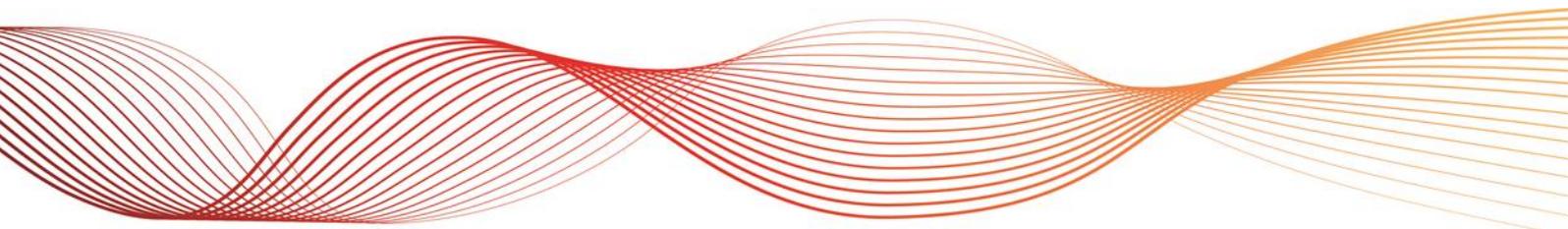# POWER OF CHOICE IMPLEMENTATION PROGRAM

MARKET TRIAL TEST PLAN (VERSION 0.1)

Published: **May 2017**

VERSION RELEASE HISTORY

Version	Date	Summary of Changes
0.1	25/05/2017	First draft issued for discussion with the Power of Choice – Industry Test Working Group (POC-ITWG)

CONTENTS

1. INTRODUCTION

This Market Trial Test Plan outlines industry testing activities for the changes that have arisen as a result of the Power of Choice (POC) Project. AEMO are coordinating a series of tests to allow participants to validate these changes and ensure they are ready for the market go live on 1 December 2017. This document should be read in conjunction with the POC Industry Test Strategy. Any deviations from the POC Industry Test Strategy for this Market Trial Test Plan are outlined within this document.

1.1   Background

The objective of AEMO's POC Implementation Program is to design and implement the required changes to electricity metering, retail market arrangements and infrastructure to give effect to rule changes arising from the POC Review.[1]

1.1.1   Scope of the Market Trial Test Plan

The POC related rule changes relevant to this Market Trial Test Plan are listed below:[2]

- Expanding Competition in Metering and Related Services (MC) rule change.[3]
- Meter Replacement Processes (MRP) rule change.[4,5]
- Embedded Networks (EN) rule change.[6]
- Electricity B2B Framework (B2B) rule change. [7]

Items inside scope

This Market Trial Test Plan prescribes all activities that will allow AEMO and NEM market participants to test their systems changes for the following areas:

- Business to Market (B2M) and Market to Business (M2B) communication flows between AEMO's market system and NEM participants' market interfacing systems via MSATS (including aseXML R35).
- Business to Business (B2B) changes due to POC rule changes (including aseXML R36) using the MSATS Browser, e-Hub FTP (MSATS) or API interfaces.

Items outside scope

This Market Trial Test Plan does not prescribe any testing activities associated with:

- Changes to NEM participants' supporting business systems that do not directly interact with AEMO's market systems (i.e. back-end systems).
- Any bilateral testing between participants. Participants can coordinate bilateral testing between themselves in parallel with the Market Trial, however reporting during Market Trial will not refer to bilateral testing.
- Unchanged communication flows between AEMO's market systems and NEM participants' market interfacing systems.

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[1]   See AEMC website, http://www.aemc.gov.au/Major-Pages/Power-of-choice.
[2]   See AEMC website, Power of Choice overview page, http://www.aemc.gov.au/Major-Pages/Power-of-choice.
[3]   Rule made; AEMC final rule determination published 26 November 2015.
[4]   Rule made; AEMC final rule determination published 10 March 2016.
[5]   Note that there are no system changes associated with the MRP rule change.
[6]   Rule made; AEMC final rule determination published 17 December 2015.
[7]   Rule made; AEMC final rule determination published 30 June 2016.

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

1.2 About this paper

1.2.1 Structure of this paper

This paper is structured as follows:

- Chapter 2 details the key dates and milestones of the market trial testing phase.
- Chapter 3 details the scope and objectives of the Market Trial phase.
- Chapter 4 details the test preparation activities.
- Chapter 5 details the test execution approach.

1.2.2 Reference documents

The following POC-related documents are relevant to the Market Trial Test Plan.

#	Document Name
1	POC Market Readiness Strategy[8]
2	POC Industry Test Strategy[9]
3	POC Industry Registration & Accreditation Plan[10]
4	AEMO Procedures, as approved by AEMO under the following NER Consultations: - POC Procedure Changes (Package 1)[11] - POC Procedure Changes (Package 2)[12]
5	MSATS Technical Specification[13]
6	SMP Technical Guide Document[14]

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[8] See AEMO website, http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Power-of-Choice/Readiness-Work-Stream
[9] See AEMO website, http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Power-of-Choice/Readiness-Work-Stream/Industry-Test-Work-Group
[10] See AEMO website, http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Power-of-Choice/Readiness-Work-Stream
[11] See AEMO website, http://aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-1
[12] See AEMO website, http://aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-2
[13] See AEMO website, http://www.aemo.com.au/Electricity/IT-Systems/IT-change
[14] See AEMO website, http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Power-of-Choice/Systems-Work-Stream

2. KEY DATES AND MILESTONES

2.1 Key milestones for the Market Trial Phase

Table 1 – Key milestones

#	Milestone	Indicative date	NEM Participant
1	Market Trial Test Plan first draft	24 May 2017	AEMO
2	Market Trial Test Plan finalised	16 June 2017	AEMO
3	Market Trial Test Workbook finalised	26 June 2017	All
4	Test Scenario Participant Pairing finalised	28 July 2017	All
5	AEMO outage for data refresh (proposed date of production data from 27 July at 15:00 hrs AEST)	31 July - 07 August 2017	AEMO
6	Daily meetings commence	14 August 2017	All
7	**Market Trial pre-production release**	**Mid-August 2017**	**AEMO**
8	Cycle 1 (21 August 2017 – 8 September 2017) completes	8 September 2017	All
9	Cycle 2 (18 September 2017 – 6 October 2017) completes	6 October 2017	All
10	Cycle 3 (16 October 2017 – 3 November 2017) completes	3 November 2017	All
11	Draft Market Trial Completion Report	10 November 2017	AEMO
12	Final Market Trial Test Completion Report	17 November 2017	AEMO
13	"Go-live" date for POC reforms	1 December 2017	All

3.   SCOPE AND OBJECTIVES OF MARKET TRIAL TEST

3.1   Market Trial Test objectives

Providing market participants the opportunity and tools to verify:

- Technical, functional and operational verification and validation against all B2B and B2M system changes under all POC-related rule and procedure changes, including system changes due to changes to the following procedures:
    - Customer and Site Details Notification Process
    - Meter Data Process
    - Service Order Process
    - One Way Notification Process
    - Consumer Administration and Transfer Solution (CATS)
    - Wholesale, Interconnector, Generator and Sample (WIGS)
    - National Metering Identifier (NMI) standing data schedule
    - B2B e-hub functionality (MSATS Browser, FTP, APIs)

Provide a demonstration of the industry's operational readiness for go-live operation by:

- Participants conducting end-to-end business processes against multiple participants

3.2   Market Trial Test scope inclusions

Market Trial scope inclusions includes industry capability based technical, functional and operational testing as follows:

- Technical verification and validation – determines the technical state of the solution:
    - Validation of the B2M changes, aseXML schema (r35) validation.
    - Validation of the B2B changes, aseXML schema (r36) validation.
    - Validation of MSATS and B2B e-hub changes, connectivity and communication flows, interoperability of infrastructure, screen changes, aseXML schema (r37) update.
- Functional verification and validation – determines the functional state of the solution:
    - Validation of the B2M and B2B solution as matched against required business functionality and business processes. The solution may not mirror production from a complete "go-live" perspective e.g. performed on low volumes of data and accelerated timeframes.
- Operational capability verification and validation – determines the state of the solution from a "go-live" perspective:
    - Verification of the technical, function and operational solution from a go-live perspective, affording market participants an opportunity to exercise internal business processes and applications to achieve the desired outcome prior to "go-live":
        o Changes to business processes as a result of the updated procedures, including customers transfers, meter churn, re-energisation and de-energisation, move-ins, etc.
        o Introduction of new roles.

3.3   Market Trial Test scope exclusions

Market Trial scope exclusions:

- Testing of non-critical business processes (unless otherwise agreed by the impacted participants).
- Testing of participants' back end systems. Reporting during the Market Trial will not refer to any issues found in participant's back end systems.
- Full volume testing.
- Participants' individual agreements with MC's and communications outside of the B2B framework (e.g. notification via email with MC, MPB, etc in place of B2B message) or participants who have not registered for this phase of testing.

4. MARKET TRIAL TEST PREPARATION

As detailed in the Industry Test Strategy, the POC Industry Test Working (ITWG) will drive the test planning and preparation process, as per the ITWG Terms of Reference. All participants taking part in the Market Trial are expected to provide industry test resources to be part of the ITWG.

4.1 Test registration

Each participant is requested to register with AEMO prior to the commencement of the Market Trial test phase. Registration requests should be sent via email to the POC inbox at POC@aemo.com.au. Registration requests should include the information in Appendix A.

4.1.1 Participant ID and roles

The term 'Participant' is used to indicate a unique role that a given business is to adopt for the purpose of testing. For example, where a participating business fulfils the role of LNSP and MDP, these roles are classed as different Participants for testing purposes.

- If an organisation has more than one role (i.e. is more than one 'Participant', then it may need to separately carry out testing for each role (as each role has different transactions).
- If an organisation has more than one participant ID but they are all for the same role, then as long as the participant is using the same set of systems for each ID, the participant would only need to perform testing once for those IDs.
- Participants will detail which participant roles and ID they will be testing under as part of their Test Registration.

Please note that participants must have an **existing participant ID** for each participant role they wish to test under in the industry testing. Intending participants, including organisations undertaking new participant roles, need to follow the process to become registered or accredited in order to be issued a participant ID prior to taking part in industry testing. [15]

4.2 Test tools

HP SaaS Quality Centre (QC) will be used to manage the POC Market Trial execution, including test scenarios, test results and the tracking of test defects. HP SaaS QC will be configured by AEMO with all required information and will be accessible by all participants.

4.3 Test scenarios, scripts and data

With such a large body of participants testing needs to ensure it is able to be effective and achieve outcomes for all parties involved. The approach to defining the test scenarios is based around 80/20 rule with participants nominating the most common scenarios their businesses perform daily as the starting point for defining Market Trial scenarios. A review of this list will allow for scenarios individual businesses consider high risk to be highlighted, and/or added, with the outcome a final list that all parties can test.

The ITWG will be responsible for developing test scenarios, scripts and corresponding data sets.

In terms of scenarios, the scripting and data requirements developed in these workshops will:

- Agree on the test scenarios required for Market Trial, including which scenarios participants intend to test ("intended scenarios").

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[15] Refer to the POC Industry Accreditation & Registration Plan, see http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Power-of-Choice/Readiness-Work-Stream

- Define the subsequent test scripts that will need to be executed.
- Agree on the scope of test execution and test scripts required by participant role (i.e. Retailers, Distributors, Metering Coordinator, Metering Providers, Metering Data Providers, Embedded Network Manager and AEMO).
- Agree on the approach and timing of test script execution.
- Agree on the data required, both baseline and dynamic, to support the execution of test scripts.

4.3.1   Test data

AEMO's pre-production will be refreshed from 31 July to 7 August using production data from 27 July 2017 at 15:00 hrs (AEST). Existing NMIs will be able to be used for most tests and can be sourced from MSATS PreProd once the refresh is complete.

AEMO would have the required configuration data and the NMI ranges for the participants in the pre-production environment.

- With respect to the NMIs, LNSP can create the NMIs (different CR codes) and pass it on to the retailers to execute the functional scenarios as required.
- Participants can identify test data from the existing environment/database as these are existing CR codes and align with other participants and AEMO to ensure data is aligned across systems. The only point to be noted here is since it is existing data, participants will not have an option to select the new Status, Meter Status, Meter Install Codes and Register Status during CR creation.
- Multiple test data sets should be identified for each test script to allow for multiple executions of that test script in case of defects or problems in execution. Data identified will be mapped against every scenario in the data column in HP SaaS QC.

4.3.2   Market Trial Workbook

The Market Trial Workbook will document the test scenarios, data requirements, test participants and test calendar. This will be published on the AEMO website and will be developed in consultation with the ITWG. In addition, the test cases and steps will be uploaded by AEMO to HP SaaS QC in preparation for test execution.

4.4   Test environment

Market Trial Testing will utilise the MSATS pre-production and e-Hub API environment, managed by AEMO. Participants test environments will be as close to a replica of their go-live systems as possible. A diagram of the environment is documented in the Industry Test Strategy document under section 6.4.

The test environment will updated in line with the AEMO published release schedule, the MSATS 46.88 release and the MSATS 46.89 release. The environment will also have the B2B r36 schema changes as documented on the MSATS website.[16]

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[16] See AEMO website http://aemo.com.au/Gas/IT-systems-and-change/Copy-of-aseXML_standards/aseXML-Schemas

5.   MARKET TRIAL TEST EXECUTION APPROACH

5.1   Pre-requisites

New participants will have commenced registration[17] or accreditation[18] activities in order to have their e-Hub and MSATS pre-production ID and credentials issued.[19]

5.2   Entry criteria

Entry criteria for the Market Trial are as follows. The entry criteria relate to individual participants, and AEMO will coordinate and communication readiness between all paired participants to commence testing.

Participants are requested to submit the checklist in Appendix B when ready to commence testing.

- Pre-production environment available:
    - Stable and reliable
    - Adequate internal testing completed to be ready to commence Market Trial.
- Participant credentials issued (for new participants).
- Connectivity testing complete (for new participants and /or new B2B interface).
- Test preparation is complete:
    - Market Trial Test Plan
    - Market Trial Workbook
    - HP Quality Centre configured with all test information
    - Test data preparation is complete
- HP SaaS QC is accessible and useable.
- Appropriately skilled resource capability available to execute and support testing.

AEMO external test lead will confirm the following:

- Market Trial Test Plan and Workbook is complete and delivered to the ITWG.
- HP SaaS QC is configured with all required test information, and is accessible and useable by testing participants.
- Testing participants have confirmed readiness (through the submission of completed entry criteria checklist).

5.3   Exit/Completion criteria

Exit criteria for the text execution phase include:

- Successful completion of all high-priority test scenarios.
- No outstanding severity 1 and 2 defects.
- Any open defects (severity 3 or 4) have agreed resolutions or work around in place.
- Final Test Summary Report completed.

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[17] The Application for Registration as a Metering Coordinator and the Metering Coordinator Registration Guide can be found here : http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Participant-information/New-participants/Application-forms-and-supporting-documentation

[18] The Qualification Procedure for Metering Providers, Meter Data Providers and Embedded Network Managers, along with the Accreditation checklists can be found here: http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-2

[19] Refer to the POC Industry Accreditation & Registration Plan for an overview of these activities. See http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Power-of-Choice/Readiness-Work-Stream

5.4   Test scenario and script execution

Test execution will be undertaken as follows:

- Tests scenarios and scripts will be stored in HP SaaS QC as per the defined test configuration.

- 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 testing will be based on the defined execution calendar.

- Test execution information will be updated in HP SaaS QC as it occurs. This will include test case progress, status and data used.

- An audit trial 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. Where applicable, this information will be maintained in HP SaaS QC.

In addition to updating the HP SaaS QC test case progress and status, participants will update the scenario status in HP SaaS QC as below, which will flow into the Status Traffic Light report which AEMO will circulate prior to the daily test meetings.

- Scenario Status:
    - Completed (green)
    - In progress (yellow)
    - Blocked (red)
    - Failed (red)
    - Not Started

5.5   Market Trial Test cycles

The Market Trial Testing is targeted to be executed over 3 cycles, with each cycle consisting of a defined set of scenarios:

- The objective of cycle 1 is to successfully execute all scenarios scheduled for execution in cycle 1.

- The objective of cycle 2 is to rerun any scenario that failed during cycle 1, if the associated/linked defect fixes are delivered in cycle2, and rerun any scenario that failed to complete execution in cycle 1. Execute all test scenarios scheduled for cycle 2.

- The objective of cycle 3 is to rerun any failed or not completed scenario from the previous two cycles and complete execution of all scenarios defined for cycle 3. Any scenarios that fail during this cycle will aim to be fixed and retested before the end of the cycle.

5.6   Defect management

The overall defect management process is detailed in the Industry Testing Strategy document under Section 7 Defect Management.

5.7   Test process

AEMO will initially schedule daily stand-up meetings for testing participants to discuss test execution progress and defect status. The frequency and length of meetings will be assessed during the test execution phase.

Participants will be expected to update HP SaaS QC with their daily test results by the end of that day, or by 8:00 am (AEST) on the following morning. AEMO will generate the test execution and traffic light status report between 8:00 am and 9:30 am (AEST) and circulate prior to the stand-up meetings.

These meetings will be:

- Scheduled daily 10.00 am (AEST))
- Use the teleconference facilities provided by AEMO and will be chaired by AEMO
- Use a standard agenda:
  - Review planned against actual progress for test execution. Discuss exceptions against planned execution.
  - Review defect status – outstanding defects.
  - Confirm planned tests for the following days.

5.8   Test reporting

The progress of the Market Trial can be monitored on a continuous basis by all market participants using HP SaaS QC. Any regular reports will produced to track the progress of test execution and defect resolution. The format of these reports will be determined by the ITWG as part of the preparation activities. This information, will be presented to the ITWG to track the progress of test execution and defect resolution at the ITWG stand-up meetings.

These reports will include test measurement during the Market Trial and will be based on but not limited to the following metrics agreed by the participants:

- Test execution summary by participant:
  - Number of test scenarios executed versus the number planned
  - Number of passed, failed, blocked or deferred test scenarios versus test scenarios executed
  - Planned count versus actual count (with any exceptions)
  - Planned % versus actual %
- Defect summary will be reported with a focus on status, severity, priority, ownership, participants impacted, version and date detected against and actions required:
  - Open defects and their progressive status
  - Overall by severity and status
  - By participant and severity and status
- Issues and risks

An overall Market Trial Test Completion Report will be written at the completion of the testing period and will be presented to the ITWG and the POC Readiness Working (RWG).

This report will include:

- An introduction highlighting the purpose of the report, the background to the testing and its scope.
- Testing outcomes highlighting a results summary, defects summary, outstanding defects, summary of other outstanding issues and agreed workarounds.
- Recommendations and conclusion.

AEMO will prepare the completion reports using data from HP SaaS QC and inputs provided by participants. Inputs provided by participants would include details on their defect fixes.

5.9   Test support

All requests for support during the Market Trial Test phase should be emailed to the POC inbox (POC@aemo.com.au). Test support will be provided between 9:00 and 17:00 hrs (AEST) on business days. The subject line of the email should contain:

- **HP SaaS QC** for assistance with HP SaaS QC access or operation
- Market Trial for other queries.

APPENDIX A. REGISTRATION

The following information is to be submitted to POC@aemo.com.au

ORGANISATION NAME:

TEST LEAD:

PARTICIPANT DETAILS:

#	Participant role (LNSP, MDP, MC, etc.)	Participant ID/s	Jurisdiction/s	Registration status (existing, in progress, planned)	Targeted commencement data	Planned B2B interface (FTP, API push/push, API push/pull or MSATS Browser)
1	Retailer X	RetX1, RetX2	NSW,QLD	Existing	21 Aug 2017	FTP
2	ENM X	TBA	NSW,QLD	In Progress	1 Sep 2017	API – push/push
3						
4						

Notes:

1) Please add a role for each individual participant role you wish to test under (e.g. in example above Retailer X will test under either RetX1 or RetX2 – not both).
2) If you intend to perform e-hub connectivity testing please be specific with regards to the type of connectivity testing.
3) Add in rows as required.

APPENDIX B. ENTRY CRITERIA

The following information is to be submitted to POC@aemo.com.au

DATE:

ORGANISATION NAME:

TEST LEAD:

PARTICIPANT DETAILS: <please note which participant roles and IDs this entry criteria submission applies to>

ENTRY CRITERIA:

#	Entry Criteria	Achieved (Yes/No)	Comments
1	Pre-production environment available – stable and reliable, adequate internal testing completed to be ready for Market Trial, test version of actual system		
2	B2B interface connectivity confirmed		
3	HP SaaS QC accessible		
4	Test planning in HP SaaS QC completed and understood – Test execution processes, schedule, scenarios/ scripts and test data		
5	Appropriately skilled resource capability available to execute and support testing		