

NEM Reform Implementation Forum

Meeting #18 23 January 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, present and emerging.





#	Time	Topic	Presenter
1	1:00-1:05pm	Welcome	Greg Minney
2	1:05–1:10pm	Actions & Feedback from Previous Meeting	Greg Minney
3	1:10-1:20pm	2024 / 2025 Release Summary	Greg Minney
4	1:20-1:40pm	 March 2024 release Progress Update Industry Testing Approach – formal Industry Test Industry Go Live Plan 	Chris Fleming
5	1:40-1:50pm	 June 2024 Release Release update Pre-prod refresh timing & approach Contingency approaches & trigger points Industry readiness update Market Trial Planning - draft plan & ITWG involvement 	 Greg Minney Greg Minney Greg Minney Carla Ziser / Emily Brodie Chris Fleming
6	1:50-2:00pm	August 2024 Release • SCADA Lite – Scope / Context / <milestones< th=""><th>Greg Minney</th></milestones<>	Greg Minney

#	Time	Topic	Presenter
7	2:00-2:15pm	September 2024 Release Retail Improvements – Scope & Timings / Milestones – including Spec timings	Greg Minney
8	2:15-2:20pm	December 2024 Release / June 2025 FPP Release Progress Summary Industry Readiness Approach	Oliver Derum Karen Wilbrink
9	N/A	Other Initiatives IDAM,IDX & Portal Consolidation Business Case Process (For Noting)	Noting
10	2:20-2:40pm	 Stakeholder Engagement Stakeholder Sentiment Survey – Verbal Update 2024 Industry calendar 	Monica Morona
11	2:40-3:00pm	General Questions & Other Business	Greg Minney

Appendix A:

Competition law meeting protocol and AEMO forum expectations



2. Actions & Feedback from Previous Meeting

Actions



(Item = Meeting # - Agenda # - Reference)

Item	Topic	Action	Responsible	Status
16.5.0.1	November 2023 Release	AEMO to assess the volume of NMIs without a structured address in MSATS and consider LNSP reporting	AEMO	Closed

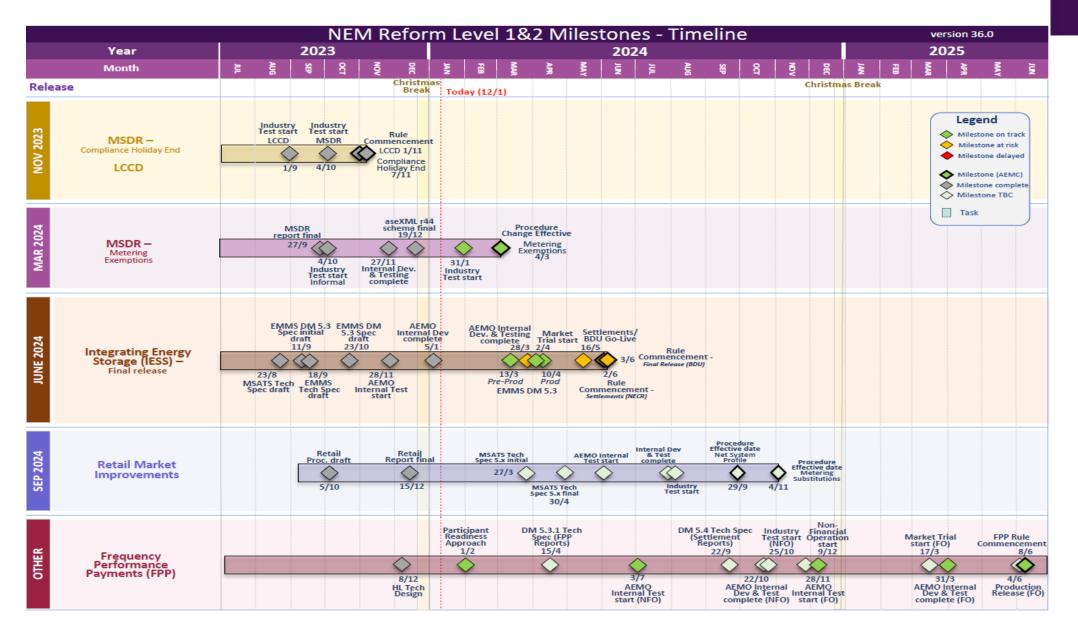
The latest meeting minutes and materials are available on the <u>Implementation Forum</u> webpage.



3. 2024 / 2025 Release Summary

Release Summary milestones







4. March 2024 Release

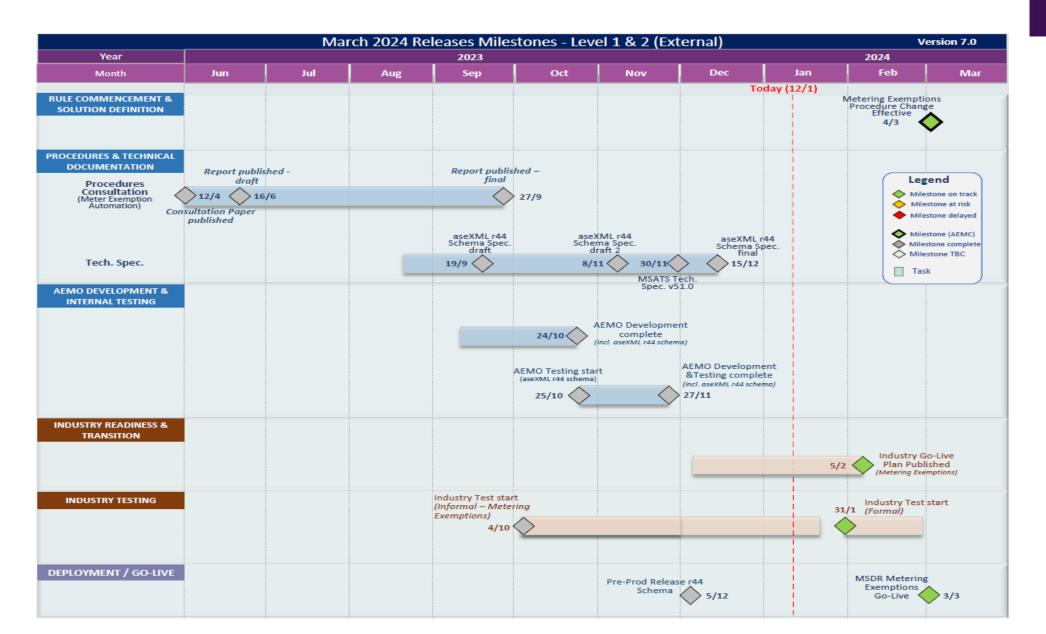


Metering Exemptions Automation

- Final version of the r44 B2M Schema has been published and can be found <u>here</u>
- MSATS r44 B2M schema changes were deployed into Pre-prod 5/12.
- MSATS defect release in preprod is being planned for 30th January
- Informal Industry Testing
 - Commenced on 04/10/23 and will continue thru to the end of January 2024.
 - Will give participants an opportunity to shakedown their application changes and new business processes supporting the Metering Exemption automation.
- Formal Testing
 - Will run from 31/01/24 to 1/03/24
 - Twice weekly Q&A sessions will recommence on Thursday 25/01.
 - Testing will not be structured but MCs are encouraged to ensure that they can manage their Metering Exemption processes via the new UI or by the new APIs.
 - Participants can confirm receipt CR5101 notifications.
 - AEMO will support the formal testing by advancing the statuses of exemptions on request.
- Draft Go-live plan for March 2024 has been distributed to participants for review. Feedback from Participants requested by 22/01/2024. The final version is due 06/02/2024.
- Production effective date for Metering Exemptions 4/03/24.

March 2024 Milestones Timeline





Metering Exemption – Milestone Table



		March 2024	4 - Level 1 8	& 2 Milestone	es (External)			
Level	Milestone ID	Milestone	Release	Target Date	Expected Date	RAG	Tentative / Confirmed	Commentary
Level 2	MSD-206	aseXML r44 Schema Specification published draft	March 2024	19-Sep-2023	19-Sep-2023		Confirmed	
Level 1	MSD-101	Industry Test start (Informal)	March 2024	4-Oct-2023	4-Oct-2023		Confirmed	
Level 2	MSD-208	AEMO Development complete (incl. aseXML r44 schema)	March 2024	13-Oct-2023	24-Oct-2023		Confirmed	
Level 2	MSD-210	AEMO Testing start (aseXML r44 Schema)	March 2024	16-Oct-2023	25-Oct-2023		Confirmed	
Level 2	MSD-211	aseXML r44 Schema Specification published final draft 2	March 2024	23-Oct-2023	8-Nov-2023		Confirmed	
Level 1	MSD-104	AEMO Development & Testing complete (incl. aseXML r44 Schema)	March 2024	15-Nov-2023	27-Nov-2023		Confirmed	
Level 2	MSD-215	MSATS Technical Spec. v51.0 published	March 2024	5-Dec-2023	30-Nov-2023		Confirmed	
Level 2	MSD-212	Pre-Production Release - aseXML r44 Schema	March 2024	22-Nov-2023	5-Dec-2023		Confirmed	
Level 2	MSD-214	aseXML r44 Schema Specification published final	March 2024	4-Dec-2023	19-Dec-2023		Confirmed	
Level 1	MSD-105	Industry Test start (Formal)	March 2024	31-Jan-2024	31-Jan-2024	Green	Confirmed	
Level 2	MSD-213	Industry Go-Live Plan published (Metering Exemptions)	March 2024	5-Feb-2024	5-Feb-2024	Green	Confirmed	
Level 1	MSD-106	MSDR Metering Exemptions Go-live	March 2024	3-Mar-2024	3-Mar-2024	Green	Confirmed	
Level 1	MSD-107	Metering Exemptions Procedure Change Effective	March 2024	4-Mar-2024	4-Mar-2024	Green	Confirmed	



5. June 2024 Release



Integrating Energy Storage Systems into the NEM

Emily Brodie / Greg Minney/ Carla Ziser / Chris Fleming







1. Release update



2. Pre-prod refresh



3. Contingency approaches



3. Industry readiness update



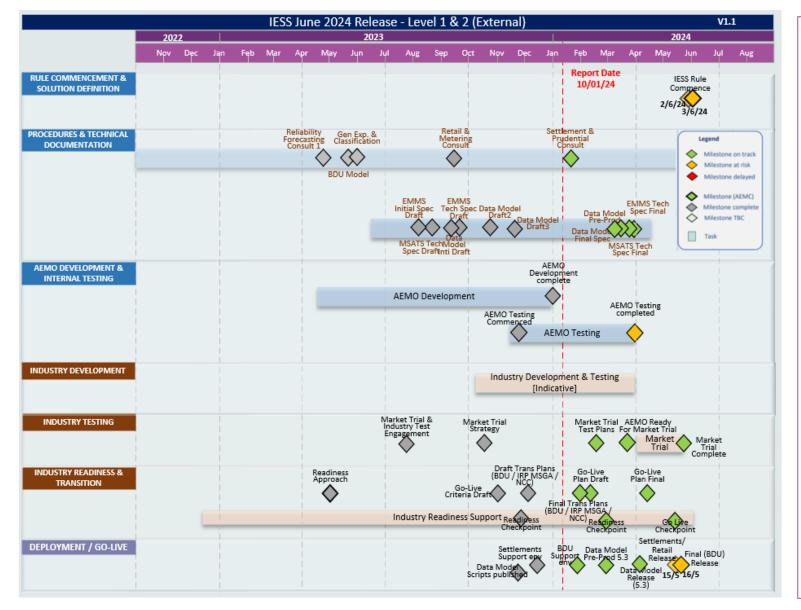
5. IESS market trial planning



1. Release Update & Milestone Review

Greg Minney

1. Release update







RELEASE COMMENTARY

- Although most components of the schedule are green, the overall
 project status is rated AMBER. This recognises no schedule
 contingency for complex AEMO delivery program. Interim milestones
 and progress will continue to be tightly managed against go-live
 criteria.
- AEMO development is complete for all participant facing components
- **AEMO internal testing** underway and on-track: scheduled to reflect individual component status to maintain overall timeframes and scope
- <u>Procedures consultation</u> in progress via EWCF/ ERCF* and on track.
 - Settlements and procedures consultation on track

Tech specs on track:

- Updated EMMS tech spec Data Model v5.3 published 20 Nov 2023
- Next tech spec update scheduled for Friday 19th Jan

Industry testing

- Settlements component of PDSE made available Fri 15 Dec
- BDU component of PDSE on track for Mon 22 Jan
- Draft Data model scripts for PDSE released Wed 22 Nov
- Market trial Plan to be released Fri 19 Jan

Industry readiness:

- 3x draft transition plans released Fri 01 Dec. Discussed below.
- Updated <u>Data Model Settlements mapping explainer</u> published Fri 17 Nov 2023
- Contingency plans to be discussed in this agenda
- Draft Industry go-live plan commenced

^{*}Electricity wholesale / retail consultative forums

IESS June Milestone Table - Past





Level	Milestone ID	Milestone	Target Date	Expected Date	RAG	Tentative / Confirmed	Comments
evel 1	IES-100	AEMC Final Determination Published (Integrating energy storage systems into the NEM)	2-Dec-2021	2-Dec-2021	Complete	Committee	
evel 2	!IES-110	IESS High level Design final	7-Jul-2022	7-Jul-2022	Complete		
	IES-210	Reliability Forecasting Consultation 1	28-Apr-2023	28-Apr-2023	Complete		
evel 1	IES-120	BDU Model Finalised	31-May-2023	31-May-2023	Complete		
evel 2	IES-211	Guide to Gen. Exp. & Classification - Final documents published	1-Jun-2023	1-Jun-2023	Complete		
	IES-300	MSATS Technical Specification draft available	7-Aug-2023	23-Aug-2023	Complete		
evel 2	IES-301	EMMS Data Model 5.3 specification - Initial Draft	11-Sep-2023	11-Sep-2023	Complete		
	IES-302	EMMS June 24 Technical Specification (Draft)	18-Sep-2023	18-Sep-2023	Complete		
	IES-213	Retail Metering Procedures Final Published	18-Sep-2023	18-Sep-2023	Complete		
	IES-303	Industry Test and Market Trials Strategy Draft published	22-Sep-2023	22-Sep-2023	Complete		
	IES-304	EMMS Data Model 5.3 specification - Draft 2	9-Oct-2023	23-Oct-2023	Complete		
	IES-305	Industry Test and Market Trials Strategy complete	17-Oct-2023	17-Oct-2023	Complete		
evel 2	IES-306	Go-Live Criteria draft/establish	30-Oct-2023	30-Oct-2023	Complete		
evel 2	IES-307	EMMS Data Model 5.3 specification - Draft 3	13-Nov-2023	20-Nov-2023	Complete		
	IES-308	AEMO Internal Testing commenced	20-Nov-2023	28-Nov-2023	Complete		
		Draft Data Model 5.3 scripts published	22-Nov-2023	22-Nov-2023	Complete		
	IES-310	Initiative Readiness Checkpoint	28-Nov-2023	28-Nov-2023	Complete		
	IES-311	Transition Plan Draft (BDU / IRP MSGA / NCC)	15-Dec-2023	1-Dec-2023	Complete		
		Settlements Participant Support Environment available	15-Dec-2023	15-Dec-2023	Complete		
		AEMO Development complete	22-Dec-2023	5-Jan-2024	Complete		Participant facing components complete this perioc

IESS June Milestone Table: Future





IESS Project - Level 1 & 2 Milestones (External)

Level	Milestone ID	Milestone	Target Date	Expected Date	RAG	Tentative / Confirmed	Comments
	IES-313	BDU Participant Development Support Environment available	22-Jan-2024		Green	Confirmed	
	IES-314	Settlements & Prudentials Procedures published	29-Jan-2024		Green	Confirmed	
	IES-315	Transition Plan Final (BDU / IRP MSGA / NCC)	31-Jan-2024		Green	Confirmed	Draft Published 1/12
	IES-316	Market Trial Test Plan complete	16-Feb-2024		Green	Confirmed	
	IES-317	Industry Go-Live Plan Draft published	26-Feb-2024		Green	Confirmed	
	IES-218	EMMS Data Model 5.3 Released to Pre-Production	27-Feb-2024	13-Mar-2024	Amber	Confirmed	MIlestone adjusted to accommodate planned pre-prod refresh for IESS Market Trial
Level 1	IES-318	Initiative Readiness Checkpoint	1-Mar-2024		Green	Confirmed	
Level 1	IES-319	EMMS Data Model 5.3 final specification available	12-Mar-2024		Green	Confirmed	
Level 2	IES-107	AEMO Development & Testing complete	28-Mar-2024		Amber	Confirmed	Compressed Quality Assurance timeline.
	IES-320	AEMO Ready for Market Trial	2-Apr-2024		Green	Confirmed	
Level 1	IES-321	MSATS Technical Specification final available	2-Apr-2024		Green	Confirmed	
	IES-322	EMMS Settlement Technical Specification final	2-Apr-2024		Green	Confirmed	
	IES-108	Market Trial start	2-Apr-2024		Green	Confirmed	
Level 2	IES-219	EMMS Data Model 5.3 Released to Production	10-Apr-2024		Green	Confirmed	
Level 1	IES-214	Reliability Forecasting Consultation finalised			N/A	Confirmed	Minor and/or Administrative change. no Particpant impact
Level 2	IES-323	Settlement Certification complete	19-Apr-2024	29-Apr-2024	Amber	Confirmed	Minor schedule update, Solution Readiness not impacted, issues if any to be remediated prior go-live decision,
Level 2	IES-324	Industry Go-Live Plan Final published	19-Apr-2024		Green	Confirmed	
	IES-325	Go-Live Checkpoint	1-May-2024		Green	Confirmed	
	IES-326	Market Trial complete	24-May-2024		Green	Confirmed	
	IES-220	IESS Settlements Go-Live	2-Jun-2024	15-May-2024	Amber	Confirmed	Deployment of code prior to rule commencement. Reflects current scheduling. Amber reflection of overall schedule
Level 2	IES-327	Rule Commencement Date - Settlements [NECR]	2-Jun-2024		Amber	Confirmed	Reflects compressed schedule
Level 2	IES-221	IESS BDU Go-Live	3-Jun-2024	16-May-2024	Amber	Confirmed	Deployment of code prior to rule commencement. Reflects current scheduling. Amber reflection of overall schedule
	IES-109	IESS Final Release [BDU] - Rule Commencement	3-Jun-2024		Amber	Confirmed	Reflects compressed schedule





2. Pre-Prod Refresh Timing & Approach

Greg Minney





Proposed Dates and outage timings

- Preprod Wholesale and Retail to be refreshed from production from 4 March
- Outage window will be 4th March to COB 8th March 2024
- Two additional outages are being planned for late February (dates TBC) to enable some critical software and infrastructure updates. These outages will each be less 8 hours in duration.

Effective dates of refreshes

- Pre-prod Wholesale will be refreshed from production as at 7th February
- Preprod Retail will be refreshed from production as at 4th March
- On completion of the refreshes, several settlement runs will be re executed in MSATS to align the data in the Wholesale system.





3. Contingency Approaches & Trigger Points

Greg Minney



Contingency approach for IESS June release



- The Go-Live criteria for IESS June release highlights the dependency on AEMO solution and business readiness to support the implementation of IESS on the 2nd (Settlements) and 3rd of June 2024 (BDU)
- The progress and go-live checkpoint conducted 1 December 2023 on-track progress against those criteria, and therefore, no consideration of a rule-based change to the implementation date was required
- The attached contingency approaches identify the proposed approach should scenarios arise prior to implementation that impact either the readiness of elements of the initiative, the action to be taken and the trigger point for those considerations.

AEMO is seeking feedback on the identified IESS contingency scenarios and proposed approaches.

Please provide feedback to iess@aemo.com.au by Fri 9th Feb

IESS Contingency Approaches





Category	Area	Impact/Implication	Proposed Contingency approach	Decision Timeframe / Trigger
Settlement	Settlement Processing	Not able to demonstrate accurate settlement processing during Market Trial or prior go-live	 Assess if sufficient settlement runs to prove accuracy into remaining Market Trial Period. Delay Commencement of NECR component of IESS Rule- on basis that can't ensure integrity of market Delay introduction of single DUID / MSGAs transfer to IRP/ IRP registration due to technical software dependency on settlement processing Prepare and distribute comms explaining delay and next steps 	From commencement of Market Trial / 2 April
Settlement	Settlement certification	Settlement Certification processes idenifies deficiencies in calculation that cannot be addressed prior go-live	 Delay Commencement of NECR component of IESS Rule- on basis that can't ensure integrity of market Delay introduction of single DUID / MSGAs transfer to IRP/ IRP registration due to technical software dependency on settlement processing Prepare and distribute comms explaining delay and next steps 	Settlement Certification Completion
Scheduling	Single DUID BDU operation	Updated Scheduling and cutover capability not able to be demonstrated during market Trial	 Reschedule BDU transition and commencement of new single DUID participants until fully tested capability available Support extended / rescheduled Industry Testing of capability once available Targeted comms to affected participants 	Completion of AEMO Internal Testing for Scheduling (regression)
Scheduling	Non- single DUID BDU scheduling (pumped hydro)	Regression impacts on non-single BDU scheduling operation that impact security of operation (eg inconsistent results, performance issues)	 Reschedule IRP transition (if required) and commencement of new single DUID participants until fully tested capability available Support extended / rescheduled Industry Testing of capability once available 	Commencement Of Market Trial / Completion of AEMO Internal Testing
Scheduling	NEMDE certification	NEMDE certification processes identify deficiencies that are not addressed prior go-live	 If Issue relates only to Single DUID BDU operation - reschedule commencement of single DUID BDU operation until certified Solution Available If Issue relates to integrity of all NEMDE outcomes - delay upgrades and go-live until remedied and certified 	Completion of AEMO Internal Testing for Scheduling
Registration/ Or Boarding	IRP Registration / BDU Registration (new)	Unable to support IRP / BDU registration for Market Trial involvement	 Commencement in line with 2/3 June If delivery of operational code supports Phased establishment during market trial period - support delayed entry 	Registration AEMO Testing Completion
Registration/ Or Boarding	IRP Registration / MSGA establishment	Unable to update BESS / MSGA registration to IRP as at 3/6/24 Unable to register new IRP from 3/6/24	 Update NCC for MSGA's to progress NECR processing (settlement) Delay IRP/ Single BDU progression 	Go-Live checkpoint - 1 May 2024
AEMO Business Readiness	Settlements	Business areas cannot effectively manage market operations with IESS capability deployed and ensure integrity of ongoing operations	 Delay Commencement of NECR component of IESS Rule until Business operations sufficiently stable Reschedule deployments in line with operations requirements Continue Market Trial / preparation activity 	Go-Live checkpoint - 1 May 2024
AEMO Business Readiness	S Operations	Business areas cannot effectively manage system operations with deployed IESS capability and ensure system integrity	 Reschedule BDU transitions and commencement of single DUID BDU introduction in line with operations readiness Continue Market Trial processing with industry Deployments proceed on schedule 	Go-Live checkpoint - 1 May 2024
Readiness	Widespread/ systemic lack readiness for settlement changes	Widespread commercial impact to market due to participants inability to manage updated settlement data	 Delay Commencement of NECR component of IESS Rule until participant capability sufficiently stable Delay in opening - plus reschedule /extension of Market Trials 	Go-live checkpoint - 1 May 2024
Participant Readiness	Single DUID BDU operation	Multiple Participants not ready to transition to single DUID	 No delay in IESS commencement, Participants to reschedule individual BDU cutover in line with their readiness - subject to operational scheduling constraints 	Participant scheduling of BDU transition



4. Industry Readiness Update

Emily Brodie / Carla Ziser



4. IESS readiness update: Since last IF meeting – Tue 28 Nov 2023

**To be read in conjunction with



the IESS release schedule**

	E IESS SETTLEMENTS	IRP & BDU		
Wed 29 Nov		IRP information session:Approach to IRP registration processesMarket fee policy for IRPs		
Fri 01 Dec	Draft transition plans released for industry comment: BDU transition and cutover plan IRP transition plan NMI classification code transition plan			
Thu 07 Dec	IESS settlement briefing for emerging participants			
Tue 12 Dec	IESS settlement Q&A			
Fri 15 Dec	PDSE open for IESS settlements			
Mon 22 Jan		PDSE open for IESS BDU bidding & dispatch		
Various dates	1to1 discussions			
Fri 19 Jan 2024	Industry feedback due on transition plans			
Tue 23 Jan 2024	Implementatio	n forum #18		



4. IESS readiness update: Prior to next IF

meeting - Tue 27 Feb 2024

To be read in conjunction with the IESS release schedule



	E IESS SETTLEMENTS	IRP & BDU
Wed 31 Jan	BDU transitionIRP transition	n plans published: In and cutover plan Insition plan In code transition plan
Thu 08 Feb		BDU focus group meeting #3
Thu 15 Feb		lers information session: n IESS (NCC changes, NMI cutovers for BDUs)
Tue 20 Feb		IRP general briefing and Q&A
Various dates	1to1 dis	cussions

4. IESS transition plan update





- Feedback was due Fri 19 Jan
- Big thank you to the 3 participants who provided comments
- Next step: Publish the final transition plans by Wed 31 Jan.

Transition plan	Content	High-level stakeholder feedback
BDU transition and cutover plan	Expected responsibilities, activities, dependencies, and timeframes for AEMO and Participants to successfully transition all grid-scale batteries from 2 DUIDs to a single BDU DUID.	 Considerations provided regarding cutover timing of 1PM Requests for clarity on: MSP requirements Timing/opportunity to establish bids on new DUID ahead of cutover
IRP transition plan	Expected responsibilities, activities, dependencies, and timeframes for transitioning affected participants to the IRP registration category.	Request for reference to NCC Transition Plan
NMI classification code transition plan	Activities, dependencies, and timeframes for AEMO to transition the existing distribution-connected generators to the DGENRATR registration category.	Request for clarity on timing for Market Trial







DATE	ACTION
Thu 12 Oct 2023	✓ <u>BDU focus group #1</u> – seeking early feedback on aspects of BDU transition and cutover plan
Thu 12 Oct 2023	✓ Transition survey launched asking participants to provide feedback on initial BDU transition and BDU cutover approaches to AEMO
Thu 26 Oct 2023	✓ Survey responses due✓ Feedback on BDU transition and cutover plan due
Thu 23 Nov 2023	✓ BDU focus group #2 – providing more detail on transition and cutover activities
Fri 15 Dec 2023	✓ Publish <u>DRAFT BDU transition and cutover plan</u> for comment
Fri 19 Jan 2024	Participants to provide feedback on draft plan
Mon 22 Jan 2024	PDSE Environment available for BDU
Wed 31 Jan 2024	AEMO publishes FINAL BDU transition and cutover plan
February 2024	Agree production cutover date for each BDU
Thu 08 Feb 2024	BDU focus group #3 – providing further details on transition and cutover activities
As early as March 2024 (for Market Trial)	Complete required paperwork for BDU establishment



5. Market Trial Planning

Chris Fleming



5. IESS market trial planning

KEY DATES	ACTIONS	
Tue 17 Oct	AEMO published final IESS market trial strategy that considers participant feedback	
Thu 30 Nov	 ITWG to discuss planned approach to market trial execution AEMO to expand strategy scenarios and general timing of phases 	
Thu 30 Nov to Mon 15 Jan	Please provide feedback via NEMReform@aemo.com.au , including commentary on: Requested test scenarios Consideration of proposed approach to settlement runs Pre-prod refresh approach 	
Fri 19 Jan 2024	Draft Market Trial Plan issued for comment	
Wed 24 Jan	ITWG to consider participant feedback	
Fri 2 Feb	Participant feedback due on IESS market trial plan	
Fri 16 Feb	Fri 16 Feb Final IESS market trial plan issued	
Feb – March	Detailed trial preparation including: Test script / workbook development Detailed schedule of activities for invitation and bi-lateral scenarios Confirmation of test reporting	

5. IESS market trial planning

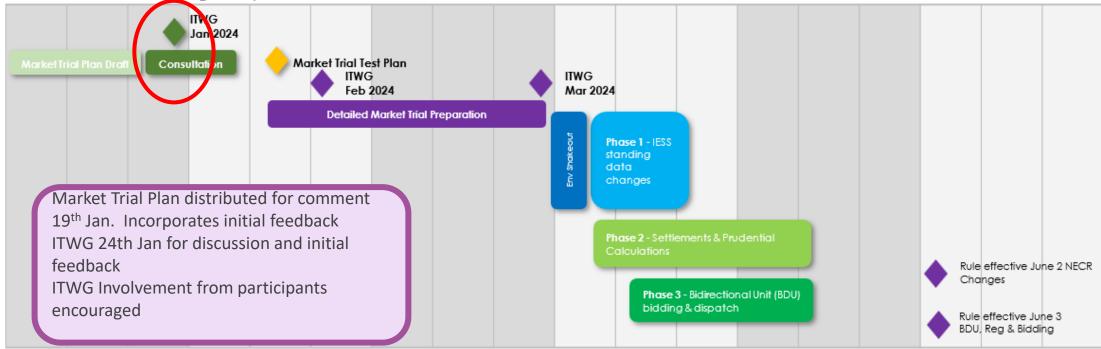




IESS industry testing and market trial high level timeline

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

IEE Market Trial Planning & Implementation



5. IESS Market Trial Planning - Scope

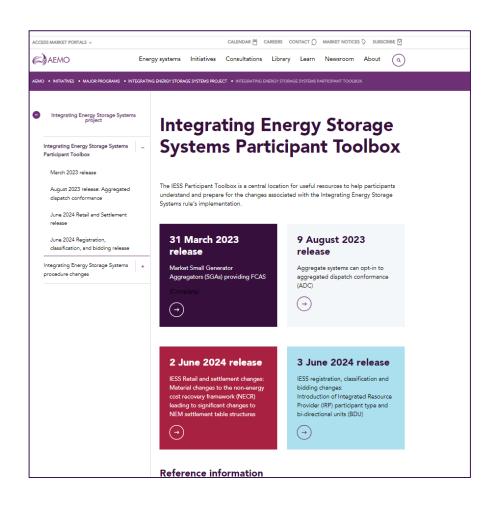




Test Phase	Timing	How we are testing proposed scope	Participants
Phase 1 – IESS standing data changes	2 April	 Testing cutover process of SGAs to IRP and de-generators using the bulk data tool. Participants confirming Registration & Market Standing Data Changes are reflected correctly. This will include new NMI Classification Codes (NCC). 	FRMPs, market generators, market customers, IRPs, SGAs, Market ancillary service providers, network service providers, metering service providers, embedded network managers
Phase 2 – Settlements & Prudential Calculations	3 April – 6 May 2024	 Pre mock go-live settlement runs (regression using old settlement method): Post mock go-live settlement runs (New Settlement Method): Prudential dashboard updated for participants during this period. Participants to review data model & reports after each settlement run. Participants to confirm the market fee calculations under the new database structure. 	FRMPs, market generators, market customers, IRPs, SGAs, Market ancillary service providers, network service providers, metering service providers, embedded network managers
Phase 3 – Bi-directional Unit bidding and dispatch	19 April – 6 May 2024	 Simulated cutover Selected participant transition from 2DUID to 1DUID Participants to confirm bidding on new BDU Participants to confirm dispatch instructions and review submitted bids 	Market Generations (Battery – Gen Only), Market Customers (Battery – Load Only)

IESS information





IESS project information	Participant toolbox	
IESS market procedure updates	Indicative change program	
General IESS queries	iess@aemo.com.au	
IESS market trial queries	NEMReform@aemo.com.au	



6. August 2024 Release

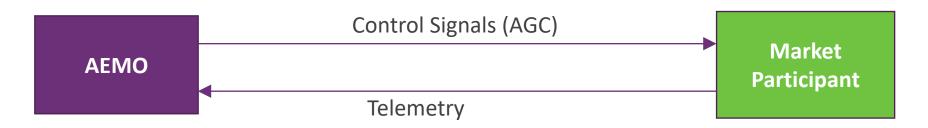


Release Update &Milestone Review

Greg Minney







Provide a capability for a market participant to establish a bi-directional communication path to exchange telemetry data and control signals with AEMO such that they can participate in the wholesale market. Specifically:

- Demand Response Service Providers (DRSP) providing Wholesale Demand Response (WDR).
- Generators or Integrated Resource Providers not able to exchange information or controls with AEMO via an NSP.

Project Context - Why is it needed?



- The evolving and transitional NEM market will involve several new non-NSP (Network Service Provider) Participants in addition to the already existing traditional ones (such as NSPs and Generators).
- It has been onerous for these non-NSP Participants to establish a telemetry connection with AEMO using the ICCP (Inter-control Centre Communications Protocol) protocol that AEMO currently supports.
- SCADA Lite solution will deliver the requirements defined in both the <u>WDR Guidelines</u> (Version 1.0, Effective Date: 24 June 2021) and <u>Power System Data Communication Standard</u> (Version 3.0, Effective Date: 3 April 2023).
- New Reform initiatives such as <u>Integrating price-responsive resources into the NEM</u> will soon open new market opportunities for non-NSP Participants once accessible telemetry exchange channels are available.

SCADA Lite: High-level impacts - DRAFT



The information presented here is general in nature. AEMO encourages industry participants to undertake their own due diligence to assess energy market reform impacts on their respective organisations.

AFFECTED TECHNOLOGY & PROCESSES	INDICATIVE PARTICIPANT CHANGE IMPACTS AFFECTED PARTICIF					
		IRP	GEN	DRSP	TNSP	DNSP
REGISTRATION	 Required: DRSPs seeking to register >5MW of WDR from a single site/aggregation who do not provide telemetry via an NSP will require a SCADA lite connection Optional. IRPs or Generators seeking a transitional SCADA Lite connection where the NSP does not support the service. MEDIUM Provide required data and undergo required certification Direct annual fees for a SCADA Lite connection 	0	0	√		
DISPATCH	 MEDIUM: OPTIONAL - Operational systems could be upgraded to receive/respond to instruction signals from a SCADA Lite feed. 	0	0	0		
TECHNOLOGY	 MEDIUM for non-NSP participants: Potential for new technology and hardware will be required to enable the bidirectional communication link with AEMO to provide telemetry and optionally receive instruction signals. 	0	0	√		

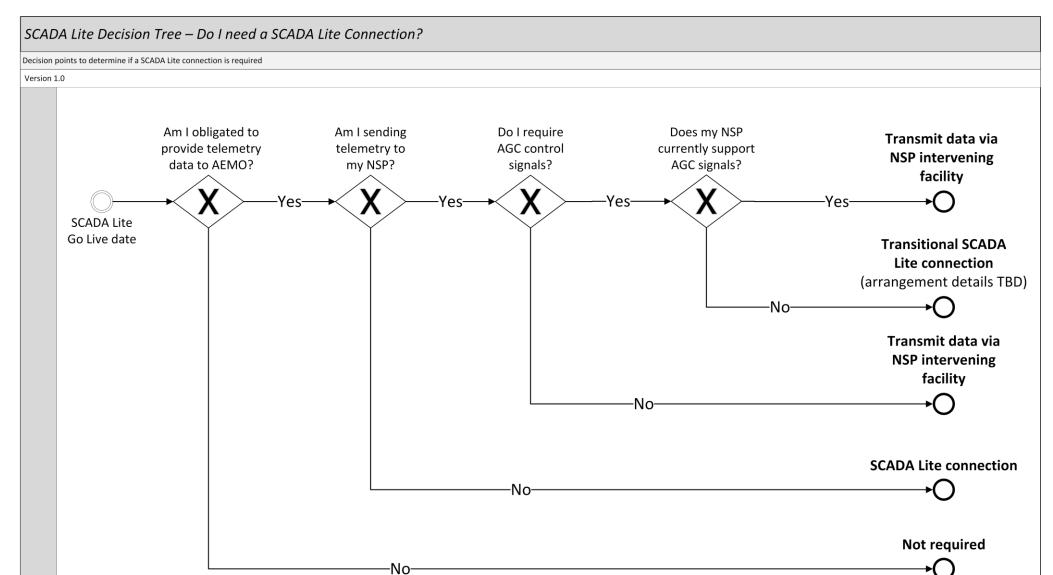
^{*} Refer to <u>SCADA Lite Stakeholder Workshop Presentation – 23 August 2023</u> for technical overview

DRSP Demand Response Service Provider						
GEN Scheduled Generators						
IRP	Integrated Resource Providers					

TNSP	Transmission network service provider
DNSP	Distribution network service provider

Eligibility map







SCADA Lite Implementation

- AEMO has now received Investment approval to proceed with SCADA Lite implementation.
- AEMO is currently conducting a Proof of Concept (POC) on identified approach and formalising delivery approach and timings.
- Milestones and progress reporting will be incorporated into NEM Reform program and forums (PCF, Implementation Forums).
- Current expectation that SCADA Lite will Go-Live is 3rd Qtr 2024 (TBC).



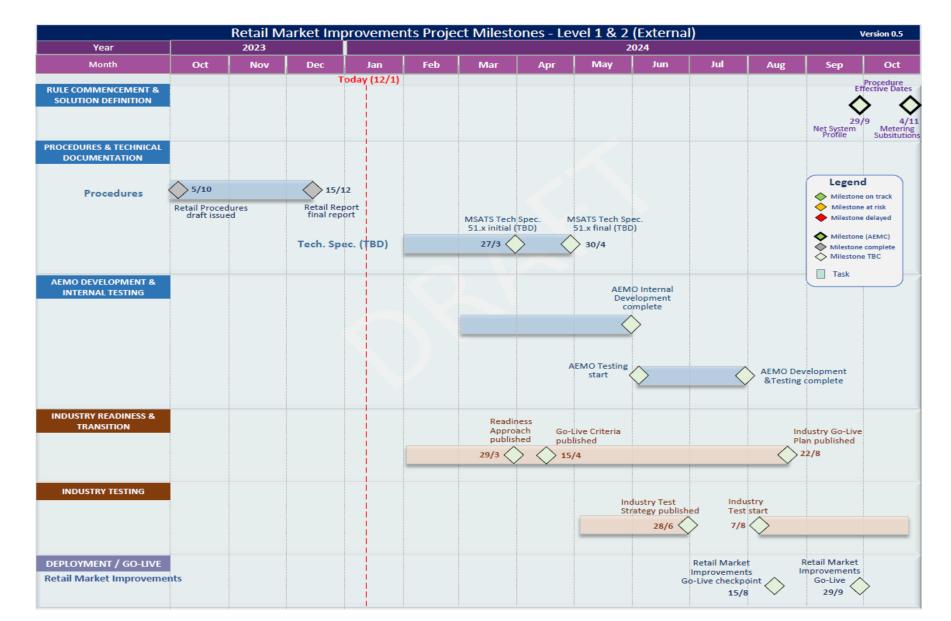
7. September 2024 Release

September 2024 Retail Market Improvement Release



- AEMO has completed consultation on various changes to its Retail and Metering Procedures and issued final report on Dec 15 2023
 - 'July 2023 Retail Electricity Market Procedures Consultation': https://aemo.com.au/consultations/current-and-closed-consultations/july-2023-retail-electricity-market-procedures-consultation
- Report has established procedure effective dates for:
 - A preferred longer-term Net System Load Profile (NSLP) Methodology (ICF_072)
 - Considers situations where positive and negative NSLP trading interval values are present.
 - Procedure Effective Date 29 Sept 2024
 - Substitution Types review (ICF_054)
 - Intends to provide recipients a clearer understanding of the reason and method used to support a substituted metering data value
 - Procedure Effective Date 4 November 2024
- AEMO is currently considering finalising development and implementation plans and timings (including Industry Test) to support introduction of both ICF's

September Release Timeline





- Retail Improvements Release scheduled 29th September
- Indicative milestones provided to assist Participant planning
 - Tech Spec milestones to be provided
- Milestones to be formalised on confirmation of effective date

September – Retail Improvements – Draft milestones



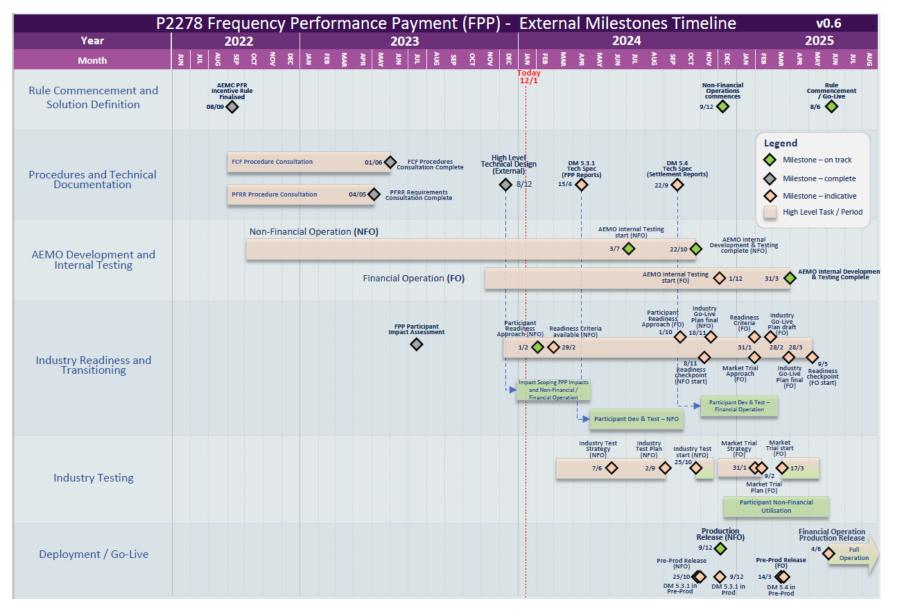
	September 2024 - Level 1 & 2 Milestones (External)												
Level	Milestone ID	Milestone	Target Date	Expected Date	Status	RAG	Tentative / Confirmed	Commentary					
Level 2	RMI-201	Retail Procedures draft issued	5-Oct-2023	5-Oct-2023	Complete		Confirmed						
Level 2	RMI-202	Retail Report final report	15-Dec-2023	15-Dec-2023	Complete		Confirmed						
Level 2	RMI-203	Readiness Approach published	29-Mar-2024			Green	Tentative						
Level 2	RMI-204	Go-Live Criteria published	15-Apr-2024			Green	Tentative						
Level 2	RMI-211	MSATS Tech Spec initial	27-Mar-2024			Green	Tentative						
Level 2	RMI-212	MSATS Tech Spec final	30-Apr-2024			Green	Tentative						
Level 2	RMI-205	Industry Test Strategy published	28-Jun-2024			Green	Tentative						
Level 2	RMI-206	AEMO Internal Development complete	31-May-2024			Green	Tentative						
Level 2	RMI-207	AEMO Internal Testing start	3-Jun-2024			Green	Tentative						
Level 2	RMI-208	AEMO Development & Testing complete	31-Jul-2024			Green	Tentative						
Level 1	RMI-101	Industry Test start	7-Aug-2024			Green	Tentative						
Level 2	RMI-209	Retail Market Improvements Go-Live checkpoint	15-Aug-2024			Green	Tentative						
Level 2	RMI-210	Industry Go-Live Plan published	22-Aug-2024			Green	Tentative						
Level 1	RMI-102	Retail Market Improvements Go-Live	29-Sep-2024			Green	Tentative						
Level 1	RMI-103	Net System Profile - Procedure Effective Date	29-Sep-2024			Green	Tentative						
Level 1	RMI-104	Metering Substitution - Procedure Effective Date	4-Nov-2024			Green	Tentative						



8. December 2024 / June 2025 Release

Frequency Performance Payments (FPP) Milestones Timeline





RELEASE COMMENTARY

- Overall project status GREEN
- AEMO development in progress
- Milestones include readiness deliverables in support of Nonfinancial and financial operation
- Participant impact assessment provided in <u>this presentation</u> based on industry workshops
- High level technical design published on 8 Dec 2023. FPP Reporting Data model (DM5.3.1) to be published in April 2024.
- Readiness Approach for nonfinancial operations including participant test support requirements to be provided 1 Feb 2024.

FPP- Milestone Table



Level	Milestone ID	Milestone	Project	Target Date	Expected Date	RAG	Tentative / Confirmed	Commentary
evel 1	-	Rule Determination Published - Final	FPP	8-Sep-2022	8-Sep-2022		Confirmed	
evel 2	FPP-201	AEMC PFR Incentive Rule Finalised	FPP	8-Sep-2022	8-Sep-2022		Confirmed	
evel 2	FPP-202	CFP Initial Paper Published	FPP	31-Oct-2022	31-Oct-2022		Confirmed	
evel 2	FPP-203	CFP First Stage Submissions received	FPP	6-Dec-2022	6-Dec-2022		Confirmed	
evel 2	FPP-204	PFRR Initial Paper Published	FPP	6-Dec-2022	6-Dec-2022		Confirmed	
evel 2	FPP-205	PFRR First Stage Submissions received	FPP	16-Jan-2023	16-Jan-2023		Confirmed	
evel 2	FPP-206	CFP Draft Determination Published	FPP	7-Feb-2023	7-Feb-2023		Confirmed	
evel 2	FPP-207	PFRR Draft Determination Published	FPP	20-Feb-2023	20-Feb-2023		Confirmed	
evel 2	FPP-208	CFP Second Stage Submissions received	FPP	15-Mar-2023	15-Mar-2023		Confirmed	
evel 2	FPP-209	PFRR Second Stage Submissions received	FPP	21-Mar-2023	21-Mar-2023		Confirmed	
evel 2	FPP-210	PFRR Requirements Consultation complete	FPP	8-May-2023	4-May-2023		Confirmed	
evel 2	FPP-211	CF Procedures Consultation complete	FPP	8-Jun-2023	1-Jun-2023		Confirmed	
evel 1	FPP-102	NEM Procedures Published	FPP	8-Jun-2023	1-Jun-2023		Confirmed	
evel 2	FPP-221	High Level Technical Design (External)	FPP	15-Dec-2023	8-Dec-2023		Confirmed	
vel 2	FPP-222	Participant Readiness Approach (incl. Dev Support Reamts) published	FPP	1-Feb-2024		Green	Confirmed	
evel 2	FPP-230	Readiness Criteria available (NFO)	FPP	29-Feb-2024		Green	Tentative	
evel 2	FPP-217	Data Model 5.3.1 Tech Spec (FPP Reports)	FPP	15-Apr-2024		Green	Tentative	
evel 2	FPP-227	Industry Test Strategy (NFO) published	FPP	7-Jun-2024		Green	Tentative	
	FPP-212	7 37, 77						
evel 2		AEMO Internal Testing commenced (NFO)	FPP	3-Jul-2024		Green	Confirmed	
evel 2	FPP-229	Industry Test Plan published (NFO)	FPP	2-Sep-2024		Green	Tentative	
evel 2	FPP-218	Data Model 5.4 Tech Spec (Settlement Reports)	FPP	22-Sep-2024		Green	Tentative	
evel 2	FPP-214	Participant Readiness Approach complete (Financial Operation)	FPP	1-Oct-2024		Green	Tentative	
evel 2	FPP-231	Industry Development finish (NFO)	FPP	1-Oct-2024		Green	Tentative	
evel 2	FPP-232	Readiness Checkpoint - Industry Test start (NFO)	FPP	15-Oct-2024		Green	Tentative	
evel 1	FPP-103	AEMO Internal Development & Testing complete (NFO)	FPP	22-Oct-2024		Green	Tentative	
evel 2	FPP-225	Pre-Production Release (NFO)	FPP	25-Oct-2024		Green	Tentative	
evel 2	FPP-233	Data Model 5.3.1 available in Pre-Prod	FPP	25-Oct-2024		Green	Tentative	
evel 1	FPP-104	Industry Test start (NFO)	FPP	25-Oct-2024		Green	Tentative	
evel 2	FPP-234	Industry Go-Live Plan published - draft (NFO)	FPP	4-Nov-2024		Green	Tentative	
vel 2	FPP-236	Readiness Checkpoint - Go-Live (NFO)	FPP	8-Nov-2024		Green	Tentative	
evel 2	FPP-235	Industry Go-Live Plan published - final (NFO)	FPP	18-Nov-2024		Green	Tentative	
vel 2	FPP-215	Industry Test finish (NFO)	FPP	22-Nov-2024		Green	Tentative	
vel 2	FPP-237	AEMO Internal Testing commmenced (FO)	FPP	28-Nov-2024		Green	Tentative	
evel 2	FPP-238	Data Model 5.3.1 available in Prod	FPP	9-Dec-2024		Green	Tentative	
evel 2	FPP-246	Production Release (NFO)	FPP	28-Nov-2024		Green	Confirmed	
vel 1	FPP-105	Non-Financial Operations commences	FPP	9-Dec-2024		Green	Confirmed	
vel 2	FPP-223	Market Trial Strategy published (Financial Operation)	FPP	31-Jan-2025		Green	Tentative	
vel 2	FPP-224	Readiness Criteria available (Financial Operation)	FPP	31-Jan-2025		Green	Tentative	
vel 2	FPP-246	Market Trial Plan complete (Financial Operation)	FPP	10-Feb-2025		Green	Tentative	
vel 2	FPP-239	Industry Go-Live Plan published - draft (Financial Operation)	FPP	28-Feb-2025		Green	Tentative	
vel 2	FPP-240	Readiness Checkpoint - Market Trial start (Financial Operation)	FPP	28-Feb-2025		Green	Tentative	
vel 2	FPP-241	Industry Development Finish (Financial Operation)	FPP	15-Mar-2025		Green	Tentative	
vel 2	FPP-242	Data Model 5.4 available in Pre-Prod	FPP	15-Mar-2025		Green	Tentative	
/el 2	FPP-226	Pre-Production Release (Financial Operation)	FPP	14-Mar-2025		Green	Tentative	
vel 1	FPP-108	Market Trial start (Financial Operation)	FPP	17-March-2025		Green	Tentative	
vel 2	FPP-243	Industry Go-Live Plan published - final (Financial Operation)	FPP	28-March-2025		Green	Tentative	
vel 1	FPP-107	AEMO Internal Development & Testing complete (Financial Operation)	FPP	31-Mar-2025		Green	Confirmed	
vel 2	FPP-244	Readiness Checkpoint - Financial Operation	FPP	9-May-2025		Green	Tentative	
vel 2	FPP-245	Market Trial finish (Financial Operation)	FPP	20-May-2025		Green	Tentative	
vel 1	FPP-109	Production Release (Financial Operation)	FPP	4-Jun-2025		Green	Tentative	
/el 1	FPP-106	FPP Project Go-Live / Rule Commencement	FPP	8-Jun-2025		Green	Confirmed	





- Published 8 December 2023.
- Available at: https://aemo.com.au/-/media/files/initiatives/frequency-performance-payments-project/231208-aemo-fpp-external-high-level-technical-data-design-final.pdf?la=en
- Contains:
 - Succinct summary of FPP's background and intended purpose, as well as how the calculations will be done and the remaining stages of the implementation process.
 - Column names, business rules and other information about the 15 reports AEMO will provide to participants, including at the completion of each 5min calculation.
 - Information about what current reports will be altered or discontinued from 8 June 2025.
- Provided to assist participants to understand how their own systems will be impacted and commence the process of scoping, and potentially procuring, necessary changes to their systems, ahead of the release of the FPP reports tech spec (DM5.3.1) in April 2024 (at which point the information can be considered final).



Reports to be provided (as at Dec '23)

- Curated 4sec SCADA data
- Regional frequency and frequency measure
- Unit performance (5min)
- Unit contribution factor
- Requirement for Corrective Response (RCR)
- Usage (of Reg FCAS)
- FPP unit estimated cost
- Estimated residual cost rate
- Default performance factor

- Pre-dispatch unit estimated cost
- P5min pre-dispatch unit estimated cost
- Pre-dispatch residual estimated cost
- P5min pre-dispatch residual estimated cost
- Summary of FCAS requirement
- FPP calculation run





Date and time	CONSTRAINTID	BIDTYPE	RCR	Version
20/07/2021 5:10:00	F_I+LREG_0210	LOWERREG	237.7863	1
20/07/2021 5:10:00	F_I+NIL_APD_TL_L5	LOWERREG	237.7863	1
20/07/2021 5:10:00	F_I+NIL_MG_R5	RAISEREG	211.7725	1
20/07/2021 5:10:00	F_I+RREG_0220	RAISEREG	0	1
20/07/2021 5:10:00	F_MAIN++APD_TL_L5	LOWERREG	231.4095	1
20/07/2021 5:10:00	F_T+NIL_WF_TG_R5	RAISEREG	22.2552	1
20/07/2021 5:10:00	F_I+NIL_MG_R5	RAISEREG	200	2

Sample of the RCR report (left)

Sample of the Frequency and Frequency Measure report (right)

Date and Time	Region ID	Frequency	Frequency Measure	Version
14/08/2023 00:05:00	TAS1	49.997	-0.01238	1
14/08/2023 00:05:00	QLD1	49.964	0.015442	1
14/08/2023 00:05:00	NSW1	49.964	0.014613	1
14/08/2023 00:05:00	VIC1	49.987	0.006758	1
14/08/2023 00:05:00	SA1	49.993	0.006007	1
14/08/2023 00:05:04	TAS1	49.973	-0.00363	1
14/08/2023 00:05:04	QLD1	49.977	0.017122	1
14/08/2023 00:05:04	NSW1	49.978	0.016255	1
14/08/2023 00:05:04	VIC1	49.963	0.013479	1
14/08/2023 00:05:04	SA1	49.965	0.01245	1

FPP Year Ahead webinar



- Friday 23 February 2024, 10:30am-12pm AEDT
- Register by emailing <u>FPPconsultation@aemo.com.au</u> (invitation forthcoming)
- This webinar is intended to offer an easy and effective introduction into the FPP reform implementation process for those participants (and other stakeholders) who have not been deeply involved to date.
- Those participants who have participated in, or closely monitored, the reform implementation process to date will not learn anything new, but it may be useful for other staff less exposed to FPP thus far.
- Additional, more detailed, education resources will also be published, to compliment the <u>two fact sheets</u> published in December 2023.



Industry Readiness Approach

Frequency Performance Payments





Purpose of Initiative Readiness Approach

- To assist industry with their own planning and delivery activities to be ready for FPP as it is operationalised.
- To define the criteria against which go-live decisions will be made.
- Aligns to and supports the implementation approach of the two-stage delivery defined for FPP:
 - 9 December 2024 Commencement of a 6-month period of "non-financial operations**"
 - 8 June 2025 Rule commencement and financial settlement changes (Financial Operations)
- The Readiness Approach, once endorsed, will form the basis of participant readiness activities in line
 with the principles in the <u>NEM 2025 Industry and Business Readiness Strategy</u>.

^{**} The period of Non-Financial Operations is designed to allow participants to observe how different patterns of operation would result in penalties or payments, based on actual performance and in real time, prior to FO operations commencing.





Participant Impact Assessment

The FPP initiative introduces:

a new financial incentive whereby facilities such as electricity generators, large loads and batteries that help to control power system frequency will receive payments from those who make unhelpful contributions.

FPP penalties and payments and the estimated recovery rates for regulation FCAS services will be calculated for each five-minute trading interval.

Participants will be provided with the outcome and all input data following the completion of the calculation. This will give facility operators the opportunity to understand their frequency performance and potentially vary their behaviour in response.

A Summary of expected participant impacts reflected by participant category is contained in the attached <u>Initiative</u> <u>Impact Assessment</u>





STAGE 1 - DECEMBER 2024 NON-FINANCIAL OPERATION

Actual generator performance used to calculate and report to participants what Reg FCAS and FPP financial outcomes would have been under the new system.

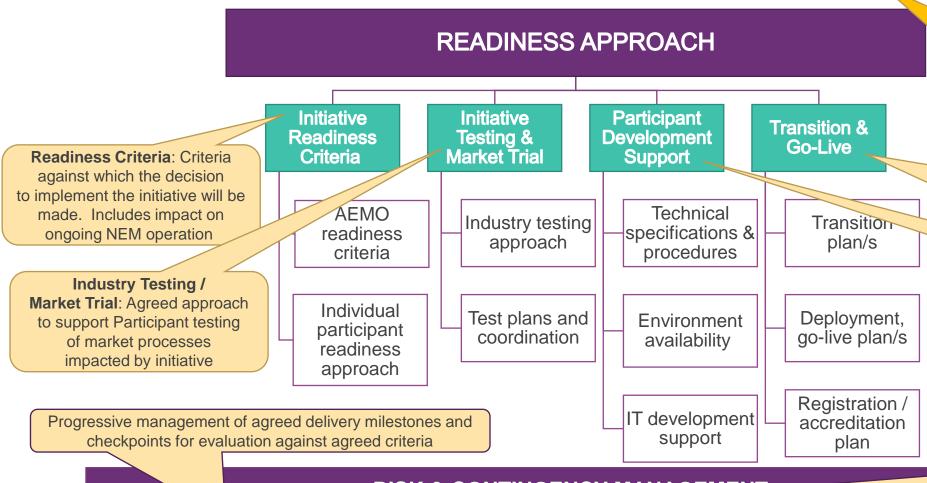
STAGE 2 - JUNE 2025 FULL COMMENCEMENT

Settlement of Reg FCAS and FPPs commences.

Context: NEM Reform program industry strategy



NEM REFORM READINESS STRATEGY (ALL INITIATIVES)



FPP readiness
approach adopts the
standard NEM
Reform program
framework

Transition & Go-Live: Approach and management of transitional activities and Go-Live timings, dependencies and communication approaches

Participant Development Support:
Approaches to provide impacted
participants the information required
for successful development and
implementation of their required
changes

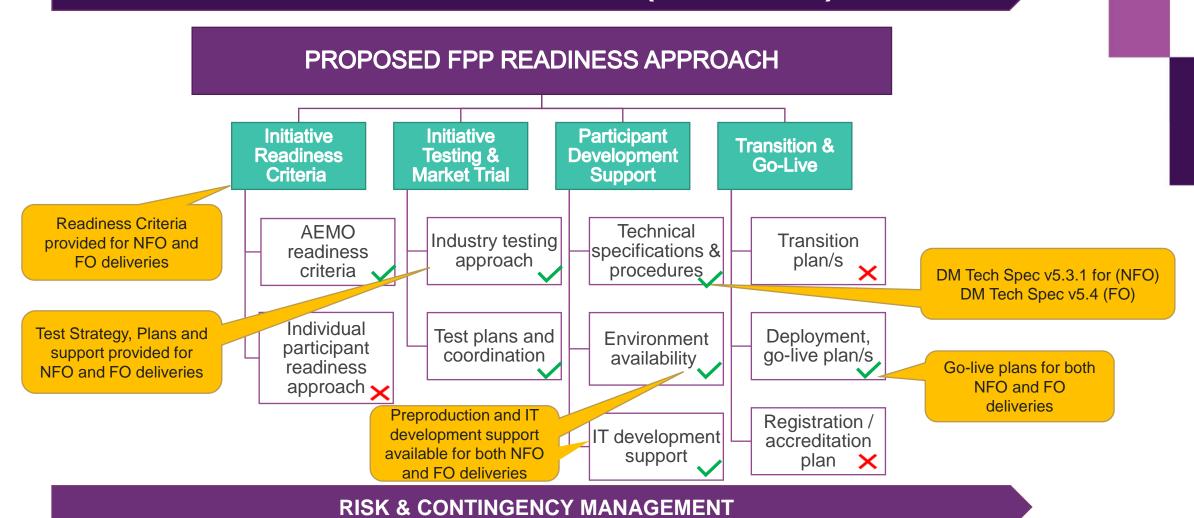
Identification and management of Implementation risks and Agreed contingencies for the initiative

RISK & CONTINGENCY MANAGEMENT

Context: NEM Reform program industry strategy



NEM REFORM READINESS STRATEGY (ALL INITIATIVES)





Next Steps

 The Initiative Readiness Approach including the proposed approach for each readiness element of the framework, will be published on 1 February 2024

Seeking Feedback

- What are your views on the proposed readiness approach?
- What else should AEMO consider to assist industry to meet the agreed timeframes?

Please provide initial feedback (including seeking any clarification) by Fri 9 Feb 2023

• Please note that feedback on readiness approach continues to be welcomed anytime and will be actively sought in the development of readiness plans.



9. Other Initiatives



Foundational & Strategic Initiatives

Identity & Access Management Industry Data Exchange Portal Consolidation

For noting

Business Case Approach



AEMO identified IDAM, IDX and Portal Consolidation as foundational initiatives that serve as prerequisites to the NEM Reform Implementation Program. These involve uplifting AEMO & participant systems to align capabilities with reform dependencies. The key outcome from these initiatives will be creating a fit for purpose, resilient and secure framework for existing market business services and provides the agility to support services for new NEM Reform Initiatives as well as an extensible framework for other energy markets.

Approach

AEMO has been collaborating with the industry participants (<u>FaSI Focus Group</u>) to develop a business case to assess the feasibility of implementing these three initiatives: IDAM, IDX and Portal Consolidation.

This was completed over more than 6 months and more than 10 consultation workshops of on average 4 hours each:

- 1. Identification of current industry pain points relating to these domains
- 2. Development of conceptual target state solutions that would materially address those pain points, and refinement based on feedback
- 3. Transition Strategy covering guiding principles, sequencing and bundling of business services and prioritisation of tranches, including a flexible sunset period
- 4. Initial Implementation Cost Estimates and a methodology for assessing the business case
- 5. (This document) a working draft business case package



Applicable to all fuels and markets such as WEM, NEM, Gas etc

Applicable to NEM business services only

Industry Consultation Update



Preparation of business case continues.

- AEMO has received thirteen stakeholder contributions to the costing exercise however two of those did not have sufficient information to be included in the cost extrapolation
- November industry workshops scheduled, allowing additional time and focus on cost and approach for AEMO and industry, reflecting the high level of interest in the topic.

Published information and materials:

- Focus Group webpage: https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/nem-reform-foundational-and-strategic-initiatives-focus-group
- Any queries can be directed to NEMReform@aemo.com.au

Timing is indicative. Additional engagement with Executive forum and PCF members under consideration.

	Session 1	Session 2	Session 3A	Session 3B			Session 4C	Session 5	Session 5A	Session 5B		Session 6B
	22 Mar	17 Apr	15 May	22 May	26 Jul	2 Aug	17 Aug	21 Sep	16 Nov	30 Nov	22 Jan	12 Mar
2023 — —											2024 — —	

Session	Introduction	Discovery	Target State	Transition Strategy	Cost & Method	Business Case
Agenda	Introduce initiativesOutline workshop plan	Pain points and benefitsSurvey	Concept walkthroughSurvey	Transition StrategyImpacts & BenefitsSurvey	 Industry and AEMO costs Assumptions, options and methodology 	Walkthrough of draft business caseAssessment and completion



10. Stakeholder Engagement

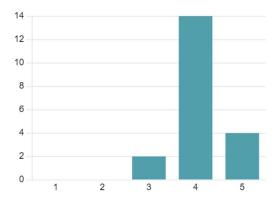
Stakeholder Sentiment Survey Results

How would you rate AEMOs engagement via the Implementation Forum in 2023?

More Details

:Ö: Insights

4.10 Average Rating

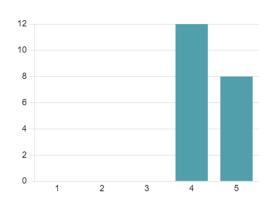


Is the agenda and meeting frequency supporting the needs of forum members to understand the Program requirements?

More Details

🌣 Insights

4.40 Average Rating

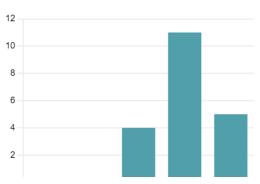


Do you feel that AEMO engagement has adequately supported your implementation and readiness actions?

More Details

🌣 Insights

4.05
Average Rating

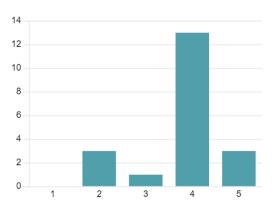


Do you feel that AEMO has provided sufficient post-implementation support?

More Details

🌣 Insights

3.80 Average Rating



Upcoming Engagements



	January													
M	Т	W	Т	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												

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





NEM Reform Program Committees/Forums Executive Fourm Reform Delivery Committee Reform Delivery Committee Collaborative Workshop Program Consultative Forum Electricity Wholesale Consultative Fourm Implementation Forum Industry Testing Working Group



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



11. General Questions & Other Business



NEMReform@aemo.com.au



AEMO | Implementation Forum





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.



For more information visit

aemo.com.au