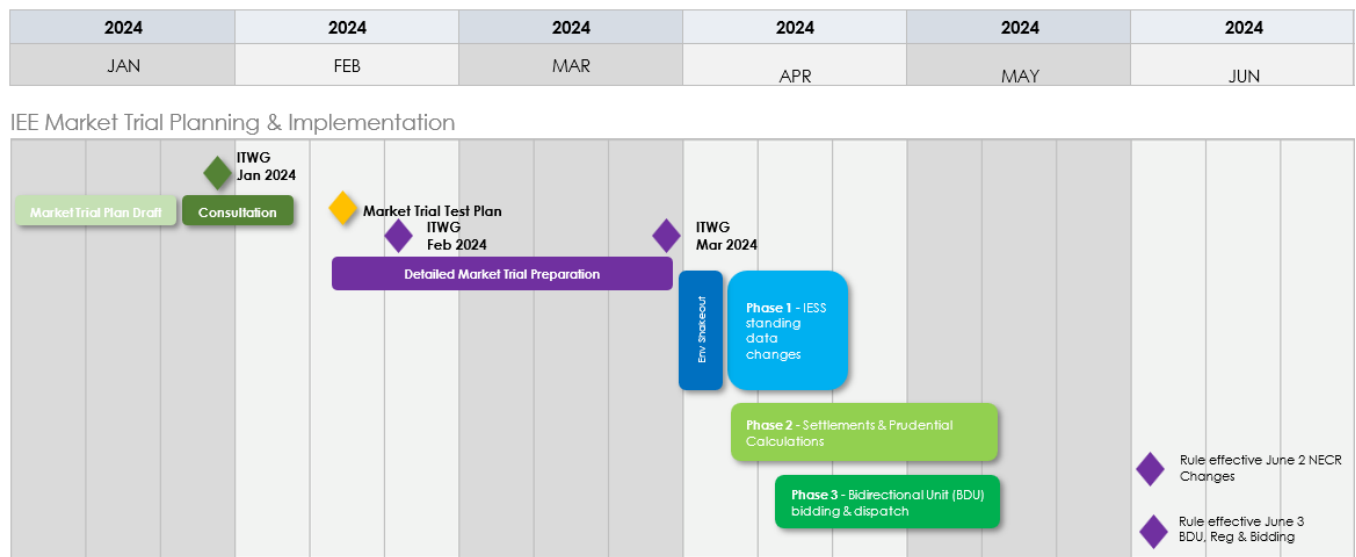
**Note:**

- The proposed test phase will isolate BDU testing from settlement calculations testing which is handled in Test Phases 1 & 2.
- Existing BESS load/generation DUIDs will **not** be deactivated in pre-production. i.e., After the simulated cutover in pre-production, the existing load/generation DUIDs will continue to be registered until the production cutover is complete.

## 3.2 Detailed scope

By assessing the changes that will come into effect with the IESS Rule commencement, AEMO has determined the detailed scope of testing for each of the three functional areas for each Market Trial Phase.

Figure 2 Overview of IESS industry testing and market trial timeline



### 3.2.1 Market Trial Phase 1: IESS standing data changes (Wed 03 Apr 2024 to Fri 12 Apr 2024)

Functional Area	Test Objective	Test Scope
Retail	<ul style="list-style-type: none"> <li>NMI and Metering Standing Data (MSATS) updates.</li> <li>Test metering standing data changes and related changes: <ul style="list-style-type: none"> <li>AEMO will manage the transition of new NCCs for those existing NMIs where a code needs to be applied</li> <li>Test standing data update of NCC of DGENRATR</li> <li>Test that CATS reports will be able to accommodate new NCCs</li> <li>Test that MSATS screens will be able to accommodate new NCCs</li> <li>Test that MSATS can process transactions with new NCCs.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Before the standing data updates confirm changes reflect current production state</li> <li>After the standing data updates confirm changes are successful.</li> <li>After the standing data updates confirm CAT CR transactions have been received</li> <li>After the standing data updates confirm NCC code is updated in MSATS.</li> </ul>
Settlements	N/A	N/A
Registration, Bidding and Dispatch	<ul style="list-style-type: none"> <li>Test registration changes: <ul style="list-style-type: none"> <li>Confirm update of SGAs to new IRP registration category (NCC of NREG will be maintained).</li> <li>Confirm update of post-Dec 2021 BESS operators (New IRS) to new IRP registration category.</li> <li>AEMO will aim to update some other participants' registration category to IRP where relevant and practicable (Existing IRS, Pumped Hydro, Non-transitioning generating system participants), otherwise later during Market Trial.</li> </ul> </li> <li>Test that impacted applications can accommodate retrospective changes for dates prior to cut-over date.</li> <li>Confirm cutover / commencement processing.</li> </ul>	<ul style="list-style-type: none"> <li>Before the standing data updates confirm registration changes reflect current production state.</li> <li>After the standing data updates confirm IRP category in the data model.</li> </ul>

### 3.2.2 Market Trial Phase 2: Settlements & prudential calculations (Wed 03 Apr to Sat 06 May)

Functional Area	Test Objective	Test Scope
Retail	<ul style="list-style-type: none"> <li>Confirm shift to new gross calculation methodology and reporting is reflected in settlements for periods post 02 June 2024                             <ul style="list-style-type: none"> <li>This will include the associated impacts related to Embedded network management to ensure that the parent has the appropriate gross energy volumes available for settlement, which has resulted in the netting of children reads moving to the Metering system.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>RM reports updated to reflect updated energy gross values.</li> </ul>
Settlements	<ul style="list-style-type: none"> <li>Population of EMMS Data Model 5.3 that will affect participant reconciliation and reporting activities, and AEMO data provision.</li> <li>Confirm existing Net calculation methodology and reporting is not impacted for periods up to 02 June 2024.</li> <li>Execute a mix of daily, interim, prelim, final and revision bill runs.</li> <li>Provide participant RM Reports to support participant settlement reconciliation processes.</li> <li>Provide participants confidential settlement and billing reports for executed settlement runs.</li> <li>Confirm the Direction and Ancillary Service recovery changes under the new NECR logic.</li> <li>Confirm the market fee calculations under the new database structure.</li> <li>Confirm participants can access information in prudential dashboard and forecast dashboard under new methodology.</li> </ul>	<ul style="list-style-type: none"> <li>Before the cutover date confirm settlement run as reflected in current production state</li> <li>Before the cutover date confirm settlement reports as per production.</li> <li>After the cutover date confirm settlement run with the new calculations for IESS.</li> <li>After the cutover date confirm updated settlement reports.</li> <li>After each settlement run confirm RM Reports are generated.</li> <li>After each preliminary settlement run confirm direction payment is applied.</li> </ul>
Registration, Bidding and Dispatch	N/A	N/A

### 3.2.3 Market Trial Phase 3: BDU bidding, dispatch & MTPASA (Fri 19 Apr to Fri 24 May 2024)

Functional Area	Test Objective	Test Scope
Retail	N/A	N/A
Settlements	N/A	N/A
Registration, Bidding and Dispatch	<ul style="list-style-type: none"> <li>Confirm ability for 1 DUID BDU to bid and be dispatched.                             <ul style="list-style-type: none"> <li>Enable bidding of BDUs (10 Load Bands and 10 Generation Bands) through FTP, API and web interfaces for Energy and Regulation FCAS.</li> <li>Enable bidding of BDUs (10 bid bands) through FTP, API, and web interfaces for Contingency FCAS.</li> <li>Validation of Bids.</li> <li>Confirm participants can bid within new validation rules for IESS June 2024.</li> <li>Review submitted bids using NEM Reports, API and web interface.</li> <li>Confirm dispatch instructions.</li> <li>Test optional bidding of Energy Storage Limits in Predispatch (PD/7DayPD only)</li> </ul> </li> <li>Confirm existing bidding and dispatch functionality still works for 2 DUID BDU arrangement.</li> <li>Test transition of 2DUID BDU to 1DUID BDU</li> <li>MT PASA Offers support submissions from IRP and DUID type BDU</li> </ul>	<ul style="list-style-type: none"> <li>Before the cutover date, enter energy and FCAS bids to check that the bid bands and any validation that applies.</li> <li>After the cutover date, enter energy and FCAS bids to check 10 bid bands applies.</li> <li>After the cutover date, check that TRADINGPRICE is being accurately updated.</li> <li>After the cutover date, check that PD is being accurately updated.</li> <li>After the cutover date, check that 5MPD is using each bid in the one-hour forecast period.</li> <li>Before the cutover date, enter offers in MTPASA to check existing validation for a BDU.</li> <li>After the cutover date, enter offers in MTPASA that a BDU can have offers submitted.</li> <li>Testing of Zero constraints.</li> <li>New participants to the NEM will be testing the BDU process and testing their own systems as part of market trial.</li> </ul>



## BDU test scenarios supported in market trial

**Existing BESS on 2-DUID arrangement transitioning to single BDU DUID:** Existing established generation/load pair DUID BESS (before rule commencement) transitioning to single DUID BDU at a distinct cutover day/time participating in a simulated cutover event.

### Scenario items to be considered for BDU testing

BESS participants wishing to participate in Phase 3 of market trial to have BDU registration forms submitted by Fri 08 Mar 2024 (to allow sufficient time for single BDU DUID creation in Pre-production environment).

- **Note:** Registration information used to create the BDUs in Pre-production will also be used for Production as appropriate.

Simulated cutover to the single BDU DUID in the pre-production environment is available on the simulated cutover dates and times. See Figure 3 for more detail.

Central dispatch (pre-dispatch and dispatch instructions) for simulated cutover effective date/times will be controlled by:

- Participant bid submissions of zero for Max Availability and PASA Availability, and
- AEMO invoking BDU constraint sets reflecting zero targets,

until the effective date/time for cutover is reached. This is so that the new BDU DUIDs are not considered in central dispatch until the mock cutover effective date/time.

For existing registered BESS, the market trial will support one or two simulated generation/load pair to BDU cutover times/batches dependent on the volume of participants interest to undertake a simulated cutover. For this plan, simulated cutover dates of Wed 01 May 2024 or Wed 15 May 2024 are considered.

The BDU simulated cutover activities timeline consists of pre-cutover, cutover (single day) and post cutover periods.

Market Trial simulated cutover will be executed similarly to that planned for cutovers performed in the production environment, excluding de-registration of the current 2-DUID BESS arrangement in the post cutover period. (This is to allow for continued participant testing in the pre-production environment after the completion of market trial).

Note that not all cutover activities identified in the BDU Transition and Cutover Plan are able to be simulated in market trial, e.g. transition of SCADA signals and NMIs including NMI classification code (NCC) changes and settlement runs. Due to system limitations, the existing NMI that will be retained post-cutover will not be transitioned to the BDU, meaning the BDU will remain associated to a dummy NMI for the duration of market trial. This also means that the NCC updates to DIRS/TIRS will not occur, nor will settlement runs occur on transitioned BDUs. SCADA will also not be transitioned during simulated cutover, meaning the existing SCADA points in pre-production will be maintained for the duration of the Market Trial.

For Medium Term PASA (MT PASA) offers, in the week preceding the simulated rule commencement or simulated cutover participants to:

- Submit weekly offers for the BDU with Unit state of 'Inactive reserve' and zero availability until rule or cutover day effective date, then actual offer data for unit from cutover day.
- In parallel, amend offers for generation/load pair DUIDs identifying them as Unit state of 'Retired' and zero availability from rule commencement or cutover date.

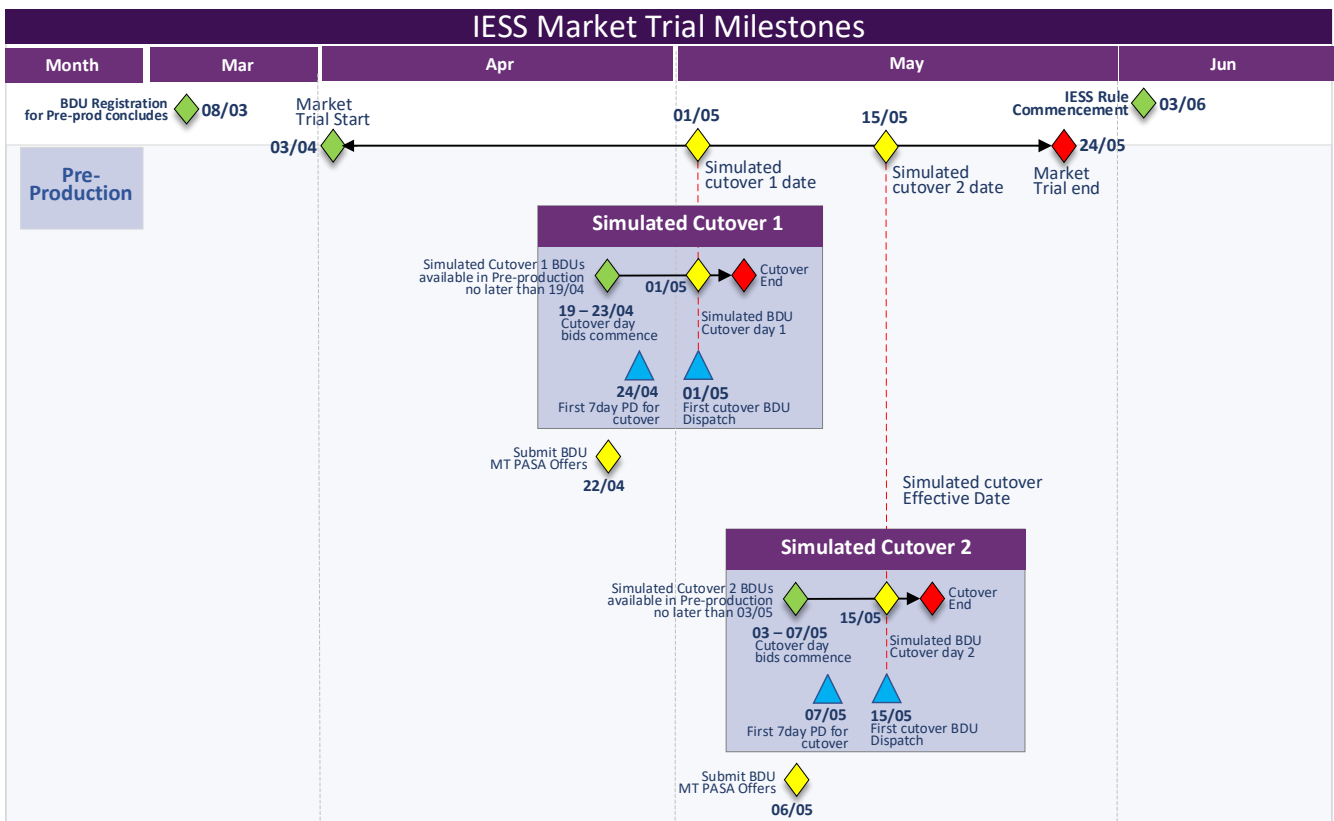
**Note:**

- Existing BESS load/gen DUIDs will **not** be deactivated in pre-production. i.e., Post simulated cutover in pre-production, the existing load/gen DUIDs will continue to be registered until the production cutover is complete.

Key dates and activities for BDU testing

Figure 3 shows the key milestones for testing a simulated BDU cutover. Further detail on each BDU cutover activity is set out in Appendix 3.

Figure 3 Timeline milestones for simulated BDU cutover





### 3.2.4 Out of Scope

The following items are out of scope of market trial due to system limitations:

- Testing of SCADA signal transition as part of the simulated BDU cutover.
- Testing of NMI transition as part of the simulated BDU cutover.
  - Testing of TIRS/DIRS NMI classification code updates.
- Testing of settlement runs for BDUs.
- Deactivating existing BESS load/generation DUIDs. i.e., After simulated cutover in pre-production, the existing load/generation DUIDs will continue to be registered until the production cutover is complete.

# 4 Prerequisite activities, entry and exit criteria

In advance of the Market Trial, AEMO will request that some prerequisite activities are completed by participants. The completion of these activities will be declared by the participant through an entry criteria checklist which will be issued by AEMO to all participants that register to take part in Market Trial.

AEMO will report on the exit criteria for Market Trial. The completion of each exit criterion will allow AEMO to notify participants that a successful Market Trial has been executed.

## 4.1 Prerequisite activities

Table 4 provides a timeline for prerequisite activities. AEMO will issue a form to existing BESS participants intending to take part in the Phase 3 of the Market Trial.

Regarding the IESS Market Trial, AEMO will request participants to confirm the test scenarios allocated and associated user id that will be used for testing.

Participants will also be asked to declare which of the test scenarios they will execute from the pre allocated market trial workbook. This information will be used by AEMO to identify appropriate participant pairings to allow for scenario execution.

In advance of Market Trial, it is essential that all participants have set-up their Practitest access and profile. AEMO will provide Practitest training in advance of Market Trial.

**Table 4** Timeline for completion of prerequisite activities

Prerequisite Activity	Due Date
Test scenario nomination by Participants	ITWG Jan to be discussed & received by Feb ITWG.
Participant Pairing Confirmed By AEMO	ITWG 28 Feb 2024
Participants to send nominated test scenarios to AEMO	08 Mar 2024
Participants returns registration form to AEMO (BDU)	08 Mar 2024
Practitest training and set-up (AEMO and Participants)	Mar 2024
BDU Identification (Participants)	Mar 2024
NMI Identification if applicable (Participants)	Mar 2024

## 4.2 Entry criteria checklist

Participants will be asked to confirm the following criteria in advance of the commencement of Market Trial:

- Nominated test scenarios have been sent to AEMO.
- Allocated test scenarios as per the workbook is accurate.
- Participants internal testing completed
- Pre-production participant ID received for new participants (via registration), if relevant
- Connectivity testing complete
- Test data preparation (in line with test scripts/cases, i.e. roles and DUID) is complete, if required
- Appropriately skilled resource capability available to execute and support testing.

AEMO will confirm the following:

- Pre-production environment available and all relevant functionality is available for testing.
- The relevant Industry Test Plan is complete, agreed and delivered to the ITWG.
- Practitest is configured with all required test information and is accessible and useable by all testing participants.
- AEMO expects participants to be ready before the commencement of the Market Trial.
- AEMO will confirm to participants that AEMO internal testing is successfully completed to extent to support commencement of market trial.
- AEMO will confirm what defects are outstanding from AEMO's internal testing that could impact participant or AEMO testing in Market Trials.

## 4.3 Exit criteria

Exit criteria for the text execution phase may include:

- Successful completion of all high-priority test scenarios.
- No outstanding Priority 1 or Priority 2 defects on AEMO.
- Any open defects (Priority 3 or 4) have agreed resolutions or work around in place and published.
- Final Test Summary Report completed.
- The overall result of each phase of market testing will be one factor included in the assessment of the overall market readiness for each phase of implementation.

# 5 Test cycle approach

The Test Schedule and Test Workbook have been developed in line with the approach that was agreed in consultation with the Industry Testing Working Group.

## 5.1 Market trial timeframe

The IESS Market Trial period will commence on Tue 02 Apr 2024 with pre-settlement activities. The first day will conduct registration and market standing data changes. This is expected to simulate cut-over and estimation process will commence.

The cut-over process will ensure SGA to IRP & De-generator are processed successfully.

Market trial will end Fri 24 May 2024.

## 5.2 Test schedule

To fulfill the test scope and to allow the simulation of the market functionality in production on Sun 02 Jun 2024 it is proposed to set the cut-over date in AEMO's pre-production environment to Sun 11 Feb 2024.

The Settlements week commences on a Sunday. Week 7 (the transition week) commences on Sun 11 Feb 2024 with IESS rule commencement on Sun 11 Feb 2024.

[Test Schedule](#) provides an overview of the tests that must be completed prior to Tue 02 Apr 2024 and those that will take place post cutover in the pre-production environment.

The Settlement run week that will be available for testing in pre-production are set out in the relevant cells. Green denotes that this data will be using the previous settlement method, yellow denotes a transition week Settlement runs and purple denotes using the new settlement method settlement run. The excel file of this diagram is published alongside this document.

## 5.3 Test workbook

The Test Workbook documents the test scenarios, data requirements, registered test participants. Participant pairing where applicable will be done via the Test Workbook.

Scenarios have been created and require participants to review. Feedback from participants is required to confirm which scenarios will be allocated to participants for market trials.

The Test Workbook has been developed with the Industry Testing Working Group and is published with this document.

## 5.4 Test scenario and script execution

Test execution will be undertaken as follows:

- Test Scenarios will be created in Practitest. Test Execution set will be set up for all participants to facilitate easy identification of whom is accountable for each step within the scenario being tested.
- Execution of the testing will be undertaken according to execution calendar made available as part of the preparation activities.
- Informal testing may occur between participants, however reporting of the market testing will be based on the defined execution calendar.
- Test execution information will be updated in Practitest as it occurs, i.e. in as close to real time as possible. This will include test progress, status and data used.
- An audit trail of test execution is to be undertaken by participants. This includes capture of positive results to prove that a test met expected results as well as capture of negative results for defect resolution. For example, participants can use Market Portal screens as evidence of their test results. Where applicable, this information will be maintained in Practitest. Where this is not applicable, e.g. particularly large files, participants should store the required information accordingly, so it can be referenced as positive proof of testing. Sensitive participant information can be excluded from capturing evidence in Practitest.

## 5.5 Data management

Pre-production Wholesale and Retail systems will be refreshed from production from Mon 04 Mar 2024. The outage window will be Mon 04 Mar 2024 to close of business Fri 08 Mar 2024.

BDU Dispatch and bidding along with the Settlements applications, will be refreshed with data from Production using an as effective at date of Wed 07 Feb 2024 10:53am MKT. The Retail systems including MSATS will be refreshed from Production using an as at effective date of Mon 04 Mar 2024 9:00am MKT.


When all refreshes are complete during environment shakeout, several settlement runs will be re executed in MSATS to align the data in the Settlements solution and bring it up to date.

## 5.6 Communication and support

During the Market Trial period support will be provided between 09:00 and 17:00 Hrs (AEST) on business days. AEMO will also establish direct communication channels as set out in the following sub-sections.

### 5.6.1 Daily test status meetings

AEMO will establish daily test status meetings at the beginning of each test day. Invitation to these meetings will be sent to the list of contacts provided by each organisation participating in the Market Trial. The invitation will also be sent to the Industry Testing Working Group so that any participant may observe the meeting regardless of whether they are participating in the Market Trial or not.



Each daily call will follow a core agenda:

- Test execution progress
- Review planned against actual progress for test execution. Discuss exceptions against planned execution.
- Confirmation of readiness to commence scheduled tests
- Review of open defects
- Participants will be asked to update Practitest prior to the meeting.

### 5.6.2 Market trial report

AEMO will produce a daily Market Trial Report which will provide an update on the status of each test and report against the test metrics. The Market Trial Report will be circulated prior to the daily test status meetings.

As set out in the Strategy, the test metrics are:

- Number of test scenarios executed versus the number planned.
- Number of passed test scenarios versus test scenarios executed.
- Number of failed test scenarios versus test scenarios executed.
- Number of test scenarios blocked versus test scenarios planned.
- Number of test scenarios deferred/not applicable versus number planned.
- Outstanding defects including the impact and agreed date of resolution.
- These test metrics will be used to determine the overall traffic light status for Market Trial.

### 5.6.3 Support contact details

Participants requiring support should raise a ticket with AEMO's Support Hub: <https://aemo.com.au/en/contact-us>

### 5.6.4 Communication tool

AEMO will use the IESS mailbox to communicate with those participants registered for the Market Trial. These communications will include, but are not limited to, planned outages, status reports, meeting invitations. AEMO will CC the ITWG on all communications.


The daily stand-up will be used to communicate any upcoming changes, releases or outages.

## 5.7 Defect management

The Market Trial is an opportunity for defects to be identified and closed prior to IESS Rule Commencement. Market testing defect management will be a collaborative effort, principally involving AEMO's and participants' testing teams, development teams and business analysis teams. There will, at times, be a need to consult other projects' team members for advice and assistance on the resolution of defects. Defect management will be managed entirely within Practitest.

The objective of defect management is to resolve all defects within the project lifecycle. However, this objective must be balanced against other project objectives, such as achieving the schedule and the system impact and





priority of the defect (discussed below). The acceptable level of defects within each stage of testing is typically defined as part of the 'exit criteria' for that stage.

AEMO will manage and report on all defects identified during test execution. Where it is determined that it is not an AEMO defect, AEMO will coordinate with market participants to obtain the status of the defect.

A template will be provided to assist participants with the creation of defects.

## 5.8 Defect management approach

### 5.8.1 Raising defects

Defects raised during market testing will be captured in Practitest, with the following information:

- Description of defect
- The test scenario and/or test script associated with the defect
- Who detected it and the date it was detected
- Defect owner (entered after gaining agreement between testing counterparties as to who owns the defect)
- Target fix date (entered by defect owner)
- Defect severity
- Defect priority
- Defect status
- Defect root cause (entered by defect owner).
- Defect assigned to (nominated AEMO representative confirmed before commencement of market trials).

For IESS implementation, the term “defect” is used broadly to include defects that would ordinarily fall outside of a narrow “IT” definition. For example:

- Information could be captured regarding lack of required support. This affects test execution from a timing perspective; and
- Testing may indicate that an automated business process needs manual intervention to work correctly and given constrained timings an automated fix cannot be developed and tested in time for go-live. Information such as this can feed into the deployment\cutover planning for go-live.

As a general principle, any information that occurs during market testing and assists with risk mitigation for the “go-live” solution may be captured.

Defect statuses and progress on defect fixes will be discussed in the daily test status meeting.

## 5.8.2 Defect triage

Defect triage occurs during the daily test status meeting. Test scenarios or scripts that are blocked with critical or high priority defects will be discussed in the meeting. The defect owner and the target fix time will be agreed for critical and high priority defects blocking test execution.

Participants and AEMO should review defects frequently on daily basis and update the target fix date/time in Practitest for everyone's reference.

See section 5.8.6 contains a defect workflow for the testing process.

## 5.8.3 Defect escalation

All open defects will be discussed in the daily test status meeting. If a critical/high priority defect can't be resolved within the agreed timeframes, it can be escalated in the daily test status meeting. If required AEMO will arrange a separate defect triage meeting with the relevant participants to see that the defect is resolved quickly to progress test execution.

## 5.8.4 Defect severity and prioritisation

Defects will be classified according to severity and where there are multiple within a severity, they will be address based on priority by the participant test leads in consultation with other affected participants, as described in Table 5. Priority will indicate the degree to which the defect affects both the system capability, testing execution and the overall project. Priority is determined by assessing probability of system and the business impacts. Table 5 & Table 6 describes each priority classification.

**Table 5 Defect severity classification**

Severity	Definition
<b>1- Showstopper</b>	Defect is considered critical to business operations and/or testing. Core business and project impact.
<b>2-Major</b>	Defect is considered high impact to the business operations and/or testing. However, core business processes are still able to be completed (possibly via workarounds, etc.) and some testing is still able to continue.
<b>3-Moderate</b>	Defect is considered moderate impact to the business operations and/or testing. Core business processes are unaffected, and workarounds available, with testing still able to continue.
<b>4-Minor</b>	Defect is considered low impact to the business operations and/or testing. Core business processes are unaffected, and testing is still able to continue.

**Table 6 Defect priority classification**

Priority	Definition
<b>1- Blocker</b>	Entire functionality is blocked, and no testing can be conducted. Fix/resolution turnaround time best endeavour effort in first 4 hours or provide update on impact.
<b>2-Highest</b>	Defect is considered high impact to testing, multiple tests are blocked/failed due to the defect and no workaround is available
<b>3-High</b>	Defect is considered high impact to testing one or more tests can be linked to the defect, but workaround is available, and testing is still able to continue.
<b>4-Medium</b>	Defect is considered moderate impact to testing with one or more tests can be linked to the defect, but workaround is available and none of these tests are currently a priority.



Priority	Definition
<b>5-Low</b>	Defect is considered low impact to testing, no tests are failed or blocked due to this defect.

Post triage and acceptance of a defect, a resolution date will be added and published in the daily status report for all identified defects.

### 5.8.5 Defect management status

Table 7 shows the valid defect management statuses to be selected in Practitest.

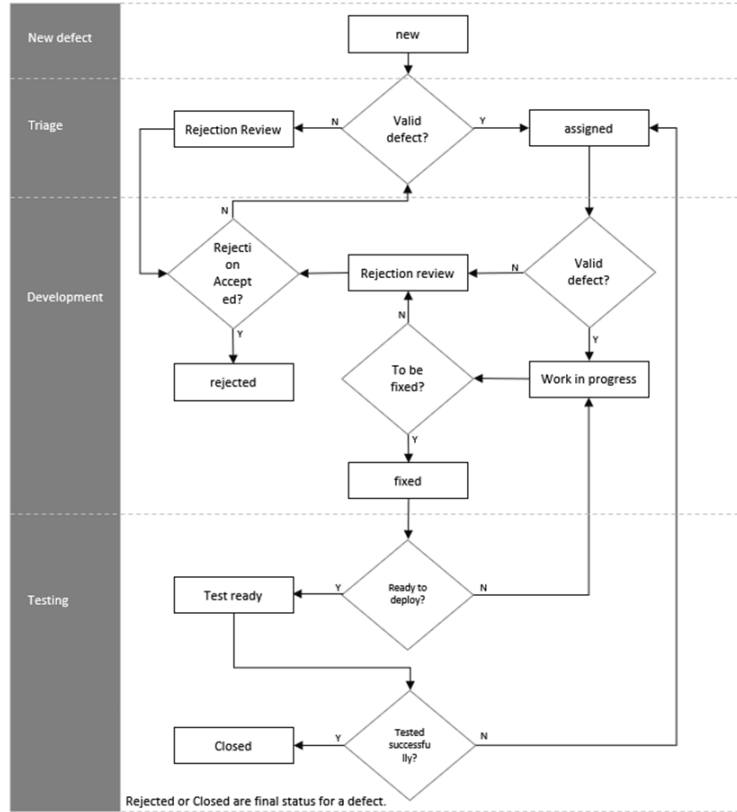
**Table 7 Defect management status**

Status	Definition
<b>New</b>	Initial defect raised but will require a triage to determine if further analysis is required and whether it is a true defect as such to move to an assigned status.
<b>Assigned</b>	Defect will be assigned to the appropriate development team to be addressed further assessed and progressed.
<b>Work in Progress</b>	Practitest item that is considered valid to be set to 'Work in Progress' to be fixed by development. This status means, a team is working on the Practitest item (analysis or fixing)
<b>Rejection Review</b>	After Triage or review by developer the defect is not considered valid the defect will be assigned to the status of 'Rejection Review' and assigned to the participant whom raised the defect to accept rejection or update defect to allow it to be 'assigned'.
<b>Rejected</b>	Practitest item that is in a 'Rejection Review' status can be progressed to this state. If a participant accepts a defect is not valid they can confirm the acceptance of the defect by changing the status to 'Rejected'.
<b>Fixed</b>	Once Practitest item has been fixed and unit tested by developer the status is set to 'fixed'. This indicates the release of the fix is ready for deployment to a test environment.
<b>Test Ready</b>	Once the fix is released to test environment successfully the status is set to 'Test Ready' and assigned to the participant whom raised it.
<b>Closed</b>	If the participant (defect originator) is satisfied that the testing of the defect is successful they should update the defect

### 5.8.6 Defect process flow

Figure 4 shows the defect management process throughout the various defect management statuses of the defect lifecycle from its inception through to its closure.

Figure 4 Defect management cycle



### 5.8.7 Defect cause

Defect root cause will be updated in Practitest once the defect cause is identified. This will help with the defect metrics to identify the impacted area of the issues/defects identified in the testing. Table 8 shows the available defect causes and their descriptions.

Table 8 Defect cause

Defect Cause	Definition
<b>Design</b>	The design of the process does not meet the requirements specified. Defect may include examples, algorithm (incorrect calculation), error handling, creation/release of object or memory, decision logic error, loop control, procedure call, failing to validate data values before being used.
<b>Configuration</b>	The intended outcome of the configuration is not meet.
<b>Data</b>	There are system data issues for the process that may prevent test completion.
<b>Requirements</b>	Unclear or incorrect requirement, Functional and Business specification documentation.
<b>Infrastructure/Hardware</b>	Defect is not in the object being tested but, in the test, set up, for example the wrong configuration or version control of platform, operating system, browser, hardware or networking, system is down, or the environment is down.



## 5.9 Suspension criteria and resumption requirements

AEMO in consultation with the ITWG will determine if a complete or partial suspension of testing is required during market testing and will also determine when testing will continue. Suspension and resumption criteria and actions are described below.

### 5.9.1 Suspension criteria

Complete or partial suspension of testing may be required if:

- High density of defects is open impacting the number of test cases that can be executed.
- High severity (i.e. showstopper) or combination of defects open.
- Significant change to specifications (delaying release of software to the pre-production).
- Quality of software (rated by number of test cases failing).

If these circumstances arise, the following actions will be taken:

- AEMO will make a recommendation to suspend the test activities in consultation with ITWG
- AEMO will advise the industry participants of the potential delays due to the test suspension, and the impact of defect / defects concerned
- AEMO and the ITWG will support and coordinate the development and test efforts to resolve the defects raised.

### 5.9.2 Resumption criteria

Test resumption can occur after the issues that caused the suspension of testing have been resolved. If these circumstances arise, the following actions will be taken:

- AEMO will inform the testing participants of the successful deployment of the defect fix(s) and its successful verification.
- AEMO will inform the testing participants that the test environment is in a suitable condition to resume the suspended testing.
- AEMO in consultation with the participant who raised the defect, will inform the participants of the impact(s) of the defect fix on the previously executed test cases and suggest if any re-execution must be done.

# A1. Test management activities

Table 9 below shows the activities which will occur during market testing and who is responsible for them.


**Table 9 Test Management Activities**

Activities	Description	Timing	Responsibility
<b>Prepare tests</b>	Configure Practitest with test scenarios and test scripts.	Prior to the commencement of test phase execution	AEMO
<b>Identify data</b>	Identify data sets for each test scenario, enter in Practitest and confirm with testing partners.	Prior to the commencement of test phase execution	Participants, AEMO may assist if required
<b>Execute tests</b>	Individual testers to perform test execution and capture actual results of testing in Practitest.	Daily	Participants
<b>Update progress</b>	Progressively update the status of each script tested in Practitest.	Daily	Participants
<b>Raising defects</b>	Raising defects from failed scripts or any other root cause in Practitest.	Real time immediate as soon as the script has failed.	AEMO and Participants
<b>Managing defects</b>	Review defects logged in the Practitest to identify major defects and determine the impact of those defects.	Daily	AEMO and Impacted Participants
<b>Retesting defects</b>	Retesting defects once they are available to testers is a priority.	Defect retests are to be completed prior to commencing new scripts.	AEMO and Participants
<b>Test phase entry</b>	Complete entry criteria checklist	Prior to the commencement of test phase execution	AEMO and Participants
<b>Test phase exit</b>	Complete exit criteria check	At the completion of test phase execution	AEMO and Participants
<b>Test status meetings</b>	Test status meeting to be attended by test representatives from all participants to discuss progress, issues and defects.	Daily (or as detailed in the Test Plan)	AEMO and Participants

## A2. Glossary

This document uses many terms that have meanings defined in the National Electricity Rules (NER). The NER meanings are adopted unless otherwise specified.

TERM	DEFINITION
<b>AEMC</b>	Australian Energy Market Commission
<b>AEMO</b>	Australian Energy Market Operator
<b>B2B</b>	Business-to-business
<b>B2M</b>	Business-to-market
<b>BDU</b>	Bidirectional unit
<b>BESS</b>	Battery energy storage system
<b>Commencement</b>	Date when a rule takes effect under the NER. For example: <ul style="list-style-type: none"> <li>• The settlement component of the IESS rule commences on Sun 02 Jun 2024. For the Market Trial of IESS this will be Sun 11 Feb 2024</li> <li>• The BDU component of the IESS rule commences on Mon 03 Jun 2024. For the IESS Market Trial this will be from simulated BDU cutover #1 date of Wed 01 May 2024.</li> </ul>
<b>Cutover</b>	Process and steps for implementing Market Systems capability. Includes once-off data updates conducted in association with system deployments.
<b>DUID</b>	Dispatchable unit identifier
<b>Go-live</b>	System and capability available in production environment, may take place prior to commencement dates.
<b>FRMP</b>	Financially responsible market participant
<b>IESS</b>	Integrating Energy Storage Systems rule
<b>Industry testing</b>	Informal, uncoordinated testing by participants in AEMO's IT environments. Self-testing of functionality such as connectivity, and/or coordinated multi-party testing of functional scenarios.
<b>Invitation industry testing</b>	Coordinated testing of business process scenarios with a select number or subset of participants with systems ready for testing
<b>IRP</b>	Integrated resource provider
<b>IRS</b>	Integrated resource system
<b>ITWG</b>	Industry testing working group
<b>Market testing</b>	Umbrella term covering industry testing, invitation industry testing and market trial
<b>Market trial</b>	Formal, industry coordinated test activities between participants' and AEMO's IT environments. Involves coordinated multi-party end-to-end testing of business process scenarios.
<b>MSATS</b>	Market settlements and transfer solutions
<b>MSGA</b>	Market small generation aggregator
<b>NCC</b>	NMI classification code
<b>NECR</b>	Non-energy cost recovery
<b>NEM</b>	National electricity market
<b>NEMDE</b>	National electricity market dispatch engine
<b>NER</b>	National electricity rules
<b>NMI</b>	National metering identifier
<b>PAE</b>	Profiling and allocation engine
<b>PASA</b>	Projected assessment of system adequacy



<b>TERM</b>	<b>DEFINITION</b>
<b>PCF</b>	Program consultative forum
<b>PDSE</b>	Participant development support environment
<b>SGA</b>	Small generation aggregator
<b>SoC</b>	State of charge
<b>Transition</b>	Process of shifting from current to future operating state
<b>UFE</b>	Unaccounted for energy



## A3. Simulated BDU cutover: Key dates and activities

This table details the IESS phase 3 market trial activities for simulated BDU cutover testing. All times are Market Time (AEST). These activities are based on the production BDU transition & cutover plan that can be found in the IESS participant toolbox. As specified in Section 3.2.3, not all activities from the production cutover plan can be executed in pre-prod for market trial simulated cutovers. However, there may be internal activities executed by AEMO included in market trial that are not depicted below that AEMO will contact the participant about if necessary.

AEMO will work directly with participants to schedule their individual cutover intervals.

Period	Simulated Cutover #1 Dates	Simulated Cutover #2 Dates	Activity/Action	Description	Dependencies	Participant Responsibility
<b>Pre-Cutover</b>	Fri 19 Apr 2024	Fri 03 May 2024	BDU available in pre-production	AEMO will promote BDU to Pre-production environments as active/effective -12 days prior to the simulated cutover day.	Registration complete to allow BDU establishment in Pre-production.	Participant notified via Market Notice.
<b>Pre-cutover</b>	Fri 19 Apr 2024	Fri 03 May 2024	Submit MT PASA Offers	For MT PASA week commencing: <ul style="list-style-type: none"> <li>Sunday 21 April participant for simulated cutover #1</li> <li>Sunday 07 May for simulated cutover #2</li> </ul> <ul style="list-style-type: none"> <li>Submit weekly offers for the BDU with Unit state of 'Inactive reserve' and zero availability until rule or cutover day effective date, then actual offer data for unit from cutover day.</li> <li>In parallel, amend offers for generation/load pair DUIDs identifying them as Unit state of 'Retired' and zero availability from rule commencement or cutover date.</li> </ul>	BDU establishment in Pre-production.	Submit MT PASA offers as described.
<b>Pre-cutover</b>	Fri 19 to Tue 23 Apr 2024	Fri 03 to Tue 07 May 2024	AEMO Notification BDU Bid submission can commence.	To control Pre-dispatch and Dispatch instructions, AEMO associates zero target constraints to BDU until the agree cutover time on cutover day (e.g. 13:00 01/05). Post completion AEMO notifies the Participant BDU Bid submission can commence.	Not Applicable.	Receipt AEMO notification as precursor that cutover has commenced i.e., execute cutover activities.
<b>Pre-cutover</b>	Fri 19 to Tue 23 Apr 2024	Fri 03 to Tue 07 May 2024	Participant BDU bid submissions opens	Participants can commence BDU bid submission. See 'Bid Submission Guidelines' and 'Cutover Day Bid Characteristics' below this matrix for specifics of allowable bid combinations.	Participants receive notification bidding can commence.	Participants commence bidding as per 'Bid Submission Guidelines' and 'Cutover Day Bid Characteristics'.

Period	Simulated Cutover #1 Dates	Simulated Cutover #2 Dates	Activity/Action	Description	Dependencies	Participant Responsibility
<b>Pre-cutover</b>	Thu 25 Apr 2024	Thu 09 May 2024	First 7-day Pre-dispatch and ST PASA runs for cutover day	Continuous Pre-dispatch runs inclusive of BDU for cutover day.	Not Applicable	Consume 1 <sup>st</sup> Pre-dispatch and ST PASA instruction and confirm outcome as expected, report to AEMO any concerning anomalies.
<b>Pre-cutover</b>	Tue 30 Apr 2024	Tue 14 May 2024	Participant cutover day bid submission cut off	Participant cutover day bids for the BDU, existing Load and Generation DUID, should be submitted no later than end of day before the cutover day i.e., bids remain stable for the cutover day and reflect the required characteristics. See 'Bid Submission Guidelines' and 'Cutover Day Bid Characteristics' below for details of allowable bid combinations.	Not Applicable	Participants to submit cutover day bids for existing DUIDS and BDU before end of day – no further changes as practical.
<b>Pre-cutover</b>	Tue 30 Apr 2024	Tue 14 May 2024	First Pre-dispatch and PD PASA runs	AEMO confirm Pre-dispatch and PD PASA for cutover day runs inclusive of BDU. If sufficient non repairable anomalies and errors are present in Pre-dispatch AEMO may make a 'No Go' decision.	Not Applicable	Consume Pre-dispatch and PD PASA instruction and confirm outcome as expected, report to AEMO any concerning anomalies.
<b>Cutover day</b>	Wed 01 May 2024 9 to 10 am approx.	Wed 15 May 2024 9 to 10 am approx.	AEMO confirmation of cutover 'Go or 'No Go' decision	AEMO review cutover day variables are consistent with a successful cutover i.e., bids, Pre-dispatch and market conditions reflect success path. AEMO broadcast Final 'Go' or 'No Go' decision.	Not Applicable	Receipt AEMO 'Go' or 'No Go' notification and execute cutover day activities and plan accordingly.
<b>Cutover day</b>	Wed 01 May 2024	Wed 15 May 2024	First P5min Pre-dispatch	Continuous P5min runs inclusive of BDU.	Not Applicable	Consume P5min Pre-dispatch instruction and confirm outcome as expected, report to AEMO any concerning anomalies.
<b>Cutover day</b>	Wed 01 May 2024	Wed 15 May 2024	Invoke zero constraints on existing Load and Gen, non-zero on BDU	At agreed cut overtime (e.g., 13:00), AEMO confirm the transition of zero constraint targets to existing Load and Gen DUIDs, non-zero for BDU (switch over) was successful.	Not Applicable	N/A awareness only.
<b>Cutover day</b>	Wed 01 May 2024	Wed 15 May 2024	Review first dispatch post cutover of 2 exiting to new single BDU.	AEMO confirm dispatch instruction behaving as expected.	Not Applicable	Consume BDU dispatch instructions, report to AEMO any concerning anomalies.

Period	Simulated Cutover #1 Dates	Simulated Cutover #2 Dates	Activity/Action	Description	Dependencies	Participant Responsibility
Post Cutover	Wed 01 May 2024 Cutover time to + 2 days	Wed 15 May 2024 Cutover time to + 2 days	Monitor Dispatch and Pre-dispatch	Participant and AEMO continues to monitor Dispatch, Pre-dispatch, PASA and network security in the post cutover period with view to confirm operating as expected.	Not Applicable	Report to AEMO any concerning anomalies.

## Bid Submission Guidelines

- Participant submits BDU bids for day(s) in the pre-cutover period with zero availability for all registered services until the agreed cutover time (i.e., the last interval before the first available BDU DUID bid).
- No change to existing Load and Generation DUID bid submissions in pre-cutover period i.e., bids submission follows BAU approach.

## Cutover Day Bid Characteristics

- Existing Load and Generation DUID to bid unavailable from agreed cutover time (e.g., 13:00) ongoing into the post-cutover period until a minimum of 7 days post-cutover.
- BDU bid unavailable until agreed cutover time (e.g., 13:00), then available from proceeding interval (e.g., 13:05) (while it is preferable that participants bid non-zero availability post cutover time, zero availability post cutover time is acceptable).

### Note:

- Existing BESS load/generation DUIDs will **not** be deactivated in pre-production. i.e., Post simulated cutover in pre-production, the existing load/gen DUIDs will continue to be registered until the production cutover is complete.
- Participants can decide which set up they would like to continue testing on 7+ days post simulated cutover. i.e., the pre-IESS dual load/gen DUID set up can be maintained until production cutover for testing, with the new single BDU DUID constrained to zero, or vice versa.