

Program Consultative Forum

Meeting #2
9 November 2022



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.

Agenda

#	Time	Topic	Presenter(s)
1	1:00pm – 1:05pm	Welcome	Chris Muffett (AEMO)
2	1:05pm – 1:10pm	Actions & Feedback from Previous Meeting	Chris Muffett (AEMO)
3	1:10pm – 1:20pm	ESB Energy Reform Introduction <ul style="list-style-type: none">• Importance and Benefits	TBC (ESB)
4	1:20pm – 2:10pm	NEM2025 Initiatives <ul style="list-style-type: none">• Inflight & Near-term Initiatives• Upcoming Initiatives	Lance Brooks (AEMO) Phil Hayes (AEMO)
5	2:10pm – 2:20pm	Participant Impact Assessments	Lance Brooks (AEMO)
6	2:20pm – 2:30pm	Level 1 /L2 Milestones for In-Flight initiatives	Greg Minney (AEMO)
7	2:30pm – 2:40pm	Stakeholder Engagement <ul style="list-style-type: none">• Forum mobilisation update• PCF draft agenda	Ulrika Lindholm (AEMO) Greg Minney (AEMO)
8	2:40pm – 2:45pm	Upcoming engagements	Ulrika Lindholm (AEMO)
9	2:45pm – 3:00pm	General Questions and Other Business	Chris Muffett (AEMO)

Appendix A: Competition law meeting protocol and AEMO forum expectations

Appendix B: Proposed Stage Gates

Appendix C: Remaining ESB Roadmap Initiatives

Appendix D: Functional Relationship Mapping

Appendix E: NEM2025 Forums & Working Groups

Please note that this meeting will be recorded for the purpose of compiling minutes.

2. Actions & Feedback from Previous Meeting

Actions & Feedback from Previous Meeting

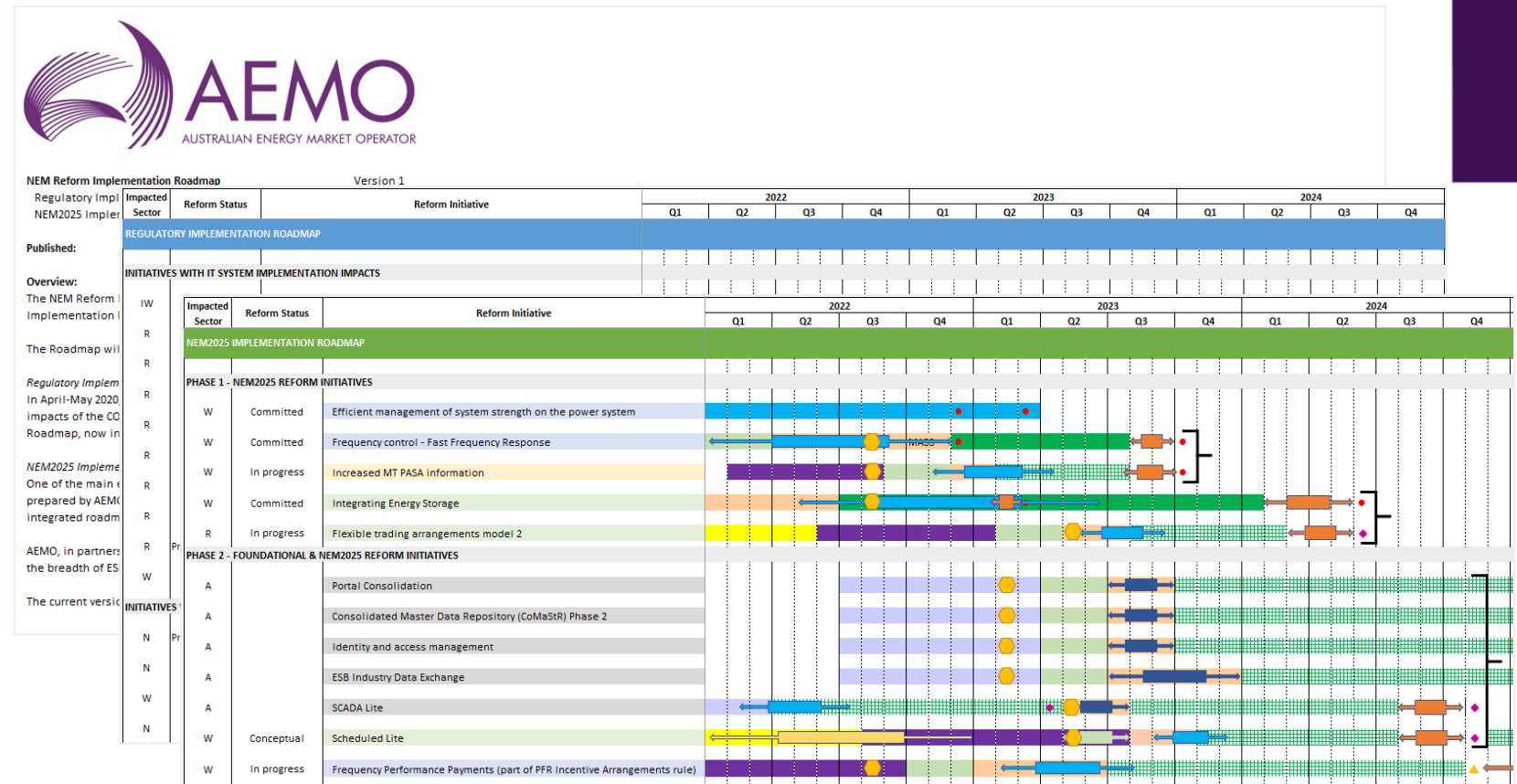
#	Topic	Action	Responsible	Status
1.1	Managing Inflight Initiatives	AEMO will conduct a deeper dive briefing into the initiatives that are currently in flight and those initiatives for 2023 and 2024 at the next PCF to assist participants when establishing their internal NEM reform programs.	AEMO	Closed. Included in agenda item 4.
1.2	Managing Inflight Initiatives	SA Water to provide AEMO with some examples on how to better incorporate alignment between project milestones and readiness milestones into the NEM Reform program.	SA Water	Closed. AEMO thanks SA Water for feedback and is working to incorporate into program readiness approach.

3. ESB Energy Reform Introduction

4. NEM2025 Initiatives

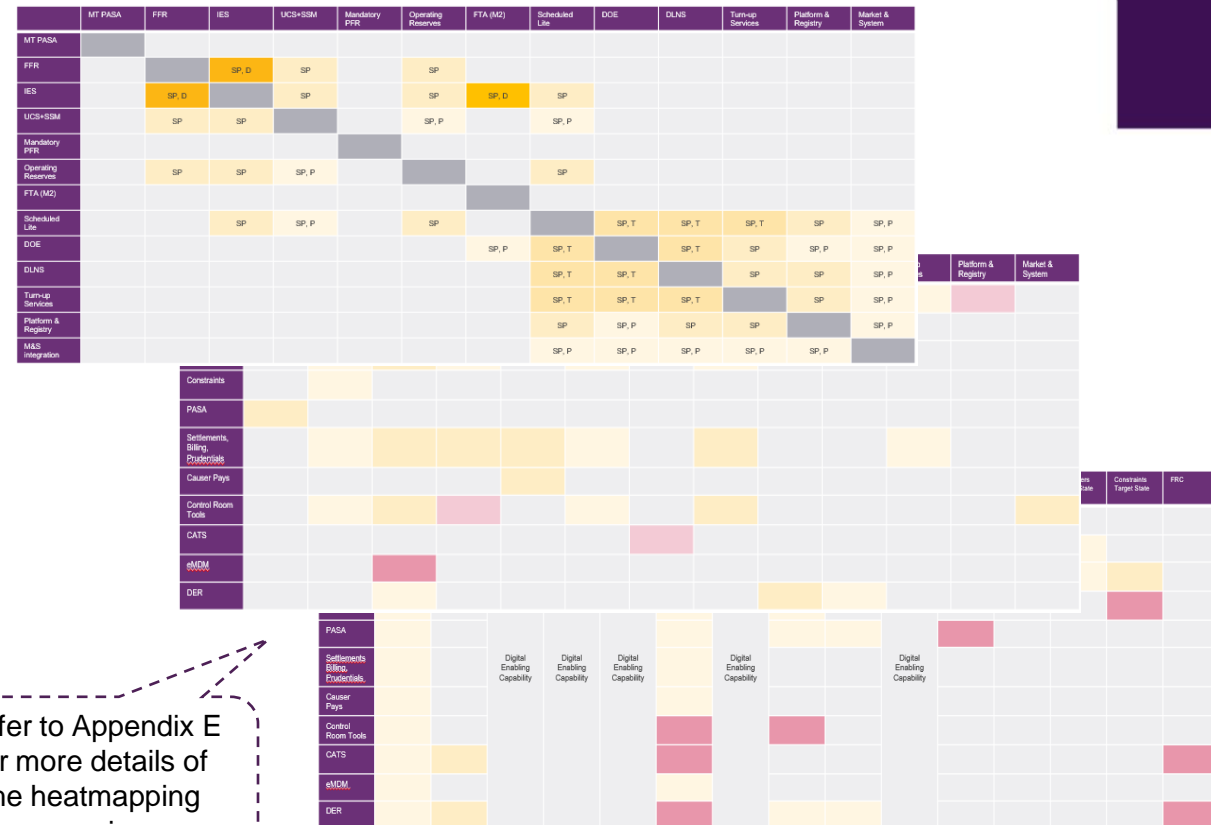
NEM Reform Implementation Roadmap

- The Roadmap, provides AEMO and stakeholders with a holistic view of the reform program impacting National Electricity and Gas Markets
- It does so by bringing together AEMO's former **Regulatory Implementation Roadmap** (version 7) and **NEM2025 Implementation Roadmap** (version 1) into one central Roadmap
- The Roadmap will be revised periodically to reflect changes in scope or timelines as policy or designs are being finalised or as new rule determinations are made.



A heatmap of the functional relationships helps inform opportunities to group and sequence

- AEMO has completed a heatmap assessment identifying:
 - Functional relationships across NEM 2025 reform initiatives** – here AEMO has identified those system, process, policy, trial and deadline relationships
 - Significance of the functional impacts from the NEM 2025 reform initiatives**
 - Significance of the functional impacts from AEMO’s own strategic and foundational initiatives**
- This analysis highlights the critical touch points for AEMO and participant systems and aids in the consideration of alternative groupings and pathways
- For example, FFR, OSM and Operating Reserve all have similar touch points and impacts across the various functions
- However, in implementing FFR it may be beneficial for this initiative to be considered in isolation in order to ensure the regulatory deadlines are met



Refer to Appendix E for more details of the heatmapting exercise

Inflight Initiatives

Increased MT PASA Information

ESB Reform Pathway	Resource Adequacy Mechanism
Status	Final Rule Determination
Key Date(s)	Go-live October 2023

Objective

Establishing the reporting of a unit’s status through reason codes via MT PASA. Establishing the reporting of recall times via MT PASA when triggered through a reason code

Value / Benefit

- Standardised information around when generators are available to supply, and the lead time required for recall from an outage may support:
 - AEMO to effectively plan and operate the system.
 - The AER in assessing compliance under the current notice of closure arrangements.
 - Participants to coordinate maintenance schedules.
 - Investors to assess opportunities for replacement plant

Project Scope

- Consultation on design and definition of reason codes and recall times within AEMO’s MT PASA framework
- Updates to other relevant AEMO guidelines and processes to streamline the collection of generator availability information where practical
- Consultation and drafting of amendments to key processes and supporting documentation including for example Reliability Standard Implementation Guidelines (RSIG), MT PASA Process Description
- Amendments to AEMO’s MT PASA systems, models and reports (e.g. Participant Markets Portal)

Inflight Initiatives

Fast Frequency Response

ESB Reform Pathway	Essential System Services
Status	Final Rule Determination
Key Date(s)	Go-live October 2023

Objective

Establish two new market ancillary services – very fast raise and very fast lower – to operate alongside the existing contingency FCAS markets.

Value / Benefit

- An alternative additional frequency control option may reduce the overall costs of managing power system frequency relative to the status quo or other alternative arrangements. For example, through a reduction in the costs for fast six-second FCAS.
- Incentivises investment in resources capable of providing very fast FCAS.
- Encourages innovation and technology development in resources capable of providing very fast FCAS.

Project Scope

- The market arrangements for the new market ancillary services will be the same as those for the existing fast raise and fast lower services. This includes the arrangements for registration, scheduling, dispatch, pricing, settlement and cost allocation.
- Develop and consult on FFR Market Ancillary Service Specification (MASS) – DONE Published October 2023.
- IT related changes to AEMO/Participant FCAS systems/ models, bidding interfaces and reports, NEM Dispatch Engine (NEMDE), and Settlement Systems.
- Updates to relevant AEMO/Participant policies, processes, guidelines.

Inflight Initiatives

Frequency Performance Payments

ESB Reform Pathway	Essential System Services
Status	Final Rule Determination
Key Date(s)	May 2023 PFR requirements consultation; June 2023 Frequency Contribution Factor consultation; Go-live June 2025

Objective

Confirmation that the mandatory PFR arrangements will continue beyond the sunset date on 4 June 2023. Introduction of a new double-sided frequency performance payments process to encourage plant behaviour that helps to control power system frequency.

Value / Benefit

- Reforms can deliver improved valuation and pricing of plant behaviour that impacts on power system frequency.
- Better alignment of the economic incentives for plant active power performance.
- Lower costs to consumers.

- Improved transparency and provision of relevant information to Market Participants and stakeholders.

Project Scope

- Development and consultation on frequency contribution factors procedure and final PFR requirements to replace the existing Regulation FCAS Contribution Factor (Causer Pays) procedure.
- Design, build and implement a new IT system; FPP, to determine contribution factors, and modify the existing NEM Settlements system to apply these factors during settlement. Effectively replacing AEMO’s existing Causer Pays systems.
- Minor changes to AEMO registration procedures

Inflight Initiatives

Integrating Energy Storage

ESB Reform Pathway	Essential System Services
Status	Final Rule Determination
Key Date(s)	Initial Release May 2023; Go-live June 2024; End IRP registration grace period 3 December 2024

Objective

Facilitation of energy storage systems and hybrid facilities to register and participate in the national electricity market

Value / Benefit

- Simplifies the registration process for storage and hybrid facilities (single category as opposed to two) lowering the barrier to participation
- More efficient operational integration of storage and hybrids
- Increased operational efficiency through providing flexibility for hybrid facilities to manage energy flows between units behind the connection point
- Amendments to the framework to recover non-energy aligns cost recovery with the principle of beneficiary and causer pays; provides incentives for more efficient behaviour

- improved competition in the ancillary services market by allowing Small Resource Aggregators to provide these services which will likely reduce system costs of procuring them.

Project Scope

- The delivery scope is complex, given the substantial changes to NER chapters, industry procedures and guidelines, which drives changes across AEMO processes and systems.
- Major IT related changes to AEMO/Participant systems/models (e.g. registrations, dispatch and operations, FCAS, Marginal Loss Factors (MLF), constraints, RERT, metering and settlement systems).
- Minor IT related changes to AEMO systems to integrate new participant category across market systems.
- Updates to relevant AEMO/Participant policies, processes, guidelines – more than 150 impacted procedures have been identified (e.g. registrations, non-energy cost recovery settlement)

Inflight Initiatives

Operational Security Mechanism

ESB Reform Pathway	Essential System Services
Status	Draft Rule Determination
Key Date(s)	Final Determination December 2022; Security services guideline and OSM procedures January 2025; Market Power Review July 2025; Go-live October 2025

Objective

Provide a valuation, procurement and scheduling process for ESS by producing a least-cost, inter-temporal optimised dispatch schedule which considers attendant technical constraints and costs for unit commitment and system security

Value / Benefit

- Provide an investment signal through commercial return for the provision of services supporting power system security.
- Provide an additional tool for AEMO to procure for requirements ahead of using directions.
- Reduce labour associated with manual market intervention for real time operators (RTO) and support staff, and improved situational awareness for operators.

- Improve operational efficiency through transparency of integration of secure unit configurations with pre dispatch.

Project Scope

- Delivery scope is highly complex and subject to ongoing consultation on design, prototyping, building, integrating and testing of IT infrastructure
- Development of operational and business processes
- Development and consultation on guidelines and procedure documentation
- Readiness activities, such as evaluating and accrediting plant

Inflight Initiatives

Dispatch Tactical Uplift

Pathway	AEMO Strategic
Status	Stage Gate 1 Funding Approved
Key Date(s)	TBC

Objective

To modernise the core market dispatch and short-term market systems to align it with modern technologies that are widely supported in AEMO and for which external resources with those skill sets readily exist.

Value / Benefit

- Remediation of immediate technology risks around supportability that are untenable to continue with while retaining the flexibility of a component by component-based approach towards target state.
- Avoids further cost and risk associated with enhancements to dispatch being delivered across the rest of the NEM2025 program due to the challenges in resourcing for the legacy environment.

Project Scope

- Low complexity – Amendments / upgrades to key applications that make up AEMO dispatch systems.

Full replacement of AEMO’s dispatch systems can and should be deferred until various ESB initiatives are further progressed. However, key areas of technical debt require remediation.

Upcoming initiatives (AEMO Strategic & Foundational)

AEMO Foundational

Name	Description
Identity Access Management	A unified mechanism to authenticate participant users and applications when accessing AEMO services enabling a single pane of glass for participants accessing AEMO applications while consolidating and improving overall cyber security controls
Industry Data Exchange	Unified access to AEMO services across all markets using modern authentication and communication protocols providing for consolidation of data exchanges into a single industrywide mechanism across wholesale and retail applications, lowering barriers to entry and reducing overall costs

AEMO Strategic

Name	Description
Portal Consolidation	Implementation of a framework, and roadmap for transition and implementation, to enable stakeholders with the ability to self-manage their user experience by delivering a new web and mobile user portal that provides personalised, secure, single pane of glass access to data and services
Consolidated Master Data Repository (CoMaSTr)	An internal master data management platform hosting information about power system asset data (e.g., NMI standing data, DER devices) used by AEMO market systems providing participants with a single source of truth and data quality management

AEMO are currently progressing with planning for these initiatives at this time.

Each of these initiatives make up Stage Gate 2 (~Q1 2023) the timing of which may change subject to completion of planning work.

NEM Reform Implementation Roadmap – Run-through

<https://aemo.com.au/-/media/files/initiatives/regulatory-implementation-roadmap/reform-update-v1/nem-reform-implementation-roadmap-v1.xlsx?la=en>

5. Participant Impact Assessments

Participant Impact Assessments

AEMO request Participants review and provide updates to the participant impact assessments periodically as initiatives progress

- AEMO, via the RDC, provided industry with and stakeholders with an opportunity to submit Participant Impact Assessments assessing each of the core NEM2025 reform initiatives
- This feedback on the impacts of reforms was incorporated into the business case developed by AEMO to inform selection of the NEM2025 Implementation Roadmap pathway and provided a cross check for the key assumptions and current assessment of complexity across the majority of initiatives
- Participant Impact Assessments are available via AEMO website [here](#)

Reform Delivery Committee Participant Impact Assessment Australian Energy Council		PARTICIPANT TYPE														FUNCTIONS										COMMENT								
		Consumers - non participants	Consumers - wholesale participants	Demand Response Service Providers (DRSPs)	Developers - Renewables/Storage	Distribution Network Service Providers (DNSPs)	Generators - Renewable	Generators - Scheduled	Manufacturers - renewables/batteries	Metering Coordinators	Metering Data Providers	Meter providers and manufacturers	Reallocators	Retailers	Small Generator Aggregators (SGAs)	Trader	Transmission Network Service Providers (TNSPs)	[add new suggestions here]	Bidding/Data Provision	Trading	Settlement	Data Collection & Storage	Billing (Network Billing)	Network Management	Customer Billing System	Meter/DER Communications	Demand Forecasting	[add new suggestions here]	[add new suggestions here]	[add new suggestions here]	[add new suggestions here]	OVERALL IMPLEMENTATION =		
Scope of NEM2025 Implementation Roadmap (Version 1)	Resource Adequacy Mechanism	Increased MT PASA Information	N	N			N	Y		N	N	N	N	N					H	L	L	M				L		H					M	
	Essential System Services	Fast Frequency Response	N	Y				Y	Y		N	N	N	N	N					H	M	L	M				M	?					H	
		Mandatory Primary Frequency Response	N	Y				Y	Y		N	N	N	N	N					M	L	L	M				L							M
		Operating Reserve Market	N	N			N	Y			N	N	N	N	N					H	M	L	M				L							M
		System Strength (Planning)*	N	Y				Y	Y		N	N	N	N	N					M	M	L	M				L							M
		Structured Procurement & Scheduling Mechanism (UCS + SSM)	N	Y				N	Y		N	N	N	N	N					H	M	M	?					?						M
	Integration of DER & Flexible Demand	Integrating Energy Storage	Y	Y				Y	Y		Y	Y	Y	Y	Y					H	M	M	H	M			H	H	H				H	
		Flexible Trading Arrangements (Model 2)	Y	Y				Y	Y		Y	Y	Y	Y	Y					H	H	VH	H	H			H	H	H				VERY HIGH	
		Scheduled Lite	N	N				Y	Y		N	N	N	N	N					H	H	M	M				?	L						H
		Dynamic Operating Envelopes	Y	Y				Y	N		Y	Y	Y	Y	Y					?	L	L	M	H			M	H	H				H	
Distribution Local Network Services		Y	Y				Y	Y		Y	Y	N	Y	Y					M	M	M	H	H			H	H	H				H		
DER Platform Registry Services		Y	Y				Y	N		Y	Y	Y	Y	Y					?	L	L	H	H			H	H	L				H		
Transmission & Access	Market & System Operator Integration	N/A					N/A		N/A	N/A	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A			N/A	N/A	N/A					See: Distribution Local Network Services		
	Turn-up Services	Y	Y				?	?		Y	Y	Y	Y	Y					?	?	?	?	H			M	H	M				H		
	Data Services	N/A at this time																																
	Data Strategy	EV Charging Standing Data Register																																
Bill Transparency																																		
Network Transparency																																		
		Impact is Y/N														Impact is H/M/L - see 'Cover' tab																		

Participant Impact Assessments (Inflight Initiatives)

	PARTICIPANT TYPE																	FUNCTIONS														
	Consumers - non participants	Consumers - wholesale participants	Demand Response Service Providers (DRSPs)	Developers - Renewables/Storage	Distribution Network Service Providers (DNSPs)	Generators - Renewable	Generators - Scheduled	Manufacturers - renewables/batteries	Metering Coordinators	Metering Data Providers	Meter providers and manufacturers	Reallocators	Retailers	Small Generator Aggregators (SGAs)	Trader	Transmission Network Service Providers (TNSPs)	Engineering/carbon consultancy	Software developer (e.g. battery optimisation)	BTM hardware developer	[add new suggestions here]	Bidding/Data Provision	Trading	Settlement	Data Collection & Storage	Billing (Network Billing)	Network Management	Network Operations	Customer Billing System	Meter/DER Communications	Demand Forecasting		
AEC	Increased MT PASA Information	N	N			N	Y		N	N	N							Y				H	L	L	M				L		H	
	Fast Frequency Response	N	Y			Y	Y		N	N	N		N									H	M	L	M				M	?		
	Frequency Performance Payments	N	Y			Y	Y		N	N	N		N									M	L	L	M				L			
	OSM	N	Y			N	Y		N	N	N		N					Y				H	M	M	?						?	
	Integrating Energy Storage	Y	Y			Y	Y		Y	Y	Y		Y									H	M	M	H	M			H	H	H	
EEC	Increased MT PASA Information														Y		Y				L, M for scheduled generators											
	Fast Frequency Response											Y (but low	Y								M	M	L/M		L							
	Frequency Performance Payments																															
	OSM																															
	Integrating Energy Storage											Y	Y					Y				L (de	L									
ENA (TNSP)	Increased MT PASA Information															L																
	Fast Frequency Response															L											Y					
	Frequency Performance Payments															L											Y					
	OSM															L																
	Integrating Energy Storage															M										Y	Y					
ENA (DNSP)	Increased MT PASA Information									L	L																					
	Fast Frequency Response					M				L	L														Y			Y				
	Frequency Performance Payments					H				L	L																	Y				
	OSM					H				L	L																	Y				
	Integrating Energy Storage					H				L	L														Y	Y	Y	Y				

6. Level 1 /L2 Milestones for Inflight Initiatives

NEM Reform Milestone Approach

Provide a consistent framework for reform Implementation engagement with Industry Participants from Draft Determination through implementation and rule commencement

- Build on frameworks utilized during 5MS, updated to reflect multiple initiative nature of NEM Reform program

Support transparent reporting of Initiative Status and support for Participant development timeframes

- Availability of key deliverables, such as Procedures, Technical Specifications and data model updates
- Availability of environments and forms of Industry Testing supported
- Progress of AEMO project delivery

Milestones to be established and reported against for all initiatives within NEM Reform program

- Commence from point of Draft rules determination
- Initially established on basis of Implementation roadmap timings
- Updated and baselined during project delivery phases

Milestones structured as Level 1 and Level 2

- L1 - Milestones to manage progress against key Implementation Phases in line with Regulatory Roadmap identifying where significant delay has potential to Impact rule commencement. Includes milestones explicit in Rules.
- L2 - Milestones provide transparency for the completion of L1 milestones and support for participant preparation
- Foundational / Strategic Initiatives will establish L1/L2 in line with Stage Gates, acknowledging no Rules milestones

Milestone tailored to requirements of individual initiatives, within a standard structure

Once Baselined, proposed shift will require Industry impact assessment via PCF/ Implementation Forum to confirm viability of initiative delivery, including identified mitigation and risk profile

Progress reporting to be provided against initiative schedule

- RAG status on upcoming milestone
- Includes corrective actions being implemented

Milestone Structure and Definition

Milestone	Level	Description
Initiative	L1	L1 Milestones to manage progress against key Implementation in line with Regulatory Roadmap identifying where significant delay has potential to Impact rule commencement
Draft Determination Published (AEMC)	L1	Release of AEMC draft determination and commencement of implementation planning
Final Determination Published (AEMC)	L1	Release of Final determination as confirmation of Rule Scope and effective dates
Rule Commencement Date(s)	L1	Reflects effective date(s) for rule that will be met by implementation program
NEM Procedures Published	L1	Provide procedure certainty to impacted Participants- where included in rules decision
AEMO Internal Development and Testing Completed	L1	Progress Confidence and confirm market Systems "ready" for Industry Test
Market Trials / Industry Testing Commence	L1	Key Initiative milestone for the commencement of Industry Testing / Market Trials
Stage Gate (Foundational and Strategic)	L1	Progression against Roadmap for Foundational and Strategic Initiatives - Approval to Proceed

Milestone Structure and Definition

Milestone	Level	Description
Solution Implementation	L2	L2 Milestones provide transparency for the completion of L1 milestones and support for participant preparation
High Level Design Published- Draft Determination	L2	Input for impact assessment for system changes and Implementation Planning
High Level Design Published-Final Determination	L2	Basis for updated impact assessment and Procedure and System changes
Phase go-Live/ Deployment (s)	L2	Staged deployment of solution to support Rule Commencement Milestones (eg early availability of Registration, update of interface tech)
Key Transition Dates	L2	Pre or post rule effective date milestones for the commencement or finalisation of transitional activity
Procedures & Guidelines		By Package / Initiative
Consultation Papers issued	L2	Supports NEM Procedures L1 Milestones and Industry Resource allocation, assumes consolidation across timeframes, relates to those external procedural documents and guidelines required for Participants to progress their changes
Draft Documents Published	L2	Draft Procedures determination, draft guidelines issue
Final Documents Published	L2	Aligns to L1 Milestone for Procedures finalisation

Milestone Structure and Definition

Milestone	Level	Description
Systems Development		By "Release"
Technical Specs Draft	L2	Technical Documentation milestones to be supported by detailed scheduled of all supporting artefacts - milestone to reflect scope/ build requirements
Technical Specs Final	L2	Finalisation of Technical Specification required for participant build activity
Data Model / Schema Draft	L2	Identifies scope and timing for Data Model MMS, aseXML (B2M) and B2B changes to support initiative (NB may support multiple initiatives)
Data Model / Schema final	L2	
AEMO Development Complete	L2	Progress milestone for Industry transparency (suggest to end of system Test)
AEMO Internal Testing Commenced	L2	Progress milestone for Industry transparency (Integration, Performance and UAT) - completion of finalisation of Release development and Testing is L1
Industry Testing / Market Trial		by "Release"
Testing Strategy (Approach) Published	L2	Approach for Initiative
Participant Preparation Completed	L2	As Required for Market Trial / not explicit for Industry Testing
AEMO Preparation Completed	L2	Support of Test Commence (may include environment prep/ data refresh)
Staging Environment Release Available	L2	If identified in Readiness approach to support Participant implementation
Readiness		By "Release"
Readiness Approach Published	L2	Agree approach to Readiness support for Initiative
Transition Plan Published	L2	For Preparatory transition activities if required
Industry Go-Live Plan Published	L2	Activities and communication to take release live at Software Deployment and Rules Commencement
Contingency plans updated	L2	to address initiative readiness and risk management -as required
Accreditation / Registration Plan	L2	Approach for participant engagement for registration or accreditation changes and updates - if required

7. Stakeholder Engagement

NEM2025 Forum Mobilisation

Channel	Current focus	Status
NEM2025 Program Consultative Forum	<ul style="list-style-type: none"> Establishing standard ways of working Introduction to scope of reforms 	Kicked off 5 October
Electricity <u>Wholesale</u> Consultative Forum (EWCF)	<ul style="list-style-type: none"> Review Terms of Reference Develop ways of working on NEM2025 wholesale related procedure consultations 	First meeting 22 November
Electricity <u>Retail</u> Consultative Forum (EWCF)	<ul style="list-style-type: none"> Procedural and reform and engagement across NEM2025 retail related procedure consultations 	Ongoing monthly cadence
NEM2025 Implementation Forum	<ul style="list-style-type: none"> November Retail release; systems implementation, data transition, testing, participant preparation Establishing March and May implementation activities 	Ongoing monthly cadence
NEM2025 Executive Forum	<ul style="list-style-type: none"> Participant nominations Identifying appropriate engagement timeframe given participant and program activities 	To be established in Q2 2023
IESS Working Group	<ul style="list-style-type: none"> Transition of topics to NEM2025 program forums 	Last meeting 30 November

Refer to Appendix E: NEM2025 Forums & Working Groups for details on each channel.

PCF Draft Agenda

Proposed agenda framework for the PCF's operating rhythm going forward

- Actions and feedback from previous meeting
- Program update
 - Change program update
 - Inflight initiative status
 - FFR
 - FPP
 - IESS
 - MT PASA
- Industry risk and Issues
- Upcoming engagements
- *Discussion topics as required*

Agenda principles:

To allow stakeholders to manage their time effectively, the agenda will where practicable:

- Clearly indicate what and when reform initiatives will be discussed
- Focus first half of meeting on status updates and second half on detailed discussions

8. Upcoming Engagements

Upcoming Engagements

November						
S	M	T	W	T	F	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			

December						
S	M	T	W	T	F	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

January						
S	M	T	W	T	F	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						
S	M	T	W	T	F	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				

Legend	
Coordination forums	
	NEM2025 Program Consultative Forum
	NEM2025 Executive Forum (Q1/Q2 2023)
	Reform Delivery Committee
	Reform Delivery Committee - Collab W.
	Implementation Forum
	Electricity Wholesale Consultative Forum
	Electricity Retail Consultative Forum
Initiative specific meetings/consult's	
	IESS Working Group - last meeting
	MT PASA
	Frequency Performance Payments
	Constraints Formulation Guidelines (TBC)
	Fast Frequency Response (TBC)
Other	
	National Public Holiday
	State/Territory Public Holiday
	AEMO Offices Christmas Shutdown
	Metering Industry Briefing

9. General Questions & Other Business



NEM2025@aemo.com.au





For more information visit

aemo.com.au

Appendix A: Competition law meeting protocol and AEMO forum expectations

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.

AEMO Forum and Meeting Expectations

This charter explains expectations regarding participation and behaviour in the Australian Energy Market Operator (AEMO)'s stakeholder forums.

Meeting Expectations

All participants will:

- Respect the diversity of the group.
- Speak one at a time – refrain from interrupting others.
- Share the oxygen – ensure that all attendees who wish to have an opportunity to speak are afforded a chance to do so.
- Maintain a respectful stance towards all participants.
- Listen to others' points of view and try to understand others' interests.
- Share information openly, promptly, and respectfully.
- If requested to do so, hold questions to the end of each presentation.
- Remain flexible and open-minded, and actively listen and participate in meetings.
- Abide by COVID-Safe workplace guidelines, if attending a meeting on AEMO's premises.

Roles and Responsibilities

Forum stakeholders agree to:

- Be specific and fact-based in their feedback on a specific workstream or emerging issue;
- Review and provide feedback on papers and reports;
- Relay information to their colleagues or constituents after each meeting and gather information/feedback from their colleagues or constituents, as practicable, before each meeting;
- Maintain a focus on solutions or outcomes that benefit all energy consumers.

AEMO agrees to:

- Provide technical expertise in a manner that is considerate of the audience and their level of expertise;
- Assist participants in understanding issues enough to represent their views;
- Provide all participants the opportunity to voice their views.

Appendix B: Proposed Stage Gates

Stage Gate Proposal – Initial Plan

Initial plan – flexibility to manage changes in timing will be required

Stage Gate	Name	Comment	Timing
-	Initial Business Case	<ul style="list-style-type: none"> • Presents holistic view and sets out overall budgetary envelope • No funding commitment • Used to inform decision around Strategic vs Reg-Led Pathway 	3Q2022
1	Immediate Reforms	<ul style="list-style-type: none"> • Mandatory Initiatives for 2022 Rules Determinations <ul style="list-style-type: none"> • IESS, FFR, MT-PASA, FPP and OSM 	3Q2022
2	Capacity Market & Congestion Management model	<ul style="list-style-type: none"> • Stage Gate 2A: Capacity Mechanism • Stage Gate 2B: Congestion Management Model • Separated due to possible different policy timelines for each initiative, and likely short timeframes for CM. 	Subject to Policy-makers timing
3	Strategic & Foundation Pre-Requisites	<ul style="list-style-type: none"> • Stage Gate 3A: Identity & Data bundle: IDA, IDX (noting pre-existing participant consultation should be leveraged), CoMASTR and Portal Consolidation • Stage Gate 3B: Dispatch Bundle (including dispatch, constraints and bids/offers target state) • Stage Gate 3C: FRC target state • Integrated design, plan and cost/benefit to be prepared, industry engagement to be conducted 	1Q2023 4Q2022 1Q2023
4	DER Flexible Demand & Marketplace	<ul style="list-style-type: none"> • Stage Gate 4: Turn-up services, DOEs, DER Data Hub & Registry services, Distribution/local network services and potentially DER Operational Tools • Scope is subject to change once Policy/Trials complete (impacting budget, timeline and responsibilities). • Co-ordinated approach with DNSPs may be valuable, to ensure roles are clear and scope for each role is defined 	Indicative Mid-2023, subject to trials & policy development
5	Next Reforms	<ul style="list-style-type: none"> • Mandatory initiatives for 2023 Rules Determinations <ul style="list-style-type: none"> • FTA2, Scheduled Lite & SCADA Lite, ROR 	Indicative mid/late 2023, subject to Rules timing
6	Data Strategy	<ul style="list-style-type: none"> • Data Services, Bill Transparency, Electric Vehicles, Network Visibility 	Indicative Mid-2023 (subject to policy development)

Appendix C: Remaining ESB Roadmap Initiatives

Remaining ESB Roadmap Initiatives

Resource Adequacy Mechanisms

Name	Description
Capacity Mechanism	Establish of a mechanism to explicitly value capacity intended to create a clear, technology neutral, long-term signal for investment to ensure reliable supply is maintained

Essential System Services

Name	Description
Operating Reserves	Unbundling reserves from energy to separately value flexible, responsive resources, through one or more new markets, and in doing so provide a separate and explicit signal for their provision

Transmission Access Reform

Name	Description
Congestion Management Mechanism	Establish a model to support transmission access reform to better manage access risk, incentivise congestion relief, and provide for investment and operational efficiencies

Initiative is progressing through the AEMC rule change process. Final Determination September 2023

Initiatives are progressing through the policy / design phase under the ESB

Remaining ESB Roadmap Initiatives (continued)

Initiatives are at varying stages of development from Pending Rule Change to Policy Development, Concept / Trials

Integrating DER & Flexible

Name	Description
Flexible Trading Arrangements Model 2	Enable end users to establish a private metering arrangement (PMA) for controllable resource(s) within their electrical installation, and to have these resources managed by a separate financially responsible Market Participant (FRMP). Establish a framework for 'minor energy flow' metering installations not currently considered in the NEM metering framework to reduce barriers further, create greater flexibility for the introduction of new technologies and enable access to retail competition for legacy connections in the NER
Scheduled Lite	To establish an 'opt-in' framework through lowering barriers and providing incentives for flexible demand, aggregated portfolios of DER and small generation resources (between 5 MW and 30 MW) to either: – provide greater visibility to the market operator about intentions in the market, or – to participate in dispatch of energy and ancillary services
Dynamic Operating Envelops	To establish DOE to better manage congestion on the distribution network and allow for more flexibility in exporting through various key reforms
Distribution Local Network Services	To identify ways to make it easier for DER aggregators to trade local network support services with DNSPs/DSOs, through greater visibility of local network constraints aligning the definitions of local services and how they are traded between regions
Turn Up Services	Increase the capability and capacity of load to respond to low or negative price signals during times of abundant variable renewable energy, which is correlated to periods of minimum system load
DER Data Hub & Registry Services	Establish a DER Data Hub to provide efficient and scalable data exchange and registry services for DER between industry actors and potential augmentation of DER Register to enable more efficient and permission based sharing and access to information
DER Operational Tools	To identify and develop, in collaboration with DNSPs, new DER operational tools that may be required by each party, which can work together to maintain efficient and secure power system operations at times when up to 100% of system load can be met with DER

Remaining Roadmap Initiatives

Initiatives are all at the policy development stage under the ESB

Data Strategy

Name	Description
Data Services	Provide new services which facilitate greater safe, timely and appropriate access to and public-good benefits from data sets held by AEMO and other market bodies, supporting improved policy, planning and research
EV Charging Standing Data Register	Ensure that agencies and market participants have sufficient visibility of emerging electric vehicle supply equipment (EVSE) for effective planning and management of the system
Bill Transparency	Efficient arrangements to provide ongoing transparency of consumer bills and the impacts of different services and circumstances, to support better consumer protections and understanding of consumer needs in the market transition and streamline current inefficient retail reporting
Network Visibility	Optimise benefits from DER and network assets for all customers, by informing market stakeholders making DER planning decisions and managing network capacity risks

Appendix D: Functional Relationship Mapping

Functional Relationship Mapping – NEM2025 Reform Initiatives

	MT PASA	FFR	IES	UCS+SSM	Mandatory PFR	Operating Reserves	FTA (M2)	Scheduled Lite	DOE	DLNS	Turn-up Services	Platform & Registry	Market & System
MT PASA													
FFR			SP, D	SP		SP							
IES		SP, D		SP		SP	SP, D	SP					
UCS+SSM		SP	SP			SP, P		SP, P					
Mandatory PFR													
Operating Reserves		SP	SP	SP, P				SP					
FTA (M2)													
Scheduled Lite			SP	SP, P		SP			SP, T	SP, T	SP, T	SP	SP, P
DOE							SP, P	SP, T		SP, T	SP	SP, P	SP, P
DLNS								SP, T	SP, T		SP	SP	SP, P
Turn-up Services								SP, T	SP, T	SP, T		SP	SP, P
Platform & Registry								SP	SP, P	SP	SP		SP, P
M&S integration								SP, P	SP, P	SP, P	SP, P	SP, P	

Key: SP = System or Process, D = Deadline, T = Trails, P = Policy **Heatmap:** SP SP, P SP, T SP, D Same initiative

Functional Relationship Heatmap (AEMO) – NEM2025 Reform Initiatives

	MT PASA	FFR	IES	UCS+SSM	Mandatory PFR	Operating Reserves	FTA (M2)	Scheduled Lite	DOE	DLNS	Turn-up Services	Platform & Registry	Market & System
Registration	No impact	Low impact	Low impact	No impact	Low impact	Low impact	No impact	No impact	No impact	No impact	Low impact	High impact	No impact
Offers	No impact	Low impact	No impact	No impact	No impact	Low impact	No impact	Low impact	No impact	No impact	No impact	No impact	No impact
Dispatch	No impact	Low impact	Medium impact	Low impact	No impact	Low impact	No impact	Low impact	No impact	No impact	No impact	No impact	No impact
Constraints	No impact	Low impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
PASA	Low impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Settlements, Billing, Prudentials	No impact	Low impact	Medium impact	Medium impact	Medium impact	Low impact	No impact	Low impact	No impact	No impact	Low impact	No impact	No impact
Causer Pays	No impact	No impact	No impact	No impact	Low impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
Control Room Tools	No impact	Low impact	Medium impact	High impact	No impact	Low impact	No impact	Low impact	No impact	No impact	No impact	No impact	Low impact
CATS	No impact	No impact	No impact	No impact	No impact	No impact	High impact	No impact	No impact	No impact	No impact	No impact	No impact
eMDM	No impact	No impact	High impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact	No impact
DER	No impact	No impact	Low impact	No impact	No impact	No impact	No impact	No impact	Low impact	Low impact	No impact	No impact	No impact

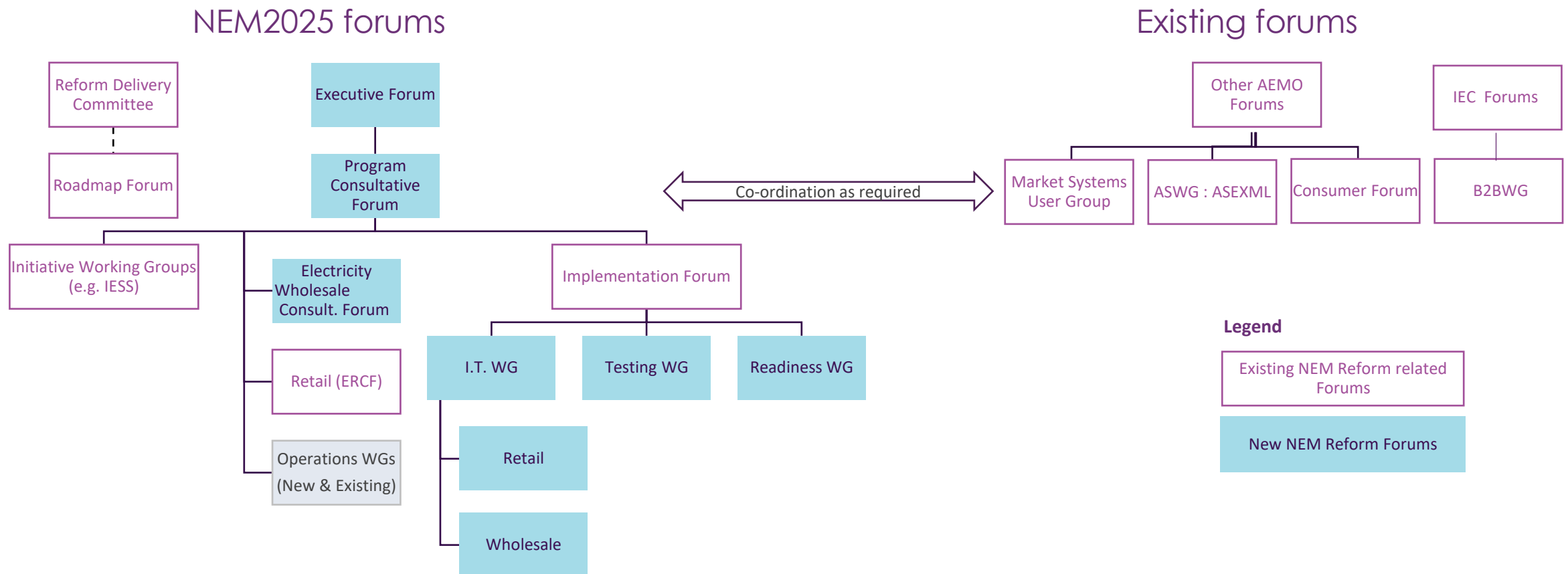
Key: No impact Low impact Medium impact High impact Significant impact

Functional Relationship Heatmap (AEMO) – Foundational & Strategic Initiatives

	Portal Consolidation	CoMaStR	Identify & Access Management	Industry Data Exchange	Enterprise Authentication Authorisation	Business Rules Engine	Forecasting Platform Uplift	Operational Decision Making Tools	Operational Data Store	SCADA Lite	ST PASA Replacement	Dispatch Target State	Bids/Offers Target State	Constraints Target State	FRC														
Registration	Low impact	Low impact	Digital Enabling Capability	Digital Enabling Capability	Digital Enabling Capability	High impact	Digital Enabling Capability	Low impact	Digital Enabling Capability	Digital Enabling Capability	Digital Enabling Capability	Digital Enabling Capability	Digital Enabling Capability	Digital Enabling Capability	Digital Enabling Capability	Digital Enabling Capability													
Offers	Low impact	Low impact				Low impact		Low impact									Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	
Dispatch	Low impact	Low impact				Low impact		Low impact									Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	High impact	Low impact	Low impact	Low impact	Low impact	Low impact	
Constraints	Low impact	Low impact				Low impact		Low impact									Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	High impact	Low impact	Low impact	
PASA	Low impact	Low impact				Low impact		Low impact									Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	High impact	Low impact	Low impact	Low impact	Low impact	Low impact	
Settlements Billing, Prudentials	Low impact	Low impact				Low impact		Low impact									Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact
Causer Pays	Low impact	Low impact				Low impact		Low impact									Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact
Control Room Tools	Low impact	Low impact				Low impact		Low impact									Low impact	High impact	High impact	High impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact
CATS	Low impact	Low impact				Low impact		Low impact									Low impact	High impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	High impact
eMDM	Low impact	Low impact				Low impact		Low impact									Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact
DER	Low impact	Low impact				Low impact		Low impact									Low impact	High impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	Low impact	High impact

Appendix E: NEM2025 Forums & Working Groups

Proposed NEM Reform Implementation Forum and working group structure



Program forums and working groups

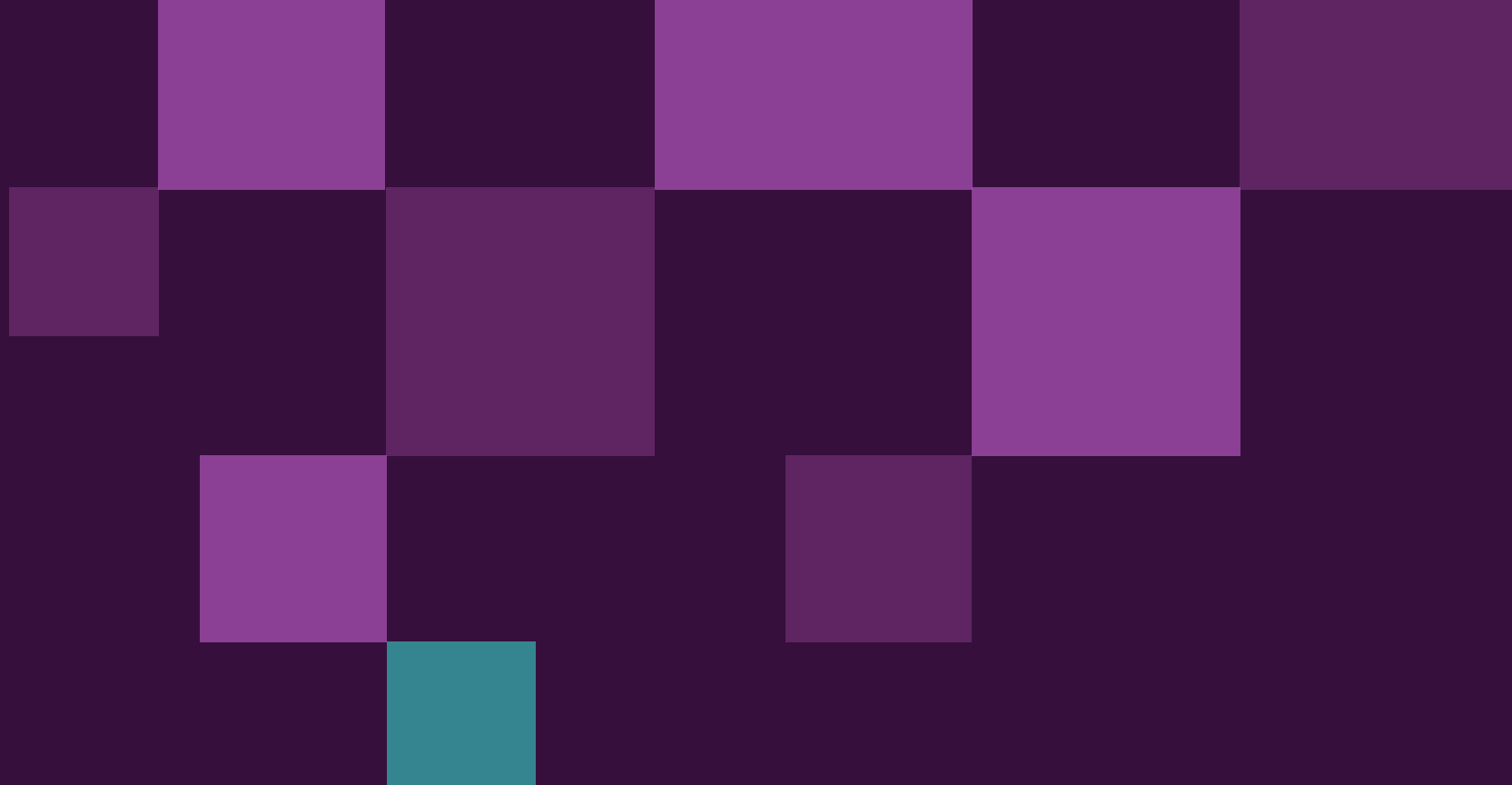
Type	Channel	Purpose	Membership	Chair	Cadence
Advise	EXECUTIVE FORUM	To facilitate engagement between AEMO and executive-level representatives from market bodies, market participants and consumer groups on matters relating to the implementation of the NEM2025 Program.	Executive and Senior industry stakeholders, Open nomination	Violette Mouchaileh	6-monthly and to be determined by the forum (October / April)
	REFORM DELIVERY COMMITTEE	Co-design the development of, and updates to NEM2025 Implementation Roadmap	Executive and Senior industry stakeholders, Attendance by nomination by peak industry bodies	Violette Mouchaileh	Quarterly (Nov / Feb / May /Aug)
Coordination and Collaboration Forums	PROGRAM CONSULTATIVE FORUM (PCF)	To collaborate with participants and intending participants on matters relating to the planning, coordination and implementation of the NEM2025 Program.	Open to nominated representatives	Peter Caruthers	Monthly (1 st week of month)
	INITIATIVE WORKING GROUPS	Undertake impact assessment following a final determination, collaborate on high level design & update mobilisation plan.	Open to nominated representatives	Initiative business lead	As relevant for initiatives
	IMPLEMENTATION FORUM (IF)	To collaborate with participants and intending participants on matters relating to the planning, coordination and implementation of the NEM2025 Program. See sub-groups on following page.	Open forum with current membership	Greg Minney	Monthly (3 rd week of month)
	PROCEDURES WORKING GROUPS: Electricity Wholesale Consultative Forum Electricity Retail Consultative Forum	To collaborate with participants and intending participants on the coordination, and the development of amendments to, procedures, guidelines and documentation required for implementation of reforms. Will utilise other AEMO forums to consult on packages of retail, wholesale and operational procedures/documentation where appropriate.	Open to nominated representatives	EWCF: Chris Muffet ERCF: Blaine Miner	Monthly

Program forums and working groups cont'

Type	Channel	Purpose	Membership	Chair	Cadence
Implementation Forum - Working Groups	IT WORKING GROUP	Consultation on AEMO foundational/strategic initiatives implementation - Retail subgroup - Wholesale subgroup	Open to nominated representatives	TBD	TBD
	TESTING WORKING GROUP	Coordination and dialogue between subject matter experts on testing prior to each release	Open to nominated representatives	Tui Grant	TBD
	READINESS WORKING GROUP (RWG)	Coordination and dialogue between subject matter experts on readiness to go-live	Open to nominated representatives	Greg Minney	Monthly
Information Forums	NEM REFORM ROADMAP FORUM	Facilitate broad industry perspectives on NEM reform and Roadmap iterations	Open attendance	Peter Caruthers	6 monthly/as required by roadmap updates
	INDUSTRY INFORMATION SESSION	Provide high-level, transparent, timely information on program implementation	Open attendance	Peter Caruthers	Quarterly

Communications approach

Type	Channel	Purpose	Stakeholders	Cadence
Communications and tools	MEDIA RELEASES	Generate general awareness around key implementation milestones that have broader implications to the public	Trade and National media, General public	At major program milestones
	AEMO NEWS ROOM ARTICLES & SOCIAL MEDIA (LINKEDIN)	Generate general awareness around implementation milestones.	Industry and general public	At program milestones
	FACT SHEETS & INFOGRAPHICS	To support effective communication around implementation milestones, used in newsletters, articles, social media etc	As required	As required
	AEMO COMMUNICATION NEWSLETTER	Provide high level updates to wider industry on key implementation milestones using AEMO's existing weekly industry newsletter	Subscribers to AEMO Comms newsletter	At program milestones
	PROGRAM NEWSLETTER	Provide transparent and timely information on program management and implementation progress to involved stakeholders	Stakeholders involved in forums and working groups	Monthly
	DEDICATED PROGRAM WEBSITE	Provide transparent, timely information on program. Linking relevant implementation information for individual reform initiatives. Final versions of documents are published on the website.	Industry and general public	Throughout the program
	DIGITAL COLLABORATIVE TOOLS	Enables collaborative development of documents	Impacted industry stakeholders	As required
	DEDICATED MAILBOX	Provide coordination point for implementation program Connect stakeholders with the correct AEMO representative to assist with questions or suggestions	As required	Throughout the program
	TAILORED MATERIALS	Updates on impacted technical standards and changing market arrangements as it pertains to the stakeholder groups	Manufacturers and Service Providers Consumer representatives and Peak bodies for Demand Management, Renewables and Energy Storage Regulatory bodies (non energy)	As required at program milestones



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