

NEM Reform Industry Testing Working Group

Meeting #14
27 March 2024



1. Welcome

We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.

**We pay respect to their Elders
Past and present.**

Agenda

#	Time	Topic	Presenter
1	10:30-10:35am	Welcome	Chris Fleming
2	10:35-10:40am	Actions & Feedback from Previous Meeting	Chris Fleming
3	10:40-10:45am	March 2024 Metering Exemptions Testing and Go Live Confirmation	Chris Fleming
4	10:45-10:50am	Pre-Prod Refresh Activities & Timings (short term)	Chris Fleming
5	10:50-11:15am	IESS June 2024 Market Trial <ul style="list-style-type: none">• Market Trial Plan Review• Scenarios, schedule & workbook• Market Trial Support Model• BDU Market trial• Test Plan and next steps	Chris Fleming / Amit Kumar / Michael Clements
6	11:15-11:20am	General Questions and Other Business <ul style="list-style-type: none">• PDSE Engagement / updates	Chris Fleming
7	11:20-11:25am	Upcoming Engagements <ul style="list-style-type: none">• Upcoming Meetings	Chris Fleming

Appendix A: Competition law meeting protocol

Appendix B: Industry Testing Approaches

Appendix C: Industry Testing Q&A

Appendix D: IESS Test Strategy Participant Feedback

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2. Actions & Feedback from Previous Meeting

Actions & Feedback from Previous Meeting

(Ref: Item = Meeting number/Agenda item number/Ref)

#	Topic	Action	Responsible	Status
13.5.0.1	IESS June 2024 Market Trial	Participants to provide feedback on the test scenarios by 8 March 2024 by emailing NEMReform@aemo.com.au.	Participants	
13.5.0.2	IESS June 2024 Market Trial	AEMO to apply a fix for rejecting FCAS bids in PDSE will be deployed, noting a new bug regarding the wording of error messages that is being updated by AEMO. Resolution of this is mid-March TBC	AEMO	

The latest meeting minutes and materials are available on the [NEM Reform Industry Testing Working Group](#) webpage.

3. March 2024 Metering Exemptions Testing Update

Metering Exemptions Industry Testing Update

- Industry Testing for Metering Exemptions now concluded.
 - Requests to advance exemptions in preprod to made by emailing NEMReform@aemo.com until this function is handed over to BAU.
- Metering Exemptions successfully implemented in Production on 3rd March
- No significant outstanding issues however there will be a maintenance release in July with some minor defect fixes.

4. Pre-Prod Refresh Activities & Timings



Pre-Prod Refresh for Market Trial

Proposed Dates and outage Timings

- March Pre-prod Wholesale and Retail refresh completed on schedule.
 - Pre-prod Wholesale refreshed from production as at 7th February.
 - Preprod Retail refreshed from production as at 4th March.
 - Several settlement runs will be re executed in MSATS during the Market Trial preparations to align the data in the Wholesale system.
- Further outage planned for 2nd April to enable critical infrastructure updates. Timing will be communicated via standard AEMO market notifications.
- Next pre-prod refresh is scheduled for 1st July to 5th July to support the September 2024 release (Retail refresh only).

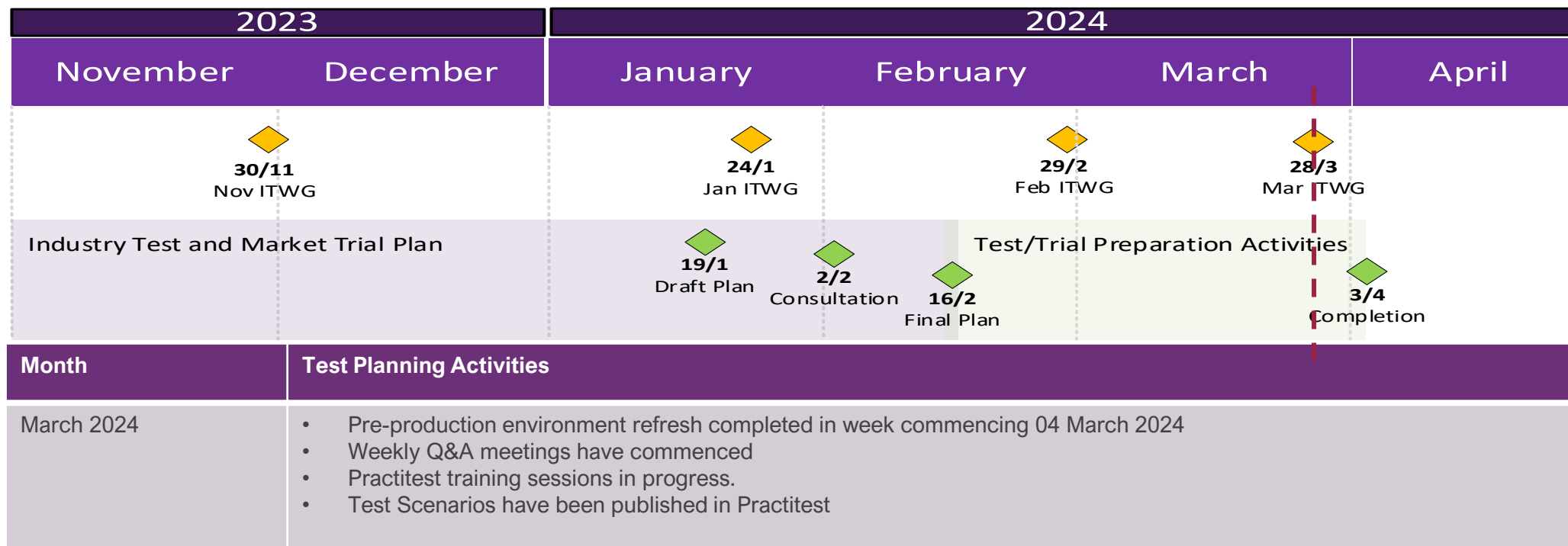
5. IESS June 2024 Market Trial

Integrating Energy Storage Systems (IESS)

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

- On 02 Dec 2021, the AEMC made a Final Determination on the IESS rule. The change seeks to better integrate storage and aggregate systems into the National Electricity Market (NEM).
- IESS rule comprises of 4 distinct high-level changes - the first 2 have been implemented and delivered.
- IESS industry testing and market trials plan relates to the IESS June 2024 rule commencements.
- Final [Industry Testing and Market Trial strategy](#) has been completed and published, in consultation with industry.

IESS June 2024 Industry Test and Market Trials Planning



Test Scenarios for Market Trial

These are the proposed scenarios for each of the phases during market trial. Please review and start thinking which test scenarios you will be executing. This information has been used to form the market trial workbook and setup the testing tool (Practitest).

Type	DBs - Reason for Market Trials	TS unique #	Reference Doc	E2E Test Scenario	Market
PHASE 1 (2 APRIL 2024 - 12 APRIL 2024)					
IRP	New IRP registration category	IRP01	4.1.2	Existing Participant converting from SGA to IRP	AEMO, FRMP, Generator
		IRP02	4.2.1, 4.2.2	New IRS Participant converting from current category to IRP	AEMO, FRMP, Generator
		IRP03	4.3.1	Existing IRS (BESS and pumped hydro) to IRP	AEMO, FRMP, Generator
		IRP04	4.3.1	Existing Non-Customer Load Participants to IRP	AEMO, FRMP, Generator
		IRP05	4.3.2	Non-transitioning generating system Participants to IRP	AEMO, FRMP, Generator
NCC		NCC01		NCC from GENERATR to DGENERATR.	AEMO, FRMP, Generator
PHASE 2 (3 APRIL 2024 - 6 MAY 2024)					
Settlements	Prudential Daily files (estimation)	S01		Process daily settlement runs	FRMP, Generator
	Prelim	S02		Process Preliminary settlement runs	FRMP, Generator
	Final	S03		Process Final runs	FRMP, Generator
	Revision 1	S04		Process Revision 1 settlement run	FRMP, Generator
PHASE 3 - (19 APRIL 2024 - 6 MAY 2024)					
		BDU01	Pre-cutover	BESS Participant submit 0 bids on BDU	AEMO, Generator
		BDU02	Pre-cutover	BESS Participant submit real bids on gen DUID's	AEMO, Generator
		BDU03	Pre-cutover	BESS Participant submit real bids on load DUID's	AEMO, Generator
		BDU04	Cutover	BESS Participant submit real bids on load DUID dispatch until cutover time	AEMO, Generator
		BDU05	Cutover	BESS Participant submit real bids on gen DUID dispatch until cutover time	AEMO, Generator
		BDU06	Post-cutover	BESS Participant submit real bids on BDU DUID (2 duid to single bdu)	AEMO, Generator
		PASA01	Pre-cutover	Submit MTPASA offer submission for BDU	AEMO, Generator
		PASA02	Pre-cutover	Submit MTPASA offer submission for DUID	
		PASA03	Cutover	Submit MTPASA offer submission for DUID	AEMO, Generator
		PASA04	Post-cutover	Submit MTPASA offer submission for BDU DUID	AEMO, Generator

Test Schedule

A schedule has been developed that details the testing activities during market trial for all the 3 phases, this includes feedback from participants from prior ITWG meetings.

IESS Market Trial	1-Apr-24	2-Apr-24	3-Apr-24	4-Apr-24	5-Apr-24	6-Apr-24	7-Apr-24	8-Apr-24	9-Apr-24	10-Apr-24	11-Apr-24	12-Apr-24	13-Apr-24	14-Apr-24	15-Apr-24	16-Apr-24	17-Apr-24	18-Apr-24	19-Apr-24	20-Apr-24	21-Apr-24	22-Apr-24	23-Apr-24	24-Apr-24	25-Apr-24													
METERING ESTIMATION FILE							Mock Go-Live																															
Estimate settlement billing run							15-Feb																															
Initial							8-Feb	9-Feb	10-Feb							11-Feb	12-Feb	13-Feb	14-Feb	16-Feb							17-Feb	18-Feb	19-Feb	20-Feb	21-Feb					22-Feb	23-Feb	24-Feb
Preliminary							03/02 - 07/02								08/02 - 12/02								11/02 - 15/02												22-Feb		23-Feb	24-Feb
Final							2024Wk5 28-Jan - 03 Feb		Feb04-10 Week 6						2024Wk5 28-Jan- 03 Feb								2024Wk7								2024Wk8						2024Wk8 incl. direction payment	
Bidding																																						
Verify submission of bids pre-cutover	*																																					
Verify submission of bids on cutover day																									*													
Verify submission of bids post-cutover																																						
Retail																																						
Verify NMI class has updated NCC	*																																					
Verify participant category change to IRP	*																																					
Settlement Reports																																						
Verify settlement reports							*												*												*		*					
Code Drops (Defect Fixes or Releases)																																	*		*			

Green represents old settlement calculations
 Yellow represents transition period
 Purple represents new settlement calculations

Test Planing and Next Steps

- Updated version of the test plan and scenarios have been issued.
- Follow-up Practitest session will be run on 28 March.
 - Please email NEMReform@aemo.com.au to register for the training or if you have any Practitest access issues.
- Test scenarios for the Market trial available in Practitest from COB 25 March.
- Daily stand-ups to support the Market Trial to commence 2 April.

Pre-production technical testing

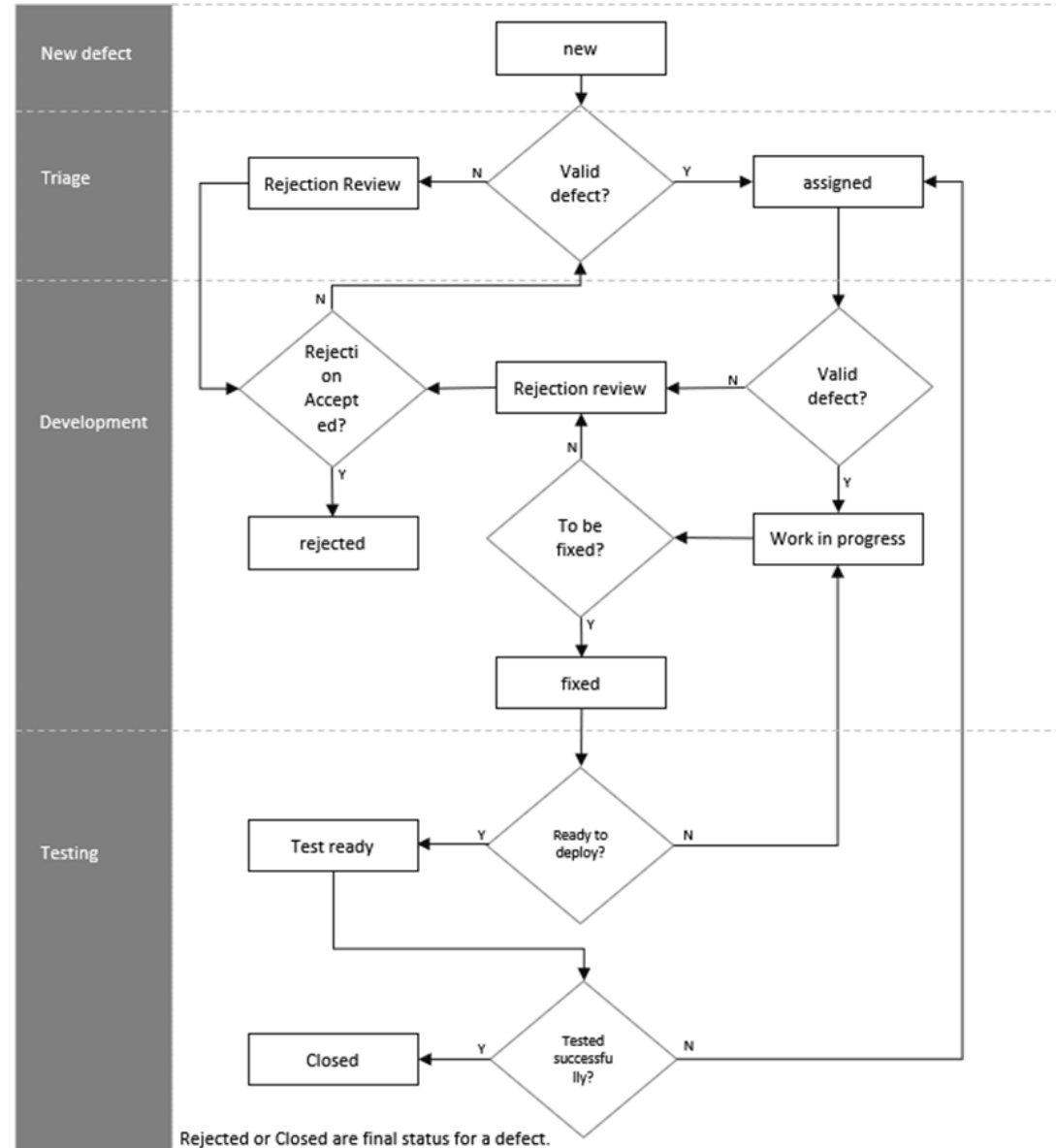
- Pre-production technical testing has commenced.
- Technical team has verified that the applications are up and running.
- For each report run we will communicate the runs in the market trial Q&A sessions.
- If you don't receive any reports, please raise in the market trial Q&A sessions.
 - Email NEMReform@aemo.com.au if you don't have these meetings in your calendar

Defect flow for Market Trial

Any access to environment, certificates or whitelisting please raise a ticket with AEMO support hub.

If you have a functionality issue, please raise a defect in Practitest.

- Market trial defects to be raised via Practitest system.
- Support hub queues and emails will not be used for Market Trial defects.
- Support Hub should only be used for general access or availability issues
- General market trial questions via NEMReform@aemo.com.au or via the Q&A sessions



Support arrangement during Market Trials

- During market trial we will have a daily stand-up at 10:30am AEDT.
- This meeting will go for 45 minutes to discuss progress, issues and defects.
- Invitations are being sent for the stand-ups
 - Please email NEMReform@aemo.com.au if you haven't received these invitations by COB 25 March and would like to attend.

BDU Market Trial Milestones

- BDU registration for pre-production concluded 08/03/2024
- Brownfield BDU units available in pre-production 03/04
- Simulated cutover starting from 16/04/2024.
- Planning 2 cutover tranches (exact timings are TBC)
 - Tranche 1 to commence in late April
 - Tranche 2 to commence in early May
- Market trial ends 24/05/2024.

Participant Development Support Environment (PDSE)

- [Participant Development Support Environment fact sheet](#)
- This environment is additional to AEMO's pre-production and allows market generators, market customers and market small generation aggregators to test their system changes against beta versions of key AEMO system changes in advance of the IESS market testing period.
- The PDSE has not been built to replicate or replace pre-production. It is a dedicated IESS environment to support participants in the early stages of their development work, particularly the development testing of interfaces to AEMO's updated market systems data models.
- Participants wishing to use the PDSE must be a registered participant/user in pre-production.
- Further releases deployed to the PDSE to resolve key outstanding issues.
- Continuing to provide support to PDSE through to 3rd June 2024

6. Upcoming Engagements

Upcoming Engagements

February						
M	T	W	T	F	S	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

March						
M	T	W	T	F	S	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

April						
M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

May						
M	T	W	T	F	S	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NEM Reform Program Committees/Forums	
Executive Fourn	
Reform Delivery Committee	
Reform Delivery Committee Collaborative Workshop	
Program Consultative Forum	
Electricity Wholesale Consultative Fourn	
Implementation Forum	
Industry Testing Working Group	
NEM Reform Initiative Specific	
Foudational and Strategic Initaitives Focus Group	
IESS Metering Service Providers Information Session	
IESS Integrated Resource Provider briefing and Q&A	
IESS BAU Focus Group	
Other Forums	
Electricity Retail Consultative Forum	
Other	
National Public Holiday	
State/Territory Public Holiday	

Note: All NEM Reform related committees, forums and working group invitations for CY2024 have been issued and are referenced on [AEMO's industry calendar](#).

8. General Questions and Other Business



NEMReform@aemo.com.au



[NEM Reform Industry Testing Working Group](#)



Appendix A: Competition law meeting protocol

AEMO Competition Law - Meeting Protocol

AEMO is committed to complying with all applicable laws, including the Competition and Consumer Act 2010 (CCA). In any dealings with AEMO regarding proposed reforms or other initiatives, all participants agree to adhere to the CCA at all times and to comply with this Protocol. Participants must arrange for their representatives to be briefed on competition law risks and obligations.

Participants in AEMO discussions **must**:

- Ensure that discussions are limited to the matters contemplated by the agenda for the discussion
- Make independent and unilateral decisions about their commercial positions and approach in relation to the matters under discussion with AEMO
- Immediately and clearly raise an objection with AEMO or the Chair of the meeting if a matter is discussed that the participant is concerned may give rise to competition law risks or a breach of this Protocol

Participants in AEMO meetings **must not** discuss or agree on the following topics:

- Which customers they will supply or market to
- The price or other terms at which Participants will supply
- Bids or tenders, including the nature of a bid that a Participant intends to make or whether the Participant will participate in the bid
- Which suppliers Participants will acquire from (or the price or other terms on which they acquire goods or services)
- Refusing to supply a person or company access to any products, services or inputs they require

Under no circumstances must Participants share Competitively Sensitive Information. Competitively Sensitive Information means confidential information relating to a Participant which if disclosed to a competitor could affect its current or future commercial strategies, such as pricing information, customer terms and conditions, supply terms and conditions, sales, marketing or procurement strategies, product development, margins, costs, capacity or production planning.

Appendix B: Industry Testing Approaches

Approaches to Industry Testing

AEMO provides opportunity for Industry participants to test their updated systems and processes prior to release of AEMO updates into production.

The approach to the level of co-ordination, integrated planning and scenario management that is provided is dependant on a number of factors including:

- Impact to end-to-end participant process flows
- Ability of impacted participants to successfully test changes without AEMO or other participant co-ordinated activity
- Number and range of participants impacted by release

The approaches to Industry testing are described as:

Type of market testing	Description	Example
Industry testing	Self-testing of functionality such as connectivity, and/or coordinated multi-party testing of functional scenarios	Testing a change request (CR) or processing a reallocation or bid submission
Invitation industry testing	Coordinated testing of business process scenarios with a select number or subset of participants with systems ready for testing.	Testing NMI transfer Process
Market trials	Coordinated multi-party end-to-end testing of business process scenarios	Meter exchange involving CRs, service orders and 5-minute meter reads

In all cases involvement in testing is voluntary on participants behalf.

Agreement on approach to the type of industry testing for a release is conducted through the Implementation forum and Industry Test Focus Group along with support arrangements during the test period.

Appendix C: Industry Testing Q&A

Q&A for Industry Testing

Question	Answer
How will the change to the NMI be sequenced in the BDU transition (e.g. would the load NMI be decommissioned first before it becomes the generator NMI)	Details on transition specified in BDU Transition Plan
Where can I find educational material to upskill prior to the Market Trial	Educational materials are available in Participant Toolbox Participant Toolbox BDU Readiness Focus Group also provides information.
Will AEMO have enough contingency to run additional settlement runs if fixes are required?	There will be multiple runs of settlements and code drops in between for fixes. The last week has also been left blank for any additional reruns of settlements. Refer to: 5.2 Test Schedule
Can we remove Initial settlement runs from the Market Trial schedule to free up more time?	AEMO uses initials for prudential dashboard updates and is required for AEMO calculation purposes.
Can regression tests be run on some MSATS standing data changes and notifications that are not impacted by the NCC?	AEMO's plan is to send the notification for the impacted NCC's. Participants will have access to preprod to validate the changes during the market trial period. Participants may need to reach out to a meter data provider for any bilateral testing.

Q&A for Industry Testing

Question	Answer
How many individual BDU's can be tested by participants as part of market trial	At this stage 1 BDU per participant is the plan.
How many direction payments will be applied during market trial	2 direction payments will be applied.
Is there a possibility in running a final or prelim using the old settlement method	Yes, we have updated the schedule to include a final at the start of market trial, this will use the old settlement method.
Can participants test post market trial for internal testing	Yes, post market trial you can utilise the system for you own testing, however AEMO will not be coordinating or managing any specific market trial testing during this time.
Is it possible to have defect fixes before running the next settlement run (if a problem is detected)	We have updated the schedule to incorporate defect fixes before each new settlement run. This will help the testing go smoothly.

Appendix D: IESS Test Strategy Participant Feedback

Participant Feedback

Participant feedback for AEMO's IESS Test Plan

AEMO QUESTION	PARTICIPANT FEEDBACK	AEMO RESPONSE
PHASE 1 - IESS standing data changes		
Is the timeframe sufficient to confirm the standing data changes are successful?	No timeframe has been provided by AEMO in this pack that we can see. The original suggestion of 4 weeks for the month of April would seem more than adequate.	We will run standing data on the first week. Beyond that period, you can confirm standing data changes during entire market trial period. Standing data updates from AEMO perspective will allow settlements from week 2. There is no impact to settlement runs if participants have not ingested the standing data changes into their system. Timeframe is described in test plan. Refer to: 3.2 Detailed Scope 5.2 Test Schedule
Are there any updates any participants want to make during this time?	No plans for Origin to make updates at this stage. But can AEMO confirm what sort of "updates" do you have in mind? No Yes - We will update impacted data points in our test environments.	Participants are welcome to make further standing data changes to their own internal testing. AEMO is expecting updates into participant test systems.

Participant Feedback

Participant feedback for AEMO's IESS Test Plan

AEMO QUESTION	PARTICIPANT FEEDBACK	AEMO RESPONSE
PHASE 1 - IESS standing data changes		
<p>What timeframe is needed to confirm the standing data changes are successful?</p>	<p>We would require 2 weeks of testing to confirm the standing data changes.</p> <ul style="list-style-type: none"> • If the impacts are only data related then the testing would require 1-2 weeks to enable several rounds. • If the impacts are to data and downstream processes (We are currently assessing) then additional time would be needed of 3-4 weeks. 	<p>We will run standing data on the first week. Beyond that period, you can confirm standing data changes during entire market trial period.</p> <p>Standing data updates from AEMO perspective will allow settlements from week 2.</p> <p>There is no impact to settlement runs if participants have not ingested the standing data changes into their system.</p> <p>Timeframe is described in test plan. Refer to: 3.2 Detailed Scope 5.2 Test Schedule</p>
	<p>The Market Trial duration is enough.</p>	<p>N/A</p>

Participant Feedback

Participant feedback for AEMO's IESS Test Plan

AEMO QUESTION	PARTICIPANT FEEDBACK	AEMO RESPONSE
PHASE 2-Settlements & Prudential Calculations		
Do participants want to run a settlement run prior to IESS mock go live using the old settlement method (Regression).	<p>Yes (Multiple responses)</p> <p>We would prefer that at least a Prelim settlement run is performed using the old method. We do not use Initial runs.</p> <p>Note: We assume that these settlement runs will be using the same data that production settlement runs used, so a comparison between PreProd and Production settlement runs for the same settlement week and run type (e.g. Prelim) can be made, with AEMO able to account for minor discrepancies (e.g. some differences in meter data)</p>	<p>We have scheduled a prelim & final use the old settlement period for comparison purposes during the first few weeks of Market Trials.</p> <p>Yes the settlement runs will be using the same data as production for the same periods.</p> <p>Refer to: 5.2 Test Schedule</p>
Are there enough settlement runs as we are running an initial, prelim, final and revision?	<p>If there are minimal to no issues, then this will be sufficient. If there are issues, then additional settlement runs may be required.</p> <p>At this stage it looks like enough runs.</p>	<p>Additional rerunning of settlement runs are available.</p> <p>Refer to: 5.2 Test Schedule</p>
Do participants want longer to review results between runs?	<p>The timeline does seem tight to review the results, and if there are issues found there does not seem to be any time for AEMO to make fixes before the next settlement run.</p> <p>Is AEMO's approach to run a settlement, apply any fixes, then run the next settlement, and so on?</p> <p>Based on the market trial calendar there appears to be enough time to identify if there is an issue. However, there is limited contingency for resolution and rerunning if issues are encountered.</p>	<p>There are multiple runs of settlements and code drops in between for fixes. The last week has also been left blank for any additional reruns of settlements.</p> <p>Refer to: 5.2 Test Schedule</p>

Participant Feedback

Participant feedback for AEMO's IESS Test Plan

AEMO QUESTION	PARTICIPANT FEEDBACK	AEMO RESPONSE
PHASE 2-Settlements & Prudential Calculations		
Do we plan for any re-run of settlements?	Is the question do we plan to re-run the Prelim (for example) again for the same settlement week, or to run it for a new settlement week? We suggest planning for contingency should additional settlement runs be required following any fixes	AEMO will rerun prelims posted as finals for any reruns required for testing. This can be done after a code drop if time permits however, we have the last week of market trial as contingency. Refer to: 5.2 Test Schedule
	Yes - defined 'as needed' for if issues arise.	AEMO will rerun prelims posted as finals for any reruns required for testing. This can be done after a code drop if time permits however, we have the last week of market trial as contingency. Refer to: 5.2 Test Schedule
Do participants want to see any extra settlement runs?	Only if there are issues that are not resolved within the current planned runs	If required, the contingency period will be available for any re-runs. Refer to: 5.2 Test Schedule
	Yes - if possible, within the schedule window.	If required, the contingency period will be available for any re-runs. Refer to: 5.2 Test Schedule
Is one direction payment enough for participants to review?	Origin would prefer two direction payments	Two direction payments incorporated into the schedule Refer to: 5.2 Test Schedule
	No - We would need to see 'one direction' payments as well as 'two direction'.	2 Direction payments have been incorporated into test schedule Refer to: 5.2 Test Schedule

Participant Feedback

Participant feedback for AEMO's IESS Test Plan

AEMO QUESTION	PARTICIPANT FEEDBACK	AEMO RESPONSE
PHASE 3 - Bidirectional Unit bidding and dispatch		
Is transition of 1 BDU per participant for participants sufficient?	Yes	N/A
Are there other test scenarios participants wish to execute?	No <ul style="list-style-type: none">• End of settlement run (2 BDU: 1 import and 1 export)• Second run (1 BDU: both import and export)	N/A We will transition one per type in tranche1. Tranche2 is under consideration



For more information visit

aemo.com.au