

Frequency Performance Payments (FPP)

June 2025

Market Trial Strategy





Important notice

Purpose

The Market Trial testing strategy sets out the high-level approach and principles associated with the National Electricity Market (NEM) testing activities that will support Frequency Performance Payments (FPP) June 2025 Financial Operation (FO) rule implementation.

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Version control

| Version | Release date | Changes |
|---------|--------------|--|
| 0.1 | 21/01/2025 | Initial draft issued for internal discussion |
| 1.0 | 28/01/2025 | Final for Industry comment |
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1 Introduction

This section provides background information on AEMO's Frequency Performance Payments (FPP) June 2025 financial operation release, and sets out the purpose, scope, and approach to the development of this Market Trial strategy.

1.1 AEMO's FPP program

The National Electricity Market (NEM) is experiencing a period of significant change. The progressive replacement of thermal, synchronous generation with variable inverter-connected resources, such as wind, solar and batteries, makes the task of managing the power system securely more complex.

The Australian Energy Market Commission (AEMC) recognised the need for a new framework of incentives for NEM participants regarding Primary Frequency Response (PFR). On 8 September 2022, the Australian Energy Market Commission (AEMC) published a final determination in [the Primary Frequency Response Incentives rule change](#). The new rules amend the existing provisions for the allocation of costs (often referred to as 'Causer Pays') relating to Regulation Frequency Control Ancillary Services (FCAS) as well as implementing a new incentive framework for the provision of PFR. The key effects of the rule change are to:

- Extend the requirement for all scheduled and semi-scheduled generators to provide automatic PFR (by removing the sunset clause that would have seen that obligation lapse in June 2023).
- Introduce a new system of incentives and penalties that will see scheduled generators, schedule loads and semi-scheduled loads either receive or be liable for payments, based on whether they have had a helpful or unhelpful impact on system frequency. These are the frequency performance payments that give their name to the overall reform.
- Use the performance values determined for FPPs, which are calculated for every five-minute interval, to allocate the cost of Regulation FCAS.

1.2 Purpose of the Market Trial Strategy

This document offers stakeholders, especially NEM participants who will be affected by June 2025 changes, a clear understanding of the Market Trial for FPP June 2025 Financial Operation (FO) release. This will be a coordinated Market Trial and AEMO will provide designated test scenarios/cases for market participants to follow. Market participants will be provided with test scenarios via the Practitest test management tool and will be asked to report any observations via Practitest.

This Market Trial Strategy will help participants understand and plan for system, process and operational changes that will commence with FPP financial operation from June 2025. This Market Trial strategy document is focused on the FPP financial operation changes. The Data Model 5.5 changes will be available in the preproduction environment from 25 March 2025, and the remaining application changes will be available in preproduction on 1 April 2025.

1.3 Reference documents

FPP related documents listed in Table 1 are relevant to the Market Trial strategy. The FPP project page is where additional information can be found for the FPP project.

Table 1 Reference documents and web sites

| # | Document name |
|---|---|
| 1 | AEMO Technical Specification - Data Model v5.5 |
| 2 | AEMO FPP Fact Sheet |
| 3 | AEMO FPP Factor Calculation Guide |
| 4 | AEMO project page AEMO Frequency Performance Payments project |

1.4 Audience

This Market Trial Strategy is primarily intended for all NEM participants affected by the FPP market reform, particularly:

- Test managers
- Test leads
- Test analysts (system integration, UAT, Market Trial)
- Project managers
- Developers
- Business and functional SMEs
- Market Participants

Secondary audiences within these businesses including:

- Development managers
- IT operations teams
- Change controllers
- Operations teams

2 Market Trial framework

This section describes the framework that underpins the FPP Market Trial Strategy. It explains the Market Trial Strategy's objective, scope, assumptions, communications, data refresh requirements, test environment and indicative timeline for the FPP June 2025 Financial Operation release.

2.1 Defining “market testing”

Throughout this document, “market testing” refers to the testing performed between NEM participants and AEMO to validate whether the updates made to NEM participants' market interfacing systems and AEMO's market systems comply with the FPP regulatory and procedural arrangements. Market testing is conducted in pre-production as a final stage before deployment to production.

Generally, AEMO can conduct three different types of market testing with the industry as explained in 01. This is in addition to the pre-production system being available for participants to perform self or bi-lateral testing at any time from when changes are deployed.

During the FPP industry test and market trial period, AEMO expects to use components of each of the following test types to support aspects of participant testing scenarios.

Table 2 Market testing types

| Type of market testing | Description | FPP example |
|------------------------------------|--|---|
| Industry testing | Self-testing of functionality such as connectivity, and/or coordinated multi-party testing of functional scenarios. | FPP NFO Industry test where Participants were able to upgrade to data model 5.4 and receive the new reports provided in this version. |
| Invitation industry testing | Coordinated testing of business process scenarios with a select number or subset of participants with systems ready for testing. | Not applicable for FPP program. |
| Market trials | Coordinated multi-party end-to-end testing of business process scenarios. | Settlement runs reflecting data model 5.5 updates to SETTLEMENT_DATA and BILLING_RUN tables. |

2.2 Market Trial objective

Market Trial provides market participants the opportunity to test their updated systems and processes against AEMO's updated systems.

In relation to FPP June 2025 Financial Operation (FO) release, the overall objective of Market Trial is:

To support industry readiness and confirm AEMO's and participants' preparedness for the June 2025 FPP system go-live.

2.3 Market Trial scope

The FPP FO Market trial follows the FPP non-financial operation period, which commenced in production in December 2024. The scope of this Market Trial will be to enable participants to verify the impact of the FPP changes on the Settlements process and to support participants with the deployment of EMMS Data Model 5.5. This functionality will be deployed into the pre-production environment for participants to integrate with their relevant systems.

2.3.1 Scope inclusions

The scope of Market Trial for the FPP June 2025 FO release:

- Changes to data model 5.5 reports that were developed as part of the FPP June 2025 financial operation release. Once participants have upgraded to/installed data model 5.5, they should be able to subscribe to new table data feeds.
- Participants should be able to receive the new and modified data feeds in their data model tables.
- AEMO will execute Settlement runs to demonstrate the impact of the FPP FO changes on the Settlements process.
- The [Technical Specification Data Model 5.5](#) document should be considered as the source of truth and should be referred to for the scope of the FPP June 2025 FO release.

Notes:

1. Data model 5.5 release will provide two scripts to participants, one to create data model from scratch and other to update from previous version. This step is a pre-requisite for any participant to be able to perform their testing.
2. The data feed reports will be run at the same frequency that is planned for production.

2.3.2 Scope exclusions

The Market Trial scope exclusions are:

- Any data model changes that are outside of the FPP Package referenced in [Technical Specification Data Model 5.5](#) document. The scope of this test excludes data model packages relating to the ST PASA Procedure and Recall Period and Enhancing Reserve Information (ERI) projects. These data model changes will be tested in their own respective Industry Test, which commences on 21 May 2025.
- Downstream business procedures for each industry participant.

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.



2.4 Market Trial approach

The FPP FO Market Trial will contain two distinct phases which will be further elaborated in the FPP FO Market Trial Plan. The initial phase will be focussed on supporting participant migration to data model 5.5. The second phase will be to run Settlements to demonstrate population of the new FPP attributes in Settlements.

AEMO will execute a series of Settlement runs during the Market Trial using the same approach as the IESS Settlement tests. Participants will be able to make direct comparisons between the Pre-production FPP tables and the Pre-production Settlement results during this Market Trial. Due to variations in the prod & preprod dispatch the FPP settlement data generated in this test will not be an exact comparison with Production. Participants will be able to make direct comparisons between the production Causer Pays reports and the FPP tables in production.

The proposed structure of the Settlement runs is as follows:

- Mock Go-live date 02 February 2025
- Regression run (without FPP):
 - WK5 Prelim, Final & R1
- Runs with FPP Backdated:
 - WK6 Prelim, WK6 Final, WK6 R1.
 - WK7 Prelim, WK7 Final, WK7 R1.
- FPP Forward Date:
 - Daily runs (estimates).
 - WK16 Prelim, WK16 Final, WK16 R1.
 - WK17 Prelim, WK17 Final, WK17 R1.

2.5 Assumptions

The key assumptions underpinning the Market Trial strategy are as follows:

1. AEMO will provide and maintain the single Pre-Production environment which will be used for the Market Trial.
2. Any change that is linked to or deployed to support a procedural or technical specification change will ensure the procedure(s) or technical specification(s) are documented and approved prior to the commencement of the Market Trial.
3. As part of any changes to Pre-Production, AEMO will give notice to participants of outages or code changes and provide release notes for the changes.
4. The next refresh of Pre-Production environments is scheduled for 24 February 2025 to 28 February 2025. The refresh will be sourced from production snapshots taken on the following dates:
 - Wholesale System Production snapshot to be taken on the morning of 14 February 2025

AEMO acknowledges the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters, and culture. We pay respect to Elders past and present.

- Retail System Production snapshot to be taken on the morning of 24 February 2025. This refresh will contain 6 months of meter data.
5. AEMO will perform all internal functional testing prior to the release of any changes into pre-production for all FPP June 2025 financial operation changes that AEMO is coordinating.
 6. Participants will perform internal testing prior to connecting to the AEMO pre-production environment.
 7. Participants will have appropriately skilled resource capability for execution and support requirements during the Market Trial.
 8. AEMO will provide support to investigate and resolve defects identified during the Market Trial. All participants engaging in the Market Trial will report any defects via Practitest.
 9. Results from the Market Trial may be used by participants for their own reference.
 10. AEMO will support participants to resolve any connectivity issues within the pre-production environment.

2.6 Communication and Q&A session approach

Commencement of Q&A sessions will be aligned with the test execution for the Market Trial. These Q&A sessions will be in the form of meetings with the proposed parameters as listed below. AEMO will work with participants to ensure these sessions are structured effectively. AEMO proposes:

- AEMO will collaborate with market participants for agreed scenarios for market trial.
- Daily Q&A session for 30 minutes, for participants seeking any kind of clarifications or discussions related to the Market Trial.
- Meetings will be recorded for action taking purposes, but not for publication.
- Questions not answered during the meeting will be taken away and answered following the meeting.
- Ad hoc meetings can be organised between 09:00 and 17:00 Hrs (AEST) on business days, for any defects which needs prioritized attention.
- Latest defect updates, if any, will be sent out after the sessions as part of defect reporting.

Table 3 describes how the progress of the Market Trial will be monitored and reported. Communications and defect reporting will involve both AEMO and participants.

Table 3 Communications and Q&A session approach

| Frequency | Type | Responsible |
|---------------|---|-----------------------|
| Daily | <ul style="list-style-type: none"> • Q&A sessions • Defect reporting | AEMO and Participants |
| Ad hoc | <ul style="list-style-type: none"> • Defect related meetings will be organised for the defects which needs prioritised attention. • Issues in accessing Pre-Production environment. | AEMO and Participants |

2.7 Data refresh

AEMO’s Pre-Production retail and wholesale environments will be refreshed between 24 February 2025 and 28 February 2025. The wholesale data will be taken from a copy of Production on 14 February 2024. The Retail data will be taken from a copy of Production on 24 February 2024 with 6 month’s meter data.

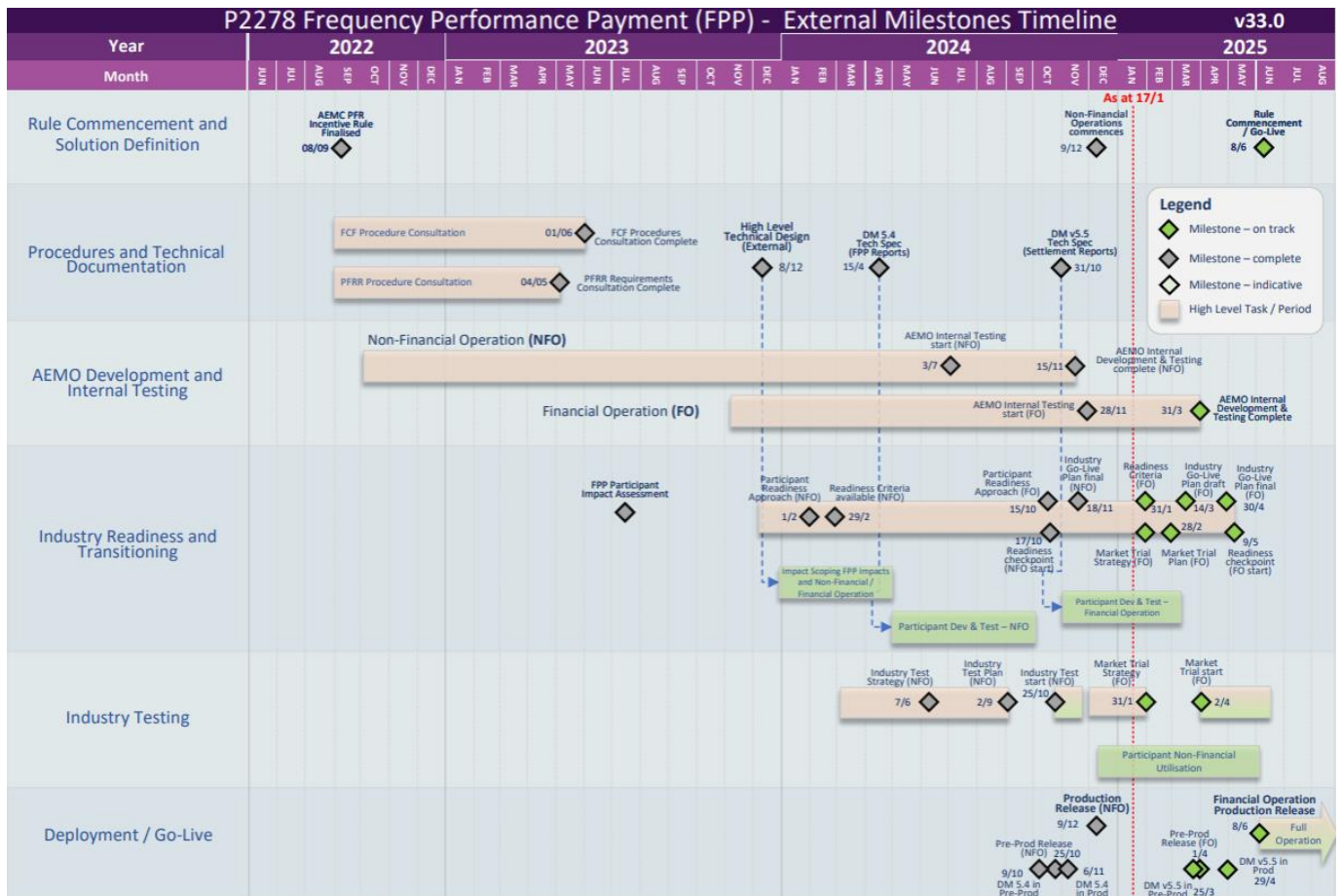
2.8 Test environment: AEMO’s pre-production environment

AEMO will prepare and maintain the single pre-production environment prior to the commencement of Market Trial. Any testing related support for FPP June 2025 financial operation in the pre-production environment will be provided between 09:00 and 17:00 Hrs (AEST) on business days by logging observations in Practitest, via the Q&A sessions and via the AEMO support hub.

2.9 Indicative timeline

The indicative timeline for the FPP(FO) project is shown in Figure 1 and Table 4, below.

Figure 1 FPP project timeline



AEMO acknowledges the Traditional Owners of country throughout Australia and recognises their continuing connection to land, waters, and culture. We pay respect to Elders past and present.



Table 4 FPP project milestones

| Milestone | Date |
|---|-------------|
| Market Trial Strategy | 31-Jan-2025 |
| Market Trial Plan published (FO) | 28-Feb-2025 |
| Industry Go-Live Plan published - draft (FO) | 14-Mar-2025 |
| Data Model (FO) available in Pre-Prod | 25-Mar-2025 |
| Pre-Production Release (FO) | 1-Apr-2025 |
| Market Trial start (FO) | 2-Apr-2025 |
| Data Model (FO) available in Prod | 29-Apr-2025 |
| Industry Go-Live Plan published - final (FO) | 30-Apr-2025 |
| Market Trial finish (FO) | 20-May-2025 |
| Production Release (FO) | 4-Jun-2025 |
| FPP Rule Commencement | 8-Jun-2025 |



3 Defect management

Market Trial defect management will be a collaborative effort, principally involving AEMO's and participants' testing teams, development teams and business analysis teams.

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, the system impact and priority of the defect.

Participants can report defects via AEMO support hub. AEMO will manage all the defects that were identified during test execution. Ad hoc meetings can be organised between 09:00 and 17:00 Hrs (AEST) on business days, for any defects which needs prioritised attention for resolution. Where it is determined that it is not an AEMO defect, AEMO will coordinate with market participants to obtain the status of the defect.

3.1 Defect management approach

3.1.1 Raising defects

Defects reported by participants during Market Trial will be captured by AEMO's test team in Practitest, with the following information:

- Description of defect
- Who detected it and the date it was detected
- Defect owner (entered after gaining agreement 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).

3.1.2 Defect escalation and triage

All open defects will be discussed in each meeting. If a critical/high priority defect cannot be resolved within the agreed timeframes, it can be escalated in the same meeting.

Defect triage meetings will be held internally by AEMO to discuss the status of any reported defects. A defects report will be shared with participants prior to the weekly meeting.

3.1.3 Defect severity and prioritisation

Defects will be classified according to severity and, where there are multiple defects of the same severity, these will be address based on priority by the participant test leads in consultation with other affected participants, as

described in 0. 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, as described in Table 6.

Table 5 Defect severity classification

| Severity | Definition |
|-----------------------|--|
| 1- Showstopper | Defect is considered critical to business operations and/or testing. Core business and project impact. |
| 2-Major | 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. |
| 3-Moderate | 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. |
| 4-Minor | 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 |
|-------------------|---|
| 1- Blocker | Entire functionality is blocked, and no testing can be conducted. Fix/resolution turnaround time is best endeavour effort in first 4 hours or provide update on impact. |
| 2-Highest | Defect is considered high impact to testing; multiple tests are blocked/failed due to the defect and no workaround is available. |
| 3-High | 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. |
| 4-Medium | Defect is considered moderate impact to testing; one or more tests can be linked to the defect, but workaround is available and none of these tests are currently a priority. |
| 5-Low | Defect is considered low impact to testing, no tests are failed or blocked due to this defect. |

Following acceptance of a defect, a resolution date will be added and published in the weekly defect report for all identified defects.

3.1.4 Defect cause

The defect root cause of a valid defect will be updated in Practitest by AEMO's test team once the defect cause is identified. Table 7 shows the available defect causes and their descriptions.

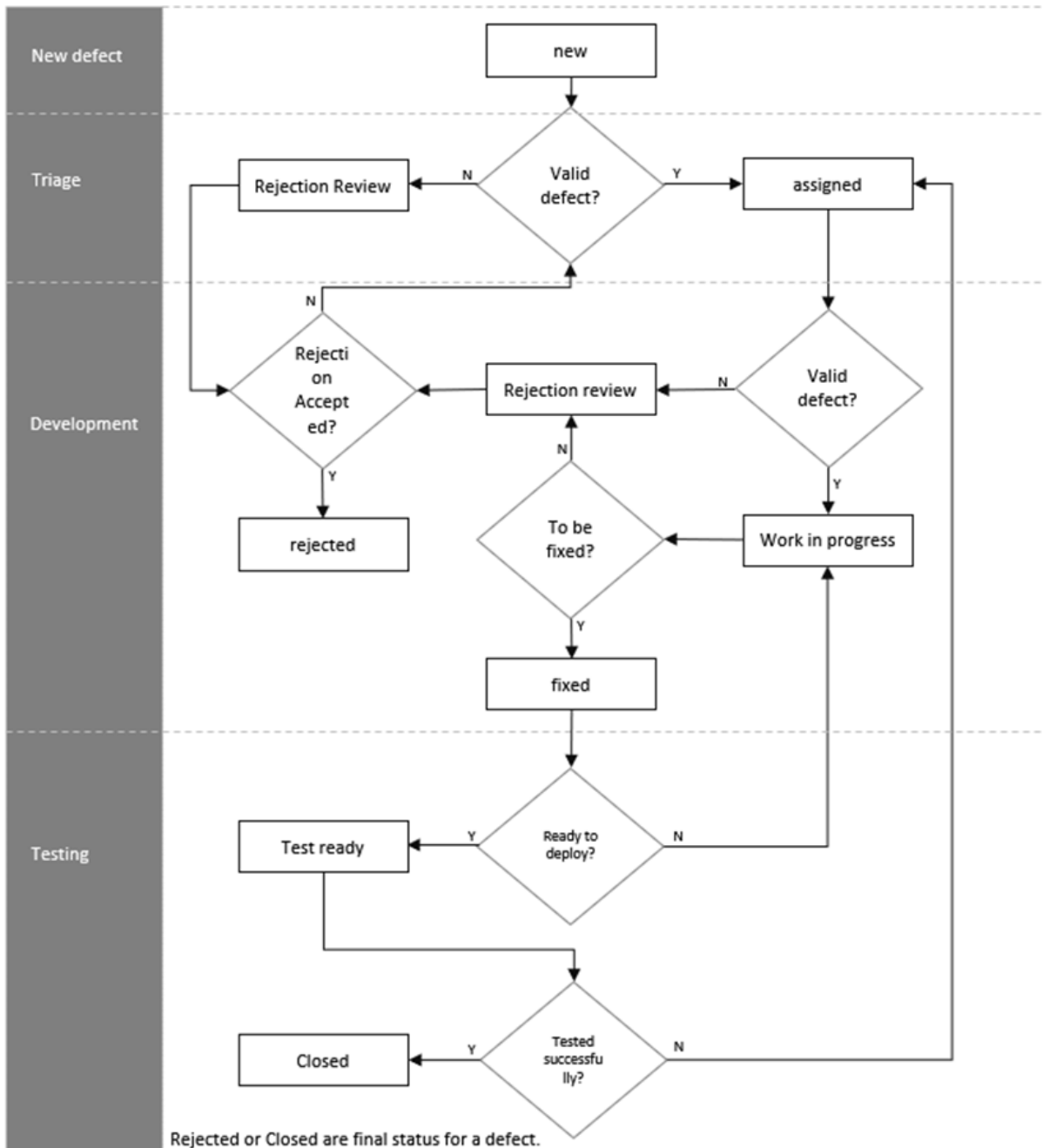
Table 7 Defect cause

| Defect Cause | Definition |
|--------------------------------|--|
| Design | 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. |
| Configuration | The intended outcome of the configuration is not met. |
| Data | There are system data issues for the process that may prevent test completion. |
| Requirements | Unclear or incorrect requirement, functional and business specification documentation. |
| Infrastructure/Hardware | Defect is not in the object being tested but it is 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. |

3.1.5 Defect process flow

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

Figure 2 Defect management cycle



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 |
|-------------------------|--|
| AEMC | Australian Energy Market Commission |
| AEMO | Australian Energy Market Operator |
| NEM | National electricity market |
| FCAS | Frequency Control Ancillary Services |
| FRMP | Financially responsible market participant |
| FPP(FO) | Frequency Performance Payments, Financial Operation |
| FPP(NFO) | Frequency Performance Payments, Non-Financial Operation |
| Industry testing | 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. |
| Market Trial | Formal testing by participants, coordinated by AEMO in AEMO's IT environments. |
| NER | National electricity rules |
| NMI | National metering identifier |
| PFR | Primary Frequency Response |