

Improving Security Frameworks (ISF) Phase 1.0 Revision Market Trial Strategy

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Important notice

Purpose

The Market Trial strategy sets out the high-level approach and principles associated with the National Electricity Market (NEM) testing activities that will support Improving Securities Framework (ISF) December 2025 final rule implementation.

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Executive summary

The Australian Energy Market Operator (AEMO) and National Electricity Market (NEM) participants are currently implementing the Improving Security Frameworks (ISF) final rule change. The ISF implementation makes changes to market procedures and market and participants' systems. 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.

As described in the [High Level Implementation Assessment](#), a key component of market readiness is the market trial – the period where AEMO and participants test their market-interfacing business systems against updated procedures and AEMO's upgraded market systems.

At a high level, the market trial strategy defines the scope, approach, process, responsibilities and high-level schedule of the market trial period for the ISF market transition. It will be supported by detailed test plan. The strategy is consistent with and should be read in conjunction with the [High Level Implementation Assessment](#) and ISF Transition Approach.

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1 Introduction

This section provides background information on AEMO's Improving Security Frameworks (ISF), 2 December 2025 release, final rule program and sets out the purpose, scope and approach to the development of this market trial strategy.

1.1 AEMO's ISF Implementation Program

On March 28, 2024, the Australian Energy Market Commission (AEMC) made a final determination and preferable final rule to improve arrangements for system security services.

The final ISF rule builds on existing tools and frameworks within the power system to enhance system security procurement frameworks. It addresses system security challenges during the transition by reducing reliance on directions and providing better incentives for participants to invest in providing system security in the longer-term. It also increases transparency on system security needs and how AEMO plans to manage system security as we transition to a secure net-zero emissions power system.

Table 1: Changes introduced by the ISF rule change that require system change

Production Implementation Date	Change	Description
02 Dec 2025 (Phase 1.0)	Commencement of full enablement obligations (operational)	<ul style="list-style-type: none">• New system security management and scheduling applications• System security enablement framework that applies to system strength, inertia, NSCAS and transitional services• Daily and annual reporting obligations commence


The ISF program covers the procedural, IT system and market readiness arrangements needed to implement the ISF rule change 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 ISF rule change.

This document is specific to the industry testing and market trial component of market readiness for the ISF December release.

1.2 Purpose of the Market Trial Strategy

This market trial strategy is a key component of AEMO's ISF readiness approach. The purpose of the market trial strategy is to set out a plan for managing, coordinating, monitoring and reporting on AEMO's and industry's market trial activities and results.



It is a high-level document that describes the testing approach that applies to the entire ISF market trial period. As mentioned in section 5.1, this strategy will be supported by individual test plan(s) containing specific details about each of the planned market trial tranches. The ISF market trial test plan will be published before the start of the market trial period.

1.3 Reference Documents

The following ISF related documents or web pages are relevant to the market trial strategy.

Table 2: Reference Documents and Websites

#	Document name
1	AEMC final rule determination
2	AEMO High Level Implementation Assessment
3	AEMO Draft Security Enablement Procedure
4	AEMO Frameworks - Project Website
5	ISF Transition Approach

1.4 Audience

This market trial strategy is primarily intended for those affected by the ISF rule change, particularly, their:

- Test managers,
- Test Leads,
- Test Analysts (System Integration, UAT, Market Trial) and
- Project Managers
- Developers and Business and Functional Subject Matter Experts (SMEs)

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 ISF market trial strategy. It explains the strategy's objective, scope and underlying principles. It also defines 'participant' and 'market trial' for the purpose of ISF implementation.

2.1 Defining 'participant' and 'market trial'

Throughout this document,

- The term '**participant**' for the purpose of this document refers to the participant(s) involved in the market trial activity.
- The term '**market trial**' refers to the testing performed between participants and AEMO to validate whether the updates made to participants' market interfacing systems and AEMO's market systems addresses the ISF regulatory and procedural arrangements. Market trial is conducted in the pre-production environment as a final stage before deployment to production.

2.2 Market Trial Objective

Market trial provides participants the opportunity to test their updated systems and processes against AEMO's updated electricity retail and wholesale market procedures and systems. AEMO will consider the market trial results as part of the readiness criteria for its 'go-live' and contingency decisions.

In relation to ISF implementation, the overall objective of market trial is:

to support market readiness and confirm AEMO's and industry's operational preparedness for the ISF system "go-lives" and rule commencements.

3 Market Trial Scope

Market capability based technical, functional and business operational testing is included in the ISF market trial scope, as follows:


- **Market technical verification and validation:** Determines the technical state of the solution, e.g. connectivity and provided interfaces.
- **Market functional verification and validation:** Determines the state of solution as matched against required business functionality and business processes. The solution may not mirror production from a complete “go-live” perspective.
- **Market operational capability verification and validation:** Determines the state of the solution from a “go-live” perspective and verifies technical, functional, and operational compliance to obligations. Mirrors as close as possible the “go-live” state of the solution from the perspective of data, timing etc. Covers key business processes essential to the operation of the systems supporting new rule change.
- Market trial will consist of system integration testing between participants’ systems and AEMO’s systems, to test the system changes required to implement ISF December 2025. Note that the ISF market trial scope is aligned with the approach to transition and ‘go-live’ as described in the [High Level Implementation Assessment](#).

3.1 Scope Inclusions

Table 3 below refers to the in-scope test objectives for ISF December 2025 rule commencements and supporting the market system changes. The scope of market trial will be restricted to testing the applications that the participants will need to interact with, in order to participate in the enablement process.

Table 3: Test Objectives for ISF Market Trial

Objective	Description
Confirm visibility and access	<ul style="list-style-type: none">• Participant ability to view and submit availability and other operational information:<ul style="list-style-type: none">○ Test that participants are able to access Security Service Management (SSM) User Interface in the Markets Portal.○ Test that participants are able to view, submit and maintain their unit’s availability and other operational information via the User Interface and/or API.○ Test that participants are able to view their enablement instructions and amendments to those instructions via the User Interface in the Markets Portal.○ Test participants are able to consume enablement instructions via the Participant Data Replication (PDR) tool or the API.
Confirm End to End Scheduling process	<ul style="list-style-type: none">• AEMO scheduling of security services and subsequent reports, including any test scenarios to simulate security scheduling scenarios, and to allow participants to demonstrate, receive and interpret enablement instructions as per the Security Enablement Procedure.



Objective	Description
	<ul style="list-style-type: none"> Participant to respond to an enablement instruction. TNSPs receipt of information to enable contract settlement. (AEMO may assist in the establishment of contracts in AEMO's internal systems prior to commencing market trials.) Visibility of settlements/Billing tables for NSCAS and NMAS security services procured by AEMO. Visibility of daily enablement reports.

3.2 Scope Exclusions

Market trial scope exclusions:

- Participants' and TNSPs' development activities.
- Changes to participants' supporting business systems that do not directly interact with AEMO's market systems (i.e. back-end systems). These are addressed by participant's own test strategies.
- Any bilateral testing between participants and/or TNSPs. Participants can co-ordinate bilateral testing between themselves in parallel to the market trial.
- Downstream business procedures for each participant and TNSP.
- Testing of agreed non-critical business processes (unless otherwise agreed by the affected participants).
- Accreditation, as there is no accreditation for ISF December 2025 release.
- Physical test of each security service unit to be enabled after the ISF December 2025 release.

Each 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.

4 Market Trial Approach

This section sets out the market trial strategy, comprising:

- The approach to market trial
- Market Trial readiness
- High-level test tranches, coverage and timeframes
- Assumptions underpinning the strategy.

4.1 Market Trial Approach

In accordance with the testing objective, scope and principles, the testing strategy for ISF December 2025 release provides participants with the necessary capability so that they can choose to undertake preparatory and testing activities ahead of the ISF 2 December 2025 rule commencement.

This strategy comprises of the test tranches that will support the staged industry transition of ISF rule implementation and will be detailed in the specific test plan. Testing of all tranches will occur within the market trial period of October and November of 2025. To enable this testing, a mock rule commencement date (or dates) will be used to simulate Go-Live. The date will be confirmed closer to the market trials.

Commencement/ go-live	Test Scenarios
Fri 02 Dec 2025 for Production Equivalent date for Pre- production to be confirmed closer to market trials.	<ol style="list-style-type: none">1. Participants can access/receive enablement instructions.2. Participants can submit/maintain security service availability (and other operation information).3. Participants can upgrade to the latest 5.6 data model and subscribe to the ISF subscriptions.4. Participants can confirm any settlement/billing changes for NSCAS, and transitional services procured by AEMO, if applicable.5. Participants can access ISF data in the participant data model.

4.2 Market Trial Test Tranches

4.2.1 Market Trial Readiness

Below are the pre-requisites for the commencement of the market trial period:

1. Expression of Interest:

Seek Expression of Interest (EOI) from participants before the commencement of the market trial via the ITWG group or ISF specific Industry engagement forums. This is sought in order to assess the number of potential participants that will be engaging in the Market trial.



2. TNSP Readiness:

As part of AEMO's approval process for security service agreements, and prior to market trial, TNSPs to provide AEMO with sufficient information on system security agreements and corresponding operational or limits advice on their contribution to system security requirements, to facilitate scheduling.

3. Participant Readiness:

Participants may demonstrate via market trial their ability to submit information to, and receive and respond to enablement instructions, as required for AEMO's approval process for each system security agreement as per rule reference 5.20B.6 for inertia agreements and 5.20C.4 for system strength agreements. Participants must ensure AEMO's approval is obtained on the arrangements necessary for AEMO to give instructions to enable or cease the provision of the system security services.

Participants will need to perform basic health checks of the ISF interfaces in pre-production environment. Each participant would need to ensure they have access to the Markets Portal - External Security Service Management. AEMO will run ITWG Q&A sessions during market trial period to support the participants.

4. Environment Availability:

Pre-production environment will be available to support the market trial.

IT support needs to be in place.

5. Extended Support:

The extended support period timeframes overlap with the go-live date of 2 Dec 2025, commencing from the end of the market trial to 28 Feb 2026 to provide more flexibility and support for contracts transitioning to enablement.

AEMO will work closely with relevant TNSPs and Providers to support participation, including coordination and scheduling into the extended support period Test Tranches.

The table below shows the test tranches and their timeframes for ISF phase 1.0 market trial.

Figure 1: Market Trial Tranches

	Week 0 Oct 27 – Oct 29	Week 1 30 Oct – 6 Nov	Week 2 Nov 7 – Nov 13	Week 3 Nov 14 – Nov 20	Week 4 Nov 21 – Nov 25
Tranche 1	Environment setup & Code				
Tranche 2					
Objective 1 – Confirm visibility and access	Participants test ISF screens on Markets Portal				
Objective 2 – End to End scheduling process	Participants perform E2E tests				
Tranche 1	Performed with selected participants (Pilot)				
Tranche 2	Performed with all participants (Rollout)				

The table below sets out details of the tranches such as the affected participants, test coverage and the timeframes for each of the market trial tranches.

Table 4: Pre-Production Environment Setup

Tranche 1: Environment Setup and Code Deployment	
Description/Objectives	<ul style="list-style-type: none"> The objective of this period is to setup and deploy the ISF code into the pre-production environment. The data model will be deployed into pre-production independently.
Timeframe	Week 0 (27-Oct-25 to 29-Oct-25)

Table 5: Market Trial Tranche 1 - Pilot

Tranche 1: Pilot conducted with selected participant/s	
Affected participants	Market Generators (Scheduled and Semi-scheduled) Integrated Resource Providers Other security service providers Transmission Network Service Providers Cost recovery market participants
Description/Objectives	<ul style="list-style-type: none"> This tranche of the market trial will be conducted with the pilot/selected participant/s.

	<ul style="list-style-type: none"> • Confirm visibility and access. • Confirm End-to-end scheduling objectives. • This is to prove that the ISF solution is working as expected before rolling out to remaining participants.
Timeframe	Week 1 and 2 (30-Oct-25 to 13-Nov-25)

Table 6: Market Trial Tranche 2

Tranche 2: Market Trial E2E conducted with all participants involved in market trial	
Affected participants	Market Generators (Scheduled and Semi-scheduled) Integrated Resource Providers Other security service providers Transmission Network Service Providers
Description/Objectives	<ul style="list-style-type: none"> • This tranche of the market trial will be conducted with all the participants. • Confirm End-to-end scheduling objectives.
Timeframe	Week 3 to 4 (14-Nov-25 to 25-Nov-25)

4.3 Assumptions

There are several key assumptions underpinning the market trial strategy:

1. AEMO will provide and maintain its Pre-Production environment which will be used for the market trial period.
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 on outages or code changes and provide release notes for the changes.
4. AEMO will back-up production data and upload into the pre-production environment prior to testing of any system changes. AEMO will communicate the details and dates of this activity to all participants as part of the market trial planning and in consultation with the ITWG. The data refresh strategy covering both wholesale and retail will be part of the AEMO ISF December 2025 market trial plan.
5. AEMO will provide and upload agreed test cases for any AEMO coordinated testing activities to Practitest¹ Testing Modules and provide Practitest support during the market trial.
6. AEMO will perform all internal functional and non-functional testing prior to the release of any changes into pre-production for all ISF December 2025 changes that AEMO is coordinating.
7. Participants will register their interest in participating in any of the market trial prior to their commencement, as will be detailed in the respective test plan.
8. Participants will perform internal testing prior to connecting to the AEMO pre-production environment.
9. Participants will have appropriately skilled resource capability for execution and support requirements during the market trial.
10. Participants will ensure that the appropriate access to AEMO's pre-production environment is in place to support their market trial requirements.
11. Participants will ensure that defined test data is prepared and available within their test environments for market trial and that this data is appropriately baselined and backed up.
12. AEMO will provide support to investigate and resolve issues or defects identified during the market trial.
13. All participants engaging in market trial will use PractiTest as the central test management tool to execute test cases, undertake defect management and produce dashboard reporting.
14. Results from market trial may be used by participants as one factor in AEMO's and their own assessment of go-live criteria.
15. AEMO will support participants to resolve any connectivity issues within the pre-production environment.

¹ Practitest is AEMO's test management tool. For more information, see section 4.2.



5 Market Trial Principles

Market trial of multiple-party interactions require cooperation between participants to be successful. The following key principles should guide all parties involved in market trial:

1. **Market trial strategy alignment with ISF December 2025 release:** The market trial strategy will align with the ISF 2 December 2025 rule commencements and deployment approach.
2. **Appropriate choice of testing type for each test tranche:** The type of market trial selected for each test tranche will be in keeping with the complexity, materiality and implementation timeframe of the system change. This is to ensure that the cost, time, and resources applied to testing are appropriate to the change. For example, simple industry testing is usually suitable for a minor change, as is a full market trial for a complex system change that affects large numbers of participants.
3. **Detailed test plans** will be developed by AEMO in consultation with the Industry Testing Working Group (ITWG) to support ISF December 2025 release testing activities, with the level of detail and involvement consistent with type of testing being conducted.
4. **AEMO will provide timely and suitable test environments:** AEMO will facilitate participants testing their updated systems and processes against AEMO's electricity market procedures and systems updated for ISF December 2025 release.
5. **Adherence to the market trial strategy and associated test plans:** All parties participating in market trial must use their best endeavours to adhere to the market trial strategy and test plans – including meeting key dates, fulfilling entry criteria checklist, adhering to defect management guidelines and reporting guidelines.
6. **Appropriately skilled resource capability:** All parties participating in market trial must be appropriately resourced for the test planning and test execution effort.
7. **Scope limited to critical business processes:** Any coordinated testing that requires interactions between multiple parties will be limited to critical business processes, unless otherwise agreed by the impacted parties. For example, business processes that affect key transactions that support market continuity.
8. **Focus on ISF December 2025 market readiness and market trial objectives:** All parties participating in market trial should be committed to cooperating with each other and be prepared to be responsive and flexible when responding to events, in accordance with the relevant ISF December 2025 objectives.
9. **Market trial outputs will be a consideration in readiness assessments:** For each market trial tranche, the number, severity, and type of defects will be a contributing factor to the relevant readiness assessment along with the number of participants who took part in testing. This information will be considered by AEMO in its proceed and contingency decisions.
10. **Release notes** will be provided for each system detailing functionality and defects fixes applicable to the release.



6 Strategy Implementation: Market Trial Management

This chapter sets out how AEMO and participants will interact thorough the market trial period.

6.1 Industry Testing Working Group (ITWG)

The ITWG will co-ordinate and execute market trial for the ISF market reforms to:

- Engage in detail on ISF market trial matters.
- Collaborate on the development of the detailed testing plans where required.
- Each participant will provide market test resources to be part of the ITWG for the duration of market trial preparation and execution activity. It is expected that those resources will be adequately skilled to meet the needs of the preparation activity.
- The ITWG will meet as required to drive the planning and preparation and execution process. High-level ITWG roles and responsibilities and ITWG's relationship with the various ISF stakeholder forums are set out in Appendix A3.

6.2 Test Management Tool

Practitest will be used to manage the market trial, including test scenarios, test script development, test execution, test results, the tracking of test defects during all tranches and dashboard reporting.


Practitest will be configured by AEMO with all required information and will be monitored and supported by AEMO. AEMO will provide one free dedicated licence to each organisation. If any organisation requires additional licences, AEMO will purchase on the organisations' behalf at a cost charged back to the organisation.

This tool is available over the internet and the link will be provided closer to the test commencement date and AEMO will provide training to participants on request.

6.3 Participant Test Registration

Each prospective participant will need to register with AEMO their intention to undertake market trial prior to commencement of the market trial period. Test registration is required so that multi-party test scenarios can be planned and scheduled from an end-to-end perspective.

Registration requirements and templates will be included in the Test Plan. AEMO will prompt for test registration requests and may request participants to complete templates or checklists as part of the registration activities. Participants will need to register each role within the market that they are responsible for. Where they have multiple IDs for the one role, a single registration with all IDs is required.



All registration requests and queries for market trial should be sent through using the NEM Reform inbox: nemreform@aemo.com.au

Each Registration will be given two login IDs with additional logins available dependant on the number of participants engaging in the testing activities.

6.3.1 Participant ID and roles

Participants will detail which participant roles and IDs they will be testing under as part of their Test Registration.

6.4 Communication and Status Reporting

Commencement of status reporting will be aligned with the test execution for market trial. Commencement of Market Trial Q&A sessions will align with test execution periods for all test tranches.

Table 7 describes how the progress of market trial will be monitored and reported. Communications and status reporting will involve both AEMO and participants.

Table 7 Communications and Status Reporting

Frequency	Type	Responsible
Continuous	<ul style="list-style-type: none">• Updates in Practitest for status of test cases and defects	AEMO and Participants
Daily	<ul style="list-style-type: none">• Status reports & Traffic light reports, readiness reports• Test status meetings	AEMO
Milestone based	<ul style="list-style-type: none">• Milestone reports, Test Completion Reports	AEMO

6.5 Risk and Issues Management

Market trial related risks and issues with the potential to affect program readiness should be raised via the Implementation Forum.

7 Strategy Implementation: Market Trial Planning and Preparation

The strategy sets out the approach and high-level timing for ISF December 2025 market trial. To operationalise the strategy, more detailed test plans will be developed by AEMO in consultation with participants to set out the details associated with the market trial activities.

7.1 Test Plan

As part of the preparation for testing, a series of workshops will be held by the ITWG to develop the ISF December 2025 Market Trial Plan covering the different tranches of testing with the content and level of detail as appropriate for the type of testing to be conducted.

The Test Plan will align with key milestones and include:

- Test tranche objectives
- Detailed scope of testing
- Pre-requisite activities
- Entry and exit criteria
- Test tranches approach and timelines
- Data management
- Defect management
- Test reporting requirements.

Table 8 sets out the timetable for the development of the test planning documents and activities.

Table 8 Timeframes for ISF Market Trial Planning and Preparation

Test planning	ITWG Engagement	Draft	Consultation	Final
Market Trial <i>Strategy</i> (doc)	May 2025	02 May 2025		18 July 2025
Market Trial Strategy Revision (doc)	June 2025	17 June 2025		18 July 2025
Market Trial <i>Plan</i> (doc)	August 2025	29 July 2025		29 August 2025
Market Trial preparation activities (aligned with plan)	Aug 2025 Sep 2025			



7.1.1 Test Scenarios

The test plan market trial will document the test scenarios, data requirements, registered test participants and test calendar. The test calendar will include the test participant matrix, detailing who each participant will test with and when.

The ITWG will develop the test scenarios, scripts and calendar, by:

- Defining the test scenarios required for market trial, including identifying:
 - Scenario priority
 - Testing counterparties
 - Data requirements
- Defining and preparing the subsequent test scripts that will need to be executed.
- Defining the approach and timing of test script execution.

7.2 Test Data

7.2.1 Data Requirements

Data requirements will be developed during the test planning stage, and the approach to data management will be detailed in the respective Test Plans. At a high-level:

- 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.
- For relevant scenarios, AEMO will work with participants to register/transition DUID's. Data identified will be mapped against every scenario in the Description field in Practitest.
- Participants are responsible for ensuring that any required data is available within their test environments for market trial test execution.

7.2.2 Data Refresh

AEMO will undertake a data refresh prior to deployment to pre-production for market trial. Currently the pre-production refresh is expected to occur between 25th August 2025 to 29th August 2025. The details of these will be discussed and communicated via the ITWG in the lead up to go live. Participants are encouraged to align their pre-production data, if possible, as this will make aligning data between participants easier.

7.3 Market Test Environment: AEMO's pre-production

AEMO will prepare and maintain the single pre-production environment prior to the commencement of market trial and throughout the test execution tranches for the duration of market trial. All participants with valid participants IDs will have access to the pre-production environment for market trial. AEMO will back-up and refresh the data and support the pre-production environment.



All participant test environments will be maintained and managed by the respective participants.

7.3.1 Test Support

Test support for market trial period will be provided from 27 October to 18 November 2025 between 09:00 and 17:00 Hrs (AEST) on business days.



8 Strategy Implementation: Market Trial Execution Approach

The ITWG will monitor and manage all market trial execution activities. Participants are responsible for supplying their own teams for test execution for the duration of market trial.

8.1 Market Test Entry and Exit Criteria

The entry and exit criteria for each market trial period will be defined in the relevant Test Plans. Depending on the testing defined, the criteria are likely to be based on those listed below.

8.1.1 Entry Criteria

Participants wanting to participate in market trial is expected to have fulfilled entry criteria prior to the commencement of market trial. This may include, but is not limited to the following criteria:

- 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 NMI ranges) is complete, if required
- Appropriately skilled resource capability available to execute and support testing.


AEMO will confirm the following:

- Internal AEMO testing has completed.
- Pre-production environment available.
- The relevant ISF December 2025 Market Trial 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.
- Registration of participants in the market trial with nominated role ID's to be used in testing.
- Testing participants have confirmed readiness (through the submission of completed entry criteria checklist).

8.1.2 Exit Criteria

Exit criteria for the text execution period may include:

- Successful completion of all high-priority test scenarios
- No outstanding Severity 1 or Severity 2 defects

- 
- Any open defects (Severity 3 or 4) have agreed resolutions or work around in place and published. Where appropriate and efficient, AEMO can discuss options for resolving a defect/s with the ITWG.
 - Final Test Summary Report completed.
 - The overall result market trial will be one factor included in the assessment of the overall market readiness for implementation.

8.2 Test Scenario and Script Execution

Test execution will be undertaken as follows:

- Respective test plans are created in Practitest Test Execution modules for all participants to facilitate testing.
- Tests scenarios and scripts that are in scope for participants will be set-up in their respective test plans of Practitest Test execution module.
- 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 trial 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 can be undertaken by participants. This includes capture of positive results to prove that a test met expected results. For example, participants can use screen shot or test output 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.
- To assist in defect resolution participants should capture negative results in PractiTest against the defect. In the case of sensitive information, please keep the information so AEMO can work through troubleshooting, if required.



8.2.1 Test Status

After running each test script, participants will update the test script status in PractiTest as below:

- Unexecuted
- In progress
- Blocked
- Failed
- Passed
- Not applicable

AEMO will use these test statuses to generate the status traffic light reports and circulate prior to the daily test status meetings.

8.2.2 Test Metrics

Test measurement during market trial will be based on but not limited to the following metrics:

- 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 metrics will be reported as appropriate in the test status reports which AEMO will generate and circulate prior to daily test status meetings.



8.3 Daily Process

The daily process to be adopted during each market trial period will be detailed in their respective Test Plans, including:

- Frequency of daily test status meetings (number of meetings per day – which may be adjusted as testing execution progresses)
- Number and scheduled time/s of daily test status meetings
- Meeting attendees (one meeting for all attendees or multiple meetings with targeted attendees)
- Meeting agenda templates.

To prepare for the scheduled meetings:

- Participants will be asked to update Practitest prior to the meeting.
- AEMO will generate and circulate the test status report and status traffic light report prior to the meeting.

The daily test status meeting agenda will include:

- Confirm attendance
- Test execution progress
 - Review planned against actual progress for test execution. Discuss exceptions against planned execution
 - Confirmation of readiness to commence scheduled tests
- Review defect status – outstanding defects.

8.4 Test Management Activities

The table below shows the activities which will occur during market trial and who is responsible for them.

Table 9 Test Management Activities

Activities	Description	Timing	Responsibility
Prepare tests	Configure Practitest with test scenarios and test scripts.	Prior to the commencement of test execution	AEMO
Identify data	Identify data sets for each test scenario, enter in Practitest and confirm with testing partners.	Prior to the commencement of test execution	Participants, AEMO may assist if required
Execute tests	Individual testers to perform test execution and capture actual results of testing in Practitest.	Daily	Participants
Update progress	Progressively update the status of each script tested in Practitest.	Daily	Participants
Raising defects	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
Managing defects	Review defects logged in the Practitest to identify major defects and determine the impact of those defects.	Daily	AEMO and Impacted Participants
Retesting defects	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
Test tranche entry	Complete entry criteria checklist	Prior to the commencement of test execution	AEMO and Participants
Test tranche exit	Complete exit criteria check	At the completion of test execution	AEMO and Participants
Test status meetings	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

9 Strategy Implementation: 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. 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 participants to obtain the status of the defect.

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

9.1 Defect Management Approach

9.1.1 Raising Defects

Defects raised during market trial 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)

For ISF 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.

- 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 trial 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.

9.1.2 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.

Appendix A1 contains a workflow of the Testing issue triage process.

9.1.3 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.

9.1.4 Defect Severity and Prioritisation

Defects will be classified according to severity and where there are multiple within a severity, they will be addressed based on the priority by the participant test leads in consultation with other affected participants, as described in Table 10 and Table 11Table 11Defect Severity Classification. 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 10 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 11 Defect Severity Classification

Priority	Definition
1- Blocker	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.
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 with 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.

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

9.1.5 Defect Management Status

Table 12 shows the valid defect management statuses to be selected in PractiTest.

Table 12 Defect Management Status

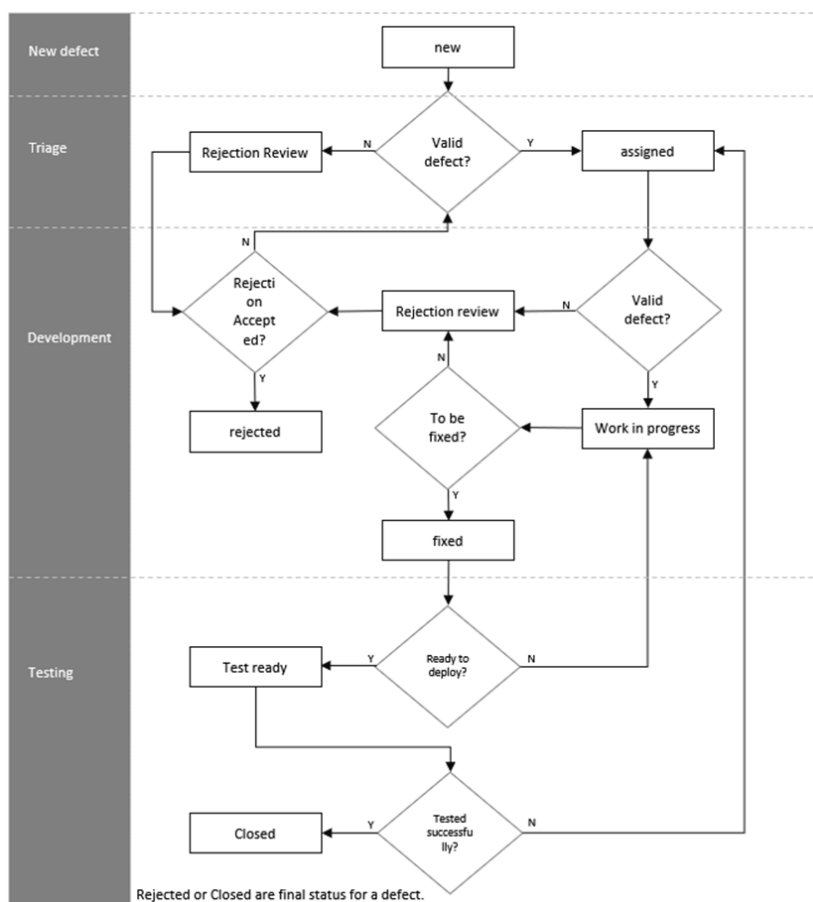
Status	Definition
New	Initial defect raised but will require a triage to determine if further analysis is required and whether it is a true defect as such to move to an assigned status.
Assigned	Defect will be assigned to the appropriate development team to be addressed further assessed and progressed.
Work in Progress	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)
Rejection Review	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 who raised the defect to accept rejection or update defect to allow it to be 'assigned'.
Rejected	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'.
Fixed	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.

Status	Definition
Test Ready	Once the fix is released to test environment successfully the status is set to 'Test Ready' and assigned to the participant who raised it.
Closed	If the participant (defect originator) is satisfied that the testing of the defect is successful they should update the defect

9.1.6 Defect Process Flow

Figure 2 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



9.1.7 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 13 shows the available defect causes and their descriptions.

Table 13 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, 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.

9.2 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 trial and will also determine when testing will continue. Suspension and resumption criteria and actions are described below.

9.2.1 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 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.

9.2.2 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.

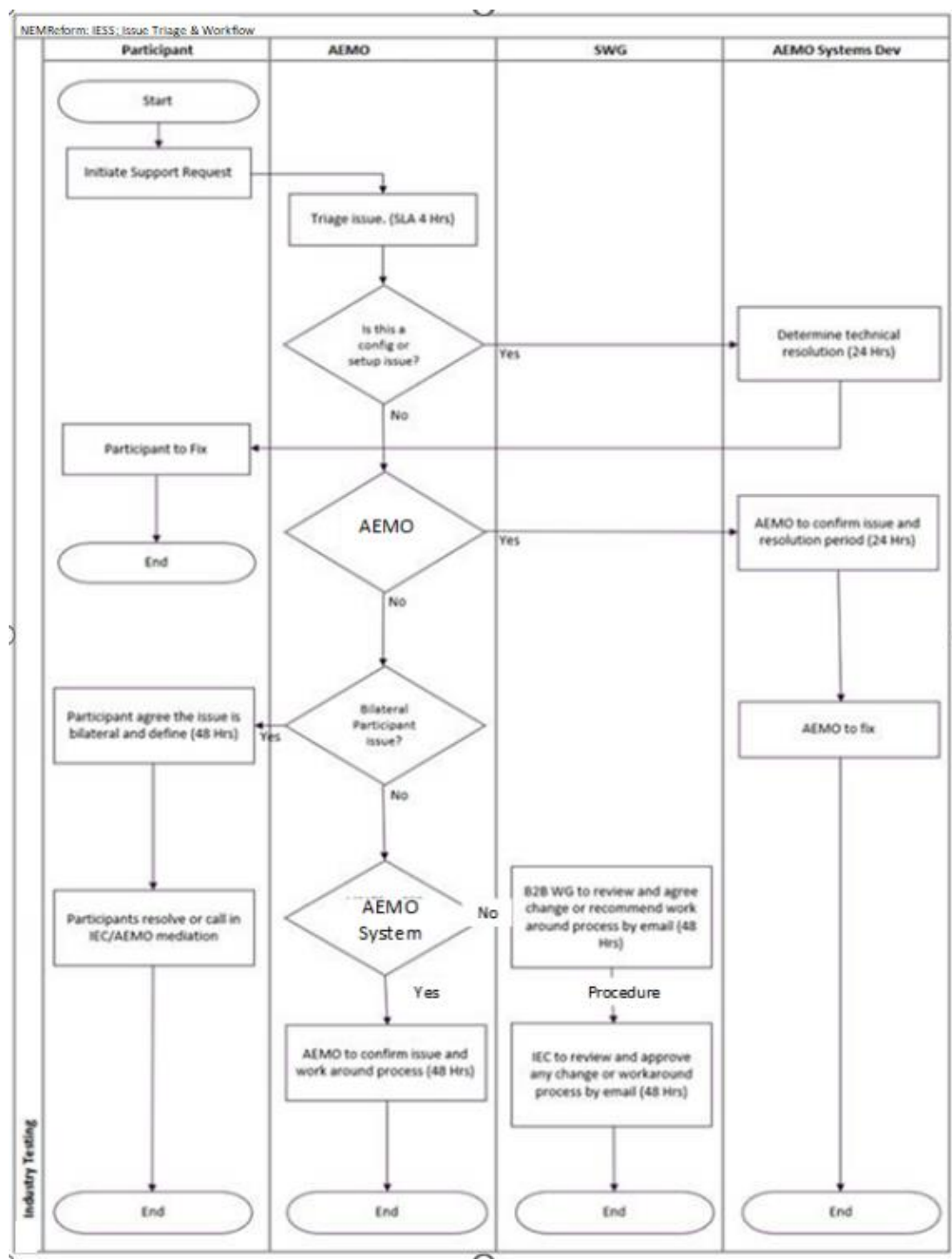
- AEMO will inform the testing participants that the test environment is in a suitable condition to resume the suspended testing.
- AEMO in consultation with the participant who raised the defect, will inform the participants of the impact(s) of the defect fix on the previously executed test cases and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

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
DUID	Dispatchable unit identifier
ISF	Improving Security Frameworks
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.
Invitation industry testing	Coordinated testing of business process scenarios with a select number or subset of participants with systems ready for testing
ITWG	Industry testing working group
Market trial	Formal, industry coordinated test activities between participants' and AEMO's IT environments. Involves coordinated multi-party end-to-end testing of business process scenarios.
NEM	National electricity market
NER	National electricity rules
Transition	Process of shifting from current to future operating state

APPENDIX A1: Issue Triage Workflow



APPENDIX A2: Industry Testing Working Group roles, responsibilities and relationships

Industry Testing Working Group Roles and Responsibilities

Role	ITWG responsibilities
AEMO and participants' test leads	<ul style="list-style-type: none"> • AEMO to develop test plans (see chapter 5) • Developing all test preparation materials, including test scenarios, test scripts and data sets, as required • Submitting test registration requests, entry and exit criteria checklists, software or connectivity requests to AEMO, when requested • Managing the testing process as prescribed in this strategy and the supporting test plans, including: <ul style="list-style-type: none"> – Undertaking test execution as scheduled – Updating Practitest with test progress and results – Communicating with testing counterparties as required – Attending scheduled stand-up and ad-hoc meetings – Adhering to the defect management process including the retesting of fixed defects.
ITWG facilitator & chair (AEMO Test Lead)	<ul style="list-style-type: none"> • Coordinating the test preparation activities • Initial set-up of Practitest with test scenarios and test scripts for participant review • Requesting and collecting test registration requests, entry criteria checklists, and software and connectivity requests, and coordinating the issuing of any required licences for the testing tool or connectivity credentials • Coordinating test counterparties if required (e.g. arranging pairings or grouping for test scenarios) • Coordinating the test execution process as prescribed in this market trial strategy and plans including: <ul style="list-style-type: none"> – Scheduling and chairing regular stand-up and ad-hoc meetings – Scheduling and chairing daily meetings during test execution windows – Communicating test readiness (i.e. giving individual participants, participant pairings or participants groups, the go-ahead to begin test activities). • Communicating status reports and updates to the ITWG, and other ISF forums • Where possible, provide initial assistance before escalating participant issues to their ITWG representative. For example, participant non-responsiveness in test execution such as running behind test schedule, not updating Practitest or following the defect management process • Referring defects that cannot be resolved by the individual participant, or at the ITWG, level to the relevant Procedures working group or the ISF-PCF for resolution.

Industry Testing Working Group Relationships

NEM Reform group	Relationship with ITWG
Implementation Forum	The Implementation Forum will receive regular status reports from the ITWG on preparations for and execution of market trial. The Implementation Forum may also refer matters to the ITWG for detailed Industry consideration in relation to Testing of ISF capability.
Program consultative forum (PCF)	The PCF and Implementation Forum will receive regular status reports and escalations on testing progress via the ITWG.