

NEM Reform Executive Forum

28 March 2024



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.

1. Welcome

Hosted by: **Violette Mouchaileh, EGM – Reform Delivery, AEMO**

Pack will be taken as read to enable the session to focus on key points, engagement and discussion.

Agenda and objectives

#	Time	Topic	Presenter	Objectives	Target
1	11:00-11:05am	Welcome	Violette Mouchaileh		
2	11:05-11:10am	Actions from previous meeting	Peter Carruthers		
3	11:10-11:30am	NEM Reform Foundational & Strategic Initiatives <ul style="list-style-type: none"> • Identity & Access Management • Industry Data Exchange • Portal Consolidation 	Luke Barlow / Andrew Bell	<ul style="list-style-type: none"> • Seek support for the recommendations set out in the Business Case 	Input Sought
4	11:30-12:00pm	NEM Reform Program <ul style="list-style-type: none"> • Look back • Forward view 	Peter Carruthers	<ul style="list-style-type: none"> • For information • Looking back – Post Implementation Review • Looking Forward <ul style="list-style-type: none"> • Now: In-Flight Initiatives • Near-Term: Forthcoming Initiatives for Mobilisation • Planning: 1 – 3 year horizon 	Information & Action
5	12:00-12:05pm	NEM Reform Engagement Structure Review	David Reynolds	<ul style="list-style-type: none"> • For Information & discussion 	Discussion
6	12:05-12:20pm	Overall Program Delivery Status, Program Cost & Risk	Rowena Leung	<ul style="list-style-type: none"> • Understand overall status of initiatives • Review AEMO program costs and status against budget 	Information
7	12:20-12:30pm	Other Business & Meeting Close	Violette Mouchaileh		

Appendix A: AEMO Competition Law Meeting Protocol

Appendix B: Foundation & Strategic Initiatives Business Case Executive Summary

Appendix C: Initiatives Overview

“Please note that this meeting will be recorded by AEMO and may be accessed and used by AEMO for the purpose of compiling minutes. By attending the meeting, you consent to AEMO recording the meeting and using the record for this purpose. No other recording of the meeting is permitted”

2. Actions from previous meeting

Peter Carruthers

Actions from previous meeting

Item	Topic	Action	Responsible	Status
2.4.0.1	NEM Reform Program – 2023 Review and 2024	Participants to provide AEMO feedback relating to 2023 activities and potential improvements to the 2024 engagement approach.	Participants	Closed
2.4.0.2	NEM Reform Program – 2023 Review and 2024	AEMO to document its process for completing post project implementation review.	AEMO	Closed
2.4.0.3	NEM Reform Program – 2023 Review and 2024	AEMO, in conjunction with PCF, to consider the addition of ‘Cost Recovery’ risk to the Industry Risk Register	AEMO	Closed – <i>Cost recovery added to register</i>
2.4.0.4	NEM Reform Program – 2023 Review and 2024	Participants to suggest options on risk mitigation strategies.	Participants	Closed – <i>Feedback from PCF reflected in Updated risk register</i>
2.5.0.1	NEM Reform Program – 2023 Review and 2024	Participants to ensure that their organisations are able to provide detailed costs feedback when reviewing and commenting on the business case.	Participants	Closed

(Item = Meeting # – Agenda # – Reference)

3. NEM Reform Foundational & Strategic Initiatives

Luke Barlow / Andrew Bell

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

Introduction

- Following extensive consultation and collaboration with the industry, the Business Case for the IDAM, IDX and PC initiatives has now been finalised
- The purpose of this agenda item is to seek industry's support for proceeding with these initiatives as set out in the recommendations, or to understand whether significant objections exist at executive level
- To facilitate this process, the agenda items today are:
 - Initiative overview
 - Recap the collaboration and consultation process
 - Review the recommendations
 - Review the key themes received from industry in submissions to the draft Business Case
 - Review the position of industry participants in relation to the recommendations, based on submissions and 1-on-1 sessions
 - Seek your support for proceeding with the recommendations, or discuss where issues or objections may exist
- The Business Case will be taken as read for this session
 - An executive summary of the Business Case has been included at Appendix B in this Pack
 - A short video (10 minutes) of the executive summary has been prepared so that executives can quickly review and understand the key points. Available [here](#).
 - The full Business Case is available [here](#).

Recap: Initiatives overview

- Foundational and strategic initiatives represent investments intended to establish secure, standardised and effective capability required for both existing and new market services.
- These initiatives have been identified for the NEM Reform Program and included in the NEM Reform Implementation Roadmap.
- A business case has been developed for implementation in consultation with industry to define scope, options, timing, costs and benefits.



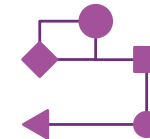
Identity and Access Management (IDAM)

A unified mechanism to authenticate and authorise external identity when accessing AEMO services, consolidating and improving overall cyber security controls.



Portal Consolidation (PC)

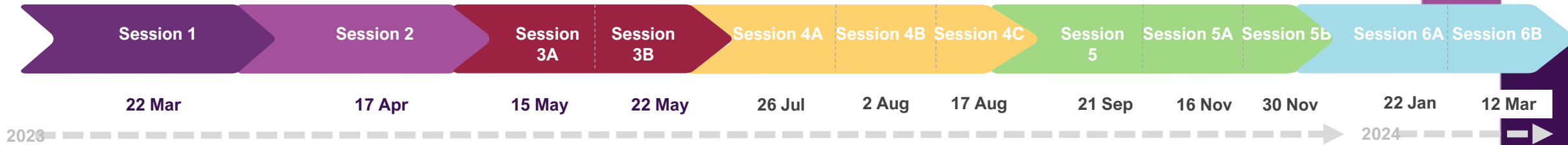
Enables a unified stakeholder experience that hosts web applications. The portals framework is an enabling platform that supports energy market participants and other partners to consume AEMO browser services in a secure manner.



Industry Data Exchange (IDX)

Unified access to AEMO services across the NEM, with a framework scalable to all markets. Using modern authentication and communication protocols, facilitating a cohesive approach to industry data exchange. This will leverage IDAM.

Engagement process with industry



Session	Introduction	Discovery	Target State	Transition Strategy	Cost & Method	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"> Industry and AEMO costs Assumptions, options and methodology 	<ul style="list-style-type: none"> Walkthrough of draft business case Assessment and completion

Published information and materials:

- Focus Group webpage: <https://aemo.com.au/en/consultations/industry-forums-and-working-groups/list-of-industry-forums-and-working-groups/nem-reform-foundational-and-strategic-initiatives-focus-group>

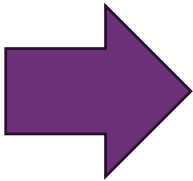
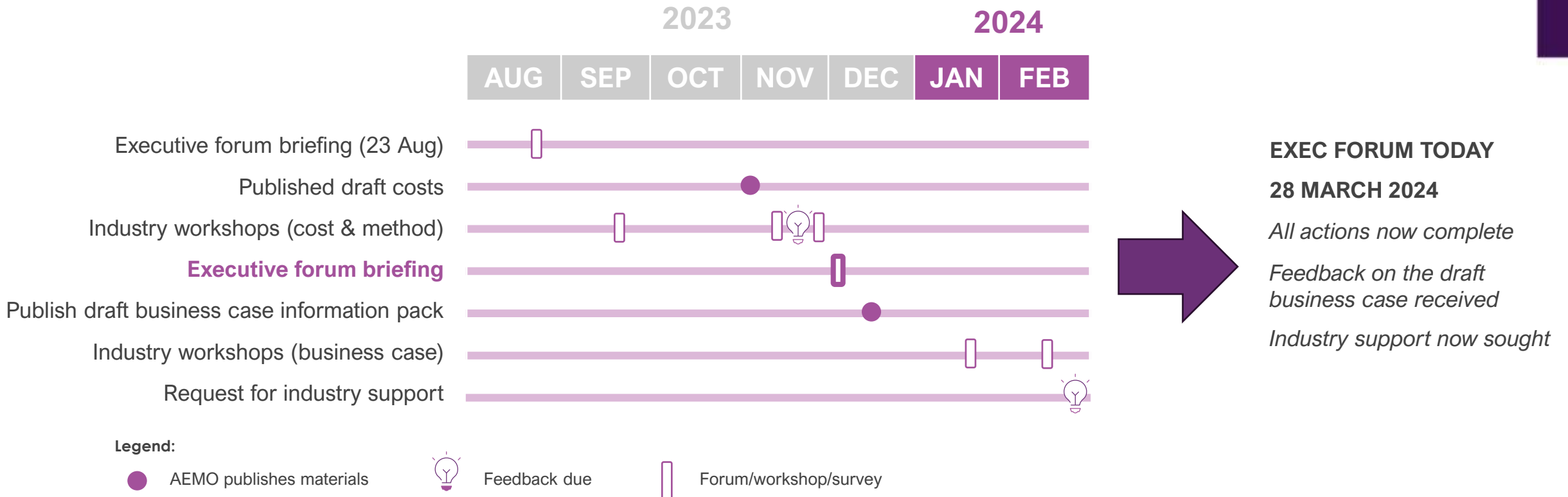
Key Elements of the Process

- Materials were developed, published and consulted on throughout the workshop schedule
- A total of twelve detailed workshops, averaging sixty to seventy attendees
- Progress and updates reported to PCF, RDC and IEC
- Feedback incorporated through workshops, informal one on one sessions and finally via formal submission on the Business Case.

Process for seeking industry support

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

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



EXEC FORUM TODAY
28 MARCH 2024
All actions now complete
Feedback on the draft business case received
Industry support now sought

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

Recommendation Summary

Compelling drivers exist to develop new foundational capability across IDAM, IDX and PC areas. Given short term reform roadmap congestion & need for fiscal prudence, *AEMO recommends a phased investment approach for IDX* to address critical security needs, support near-term NEM reforms, provide flexibility for the future & address priority industry pain points.

RECOMMENDATION

RATIONALE



Identity and Access Management

PROCEED with a Strategic target state, AEMO investment of **\$21M¹** over 2 years

- Address key security vulnerabilities and reduce attack surface area – identity management is the most impactful “weak link” in the cyber security chain
- Manage expected increase in identities for management: DERs, small generators
- AEMO TCO cost differential of **\$8M** & total Industry costs of **\$38M** are smaller than the potential cost and customer impact of security breaches



Industry Data Exchange

PROCEED with a Strategic target state Foundation phase, AEMO investment of **\$20M** over 2 years

- As the grid becomes digitised, data exchanged is increasing in volume, frequency and requires lower latency
- IDX Foundation phase represents an efficient and unified implementation of data exchange capabilities across multiple reforms requiring it (AEMO costs are **\$20M** compared to **\$29M** if done initiative by initiative, and participants also see a cost efficiency)
- Migrating legacy services is difficult to assess at this stage given the cost uncertainty and value uncertainty. Deferring the decision point on migrating legacy services – IDX Transition phase – allows for more certainty on cost and value estimates and more information to guide optimising the transition approach.

DEFER decision on Transition phase to Q4 2025.



Portal Consolidation

PROCEED with a strategic target state, AEMO investment of **\$6M** over 2 years

- Portal Consolidation Strategic target state delivers benefits to address identified industry pain points for a TCO cost differential of **\$6M** for AEMO and **\$13M** for industry
- Reduces AEMO’s attack surface area in the most common ‘entry point’ for bad actors

1. All financial figures presented on this slide have a +/- of 40%

Key Themes from Submissions to Draft Business Case

Feedback Theme	Response
Recommendation	<ul style="list-style-type: none"> Submissions ranged from strong support to no commentary with no negative feedback
Benefits Summarising all benefits to a single slide	<ul style="list-style-type: none"> Point accepted Single slide prepared, Business Case updated, and slide is included in the Appendix to this Pack. Provided to the working group and reviewed with the PCF.
Security Greater clarity on residual security risk and the approach to compliance	<ul style="list-style-type: none"> Point accepted Security is currently a key industry risk. Slide prepared to show what elements of security risk the IDAM/IDX/PC initiatives address, and a comparison of options for addressing residual security risks Business Case updated, shared with working group and presented to PCF.
Participant Costs A few revised cost submissions	<ul style="list-style-type: none"> Updated information gratefully received Financial information within the Business Case updated accordingly.
Risk Inclusion of the factors driving the risk matrix	<ul style="list-style-type: none"> Point accepted Risk assessment updated and risk rating methodology included Business Case updated

Industry Support for Recommendations

Participant Category	Position
Retailer/Generators	<ul style="list-style-type: none"> • Very strong to moderate support from retailer/generators, with 6 representations having been received covering large, medium and small • Strong support in particular for IDAM arising from security considerations • One retailer/generator was more cautious in relation to IDX approach, but accepted the need to move forward • Strong advocacy received from two organisations to extend the initiatives to Gas/WA • No objections received
Metering Service Providers	<ul style="list-style-type: none"> • No formal submissions of support received, but one-on-one sessions indicated support in principle • Some advocacy received to extend the initiatives to Gas/WA • No objections received
Distributors	<ul style="list-style-type: none"> • Submissions from Distributors were focused primarily on clarity of the business case and did not express views either way in relation to the recommendations • No objections received
Industry Forums	<ul style="list-style-type: none"> • FaSI working group: Established explicitly for this business case process, open to all • NEM Reform Forums briefed: Exec Forum, PCF and RDC • IEC briefed: Noted that change control process would need to be followed

- ❖ 9 formal submissions received
- ❖ Supplemented by multiple one-on-one sessions
- ❖ Formal submissions from participants have been treated as confidential, as most submissions are specific to the context of that participant's business
- ❖ The position statement has been derived from both formal submissions and one-on-one sessions with individual participants

Ask of this group



- AEMO is now seeking industry support for progressing with these initiatives in line with the recommendations
- AEMO recognises that the Executive Forum doesn't cover all participants, but notes that the public consultation and working group process has provided the opportunity for any interested party to have their say

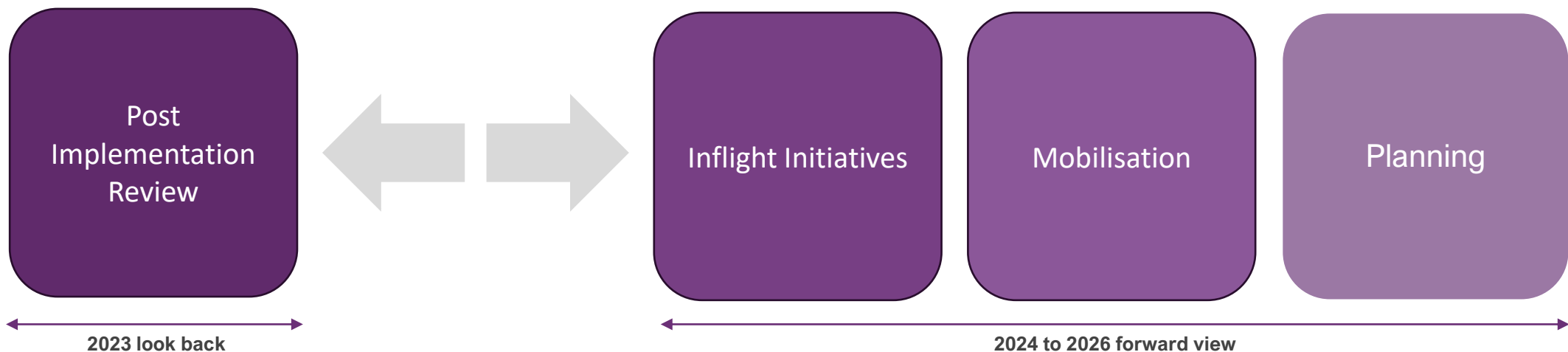
4. NEM Reform Program

Peter Carruthers

- Look back
- Forward view

Introduction

- The purpose of this agenda item is to provide forum members with:
 - An update of AEMO’s assessment completed on those initiatives delivered in 2023, and
 - A forward view of the implementation and planning activities underway or set to commence in the 2024 – 2026 period
- Forum members are encouraged to establish and/or check-in with project delivery teams, raise specific issues or concerns and provide strategic insights on potential optimisation opportunities across the breadth of activities captured within the Program



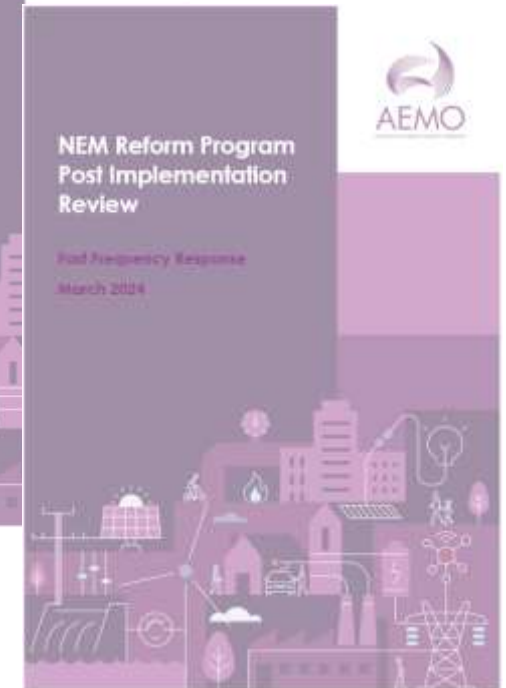
2023 Post Implementation Review

Objectives

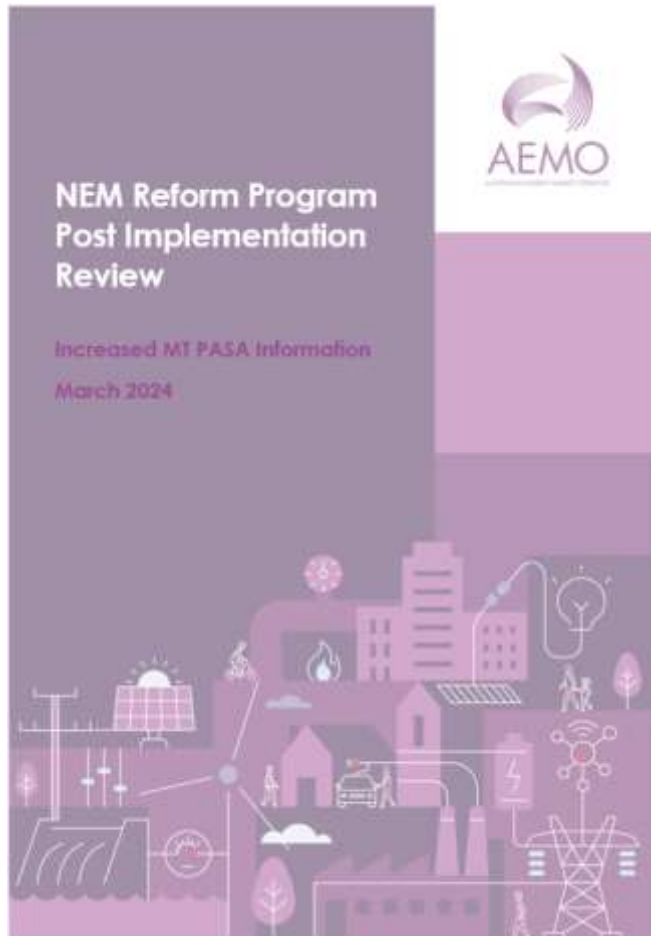
- To identify the key learnings and areas for improvement which can be applied across the delivery of future initiatives under the NEM Reform Program
- To consider implementation of the reform against the broader policy or reform objectives, benefits and/or assumptions defined at the time a final rule or policy is made and whether those objectives and benefits have been realised

- In DEC 2023, AEMO provided its preliminary thoughts on how the implementation of initiatives went in 2023 and whether policy objectives were met
- AEMO will publish in the coming weeks two reviews for those initiatives delivered in October 2023:
 - **Increased MT PASA Information**
 - **Fast Frequency Response**
- Each review provides for a more detailed assessment taking into consideration **timelines, scope, budget, AEMO and industry readiness**, as well as the **reform in action and assessed benefits** at the time of making a final rule determination or final policy decision

AEMO intend to complete similar assessments for the **Stand-alone Power Systems** and **Integrated Energy Storage System** reform initiatives in the coming months



Example: Post implementation review – Increased MT PASA Information



SUMMARY FINDINGS

- The initiative was implemented without delays throughout the delivery lifecycle and within the allocated budget
- Extensive engagement between AEMO and industry throughout the lifecycle of the project resulted in the smooth implementation of the initiative. This included early engagement of the testing team to clarify participants' understanding as well as numerous AEMO demonstrations and interactive sessions to stakeholders on the user interface to minimise issues
- Medium-term reliability and security problems associated with a lack of consistent, standardised, public information about generator availability have been addressed through the implementation of the initiative with improved functionality now afforded to participants via an API solution which subsequently minimises implementation costs for participants who can utilise AEMO's forward facing Industry Data Exchange (IDX) approach
- The additional information can provide more informed and efficient decision making by participants and policy makers – for example in the assessment of the future reliability impacts

In drafting its assessment, AEMO note (i) this reform is part of a broader package defined by the ESB as part of the Resource Adequacy Mechanism stream; and (ii) the benefits of certain reforms may not be apparent from the outset and instead take time to develop or embed within the operation of the market, or participants behaviours. For this reason, a subsequent assessment at a later point in time may be warranted.

Inflight initiatives

Refer to Appendix C for a short description of each initiative

- As noted in December Executive Forum, the Program is working towards several releases across multiple initiatives in 2024. Stakeholders are encouraged to establish and check-in with project delivery teams, and engage through relevant forums (e.g., PCF, Implementation Forum)

Release	Initiatives	Impacted Stakeholders	Expected Stakeholder Actions
MAR-24	Metering Exemptions (MSDR)	Retailers, MC, MP/MDP	N/A – Delivered
JUN-24	Integrating Energy Storage Systems	IRPs, NSPs, FRMP, MC/MP/MDP, MSRPs ENMs, Vendors	<ul style="list-style-type: none"> Complete Development, Participate in Market Trial Prepare for Settlement / NECR Go-live Confirm and Prepare BDU transition plans
SEP-24	Retail Market Improvements (NSLP methodology change and Metering Substitutions)	FRMP, MDP, LNSP	<ul style="list-style-type: none"> Establish Project Delivery Teams, commence systems scoping and design activity
OCT-24 (TBC)	SCADA Lite	DRSP, VPP, SGA, Operators of remote grid scale assets	<ul style="list-style-type: none"> Assess potential eligibility and need for adoption
DEC- 24	Frequency Performance Payments (Non-Financial)	Generators, Scheduled Loads	<ul style="list-style-type: none"> Establish Project Delivery Teams, Commence systems scoping and design Assess potential operational impacts
JUN-25	Frequency Performance Payments (Financial Commencement)	Generators, Market Customers	<ul style="list-style-type: none"> Project / Implementation included in forward delivery plans

Mobilisation activities

In addition to those inflight activities, several reforms are now close to reaching a final determination. AEMO is working through the implementation requirements for these initiatives and encourages participants to engage in these processes. ***Mobilisation should occur once Final Determination has been released***

Initiatives	Status*	Impacted stakeholders	Next steps
Improving security frameworks	Final Determination: 28/03/24	Generators, Scheduled Load, Market Customers, TNSPs	<ul style="list-style-type: none"> AEMO HLID / PIA to be published post FD Review final determination, HLID / PIA, establish project delivery teams Proposed go-live DEC 2025
Unlocking CER benefits through flexible trading	Draft Determination: 29/02/24 Final Determination: 07/24	Retailers/FRMP, Embedded Network Managers, MC, MP, MDP, DNSP	<ul style="list-style-type: none"> AEMO HLID / PIA to be published post alongside submission to DD Engage in AEMC rules consultation, review implementation impacts, assess go-live date Proposed go-live (Feb 26) subject to informed go-live process
Enhancing reserve information	Draft Determination: 21/12/23 Final Determination: 21/03/24	Generators, Scheduled Load, FRMP, TNSPS	<ul style="list-style-type: none"> AEMO HLID / PIA to be published post FD Review final determination, HLID/PIA & establish project delivery teams Proposed go-live 1 July 2025 & 1 July 2027
Integrating price responsive resources into the NEM	Draft Determination: 25/07/24 Final Determination: 12/24	FRMP, DNSPS, DRSP	<ul style="list-style-type: none"> Engage in AEMC rules consultation and technical working groups Proposed go-live TBD
Accelerating smart meter deployment	Draft Determination: 04/04/24 Final Determination: TBC	Retailers, DNSPs, MC, MP, MDP	<ul style="list-style-type: none"> Fast track rule change AEMO HLID / PIA to be published post DD Engage in AEMC rules consultation, review implementation impacts and timing Establish project delivery teams Proposed go-live 1 July 2025 & 1 July 2027
Project Energy Connect Market Integration	Rule Change Request submitted: 03/04	Generators, TNSPs	<ul style="list-style-type: none"> Awaiting commencement of rules consultation process Estimated go-live 1 Jan 2026
IDAM, IDX and PC	Stakeholder consultation complete. Draft Business Case awaiting final approval	All	<ul style="list-style-type: none"> AEMO are seeking endorsement from Executive Forum members, refer to section 3 Proposed go-live multiple tranches / releases refer to bus. case

* Items in bold highlight either next stage of reform process and / or estimated go-live date. HLID = High Level Implementation Design. PIA = Participant Impact Assessment

Planning activities

2025/26 on the surface remains a congested delivery period despite delays and changes in development of policy / rules

- The RDC’s initial assessment of the congestion period in November 2023 acknowledged the need to continuously monitor the evolving reform landscape, in conjunction with a renewed focus ensuring overall Program delivery is **optimised**
- AEMO is working with RDC (and wider participant groups) to:
 - Assess **bundling and sequencing** opportunities across upcoming initiatives
 - Better understand **participant impacts** for upcoming initiatives
 - Develop version 4 of the NEM Reform Implementation **Roadmap** and supporting artefacts (scheduled for publication late April)
 - Developing **High Level Implementation Design and Participant Impact Assessments** for wider consideration as key mobilization activities (refer to slide 16)
- AEMO are seeking stakeholder input across these key activities to ensure efficient, and cost-effective delivery of the portfolio of reform initiatives

KEY PLANNING ACTIVITIES



Summary assessment: Extent of impacts 2025 – 2026 (preliminary only)

Only Moderate to High impact initiatives shown

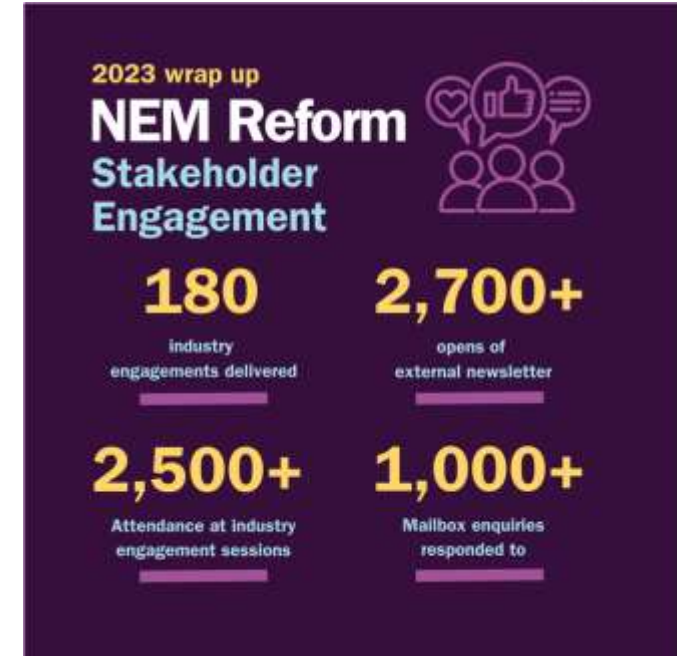
	Wholesale	Retail / Metering	Networks	AEMO
Initiative Summary	<p>4 initiatives to be delivered</p> <p>2025</p> <ul style="list-style-type: none"> FPP (Low – Moderate) Enhancing reserve information (Low) <p>2026</p> <ul style="list-style-type: none"> Unlocking CER benefits through flexible trading (Low – Moderate) Improving security frameworks through energy transition (Moderate) 	<p>4 initiatives to be delivered</p> <p>2025</p> <ul style="list-style-type: none"> FPP (Low – Moderate) Retail Market Improvements incl. MSR (Moderate – High) <p>2026</p> <ul style="list-style-type: none"> Unlocking CER benefits through flexible trading (Low – Moderate) Integrating price responsive resources into the NEM (Moderate – High) 	<p>4 initiatives to be delivered by Tx and Dx respectively</p> <p>2025</p> <ul style="list-style-type: none"> EVSE Standing Data Register (Low) Retail Market Improvements incl. MSR (Moderate – High) <p>2026</p> <ul style="list-style-type: none"> Unlocking CER benefits through flexible trading (Low – Moderate) Integrating price responsive resources into the NEM (Moderate – High) 	<p>10 initiatives to be delivered (incl. foundational and strategic)</p> <p>2025</p> <ul style="list-style-type: none"> FPP (Moderate – High) IDAM / IDX and PC (Moderate – High) <p>2026</p> <ul style="list-style-type: none"> Improving security frameworks through energy transition (Moderate – High) Integrating price responsive resources into the NEM (High)
Comment	<p>If CRM & PA proceeds, then congestion issue would likely be real and a major initiative for wholesale participants to deliver. A prioritisation exercise would therefore likely be required.</p>	<p>Ongoing planning in relation to delivery of MSR reforms to be considered in assessment with significant workload anticipated for participants</p>	<p>Potential impacts are subject to further policy outcomes from ongoing DER initiatives / recommendations noting this could increase the scope to be delivered over this period. A prioritisation exercise may be required</p>	<p>Significant work program to be managed, with impacts across various teams and systems (e.g., wholesale and retail). If CRM & PA proceeds, then congestion issue would likely be real and a major initiative for AEMO to deliver. A prioritisation exercise would therefore likely be required</p>
	<p>Assessment excludes consideration of AEMO F&S initiatives with initial foundational work to be completed by AEMO ahead of first go-live date</p>			

5. NEM Reform Program Engagement Structure Review

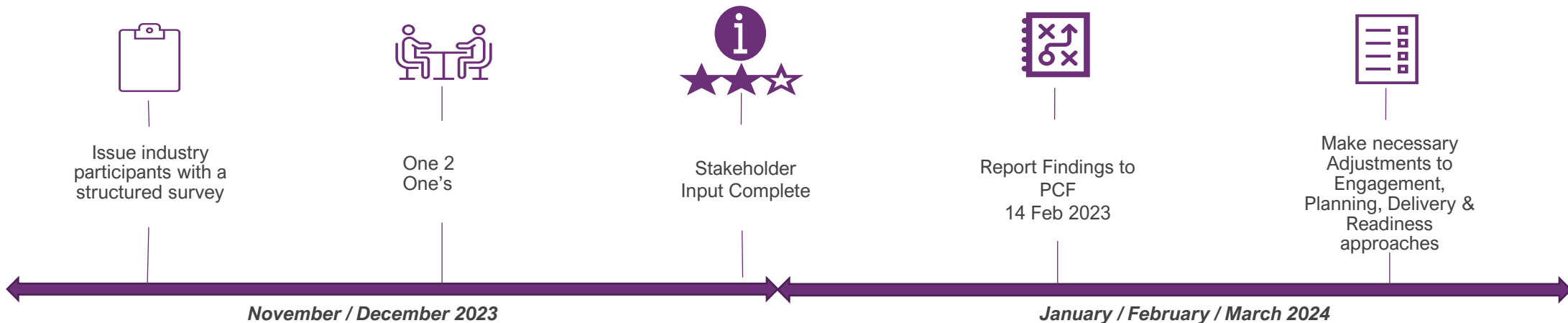
David Reynolds

Recap: NEM Reform Program Review

- AEMO undertook a review of our 2023 program processes to help inform 2024 delivery processes
- The review leveraged industry insights and reviewed our engagement, planning, delivery and readiness processes
- Key considerations of the review included
 - Is the current program engagement meeting its objectives?
 - Is this engagement framework supporting the implementation needs of market participants?
 - What else can AEMO do to support *participant delivery facilitation* objective?



INDICATIVE PROCESS



Review insights & Key focus areas for uplift

Engagement

What's working well?

- **Information channels:** Meeting packs are comprehensive, timely & serve as useful reference material.
- **Delivery support:** Program is responsive to stakeholder queries. Strong appreciation for individualised nature of query resolution.
- **Transparency:** Willingness to work transparently with stakeholders highly valued.

Opportunities for uplift

- **Engagement volume:** Large number of forums & forum packs make it difficult to get across all the information.
- Stakeholders have limited time capacity.
- **Forum efficiency:** Review cadence and duplication across forums.
- **Engagement clarity:** Establish clear problem statements and clarify the ask for participants.

Planning

What's working well?

- **NEM Reform Implementation roadmap:** is recognised as a key tool for planning amongst stakeholders.
- **Risk Register:** The inclusion of the Risk register is strongly supported at a time of significant change

Opportunities for uplift

- **Limited capacity:** Manage time on longer engagement sessions.
- **Participant support:** Issues with "build interpretation" sessions in build phase may be helpful depending on the level of change.
- **Consultation time:** Make sure we provide sufficient time for consultation where needed.

Participant delivery facilitation

What's working well?

- **Q&A Sessions:** Q&A sessions after deployment provide a useful opportunity for collective trouble shooting and good opportunity for participants to work through issues.
- **Focus groups and topic specific workshops:** Strong appreciation for specific and focused sessions through deployment.
- **Participant self-serve:** Introductory and explanatory videos available on AEMO website.

Opportunities for uplift

- **Release information:** Need improved consistency or information for releases: i.e. build is withheld/goes ahead regardless of final version of specs/procedures etc.
- **Issues identification:** An open channel that all participants can access to see the issues identified and the progress as well as add comments on their observations.

Industry readiness

What's working well?

- **Engagement:** The engagement level, and willingness to work with stakeholders through [the implementation Forum] is excellent and appreciated.
- **Informed go-live:** Increased emphasis on go live criteria and check points has been well received

Opportunities for uplift

- **Post implementation support:** NEM Reform support for a short window post-implementation rather than generic help line as Support Hub not able to provide specific details.
- **Participant development considerations:** Timely recognition of what participants require for their development support and building into AEMO delivery.

NEM Reform Program Review – Forums



Survey breakdown

- Responses - 7
- Engagement – 3.6
- Information – 3.4

Feedback on the Executive Forum

We asked this forum for suggestions to improve participant support and engagement in 2024. Responses included:

- “Ensure that the Executive Forum is brought together ahead of any key decisions”
- “AEMO to conduct timely cost benefit realisation reviews”
- “[Suggest] a revolving Guest Chairperson for the meeting from the executive” from the executive group”
- “[Provide] visibility that projects are locked in 12 months in advance to give participants certainty to mobilise resources”
- “[Suggest] a monthly bulletin or targeted comms in between the exec sessions tailored for each key workstream to provide an update on their maturity.”

Ask of the Executive Forum

- What are Executive Forum members views on having a revolving guest chairperson?
- The NEM Reform program circulates a quarterly newsletter, targeted announcements and monthly PCF workstream updates. Do members believe we are missing anything?

Next steps

Actions to improve stakeholder engagement in response to feedback.

- **Executive Forum:** Not proposing fundamental changes, rather refinements to the delivery process.
- **RDC:** Modifications to cadence, refocusing key activities, broadening membership.
- **PCF and IF:** Refinements to manage duplication across both forums
- **EWCF & ITWG:** Not proposing fundamental changes, rather refinements to forum delivery.



Rating breakdown

- Responses - 2
- Engagement – 4.0
- Agenda – 4.0
- Information – 3.5



Rating breakdown

- Responses - 9
- Engagement – 4.1
- Agenda – 4.3
- Information – 3.7



Rating breakdown

- Responses - 20
- Engagement – 4.1
- Agenda – 4.4
- Implementation Support – 4.1
- Post-implementation support – 3.8



Rating breakdown

- Responses - 2
- Engagement – 4.5
- Agenda – 4.5
- Implementation Support – 4.5
- Relevance – 4.0



Rating breakdown

- Responses - 8
- Engagement – 4.2
- Agenda – 4.1
- Implementation Support – 3.5
- Post-implementation support – 4.0

6. Overall Program Delivery Status, Program Cost & Risk

Rowena Leung

For noting

Program Update

Current progress:

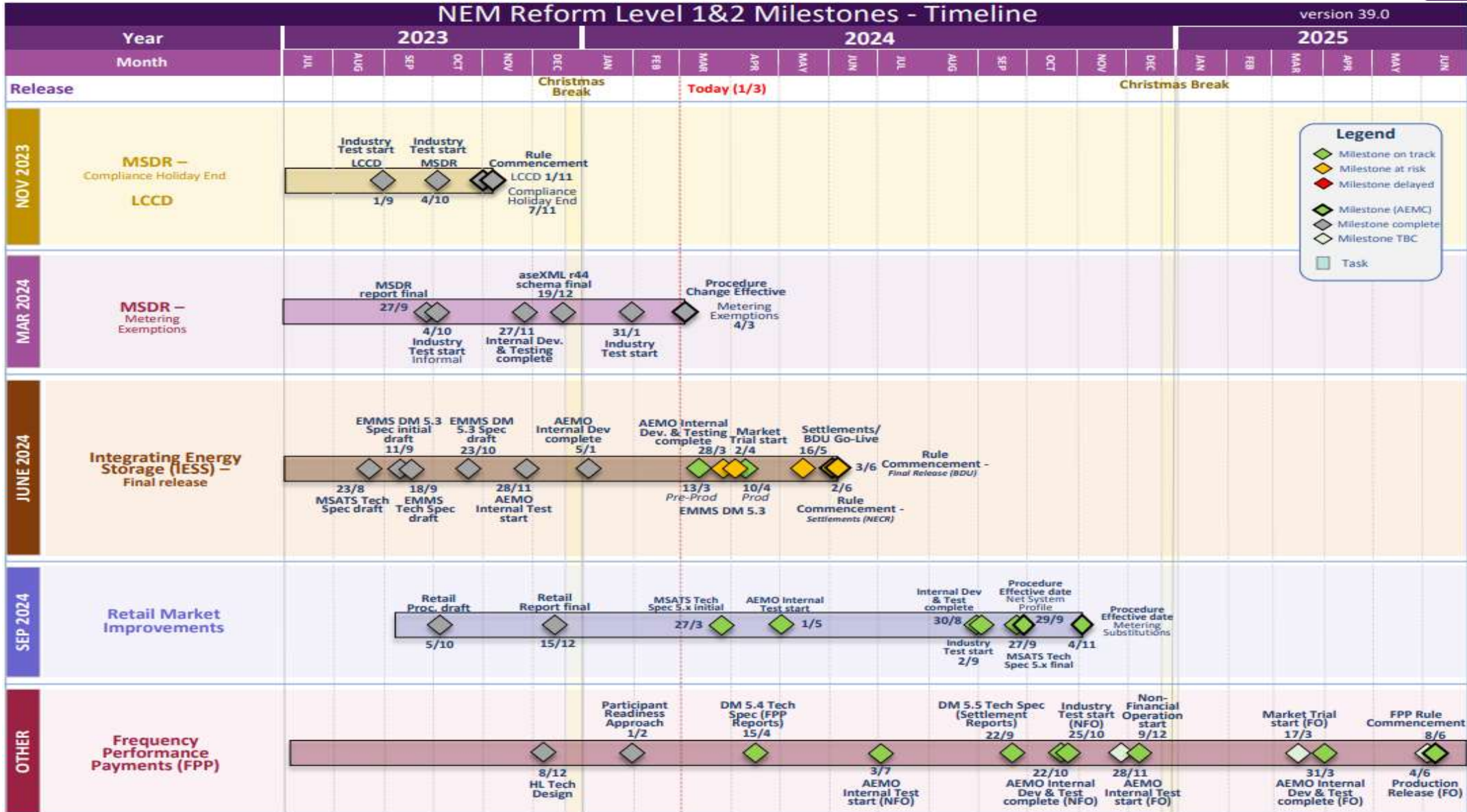
- Overall program is progressing well, key focus area remains with IESS.
- **MSDR: Metering Exemptions** Successfully deployed 3rd March, initiative live with all “in flight” exemptions transitioned. Completes the MSDR procedure change
- 2024 program locked down, subject to SCADA Lite delivery schedule.

Key areas receiving management attention:

- **IESS June 24:** Continues to make good progress, however, remains rated Amber reflecting lack of schedule contingency. AEMO Internal Testing in progress with issues being managed against tight timeframe. Market Trial Preparations on track and BDU transition timings being finalised
- **2025 / 2026 Initiatives (including IDAM, IDX and PC):** Mobilisation of project resources to conduct preparation and design activities in 2024 for initiatives scheduled for implementation in 2025 and 2026; further information in Agenda Item 5.

Release	Initiatives	Previous Status	Current Status	Key Points	Impacted Stakeholders
MAR-24	Metering Exemptions (MSDR)		Complete	03 March 2024: Successful production deployment 04 March 2024: Procedure effective	Retailers, MC and MP/MDP, DNSP
JUN-24	Integrating Energy Storage Systems			Project Status Amber, reflect status of Internal Testing, with overlap of Scheduling components for finalisation with Market Trial execution. Transition and market trial planning progressing, Market Trial will commence to schedule Readiness Checkpoint conducted and shared with PCF	IRPs, NSPs, FRMP, MP/MDP, Vendors
OCT (TBC)	SCADA Lite			Proof of Concept timing extended , Confirming Implementation activities and schedule for external milestone reporting.	DRSP
SEP-24 / NOV-24	Retail Market Improvements			Scope and Procedure effective dates NSLP (29 th Sept), Metering Substitutions (4 th November) confirmed. External milestones baselined and delivery in progress.	MC, MDP, FRMP, DNSP
DEC-24 & JUN-25	Frequency Performance Payments			Project progressing to schedule. Stakeholder Briefing session 23 rd Feb, Readiness Approach confirmed with participants. Initial Tech Specs to be available on schedule	Generators, Market Customers

NEM Reform Level 1&2 Milestones PoaP



Industry Risk Register (as of March 2024)

AEMO provides participants with visibility of key material risks associated with the delivery of the NEM Reform Program through maintaining an external Industry Risk Register

Industry Risk Register Version 3 (Summary Overview)

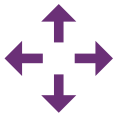
Risk Category	Risk I.D.	Risk title	Residual Risk Rating	Trend
Volume of regulatory change	R01.1	Delivery congestion – Near term	Low	↘
	R01.2	Delivery congestion	Medium-High	→
	R01.3	Sub-optimal delivery outcomes	Medium-High	→
AEMO Delivery Program	R02.1	AEMO Resourcing	Medium-High	↘
Participant development and readiness	R03.1	Participant development timeframes	Medium-High	→
	R03.2	Industry Resourcing	Medium-High	→
	R03.3	Emerging Participant Engagement	Low-Medium	→
	R03.4	Sub-optimal delivery outcomes	Medium-High	→
	R03.5	Participant investment and implementation	Medium-High	→
	R03.6	Extended participant engagement	Medium-High	→



AEMO reviews the industry risk register quarterly at the PCF. The review includes consideration of risk descriptions, risk ratings, risk trend, impact and mitigation actions in addition to consideration of new and emerging risks.



The Industry Risks and Issues register has been updated following our December and February PCF discussions and the Executive forum discussion in December.



The reviews resulted in updates to residual ratings have been reviewed and updated in addition to the inclusion of trends, recommended actions and comments.



Version 3 of the register is available on the AEMO website [here](#).



The next revision of the Risk register will be at the next PCF on 10 April 2024. Any revisions to Version 3 of the register will be presented at the next Executive Forum.

Program costs (as of Q1 2024)

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	\$40.8	\$27.4	\$39.1	\$1.7	N/A
Frequency Performance Payments	\$6.9 - \$16.0	\$15.4	\$5.5	\$14.7	\$0.7	N/A

Program costs (as of Q1 2024)

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	\$2.8	\$2.7	TBD	N/A	Final project funds subject to business case approval
Industry Data Exchange	\$7.6 - \$17.7	\$3.2	\$2.5	TBD	N/A	
Portal Consolidation	\$7.6 - \$17.7	\$0.3	\$0.3	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	\$4.3	\$4.3	\$4.3	\$0	Additional testing required
Project Energy Connect	N/A	\$0.2	\$0.1	\$0.2	\$0	Reflects AEMO initial consultation in support of rule change request

7. Other Business & Meeting Close



NEMReform@aemo.com.au



[NEM Reform Executive Forum](#)



Upcoming engagements

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

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

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

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

NEM Reform Program Committees/Forums

- Executive Fourm
- Reform Delivery Committee
- Reform Delivery Committee Collaborative Workshop
- Program Consultative Forum
- Electricity Wholesale Consultative Fourm
- Implementation Forum
- Industry Testing Working Group

NEM Reform Initiative Specific

- Foudational and Strategic Initaitives Focus Group

Other Forums

- Electricity Retail Consultative Forum

Other

- National Public Holiday
- State/Territory Public Holiday

Appendix A

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>

Appendix B

Foundation & Strategic Initiatives
Business Case Executive Summary

Background Context

Key Drivers for Change



Energy Industry Transformation

Energy Transition imposes the **most significant set of reforms** on the Australian energy industry since the creation of the NEM.

We are at a pivotal juncture: whether to allocate these resources **strategically** to provide a secure and fit-for-purpose technology foundation to deliver better consumer outcomes, or to take a **tactical, reactive and fragmented** approach, compounding complexity in AEMO and participant IT landscapes, increasing implementation and operational expenses and reducing agility to respond to change.



Security Concerns

The interconnectivity of the energy sector and digitisation of the grid is **increasing the surface area** of potential vulnerabilities that can be exploited, and the impact if security is breached.

Community expectations and government directives and legislation impose additional accountabilities and responsibilities for AEMO and industry to safeguard the critical services we collectively operate and protect our customers from impact.

The presence of multiple routes for managing identities and access, coupled with non-standard data exchange protocols and patterns, existing alongside diverse entry points to AEMO services collectively represent an **unacceptably vulnerable landscape**.



Industry Pain Points

The existing landscape of IDAM, IDX and PC requires industry participants to interact through different access points, using different protocols, formats and standards, and causing an inconsistent, fragmented and duplicated user experience when accessing AEMO's systems.

This leads to higher ongoing operational costs for AEMO in activities needed to support the performance of its functions. This has a cascading effect of administrative burden for the participants.

For example: current IDAM current services are disparate, requiring users to retain multiple sets of credentials, and AEMO's existing data exchange mechanisms use inconsistent standards, protocols and formats.

Identified Foundational Capability Gaps

The absence of foundational capability to support new reforms was identified across three areas.



Identity and Access Management

Problem Statement:

AEMO's Identity and Access Management (IDAM) services are disparate, requiring users to retain multiple sets of credentials in order to access AEMO business services. The legacy IDAM services do not implement best practices in cyber security controls (e.g. multifactor authentication) and are insufficient to meet new industry obligations introduced under the SOCI Act.



What are we trying to achieve

A unified mechanism to authenticate and authorise external identity when accessing AEMO services, consolidating and improving overall cyber security controls.



Industry Data Exchange

Problem Statement:

AEMO's existing data exchange systems have been variously acquired over the last 10-15 years, and use inconsistent standards, protocols and formats. AEMO's markets are also undergoing significant transformation, resulting in new data exchange needs. AEMO introducing new data exchange patterns without a unified target state and roadmap is inhibiting participants from modernising their systems and quantifying the benefits of their investments.



What are we trying to achieve

A unified data exchange mechanism to support the secure and efficient exchange of data between energy stakeholders for new services required by NEM Reforms, existing legacy services and provide a framework extensible to other energy markets.



Portal Consolidation

Problem Statement

AEMO browser services are exposed over a disparate range of end points and require multiple sets of credentials to consume these services. This results in a suboptimal user experience for energy stakeholders. The requirement to access browser services via private networks creates technical barriers to consuming these services.



What are we trying to achieve

The aim of the Portal Consolidation project is to enable a unified stakeholder experience that hosts web applications. The portals framework is an enabling platform that supports energy market participants and other partners to consume AEMO browser services in a secure manner.

Recommendation Summary

Compelling drivers exist to develop new foundational capability across IDAM, IDX and PC areas. Given short term reform roadmap congestion & need for fiscal prudence, *AEMO recommends a phased investment approach for IDX* to address critical security needs, support near-term NEM reforms, provide flexibility for the future & address priority industry pain points.

RECOMMENDATION

RATIONALE



Identity and Access Management

PROCEED with a Strategic target state, AEMO investment of **\$21M¹** over 2 years

- Address key security vulnerabilities and reduce attack surface area – identity management is the most impactful “weak link” in the cyber security chain
- Manage expected increase in identities for management: DERs, small generators
- AEMO TCO cost differential of **\$8M** & total Industry costs of **\$38M** are smaller than the potential cost and customer impact of security breaches



Industry Data Exchange

PROCEED with a Strategic target state Foundation phase, AEMO investment of **\$20M** over 2 years

- As the grid becomes digitised, data exchanged is increasing in volume, frequency and requires lower latency
- IDX Foundation phase represents an efficient and unified implementation of data exchange capabilities across multiple reforms requiring it (AEMO costs are **\$20M** compared to **\$29M** if done initiative by initiative, and participants also see a cost efficiency)
- Migrating legacy services is difficult to assess at this stage given the cost uncertainty and value uncertainty. Deferring the decision point on migrating legacy services – IDX Transition phase – allows for more certainty on cost and value estimates and more information to guide optimising the transition approach.



Portal Consolidation

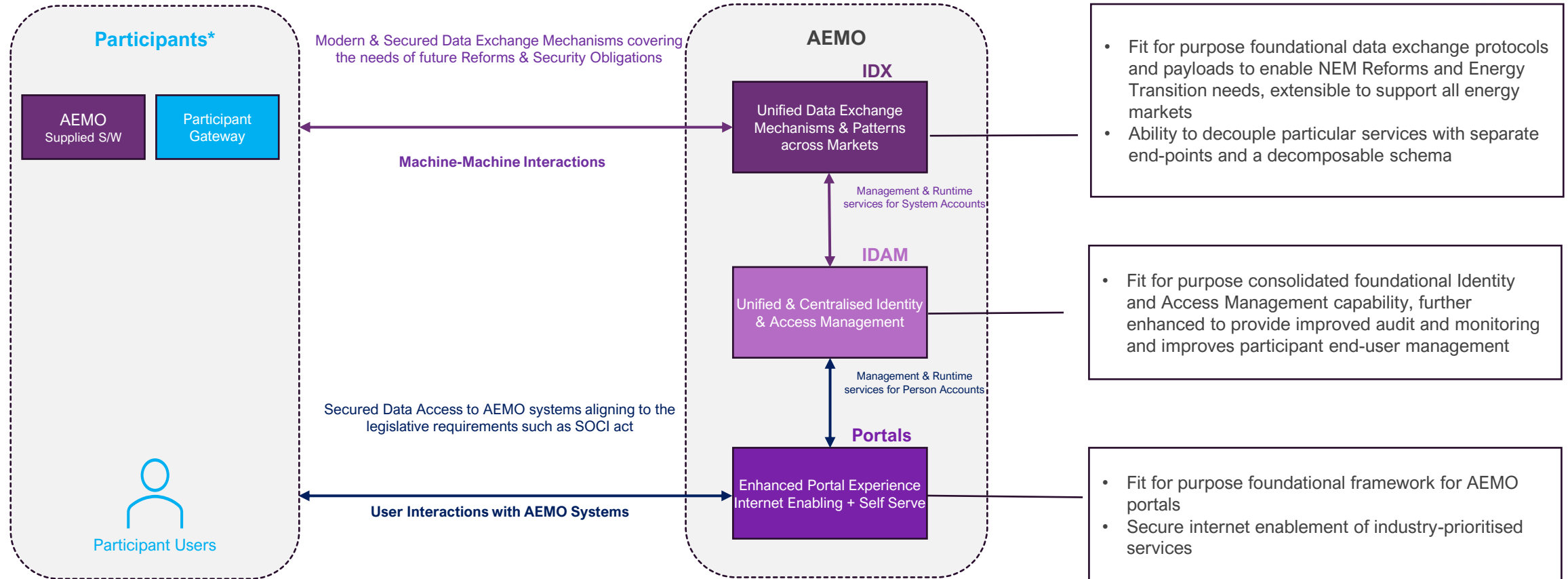
PROCEED with a strategic target state, AEMO investment of **\$6M** over 2 years

- Portal Consolidation Strategic target state delivers benefits to address identified industry pain points for a TCO cost differential of **\$6M** for AEMO and **\$13M** for industry
- Reduces AEMO’s attack surface area in the most common ‘entry point’ for bad actors

1. All financial figures presented on this slide have a +/- of 40%

Strategic Target State (Option 2)

Target state was developed in collaboration with industry, and provides a strategic, “secure by design” foundation for identity management, data exchange and portal access services to AEMO and the industry. It delivers a ‘step-change’ capability uplift and addresses current industry pain points .



* Includes Participants, Service Providers, 3rd parties, non-Participants etc

Vision and Benefits of IDAM, IDX and PC initiatives

Vision

Creating **extensible, resilient and secure** enabling technology frameworks (identity management, data exchange and web access) that underpin AEMO's services to and between NEM market participants, extensible to WEM and gas.

AEMO Overall Benefits

- ✓ Supportability of the technology ongoing (transition away from a proliferation of custom solutions)
- ✓ Reduction in security vulnerability risk through move to 'secure by design' technology
- ✓ Ability to implement reform initiatives faster through scaling resourcing and more modular solutions
- ✓ Key plank of plans to meet SOCI Compliance – both minimum and evolving requirements

Industry Overall Benefits

- ✓ Reduced operational costs through self-service
- ✓ Lowered barriers to entry for participants, including in emerging markets
- ✓ Lowered localisation costs of global industry technology solutions, e.g. CIS platforms
- ✓ Improved security posture and assists industry in meeting their SOCI obligations

IDENTITY & ACCESS MANAGEMENT



A unified mechanism to authenticate and authorise external identity and entitlements when accessing AEMO services, consolidating and improving overall cyber security controls.

Specific Benefits

- ✓ Provides support for organisational hierarchy and federation
- ✓ Enhanced security and alignment with industry obligations and best practice in cyber security controls (e.g. multifactor authentication)
- ✓ Enhanced self-service auditing and reporting capabilities to support industry's governance and compliance and reduce operational costs

INDUSTRY DATA EXCHANGE



A unified data exchange mechanism to support the secure and efficient exchange of data between energy stakeholders for new services required by NEM Reforms, existing legacy services and provide a framework extensible to other energy markets.

Specific Benefits

- ✓ Efficiently consolidates the development of data exchange protocols for new business services – avoiding protocol 'bloat', minimising siloed development & improving speed to market for new reforms
- ✓ Aligns with changing participant systems and cyber security obligations
- ✓ Improves transaction timeliness & reduces incidence of stop files
- ✓ Enables the scalable extension of existing business services [IDX Transition]
- ✓ Enable compartmentalisation of schema changes, thereby reducing regression testing costs of twice-yearly market changes [IDX Transition]

PORTAL CONSOLIDATION



A new web and mobile user portal to provide a unified stakeholder experience. The portals framework is an enabling platform that supports energy market participants and other partners to consume AEMO browser services in a secure manner.

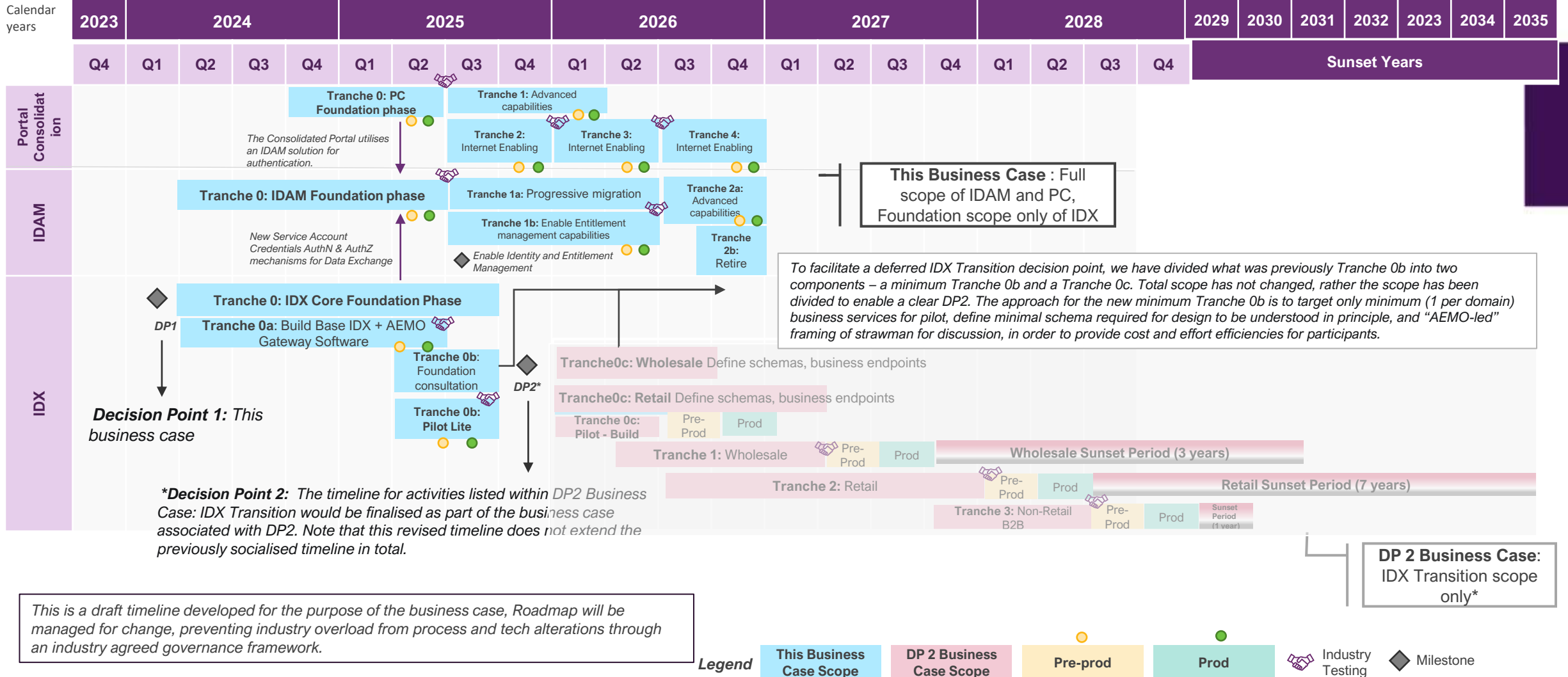
Specific Benefits

- ✓ Standardised experience to consume AEMO browser services
- ✓ Enhance self-service capabilities for market participants
- ✓ Integration with the enterprise identity management and user authentication solution
- ✓ Enables improved user experience by establishing standards for navigation, look and feel and help menus

Draft Phased Investment Delivery Timeline



This timeline was developed in collaboration with industry. To facilitate a phased investment decision approach, we have modified the IDX timeline to divide activities into two decision points – Decision Point 1 (this business case, Q1 2024) for IDX Foundation and Decision Point 2 (a new business case, Q4 2025) for IDX Transition. This has involved a sharp reduction in scope for Tranche 0b to minimal activities only.



Appendix C

Initiatives Overview – Inflight & Mobilisation

Initiatives Overview – Inflight & Mobilisation

Further details for each initiative are available via AEMOs website: [NEM REFORM PROGRAM](#)

Initiatives	Description	Current phase
Integrating Energy Storage Systems	Integration of storage and hybrid systems into the NEM through significant changes to registration and dispatch arrangements as well as in areas such as non-energy cost recovery, performance standards, and participation options for aggregated portfolios of small resources	Execution
Retail Market Improvements (NSLP methodology change & metering substitutions)	Amendment to Retail Electricity Market Procedures NSLP methodology manage situations of positive and negative NSLP trading intervals by applying a minimum (non-zero) ‘floor’ to the applicable values. Updated Retail market procedures to provide recipients a clearer understanding of the reason and method used to support a substituted metering value	Execution
Frequency Performance Payments	To implement a new Frequency Performance Payment system for Regulation FCAS (to replace existing ‘Causer Pays’ system) to which will provide incentives for participants to support frequency stability	Execution
SCADA Lite	Establish a bi-directional communication path to exchange telemetry data and control signals between AEMO and non-NSP participants (e.g., smaller generators, demand response service providers)	Execution
Improving security frameworks	Improvements to existing inertia, network support and control ancillary services (NSCAS) and non-market ancillary services (NMAS) frameworks as well as the directions process (transparency and compensation arrangements) to support procurement and scheduling of security services to support the energy transition	Rules consultation
Enhancing reserve information	Publication of information on energy availability in the operational timeframe including state of charge, daily energy constraints, and maximum storage capacity	Rules consultation

Initiatives Overview – Inflight & Mobilisation (continued)

Further details for each initiative are available via AEMOs website: [NEM REFORM PROGRAM](#)

Initiatives	Description	Current phase
Unlocking Consumer Energy Resources (CER) benefits through flexible trading	Remove or materially reduce barriers preventing customers obtaining additional retail arrangements for CER, enabling competition and active management of CER, providing customers with rewards for their flexible demand and generation	Rules consultation
Integrating price responsive resources into the NEM	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: o provide greater visibility to the market operator about intentions in the market, or o to participate in dispatch of energy and ancillary services	Rules consultation
Accelerating smart meter deployment	Implement a framework, and supporting measures (e.g., information provision to customers, new consumer protections), for a universal deployment of smart meters to all customers by 2030.	Rules consultation
Project Energy Connect Market Integration	Address market integration issues regarding PEC Stage 2 by providing flexibility around the distribution of negative Inter-regional Settlement Residues (IRSR) by allocating negative settlement residues to the importing TNSPs from the flows on the parallel transmission configuration	Rules consultation
IDAM, IDX and PC	A unified mechanism to authenticate and authorise external identity and entitlements when accessing AEMO services, A unified data exchange mechanism to support the secure and efficient exchange of data between energy stakeholders, A new web and mobile user portal to provide a unified stakeholder experience	Final BC approval



For more information visit

aemo.com.au