

NEM Reform Executive Forum

23 August 2023



1. Welcome

- Inaugural NEM Reform Executive Forum
- Hosted by:
 - Violette Mouchaileh, AEMO, EGM – Reform Delivery
 - Gordon Dunsford, AEMO, EGM – Digital
- Pack will be taken as read to enable the session to focus on key points, engagement and discussion.

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 and objectives

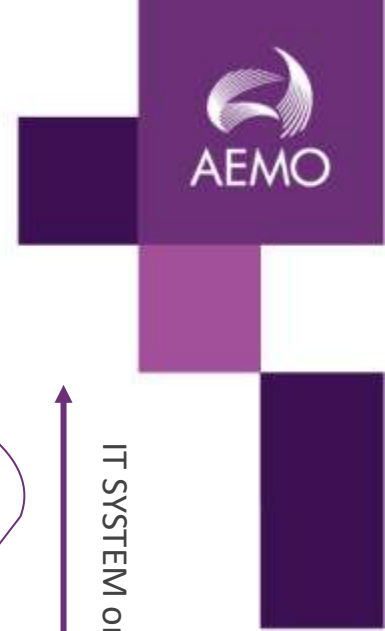
#	Time	Topic	Presenter(s)	Objective
1	1:00-1:05pm	Welcome	Violette Mouchaileh & Gordon Dunsford	
2	1:05-1:20pm	Purpose and Objectives	Peter Carruthers	<ul style="list-style-type: none"> • Promote discussion amongst execs on objectives, purpose and ways of working • Endorsement of Terms of Reference (TOR) – subject to any amendments identified
3	1:20-1:50pm	Mobilising to Deliver the NEM Reform Program	Peter Carruthers & Lance Brooks	<ul style="list-style-type: none"> • Confirmation that the challenges and proposed response are fit for the NEM Reform program • Understand processes around planning, mobilisation and delivery • Executive request: <ul style="list-style-type: none"> ○ Check impact analysis for your business ○ Mobilise teams where required for committed initiatives ○ Make planning provisions for forthcoming initiatives
4	1:50-2:20pm	NEM Reform Foundational & Strategic Initiatives <ul style="list-style-type: none"> • Identity & Access Management • Industry Data Exchange • Portal Consolidation 	Luke Barlow, Meghan Bibby & Chris Muffett	<ul style="list-style-type: none"> • Note: the business case is not ready, indications of support will not be sought at this session • Review the problem statement and business case options • Review the “direction of travel” for the proposed option • Review the process for business case completion and approach to seeking industry support
5	2:20-2:25pm	Overall Program Delivery Status and Cost	Anthony Cooke	<ul style="list-style-type: none"> • Understand overall status of initiatives • Review AEMO program costs and status against budget
6	2:25-2:30pm	Other Business & Meeting Close	Violette Mouchaileh	

Appendix A: NEM Reform Program Engagement Structure
Appendix B: Participant Impact Assessments
Appendix C: AEMO Competition Law Meeting Protocol

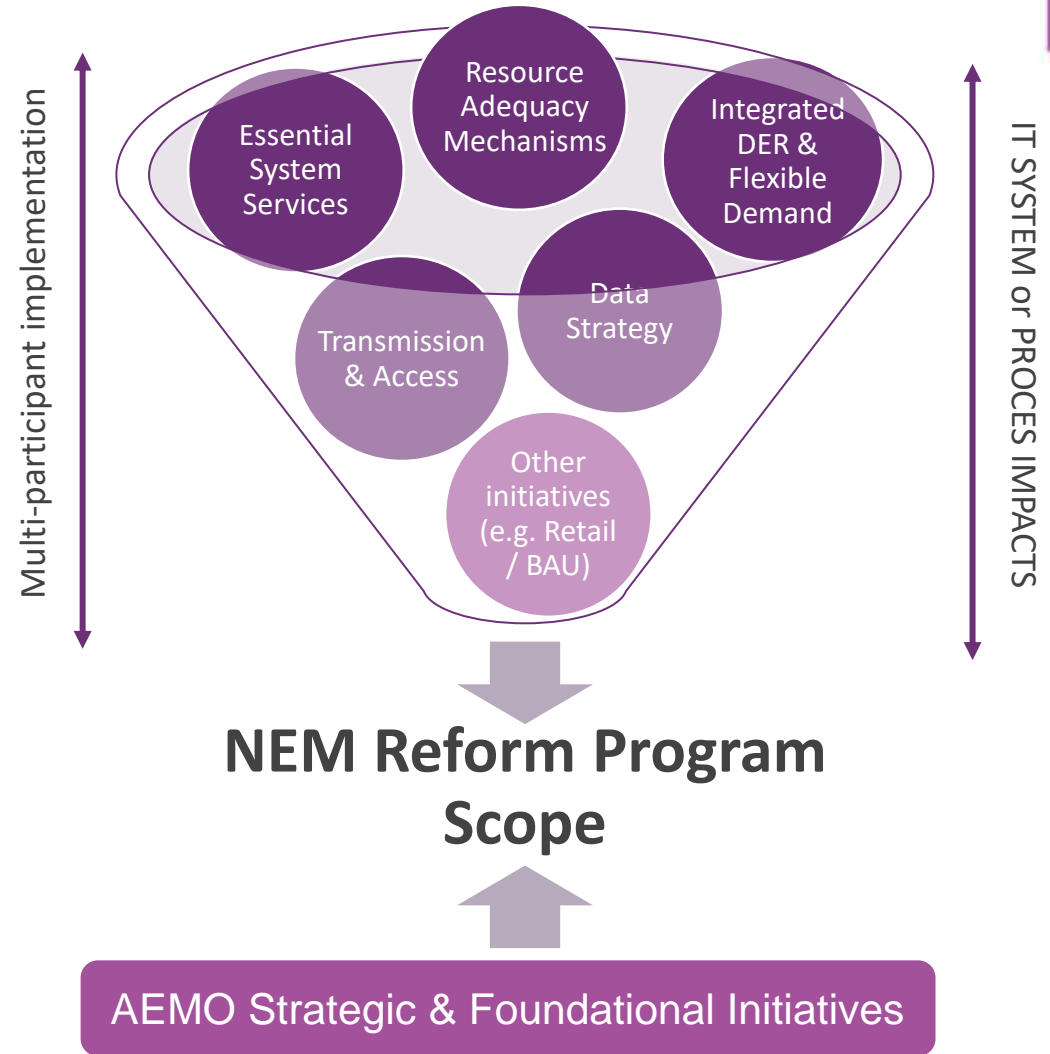
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2. Purpose and Objectives

Context and background



- AEMO, together with industry, is delivering a comprehensive package of reforms, covering the Energy Security Board's (ESB) Post 2025 reforms, AEMO Strategic and Foundational initiatives and other NEM market reforms.
- AEMO has formed the NEM Reform Program to manage the implementation of this reform package.



The challenge



- The NEM Reform Program is a major and complex industry-wide change program, requiring a significant contribution from participants right across the NEM to deliver and implement the reforms successfully.
- Industry participants are currently contending with many competing priorities, challenges and demands.
- This broader context highlights the importance of a carefully considered implementation approach underpinned by industry-wide co-ordination and collaboration to deliver reforms effectively and efficiently.

Some of the key challenges to delivering the program include:

- Size and complexity of the reform program, collectively
- Variable level of impacts across participants
- Uncertainty in the timing, scope and progression of individual initiatives
- Managing investment in a disciplined manner
- Deliverability and resourcing
- Competing demands across the industry and within individual participants.

Scope and engagement

This is the first Executive Forum for the NEM Reform Program. Feedback and alignment on the purpose, objectives and approach is welcome

AEMO is establishing this open Executive Forum to build on the industry wide engagement structure

The Executive Forum is intended to facilitate engagement between executive level organisational representatives from across industry.

The Executive Forum is intended to provide a forum for Industry Executives to:

- Hear overall plans, status, and risks in relation to industry readiness first-hand
- Discuss issues and success factors relating to timely industry investment/mobilisation for delivery
- Consider and raise risks relating to delivery effectiveness and efficiency
- Raise and consider risks external to NEM Reform that may require action/mitigation
- Identify ways for industry to collaborate more effectively and address the challenges identified.

The Forum will contribute to an integrated and coordinated approach to delivery, contributing to informing and navigating uncertainty and de-risking deliver.

Participation and administration

PARTICIPATION



This is the first meeting of this forum. AEMO is open to nominations from participants.

- Open forum – via nomination
- Executive level organisational representatives
- One representative to attend each forum.

FORMAT



- Collaborative and consultative forum rather than a decision making forum
- Focus on implementation-related matters rather than debating specific policy.

Meetings



- Video conference
- Six monthly
- 1-1.5hr duration
- Additional meetings as required.

Administration



- Circulate draft agenda 1 month prior
- Meeting material distributed 1 week prior
- Minutes and presentations made publicly available.

ACTION: We are seeking endorsement of the **Executive Forum Terms of Reference** subject to any amendments identified.

3. Mobilising to Deliver the NEM Reform Program

Program Objectives



Drivers

- **Net-zero emissions economy by 2050**
- **Respond to factors driving the energy transition:**
 - Retirement of ageing thermal plants
 - Managing a grid with increased variable renewables
 - Significant investment in new transmission
 - Preparing for the integration of distributed energy resources
 - Importance of data for facilitating better consumer outcomes



NEM Reform Program

- The **most comprehensive reform package** to be implemented since the NEM's inception in 1998
- ESB has defined **four reform pathways**, complemented by a **Data Strategy**
- AEMO has identified supporting **foundational** and **strategic initiatives**
- Continue to implement **AEMC reforms**, delivering **better consumers outcomes**



Objectives

- To work **collaboratively with industry** in setting a forward view aligned with reform timelines to support individual planning and delivery activities
- To **deliver effective solutions** that meet the reform objectives
- To **deliver as efficiently** as possible leveraging opportunities to **bundle, sequence and prioritise** projects within the Program, and where possible identify **and drive out costs** through solution design and implementation

Key challenges for industry and AEMO



Program size, complexity and overall cost

A major, and complex industry-wide change program, covering more than 30 initiatives and requiring a significant contribution in both cost and resources from participants right across the NEM to deliver and implement the reforms successfully



Uncertainty in timing, scope and progression of initiatives

Many initiatives remain within a policy design and development phase or subject to ongoing rules consultation creating uncertainty on both scope and timing. Similarly, not all initiatives will impact participants equally



Competing demands across industry and within individual participants

Industry participants are contending with many competing priorities and demands for capital and resources to pursue strategic opportunities in among high volumes of regulatory change



Deliverability and resourcing

The delivery program is large and complex, and its delivery will stretch AEMO and industry's limited pool of resources, creating risks for development, testing and readiness.



Managing investment in a disciplined manner

A 'set and forget' funding strategy that establishes a multi-year overall fixed budget is not appropriate for the Program, given policy and regulatory uncertainty. Overall funding requirements dictated by outcomes of these processes

As an industry we are engaging and collaborating to face these challenges through both Planning & Execution



Effective Planning

Industry Collaboration
(via RDC)

NEM Reform Implementation Roadmap
(long-term planning, bundling, sequencing and prioritizing of initiatives, participant impact assessments)

NEM Reform Program Governance
(change management, stage gate, investment commitment)



Efficient Execution (Industry wide)

Industry Collaboration
(via EWCF, ERCF, PCF and Implementation Forum to facilitate and support industry readiness)

Participant Impact Assessments & Development Timelines / Requirements
(informed by HLID and informed go-live assessment)

High Level Implementation Design, Level 1&2 Milestones Plan on a Page
(plans and progress reporting)

Effective Planning



SUPPORTING ARTEFACTS AND PROCESSES

- **NEM Reform Implementation Roadmap** – Reduces overall Program complexity through transparency, co-ordination of regulatory and IT change, informing future rules / policy decisions, improved resource planning and mobilisation for all stakeholders
- **NEM Reform Program Governance** – Tiered management and governance framework to mitigate Program challenges and risks
 - **Change Management Process** – A means to manage policy and regulatory uncertainty across the Program and understand potential impacts
 - **Stage Gate Process** – Ensures certainty of proceeding, by accounting for completion of key deliverables including suitable cost/benefit analysis and industry consultation
 - **Investment Governance Process** – Provides for progressive commitment and investment disciplines across the Program, ensuring funds are approved with sufficient certainty to proceed
- **Dependency / Relationship Matrix** – Upfront and ongoing assessment of key initiative dependencies / relationships to inform bundling, sequencing and prioritisation opportunities and to support delivery and resource planning
- **Participant Impact Assessment** – Upfront and ongoing assessment of affected market systems and procedures, change impacts and affected participants to mitigate delivery risks and support delivery and resource planning
- **Informed Go Live Date process** – Establish a process that provides information to the AEMC that takes account of implementation factors/timing when setting a Rule go-live date as part of a Final Determination. Intention to trial for the next Rule determination.

INDUSTRY COLLABORATION

- **Reform Delivery Committee (RDC)**
 - Collaboration on Roadmap / Program matters including key governance processes (i.e. Change Management and Stage Gate), Long term strategic advice, Informed Go-live

Early and frequent communication provides for better understanding of implementation scope, AEMO / participant impacts (including costs), priorities, bundling and sequencing opportunities, key challenges and risks

Information gathered and shared across Committees and Forums that comprise the NEM Reform Program Engagement Structure

Efficient Execution

Efficiency across the industry regardless of sector, participant or size, providing for lower costs and better services for consumers



SUPPORTING ARTEFACTS AND PROCESSES

- **High-Level Implementation Design** – Provides a preliminary view to participants and the AEMC on how initiatives may be implemented. This is intended to inform participants as they develop their own implementation timelines and impact assessments as well as the AEMC through the Informed Go-Live process
- **Participant Impact Assessment** – As per previous slide
- **NEM Reform Level 1&2 Milestones Plan on a Page** – Frequent and consistent reporting of milestones and plans holds AEMO and participants to account when it comes to implementation. Transparency of key decision making information including timelines for sharing critical changes highlighted and brought front and centre early
- **Generic Participant Development Timeline** – Informed, and early, understanding of participant implementation / development timelines to correlate with AEMO's own timelines
- **Participant Development Support Requirements** – Early assessment of participant requirements to support successful delivery e.g. testing environments / readiness requirements
- **Contingency Period** – Upfront identification and inclusion of appropriate contingency periods within planning / development timelines, mitigating delivery risks

INDUSTRY COLLABORATION

Program Consultative Forum – Advise on mobilisation, coordination, and implementation of inflight initiatives, identification of key execution risks and issues

Implementation Forum – Two-way communication for progressing projects/programs. Development of key market readiness plans and deliverables, e.g. industry testing strategy and plans, market trials and data migration approaches

EWCF & ERCF – Wholesale and retail procedural working groups facilitating collaboration across industry

Collaboration provides for better understanding development timelines, system and process impacts, deliverability risks and challenges

5MS Lessons learned review and actions

KEY LESSONS – PROGRAM DELIVERY

- Maintain wide coverage of industry engagement and governance
- Continue to manage delivery as a portfolio of work
- Define shared risks and shared success factors upfront and their implications on AEMO vs. participant's roles, schedule & dependencies, and requirements for progress tracking
- Standardise reporting across forums. Include key decision making information, with critical changes highlighted and brought front and centre
- Continue to improve transparency on issues and critically assess risks and risk treatment plan

Collaboration & Governance

- **NEM Reform Program Engagement Structure (refer Appendix A)** developed and implemented facilitate deep and effective collaboration across the industry in development of the Roadmap and implementation of initiatives in an integrated and strategic manner
- **Program governance structures:** Change management, Stage Gate and Investment Commitment processes adopted to mitigate uncertainty, risks and challenges in addition to AEMO's Enterprise Portfolio Office governance structures for program / project delivery

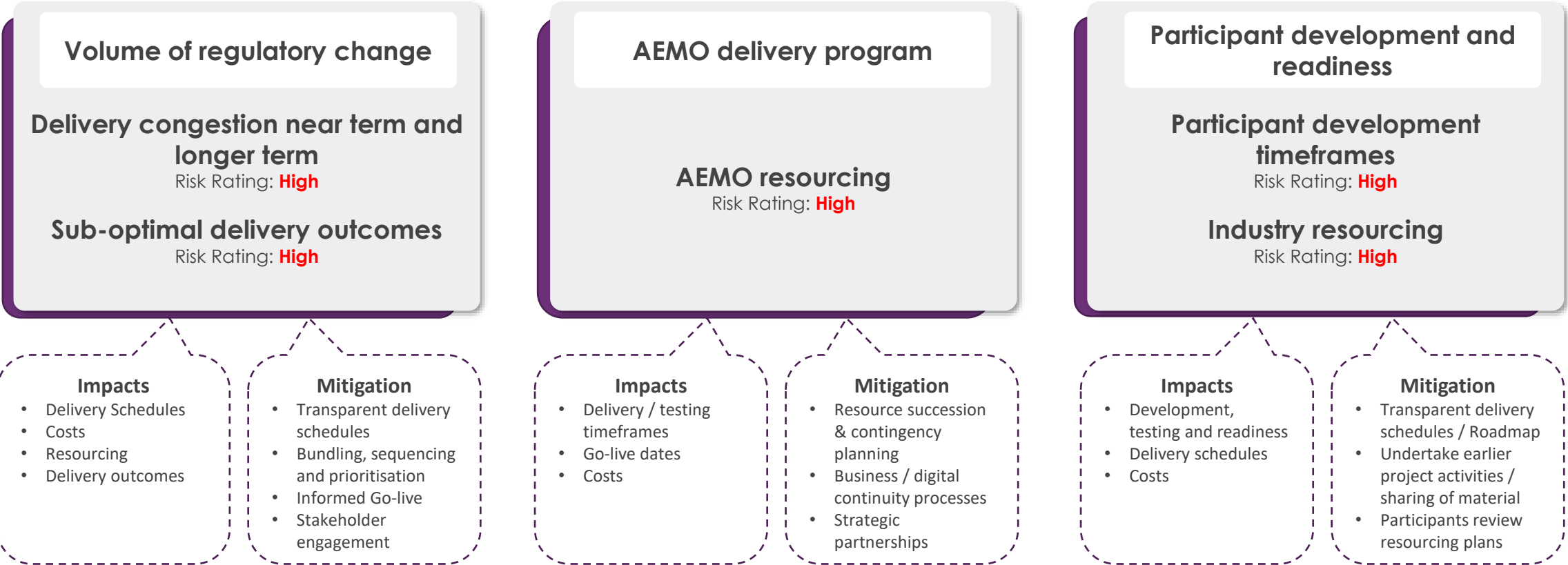
Planning and Impact Assessment

- **NEM Reform Implementation Roadmap:** Established an integrated IT & regulatory roadmap for all reform and AEMO strategic and foundational initiatives
 - Delivery cadence (twice yearly), focus on bundling, sequencing and prioritisation
- **Impact Assessment & Delivery Schedules:** Greater focus and earlier development of HLID, Participant Impact Assessment, Milestones and Participant Development Timeline
- **Informed Go-Live:** Currently being trialled in conjunction with the AEMC to provide a greater level of detail and transparency to internal and external stakeholders on the project's key activities and implementation timelines

Reporting, Risk Management

- **Standard Reporting:** Transparency and accountability against delivery milestones
- **Reform Program Costs:** Transparent about the costs of the reform program, and the options to implement the program. Improving the way it engages on costs and participant fees through the FCC
- **Risk and Issue Management:** Industry risk register established
- **Participant Readiness Enforcement:** Raised in the context of 5MS but has not yet arisen for NEM Reform program in light of "opt-in" nature of reforms

Industry Risk Register (as of August 2023)



Each of the above risks have a risk rating of “High”, with those under the categories of AEMO delivery program and participant development and readiness also having a High likelihood and consequence. Risks under the Volume of Regulatory Change category have an Medium likelihood and High consequence

Ask of Executive Forum members to support Mobilisation & Readiness

- Check impact analysis for your business for committed initiatives
 - October 2023 releases: Fast Frequency Response and MT-PASA
 - June 2024 release: Integrating Energy Storage Systems
 - Dec 2024 release (soft start): Frequency Performance Payments
 - refer to Appendix B – Participant Impact Assessments
- Mobilise teams and/or check readiness where required for committed initiatives
- Make planning provisions for forthcoming initiatives
 - Refer to NEM Reform Implementation Roadmap
- Communicate early with AEMO and industry (e.g. through the PCF) where impacts have not been identified or assessed correctly (e.g. IESS Settlements)

4. NEM Reform Foundational & Strategic Initiatives

- Identity & Access Management
- Industry Data Exchange
- Portal Consolidation

Background

A business case is being developed for implementation under the NEM Reform Implementation Roadmap. AEMO is consulting with industry to define scope and timing prior to any funding decision being made.

Pathway	Initiatives	Description
Foundational <ul style="list-style-type: none"> Foundational dependency work to deliver an uplift to base capability on which reforms are dependent. 	<ul style="list-style-type: none"> Identity Access Management (IDAM) 	<ul style="list-style-type: none"> A unified mechanism to authenticate and authorise external identity when accessing AEMO services, consolidating and improving overall cyber security controls.
	<ul style="list-style-type: none"> Industry Data Exchange (IDX) 	<ul style="list-style-type: none"> A unified data exchange mechanism to support exchanging data between energy stakeholders and with AEMO. This will leverage IDAM.
Strategic (Related) <ul style="list-style-type: none"> Strategic dependency work to effectively futureproof capabilities and scalability of systems thereby avoiding investment in systems that will become end-of-life shortly after the reforms take effect. 	<ul style="list-style-type: none"> Portal Consolidation (PC) 	<ul style="list-style-type: none"> To enable a single pane of glass experience for energy market systems. The portals framework is an enabling platform that supports energy market participants and other partners to consume AEMO browser services in a secure manner.

Case for change



Reactive & Fragmented Technology

Platforms were established independently across NEM services utilising multiple now aged technologies which are both highly customised and nearing end of life.



Evolving Market Needs




Market change continues with new Consumer needs represented by Energy Transition and other initiatives requiring new market services to be deployed.



Regulatory Requirements

Legislative reforms such as SOCI continue to evolve to manage the security and resiliency of Australia's critical infrastructure.

Key Challenges

-  **Fragmented Industry Data Exchange**
Current protocols lack support for evolving services, drive increase tactical spend to support change, maintenance cost, whilst reducing agility to adapt.
-  **Aged Identity and Authorisation Platform**
Security posture must be strengthened to address susceptibility to cyber-attacks by state and cyber criminals and provide support for new regulatory obligations.
-  **Inconsistent Portal Services**
Multiple distinct Portals offer inconsistent user experience, require multiple credentials to access services and do not provide a foundation to support new services.



Security Vulnerability on Critical Infrastructure

The inexorable march of technological advancement underscores the need for heightened vigilance. Security vulnerabilities are on the rise, and critical infrastructure remains a prime target for cyber criminals. It is imperative to adopt proactive measures to protect Australia's energy services and uphold national security.

Business Case Options

Baseline



Continue past approach

Extend the life of existing capability

- Increasing cost and risk with extending ageing technologies.
- Multiple existing platforms all requiring discreet enhancement to address security risks and compliance requirements.
- Lack of suitable foundation to support new services.
- Underlying market platforms, protocols and payload models nearing end of life and will ultimately need to be replaced.

Proposed



Phased

Phased Approach to establish foundational capability for greenfields requirements and address priority (industry defined) legacy areas

- A phased approach, with an initial investment only to address priority areas where critical deficiency/improvement is agreed.
- Set out an overall roadmap but only approve investment for initial phase.
- Transitional support capability over an extended sunset timeframe provides participants the flexibility to determine their own investment timing and sequence.
- Establish foundational capability for greenfields areas such as DER.

Discounted



Big Bang

Whole of market(s) uplift

- **Big Bang, full transition** implementation approach. Feedback from participants provided a clear indication that the industry had no appetite for a change that is high cost, too disruptive and high risk.

Direction of travel (consultation is in progress)

Expected to be included

IDAM: Replace legacy IDAM capability to address security risk and compliance. Establish target state as a pre-requisite to ensure foundation capability available.

PC: Portal framework established to support greenfields requirements, Participant user management (IDAM dependency) provided. Updates to existing Portal services where essential to integrate with new IDAM framework.

IDX: Establishment of centralized AEMO data exchange capability to support target state protocols and update to AEMO gateway software. This will provide support for greenfields requirements (e.g. DER).



Ask of Participants

IDAM:

- Support consultation and industry testing
- Elect for progressive user migration or bulk migration
- Optional integration of advanced user management – federated identity (requires Participant side IT changes).

PC:

- Industry testing and training for Participant Administrators.

IDX:

- Contribute to development of technical specifications for new protocols
- Contribute to definition of AEMO gateway software requirements
- Implementation of capability expected to align to dependent NEM reforms.

Potential - Subject to consultation

PC: Existing AEMO portal services identified as appropriate for internet enablement progressively migrated to the new Portal framework. Updated documentation and training material for services transitioned to the common framework and user experience.

IDX: Legacy NEM Retail and Wholesale Business Services enabled under target state protocols and payloads, integrated with IDAM. Existing legacy protocols and payloads remain available with AEMO centralized backwards compatibility services for duration of sunset period (to be defined by industry). Extent of industry support to be discussed at 17 August workshop.



Ask of Participants (if this proceeds)

PC:

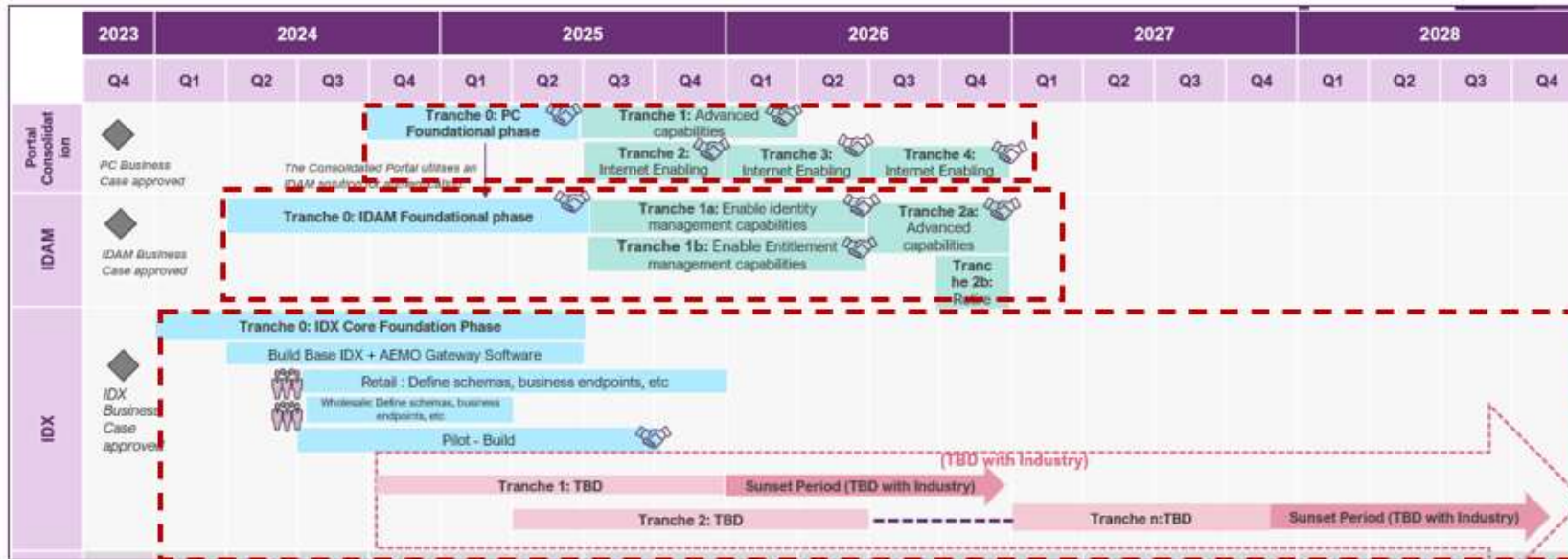
- Industry testing, update to bookmarks to AEMO services to reference new portal, training for updated services.

IDX:

- Contribute to development of updated NEM Retail and Wholesale procedures and technical specifications
- Industry testing and optional participation in Pilot phase
- Participants each define their own optimal sequence and timing to opt-in transition of legacy NEM Retail and Wholesale business services over a multi-year period. IT changes expected to span Gateway and integration capabilities potentially through to back-end systems involved in market interaction.

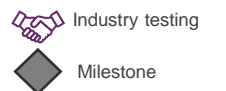
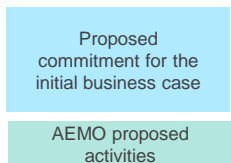
Investment Phasing and Considerations

- With existing capability spanning multiple markets, dependencies across initiatives as well as new initiatives, a phased investment approach is proposed to identify a first cut of capability (subset of tranches) to be assessed via Business Case.
- This provides greater surety on the initial investment and timing and allows for progressive re-evaluation, bundling of capability with new initiatives (where appropriate) and accommodation of change to the transition roadmap.



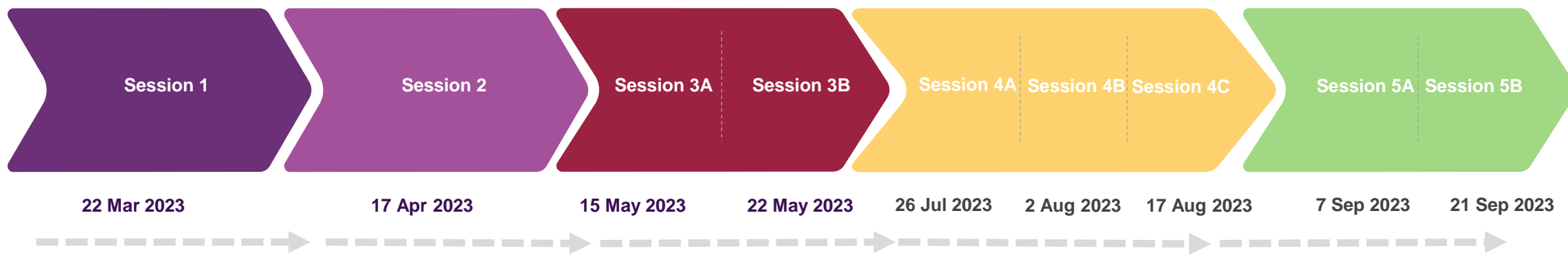
Defining the phases

- The first investment phase is being defined through workshops currently underway.
- For each initiative AEMO is seeking input from participants on the logical tranches to include in the phased investment case.
- Tranches excluded from the phased investment case will be the subject of subsequent investment case(s).



Process to date with industry

- Industry consultation underway to support business case assessment.
- Representatives from 42 market participant and vendor organisations across NEM, Gas, WEM.



Session	Introduction – IDX, IDAM & PC	Discovery Workshops – IDAM and PC	Target State Discussion	Transition Strategy	Conclusions and Business Case
Agenda	<ul style="list-style-type: none"> • Introduce initiatives • Outline workshop plan 	<ul style="list-style-type: none"> • Pain points and benefits • Survey 	<ul style="list-style-type: none"> • Concept walkthrough • Survey 	<ul style="list-style-type: none"> • Transition Strategy • Impacts & Benefits • Survey 	<ul style="list-style-type: none"> • Walkthrough of draft • Assessment and completion

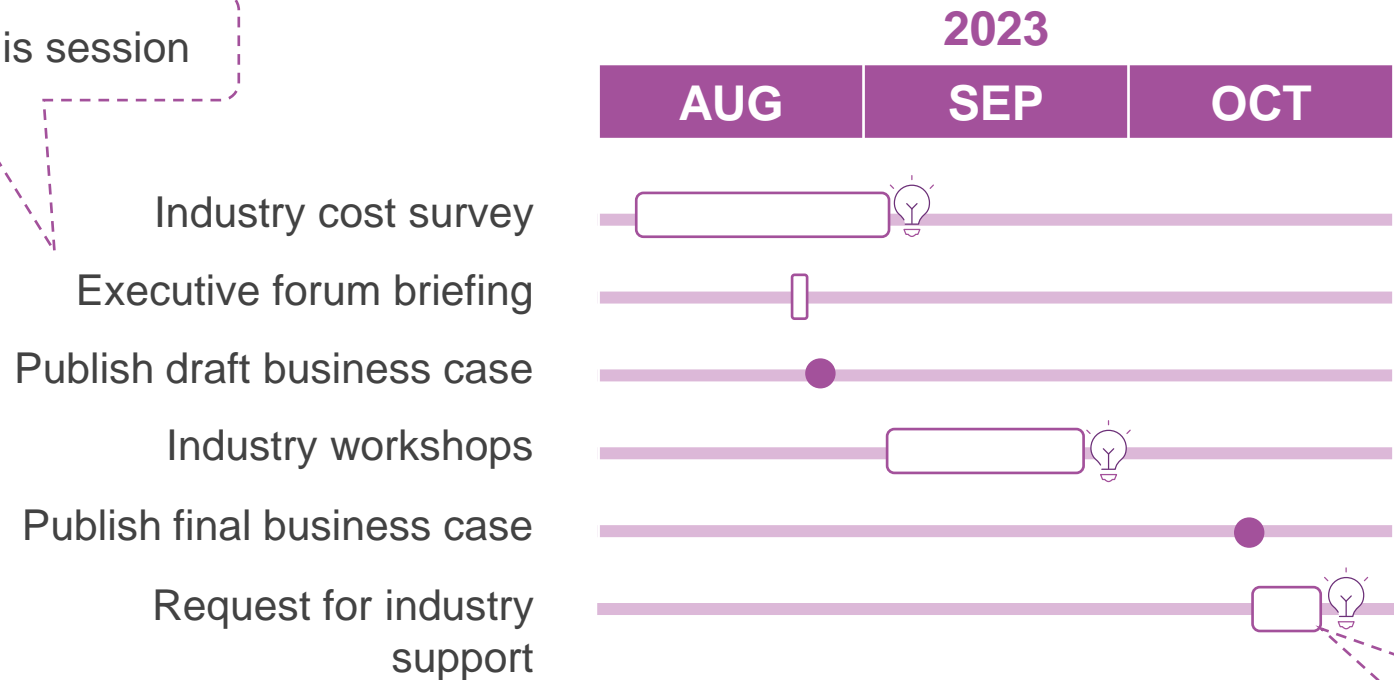
Published information and materials:

<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>

Business case process

This process is guided by the NEM Reform investment governance framework, agreed with the Reform Delivery Committee and published in September 2022*.

This session



- Intended approach**
- AEMO to put forward a recommended option.
 - Broad industry support will be sought, following conclusion of workshops.
 - Industry views will inform AEMO internal governance.

Timing is indicative. Additional engagement with Executive forum members depending on extent of consensus.

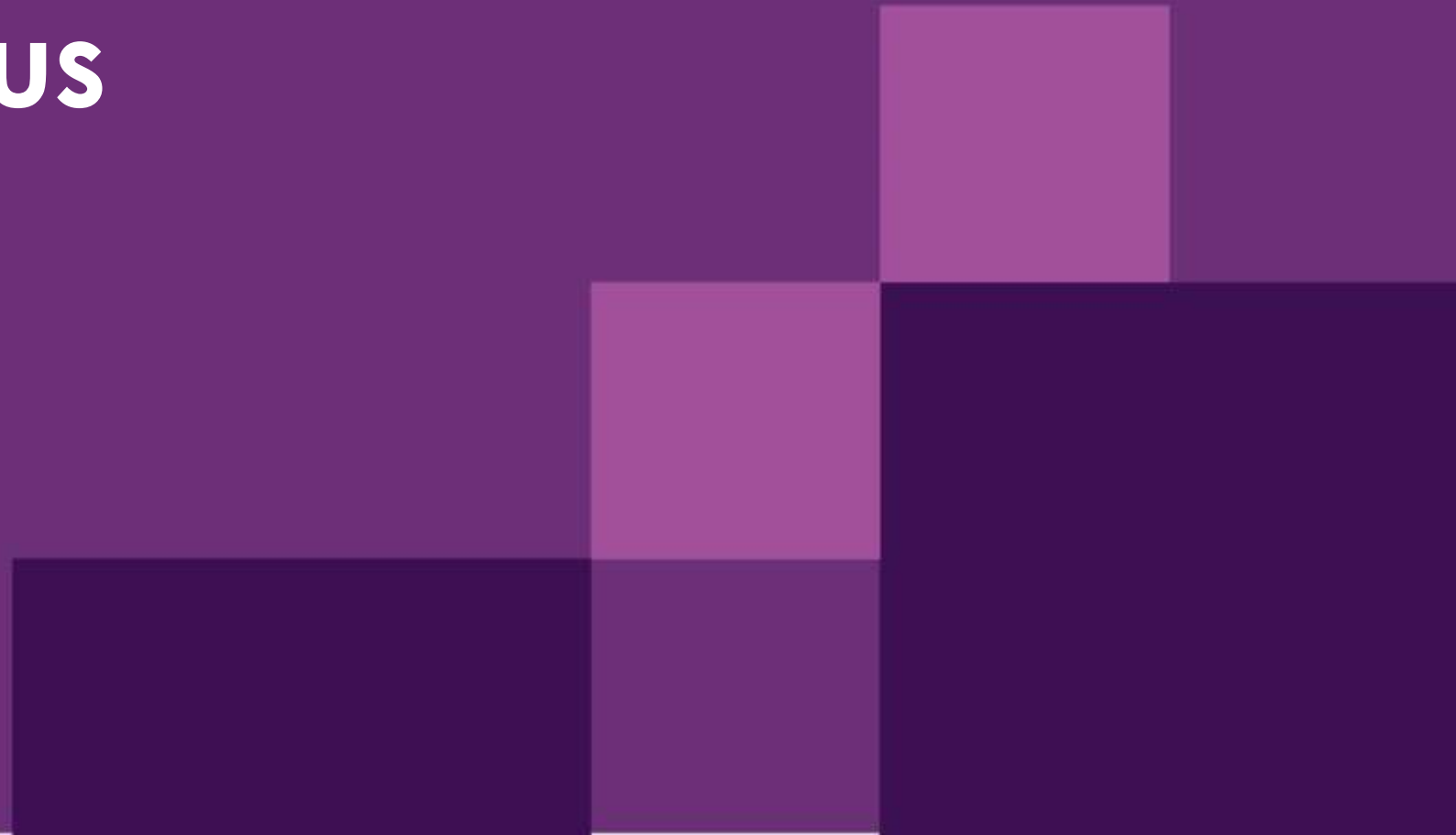
Legend:

- AEMO publishes materials
- 💡 Feedback due
- ▭ Forum/workshop/survey

*Published information and materials:
<https://aemo.com.au/en/initiatives/major-programs/nem-reform-implementation-roadmap>

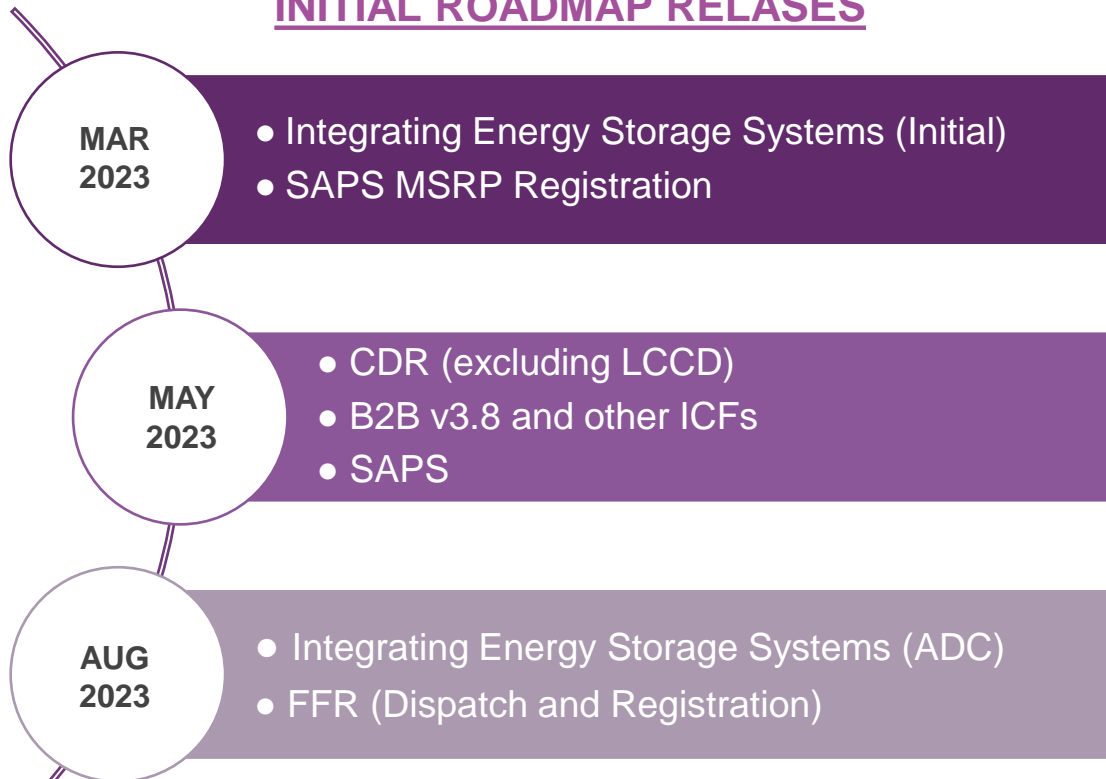
5. Overall Program Delivery Status & Cost

Delivery Status



Program delivered releases

INITIAL ROADMAP RELEASES



The next major releases for the Program is in **October 2023**. AEMO is working towards a twice yearly cadence where possible to mitigate delivery risks and ensure appropriate time for post implementation clean up

LESSONS LEARNT

While we as an industry should be proud of the successful deployment of those initial releases on the Roadmap they have not been without their challenges.

For example, May 2023 PCF raised concerns around compressed timeframes for participant development and testing programs (not a new issue)

Key lessons learnt / changes to the 'ways of working':

- AEMO to provide early, whenever possible High-Level Implementation Design for participant consideration
- Participants' understanding of the impact to their businesses is critical to allow resource planning and navigate busy delivery periods
- A better understanding and factoring in of participant development timelines and support requirements can enable AEMO to better mitigate delivery risks and reduce overall implementation stress
 - Informed by participant impact assessments

Program update inflight initiatives

Overall program status is amber as of August 2023

Strong progress in the following areas:

- MT PASA User Acceptance Testing successfully completed with 100% execution.
- FPP functional and technical workshops now completed.

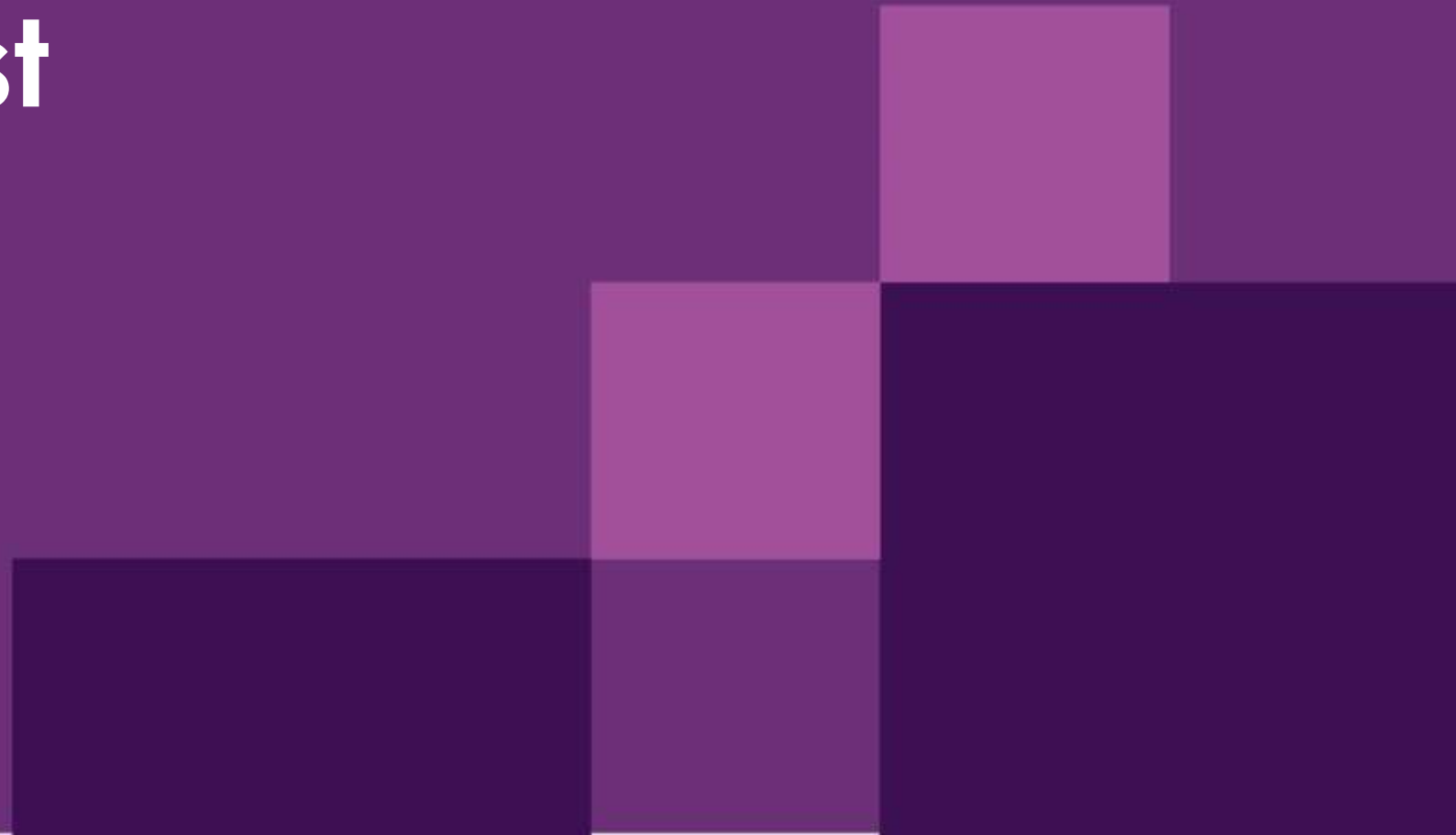
The following provides an example of the overall program update provided to industry through such forums as the PCF. In addition to this summary, more detailed updates are covered on an initiative by initiative basis

Key areas of challenge

- IESS June 2024 remains red, replanning in the process of being finalised. Key areas to be confirmed include test, environments & transition.
- IDAM/IDX/PC progressing with industry consultation, noting feedback from participants required adjustment to the program.

Release	Initiatives	Previous Status	Current status	Key Points	Impacted Stakeholders
OCT-23	Fast Frequency Response (FFR)	Amber	Amber	Industry test start date remains on track for 17 August. Amber status is due to risks existing in testing schedule compression for Settlements component.	Generators, Market Customers
	5 Minute load profile	Green	Green	Project progressing to schedule.	Market Customers / Financially Responsible Market Participants (FRMPs)
	Increased MT PASA Information	Green	Green	Project progressing to schedule.	Scheduled Generators
NOV-23	Metering Exemptions (MSDR)	Green	Amber	Environment and integration issues impacting schedule. Participant readiness raised in procedures consultation and will be addressed with those participants individually. Impacts for industry readiness raised through ERCF or Implementation Forum.	Retailers, Metering Coordinators and Metering Providers (MP) /Metering Data Providers (MDP)
	CDR (LCCD)	Green	Green	Project progressing to schedule.	FRMPs
JUN-24	Integrating Energy Storage Systems (IESS) [Final]	Red	Red	Development delays and resource issues impacting schedule. Schedule and deliverables updated to support participant transition and 2/3 June 24 commencements. Project plan has been developed which achieves the June Go-Live date, some final issues are being resolved before project plan is baselined. Status will be updated once baselined.	Integrated Resource Providers, Network Service Providers, FRMP, MP/MDP, Vendors
JUN-25	Frequency Performance Payments (FPP)	Green	Green	Functional and technical workshops now complete. Project progressing to schedule.	Generators, Market Customers

Program Cost



Program costs (as of Q4 2023)

NEM2025 Gate 1 Business Case (August 2022)

The assessment provided for **updated cost estimates of individual initiatives** and a **whole of life cycle comparison** of two alternative implementation pathways (Regulatory-led and Strategic) over a 10-year period

- The business case:
 - Commits to undertaking mandatory and no regrets initiatives in a timely way.
 - Sets a budget envelope to allow for the full scope the Strategic pathway but imposes implementation and investment disciplines for delivery of initiatives with greater uncertainty
 - Assumes a 40% contingency estimate to account for policy and regulatory uncertainty across the program at the time

NEM2025 Initiatives (\$m)

Initiative	Gate 1 Business Case (± 40%)	Project Funds Approved (incl. contingency)	Actual Spend to Date	Forecast Estimate at Completion	Variance	Comments
Integrating Energy Storage Systems	\$19.3 - \$44.9	\$36.9	\$9.2	\$36.0	\$0.9	N/A
Fast Frequency Response	\$2.5 - \$5.9	\$4.8	\$3.0	\$4.7	\$0.1	N/A
Increased MT PASA Information	\$0.9 - \$2.1	\$1.8	\$0.8	\$1.4	\$0.4	N/A
Frequency Performance Payments	\$6.9 - \$16.0	\$15.3	\$1.7	\$13.2	\$2.1	N/A

Program costs (as of Q4 2023)

NEM2025 Initiatives Continued (\$m)

Initiative	Gate 1 Business Case (± 40%)	Project Funds Approved (incl. contingency)	Actual Spend to Date	Forecast Estimate at Completion	Variance	Comments
Identity and Access Management	\$7.6 - \$17.7	\$1.3	\$0.9	TBD	N/A	Final project funds subject to business case and stage gate approval
Industry Data Exchange	\$7.6 - \$17.7	\$1.9	\$1.5	TBD	N/A	
Portal Consolidation	\$7.6 - \$17.7	\$0.3	\$0.2	TBD	N/A	

Non-NEM2025 Initiatives (\$m)

Initiative	Gate 1 Business Case (± 40%)	Project Funds Approved (incl. contingency)	Actual Spend to Date	Forecast Estimate at Completion	Variance	Comments
Metering Standing Data Review	N/A	\$4.2	\$3.7	\$4.1	\$0.1	N/A
Consumer Data Right	N/A	\$6.5	\$4.4	\$5.3	\$1.2	N/A
Stand Alone Power Systems	N/A	\$3.7	\$2.8	\$3.5	\$0.2	N/A
B2B v3.8 & Other Retail ICFs	N/A	\$1.2	\$0.7	\$1.2	\$0.0	N/A

6. Other Business & Meeting Close



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[NEM Reform Program](#)



Appendix A

NEM Reform Program Engagement Structure

NEM Reform Program Engagement Structure

Forums	Forum focus	Cadence	Approach
Executive Forum	Program overview and status update	Twice yearly	Nomination
Reform Delivery Committee (RDC)	Long term strategic perspective	Quarterly	Nomination
Program Consultative Forum (PCF)	Inflight initiatives status & co-ordination	Monthly	Open
Implementation Forum	Implementation of reforms	Monthly	Open
Electricity Wholesale & Retail Consultative Forums (EWCF & ERCF)	Procedures working groups	Monthly	Open
Testing working group	Testing	Monthly	Open
Working groups	Inflight	As appropriate	As appropriate

Focus / Working Groups for inflight initiatives include

Initiative working groups

Strategic and foundational focus groups (IDX/IDAM/PC)

Industry Testing Working Group (ITWG) – IT technical implementations

Appendix B

Participant Impact Assessments

IESS: Indicative high-level impacts

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 MARKET SYSTEMS & PROCESSES	INDICATIVE PARTICIPANT CHANGE IMPACTS	AFFECTED PARTICIPANTS (TBC)													
		Generator	Sch. Load	SGA	IRP	FRMP	TNSP	DNSP	MC	MDP	MP	ENM	MSRP	Vendors	
REGISTRATION	<p>HIGH for those:</p> <ul style="list-style-type: none"> Opting for ADC New participants registering as IRP. Existing BDUs and SGAs transitioning to IRPs 	✓	✓	✓	✓										
BIDDING & DISPATCH	<p>HIGH level of process and IT impact, including:</p> <ul style="list-style-type: none"> Potential control system changes to accommodate ADC Data model changes to accommodate BDU Bidding interface changes to accommodate BDU 	✓	✓											✓	
RETAIL & METERING	<p>MODERATE level of process and IT impact, includes:</p> <ul style="list-style-type: none"> Standing data, National Meter Identifier classification changes Business to Market (B2M) interfaces / A Standard for Energy Transactions in XML (aseXML) changes RM reports 					✓	✓	✓	✓	✓	✓	✓	✓		
SETTLEMENTS	<p>HIGH, based on initial participant feedback. Includes:</p> <ul style="list-style-type: none"> Fundamental change from generator/customer energy to energy generated /consumed Data model changes to accommodate Non Energy Cost Recovery changes Changes to Maximum Credit Limit (MCL) calculations and prudential forecasting Changes to Billing and Invoicing 	✓	✓	✓	✓	✓								✓	

EXAMPLE IMPACT ASSESSMENT as of MAY 2023

Generator	Generators
Sch. Load	Scheduled loads
SGA	Small generation aggregators
IRP	Integrated resource providers

FRMP	Financially responsible market participant
TNSP	Transmission network service provider
DNSP	Distribution network service provider
MC	Metering coordinator

MDP	Metering data provider
MP	Metering provider
ENM	Embedded network manager
MSRP	Market SAPS resource provider

FFR: high-level impacts

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 MARKET SYSTEMS & PROCESSES	INDICATIVE PARTICIPANT CHANGE IMPACTS	AFFECTED PARTICIPANTS (TBC)												
		Generator	Sch. Load	SGA	IRP	FRMP (Market Cust)	TNSP	DNSP	MC	MDP	MP	ENM	MSRP	Vendors
REGISTRATION	LOW for those: <ul style="list-style-type: none"> New contingency FCAS providers Existing contingency FCAS providers 	✓	✓	✓	✓									
BIDDING & DISPATCH	LOW level of process impact, including: <ul style="list-style-type: none"> Extending current bidding system to support Very Fast FCAS services New terms/info on constraint equations and dispatch outcomes 	✓	✓	✓	✓									
RETAIL & METERING	NONE													
SETTLEMENTS	LOW with: <ul style="list-style-type: none"> Extending to display new columns for invoicing reports 'Ancillary services' line item on billing PDF to include new services Impacts to all participants that consume settlement data 	✓	✓	✓	✓	✓								

EXAMPLE IMPACT ASSESSMENT as of MAY 2023

Generator	Generators
Sch. Load	Scheduled loads
SGA	Small generation aggregators
IRP	Integrated resource providers

FRMP	Financially responsible market participant
TNSP	Transmission network service provider
DNSP	Distribution network service provider
MC	Metering coordinator

MDP	Metering data provider
MP	Metering provider
ENM	Embedded network manager
MSRP	Market SAPS resource provider

MT PASA: high-level impacts

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 MARKET SYSTEMS & PROCESSES **INDICATIVE PARTICIPANT CHANGE IMPACTS** **AFFECTED PARTICIPANTS (TBC)**

Generator Sch. Load SGA IRP FRMP (Market Cust) TNSP DNSP MC MDP MP ENM MSRP Vendors

REGISTRATION

BIDDING & DISPATCH **LOW** for those:
 •Scheduled generation unit and scheduled bi-directional units required to supply additional data fields.
 •Optional for TNSP and Scheduled Load participants.

EXAMPLE IMPACT ASSESSMENT as of MAY 2023

RETAIL & METERING

SETTLEMENTS

Generator	Generators
Sch. Load	Scheduled loads
SGA	Small generation aggregators
IRP	Integrated resource providers

FRMP	Financially responsible market participant
TNSP	Transmission network service provider
DNSP	Distribution network service provider
MC	Metering coordinator

MDP	Metering data provider
MP	Metering provider
ENM	Embedded network manager
MSRP	Market SAPS resource provider

FPP: Indicative high-level impacts

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 MARKET SYSTEMS & PROCESSES	INDICATIVE PARTICIPANT CHANGE IMPACTS	AFFECTED PARTICIPANTS (TBC)													
		Generator	Sch. Load	SGA	IRP	FRMP	TNSP	DNSP	MC	MDP	MP	ENM	MSRP	Vendors	
REGISTRATION	LOW for those: <ul style="list-style-type: none"> Scheduled and semi-scheduled generators seeking an exemption from PFR requirements 	✓	✓		✓										
BIDDING & DISPATCH	LOW for those: <ul style="list-style-type: none"> Participating in central dispatch (as that process is unchanged), with potential consideration to changes in regulation FCAS offers 	✓	✓		✓										
RETAIL & METERING	LOW for those: <ul style="list-style-type: none"> Whose metering is compliant with current requirements, as there are no new specific metering requirements as part of the scheme 														
SETTLEMENTS	MODERATE for those: <ul style="list-style-type: none"> Scheduled, semi-scheduled generators and other facilities individually assessed in FPP Market Participants who will be involved in recovery of FPP and regulation FCAS costs 	✓	✓	✓	✓	✓									

EXAMPLE IMPACT ASSESSMENT as of MAY 2023

Generator	Generators
Sch. Load	Scheduled loads
SGA	Small generation aggregators
IRP	Integrated resource providers

FRMP	Financially responsible market participant
TNSP	Transmission network service provider
DNSP	Distribution network service provider
MC	Metering coordinator

MDP	Metering data provider
MP	Metering provider
ENM	Embedded network manager
MSRP	Market SAPS resource provider

Appendix C

AEMO 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, all participants agree to adhere to the CCA at all times and to comply with appropriate protocols where required to do so.

AEMO has developed meeting protocols to support compliance with the CCA in working groups and other forums with energy stakeholders. Before attending, participants should confirm the application of the appropriate meeting protocol.

To access the full protocol at AEMO's website, visit: <https://aemo.com.au/en/consultations/industry-forums-and-working-groups>



For more information visit

aemo.com.au