

Reform Delivery Committee

25 March 2024



1. Welcome

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

We pay respect to their Elders past, present and emerging.

Agenda

| # | Time | Topic | Ask of Committee | Presenter(s) |
|---|---------------|--|---|---------------------|
| 1 | 10:30-10:35am | Welcome | | Violette Mouchaileh |
| 2 | 10:35-10:40am | Action items from previous meeting | Update for noting. Questions welcome. | Peter Carruthers |
| 3 | 10:40-11:00am | Review and reshaping of RDC collaboration <ul style="list-style-type: none"> • Background and objectives • Review aspects and feedback received • Proposed changes • RDC membership value proposition | Discussion and insights to shape approach to RDC collaboration going forward | Peter Carruthers |
| 4 | 11:00-11:20am | Informed Go Live <ul style="list-style-type: none"> • Proposed process for FTA2 • Indicative high level implementation design content | Discussion and insights to inform the process | Lance Brooks |
| 5 | n/a | Change management & Roadmap update | Update for noting. Questions welcome. | Lance Brooks |
| 6 | n/a | Foundational & Strategic initiatives – Business case <ul style="list-style-type: none"> • Recommendations • Next steps | Update for noting. Questions welcome. Brief Executive Forum representatives ahead of the 28 March Executive Forum | Andrew Bell |
| 7 | 11:20-11:30am | Other business | | Violette Mouchaileh |
| | | Meeting close | | |

Appendix A: Competition law meeting protocol

"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. Action items from previous meeting

For discussion

Action items from previous meeting

RDC Meeting actions

| Item | Topic | Action | Responsible | Status |
|----------|---|---|-------------|---------|
| 12.3.0.1 | Change Management and Roadmap Update | AEMO to confirm and notify RDC members when ST PASA consultation will begin. | AEMO | Closed |
| 12.3.0.2 | Change Management and Roadmap Update | AEMO to include PEC, 'Clarifying mandatory primary frequency response obligations for bidirectional plant' and 'Review into electricity Compensation Frameworks' into the Roadmap as part of the December 2023 publication. | AEMO | Closed |
| 12.4.0.1 | Progression of Foundational & Strategic initiatives | Members to provide feedback on the Foundational and Strategic initiatives scope and approach by emailing NEMReform@aemo.com.au . Feedback due by 15 December | RDC members | Closed |
| 12.4.0.2 | Progression of Foundational & Strategic initiatives (IDX, IDAM, PC) | AEMO to provide ENA with a list of network participants who attend F&S sessions. | AEMO | Closed |
| 12.6.0.1 | Holistic DER Review | AEMO to consider outlining the initiatives associated with DER into themes when presenting back to RDC. | AEMO | Ongoing |

Collaborative workshop

| Item | Topic | Action | Responsible | Status |
|---------|--|--|-------------|--------|
| 4.5.0.1 | Bundling and Sequencing Opportunities Review | RDC members to facilitate a refresh of participant impact assessments by early March 2024. | RDC Members | Open |

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

3. Review and reshape our approach to collaboration

For discussion

Objective & Background

Objective

- An opportunity to ***review and reshape our approach to collaboration*** to identify areas where we as a Committee can deliver greatest value moving forward
- 2024/25 will continue to be busy period for reform
- AEMO is mindful that we need to ensure the ***RDC approach remains fit-for purpose*** including its structure and focus

While an informed go-live process has been agreed in principle, managing the process and incorporating it into the AEMC's rule change process remains outstanding (refer to Section 4)

Background

Original Purpose

- RDC originally established in NOV 2021 to support planning the implementation of the NEM Reform initiatives, to optimise implementation
- Also established to enable and facilitate more strategic and senior conversations with industry about NEM Reform implementation, and a more collaborative approach

Progress / Achievements

- RDC is well established, with significant time invested by all Committee members
- Structures and processes have been established (e.g., Roadmap, change management, business case) and are now well understood/operationalised
- Key areas of value delivered so far include the Roadmap, having a more strategic implementation pathway accepted subject to business case, and transparency in relation to managing changes and identifying potential congestion

AEMO sought Committee member views

Example questions raised

- Based on your experience, where do you think the RDC collaboration best adds value?
- How do you reflect on the role of the RDC within the broader NEM Reform Program engagement structure?
- What refinements to the RDC approach should be made?
 - E.g., meeting cadence, agenda, dissemination of information
- Is the balance of the Committee’s membership right and are there ways to improve the Committees membership?

Options ideation

- Throughout these discussions various options were raised / discussed
 - AEMO did not have a preferred approach at the time of its discussions with Committee members
- Ideation provided opportunity to identify and refine critical areas of value and key activities of the RDC

EXAMPLE OPTIONS

| 1. Status Quo | 2. Refined RDC | 3. Merge with PCF |
|--|---|---|
| <ul style="list-style-type: none"> • Maintain current cadence and membership • However, introduce greater demarcation in relation to matters for information vs matters for input / discussion | <ul style="list-style-type: none"> • As per Option 1, however: <ul style="list-style-type: none"> • Reduce cadence (e.g., quarterly or as required) • Widen membership scope (where possible) | <ul style="list-style-type: none"> • Stand down RDC • Leverage and extend PCF in principle so that each [quarter] the agenda would focus on Planning matters • Reduce cadence (e.g., quarterly) • Open membership |

What we've heard from Committee members

Are there additional comments from Committee members?

- Recognition the purpose and **role of the RDC has evolved** over time as the NEM Reform Program has matured
 - E.g., wider program scope beyond initial ESB reforms
- Established structures and processes now in place that are **well understood** (e.g. Change Management process)
 - Potential for future updates to be provided on **an exception basis**
- Strong support for **RDC to continue** noting the importance of the planning function and to provide holistic view of the program
 - Many elements still unknown and it remains important to track when key reforms crystallise in design and timelines enough to assess scheduling and implementation related matters
 - Allows for better / refined information to be filtered down and across the wider group of forums and working groups (e.g. PCF)
- A **refined approach** focusing on key planning activities is preferable and acknowledging RDC role as an advisory body 
- A desire for greater **efficiency in engagement** – rationalise or streamline meetings
- A need for greater **membership diversification** including direct participant representation (in addition to industry bodies)
 - Some difficulties in the past attracting potential members
- Opportunity to **leverage input** back into the RDC from existing forums (e.g. PCF) may add value to discussion

KEY PLANNING ACTIVITIES

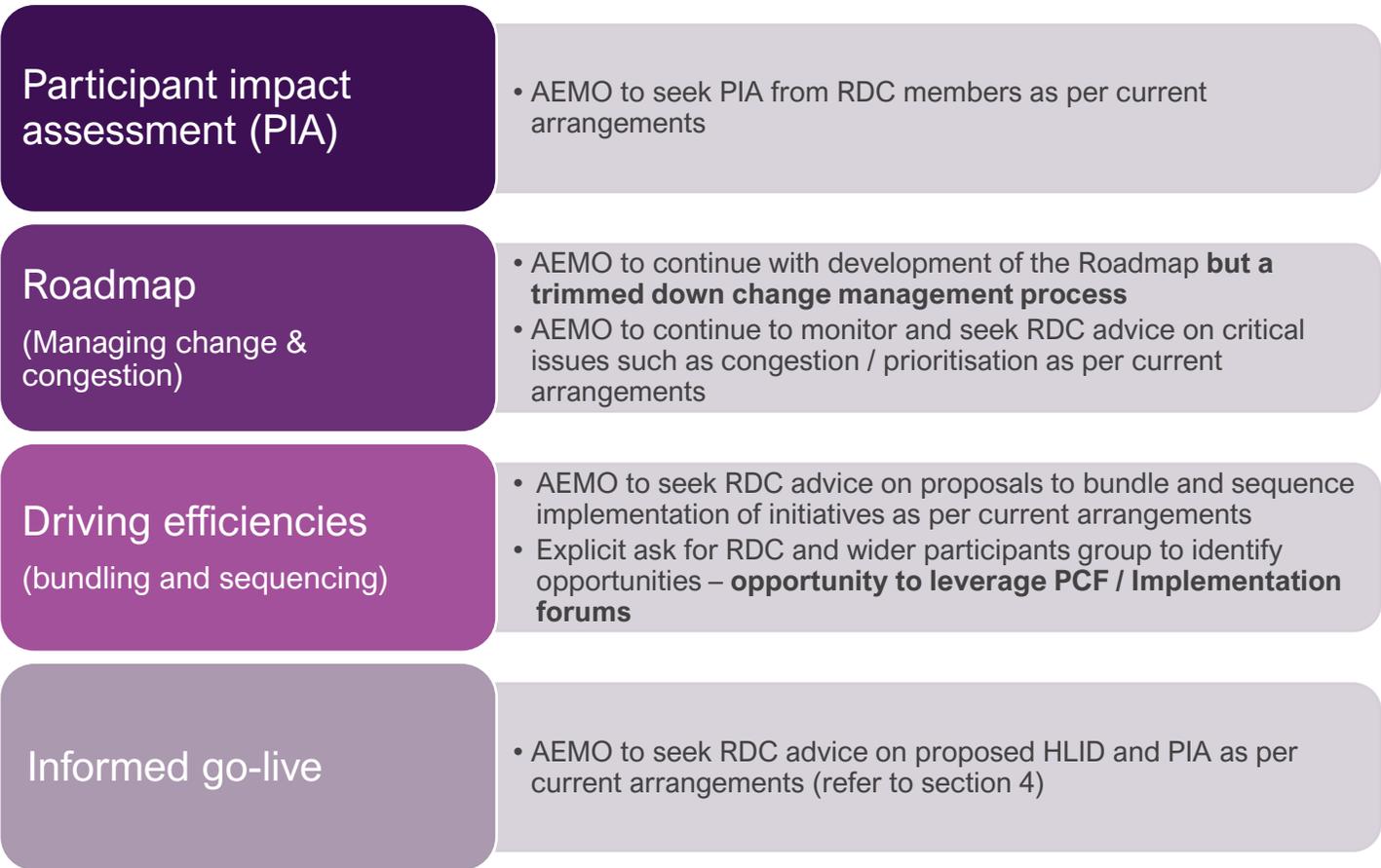


Key changes proposed moving forward

Are there additional changes Committee members would like to see ?

- **Meeting cadence** – Align with (precede) Executive Forum ~3 times/yr
 - Reduces overall meeting requirements, potentially a more attractive prospect for new members
 - Greater use of ad hoc updates and information channels (email, short video)
- **Agenda** – Focus on strategic matters for input / discussion only
 - Routine processes maintained and reported on an exception basis only
- **Governance** – AEMO to seek RDC advice as per current arrangements (as and when required e.g., business case)
- **Membership** – Extended to include additional participant representation
 - AEMO to work with industry bodies to identify and engage potential candidates
- **Value proposition** – AEMO to develop “one pager” to support wider understanding of RDC purpose / role (refer to 1-pager)

REFOCUSING KEY ACTIVITIES



Next Steps



- Revised RDC Terms of Reference to be shared with Committee Members for comment and endorsement
- RDC meeting schedule to be reset in accordance with new proposed arrangements
- AEMO to finalise and issue 'RDC Value Proposition' for wider distribution by Committee Members
- Amendments to Committee membership as appropriate

4. Informed Go-Live

For discussion

Indicative process

AEMC’s “Unlocking CER benefits through flexible trading arrangements” draft determination (DD) provides an opportunity to test the Informed Go-Live process

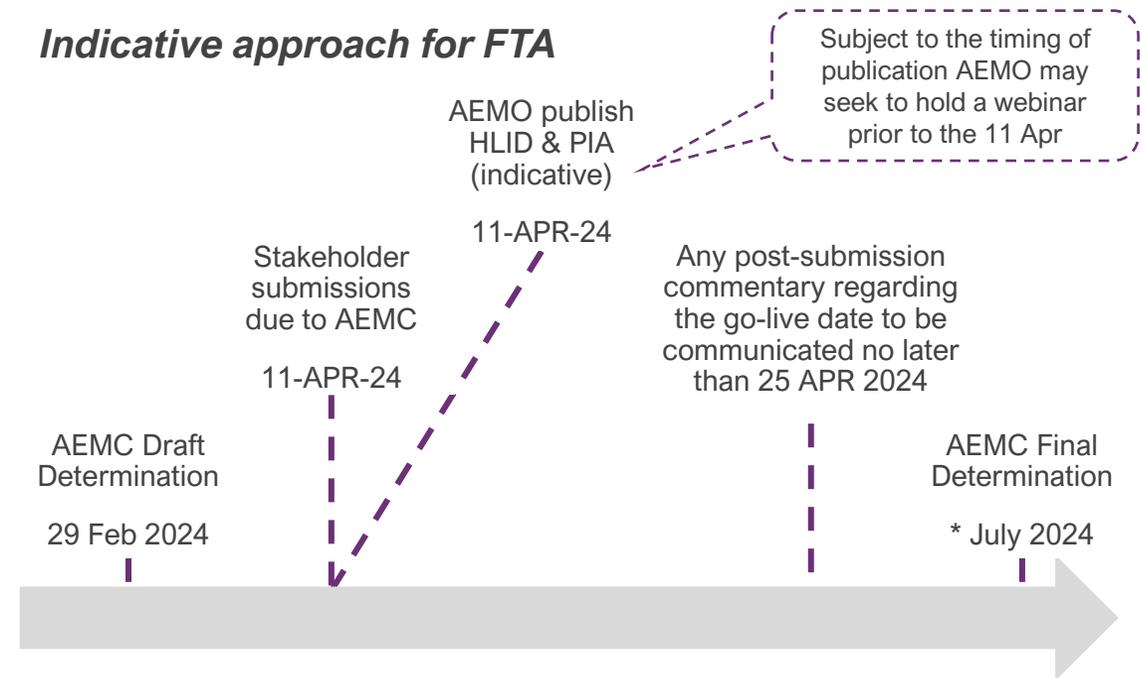
What is the informed go-live process ?

- Post issue of a Draft Determination, AEMO will provide industry with initial views on implementation approach and impact
 - This is subject to sufficient policy direction contained in draft determination
 - As determination delivery dates are confirmed, scheduled timeframes for High Level Implementation Design (HLID) / Participant Impact Assessment (PIA) timeframes will be assessed

Objectives

- Improve visibility and increased participant planning timeframe
- Provide initial view of anticipated implementation timings and contention in lead up to final Determination
- Provide participants opportunity to respond in AEMC process to any proposed implementation timeframes

Indicative approach for FTA



* Subject to change

Indicative HLID / PIA content

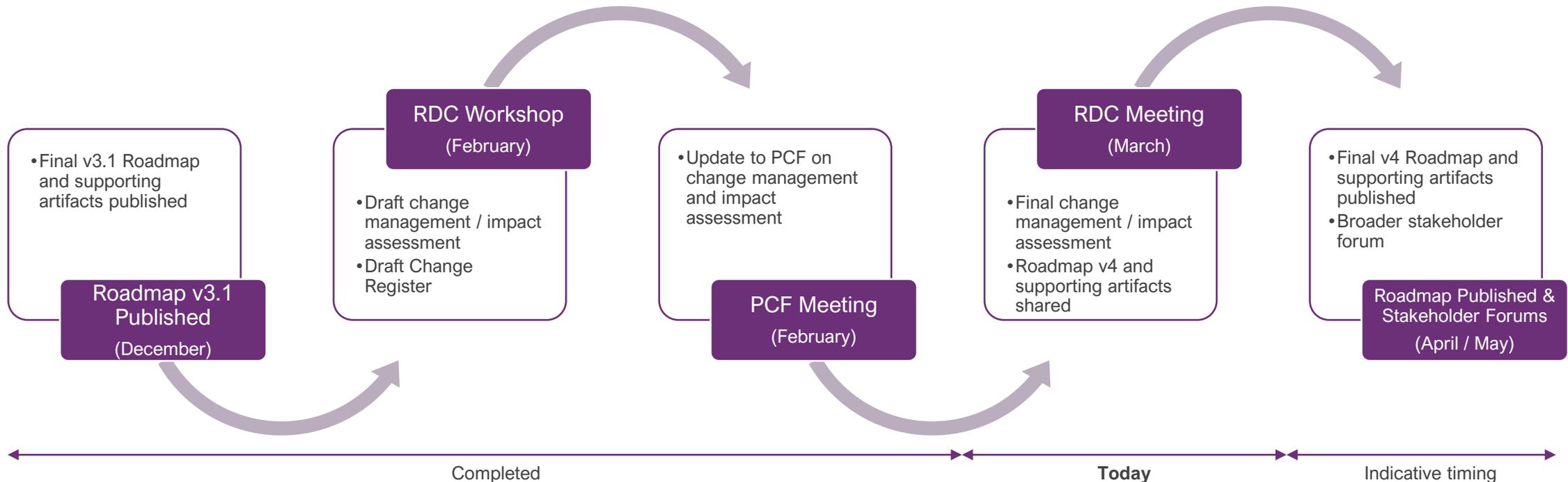
- Information to be included based on Draft Determination:
 - Key proposed Implementation dates
 - Impacts to Market Systems, systems interactions, Procedures at level of H/M/L and Heatmap
 - Participant Impacts (Who, H/M/L) to extent known
 - Potential Industry Test approach
 - High Level Implementation and Delivery Schedule (unconstrained)
 - Assessment of Congestion and Contention based on programme assessment
 - Go-Live date recommendation
- Information will be reviewed based on Final Determination
 - There remains a high potential for changes to occur from the Draft to the Final Determination which will impact the initial implementation information provided by AEMO
 - Implementation milestones updated to form baseline delivery plans for project establishment and industry engagement
 - Where initial assessment not performed based on Draft Determination, AEMO will provide HLID/PIA as first deliverable in the implementation process

5. Change Management & Roadmap Update

For noting

Keeping the NEM Reform Implementation Roadmap up to date

- Progress continues with updating the Roadmap and supporting artefacts in accordance with the Change Management Process. AEMO assess the change management impacts across its business areas and the bundling and sequencing opportunities available
- **As of 14 March 2024, no participant impact assessments have been received from Committee members. AEMO request these be submitted by the end of March for consideration as part of the amendments made to the Roadmap**
- Publication of version 4 of the Roadmap anticipated in late April 2024



6. Foundational & Strategic Initiatives – Business Case

For noting

Background & Context

- AEMO and Industry collaborated via the Foundational and Strategic Initiatives (FaSI) Working Group through the course of 2023 and early 2024
- Business case has now been through drafting and formal submissions with the final FaSI Working Group held 12th March covering:
 - Key themes from formal submissions
 - The updates to the business case
- Key themes from submissions included:
 - Summarising all benefits to a single slide
 - Greater clarity on residual security risk and the approach to compliance
 - A few revised cost submissions
 - Inclusion of the factors driving the risk matrix

Background & Context (continued)



- No change has occurred to the options nor recommendation
- AEMO has assessed two broad options:
 - Continued reactive & tactical investment (minimum compliance for security).
 - Strategic step change – establishing fit for purpose foundational capability.
- These options cover the three key capabilities originally identified as foundational for NEM Reform:
 - Identity and Access Management
 - Portal Consolidation
 - Industry Data Exchange
- AEMO recommends proceeding with strategic step change with a phased investment for Industry Data Exchange

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 and
- ✓ 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.

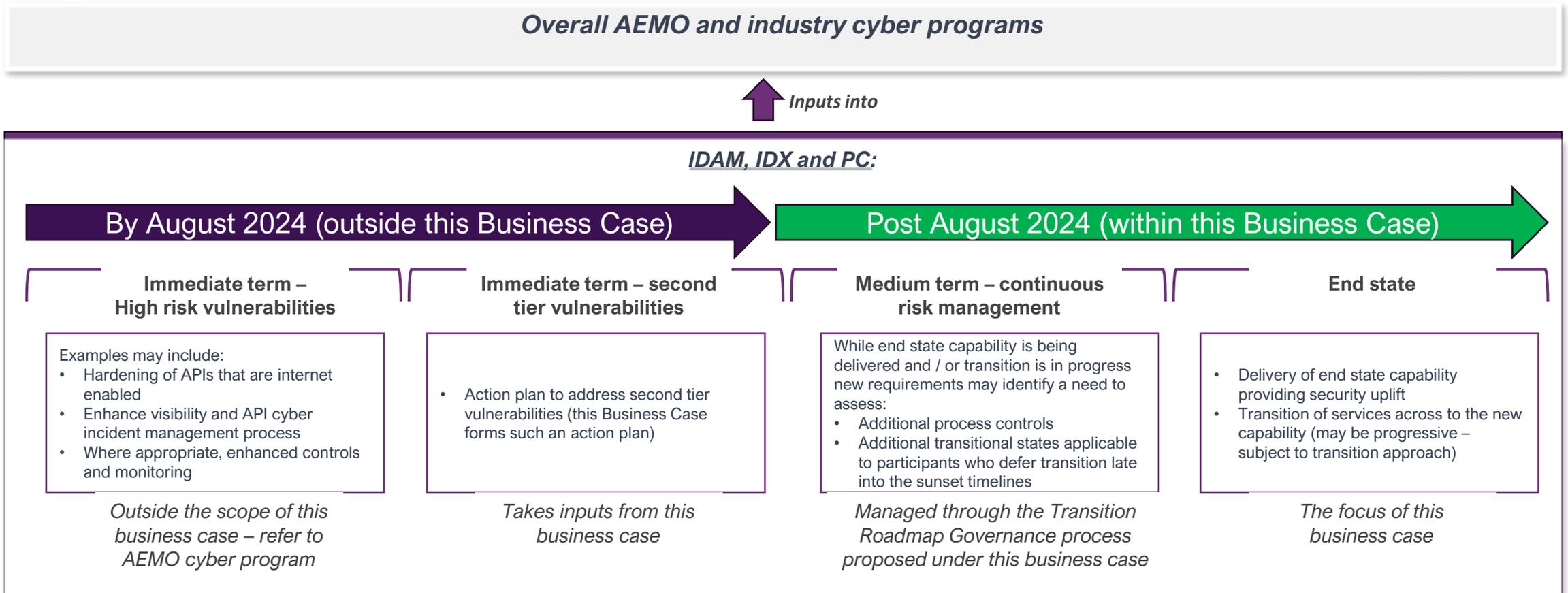
Specific Benefits

- ✓ 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

Residual security risk – Business Case context

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 IDAM, IDX and PC initiatives under this business case address establishing target / end state capability for a subset of these services and are expected to be taken as an input into the overall compliance programs that AEMO and industry individually orchestrate.



NOTE: This Business Case is limited in scope to the IDAM, IDX and PC initiatives detailed within with a focus on end state capability

Addressing residual security risks

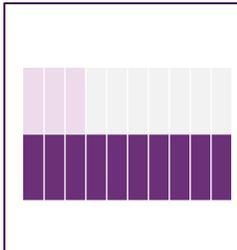
- Option 1
- Option 2a
- Option 2b

Addressing Residual Security Risk*

Identity and Access Management

Option 1

Option 2a

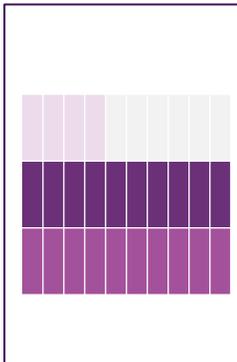


Industry Data Exchange

Option 1

Option 2a

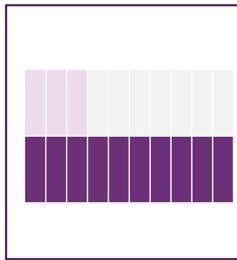
Option 2b



Portal Consolidation

Option 1

Option 2a



Option 1 (SOCl compliance driven)

Available from Q2 2025

IDAM delivery

- Implement Multi Factor Authentication (MFA) to enable two step authentication for the browser services
- Enhance self-certification management process

IDX Foundation & new services

- Migrate from FTP to SFTP
- Move APIs to OAuth authentication and authorisation pattern
- Deliver secure solution for large file transfer

Subject to DP2 - Available from Q4 26 (Wholesale) Q3 27 (Retail)

IDX Transition (legacy services)

- Progressive transition from insecure legacy protocols to secure IDX foundational protocols
- Further reduction in attack surface area

Available from Q2 2025

PC delivery

- Enhance existing browser services to integrate with IDAM to address legislative requirements
- Retire standalone MSATS browser URL, now available in Markets Portal

Option 2 (Strategically Driven)

Available from Q2 2025

IDAM delivery

- Secure Identity and Authorisation target state enabled
- Rationalisation of identity stores and solutions
- Improved audit and monitoring

IDX Foundation & new services

- New services established on target state, secure framework
- Containment of growth of attack surface area

Subject to DP2 - Available from Q4 26 (Wholesale) Q3 27 (Retail)

IDX Transition (legacy services)

- Progressive transition from insecure legacy protocols to secure IDX foundational protocols
- Further reduction in attack surface area

Available from Q2 2025

PC delivery

- Secure Portal framework provided
- Internet enabled services leverage secure framework

Both Option 1 and Option 2 address AEMO and industry's end state SOCl security compliance obligations (within the context of the scope of this business case).

Capability will be available for industry in equivalent timeframes under both options, noting extended sunset timelines requested by industry for IDX Transition subject to DP2.

Option 2 provides further reductions in residual security risk beyond bare minimum compliance through the establishment of secure by design consolidated capability and resulting reduced attack surface area.

Financial Assessment: Full Scope Delivery (Industry-wide)

For IDAM and PC, Option 2 strategic target state compared to Option 1 addresses the key drivers at a delta TCO of \$44M and \$17M respectively – this is a conservative (high watermark) estimate given industry cost impacts associated with IDAM Option 1 and industry cost savings (benefits) associated with IDAM and PC have not been quantified. IDX Option 2 compared to Option 1 has a delta TCO of \$213M, due primarily to the costs associated with migrating legacy services.

| | | AEMO Costs | | Industry Costs | |
|--|------------------|----------------|------|----------------|---|
| | | Implementation | TCO | Implementation | TCO |
| <i>Figures presented to nearest million, with a +/- 40% uncertainty range</i> | | | | | |
|  Identity and Access Management | Option 1 | \$4 | \$20 | \$2 | <i>Costs expected but unquantified</i> |
| | Option 2a | \$21 | \$28 | \$38 | <i>Cost-savings expected but unquantified</i> |
|  Industry Data Exchange | Option 1 | \$10 | \$46 | \$75 | <i>Costs expected but unquantified</i> |
| | Option 2a | \$51 | \$71 | \$260 | <i>Cost-savings expected but unquantified</i> |
| | Option 2b | \$42 | \$62 | \$182 | <i>Cost-savings expected but unquantified</i> |
|  Portal Consolidation | Option 1 | < \$1 | \$2 | < \$1 | <i>n/a</i> |
| | Option 2a | \$6 | \$8 | \$13 | <i>Cost-savings expected but unquantified</i> |

Recommendations

PROCEED with IDAM Strategic target state, conservative industry-wide delta TCO of \$44M is justified by the reduction in residual security risk and industry pain point benefits.

UNABLE TO RECOMMEND TO FULLY PROCEED AT THIS STAGE – Industry cost impacts relating to transition reflect a high level of uncertainty, recommend a reconsideration of investment approach (see following slide)

PROCEED with PC strategic target state, conservative industry-wide delta TCO of \$17M is justified by the reduction in residual security risk and industry pain point benefits.

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

Next Steps – Key Milestones

| Date | Key Milestones | |
|---|--|---|
| Tuesday 19 December 2023 | Release of draft business case package | ✓ |
| Monday 22 January 2024 | Draft business plan walk through session with stakeholders | ✓ |
| Tuesday 23 January to Thursday 8 February 2024 | Additional 1 on 1 meetings with stakeholders – contact NEMReform@aemo.com.au to arrange | ✓ |
| Friday 9 February 2024 | Stakeholder submissions due on draft business case package NEMReform@aemo.com.au | ✓ |
| Wednesday 14 February 2024 | Program Consultative Forum (PCF) meeting update | ✓ |
| Monday 26 February 2024 (TBC) | Publish “Business Case – Draft” | ✓ |
| Tuesday 12 March 2024 | Second / final stakeholder session – walk through of updates, next steps, closure of working group | ✓ |
| Thursday 28 March 2024 | Present at NEM Reform Executive Forum “Business Case – Draft” | |
| End April 2024 (TBC) | Issue final Business Case and confirm Decision. | |

Next Steps – The ask of FaSI WG

AEMO would like to thank industry for their participation throughout 2023 via the Foundational and Strategic Initiatives Focus Group (FaSI FG); this participation, collaborative engagement and development of the target state, transition strategy and business case inputs including costs and benefits has enabled the development of this package. The development and assessment of options in the draft business case package would not have been possible without this collaboration.

We also thank industry for providing formal submissions on the draft business case package. The detailed feedback has enabled AEMO to improve the general quality of this document, address ambiguity in language and presentation, and clarify very relevant queries.

Ask of FaSI

Brief your Executive Forum representatives so that they are prepared for the **28 March** Executive Forum

7. Other business



For more information visit

aemo.com.au

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>