

Cost and method discussion – Session 5B

For combined Business and Technical Focus group members

- Industry Data Exchange (IDX)
- Portal Consolidation (PC)
- Identity and Access Management (IDAM)

30 November 2023



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 and present.**

Agenda

#	Time	Topic
1	1.00pm – 1.05pm	Welcome
2	1.05pm – 1.15pm	Introduction
3	1.15pm – 2.00pm	Option 1 Scope
4		Updates to AEMO Implementation Cost
5		Updates to Industry Implementation Cost
6	2.00pm – 2.25pm	Discussion open questions
7	2.25pm – 2.30pm	Next steps & close

Supporting materials:

- Appendix A: Competition law meeting protocol
- Appendix B: Option 1 context diagram
- Appendix C: Extrapolated industry implementation cost per participant type

Objective of today's session

AEMO is working with the [FaSI Focus Group](#) to prepare a business case to determine feasibility of implementing Foundational and Strategic initiatives IDAM, IDX and Portal Consolidation.

Objective:

The preparation of the business case is underway. To support industry alignment, additional sessions focusing on cost and approach for AEMO, and industry are held reflecting the high level of interest in the topic.

The objective of this session is to:

- Provide additional information to participants as requested in the 16th November session (Session 5A)
- Provide updated participant costs on the basis of additional submissions received.
- Allow for industry discussion on the material from Session 5A now that participants have had the opportunity to review it internally in their organisations.

The ask of participants:

- Consider areas that need clarification and your feedback on areas where AEMO seeks input
- Participation in the forums

2. Introduction

Industry Consultation Update

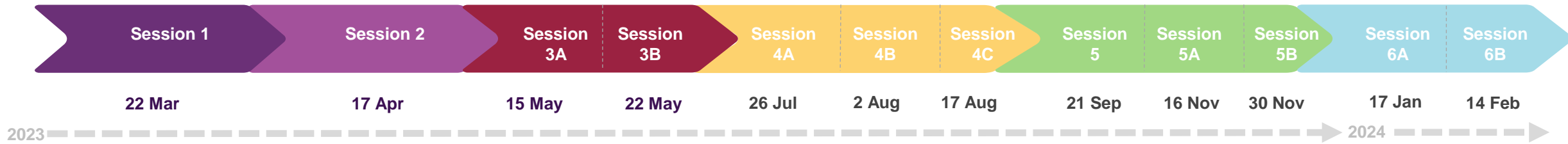
Preparation of business case continues.

- AEMO has received eleven stakeholder contributions to the costing exercise. Six detailed industry cost estimates, four high level estimates and one very high-level estimate received (as of 1 November).
- November industry workshops scheduled, allowing additional time and focus on cost and approach for AEMO and industry, reflecting the high level of interest in the topic.
- AEMO is aiming to distribute materials for Session 6A on **15 December** to allow time for proper review.

Published information and materials:

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

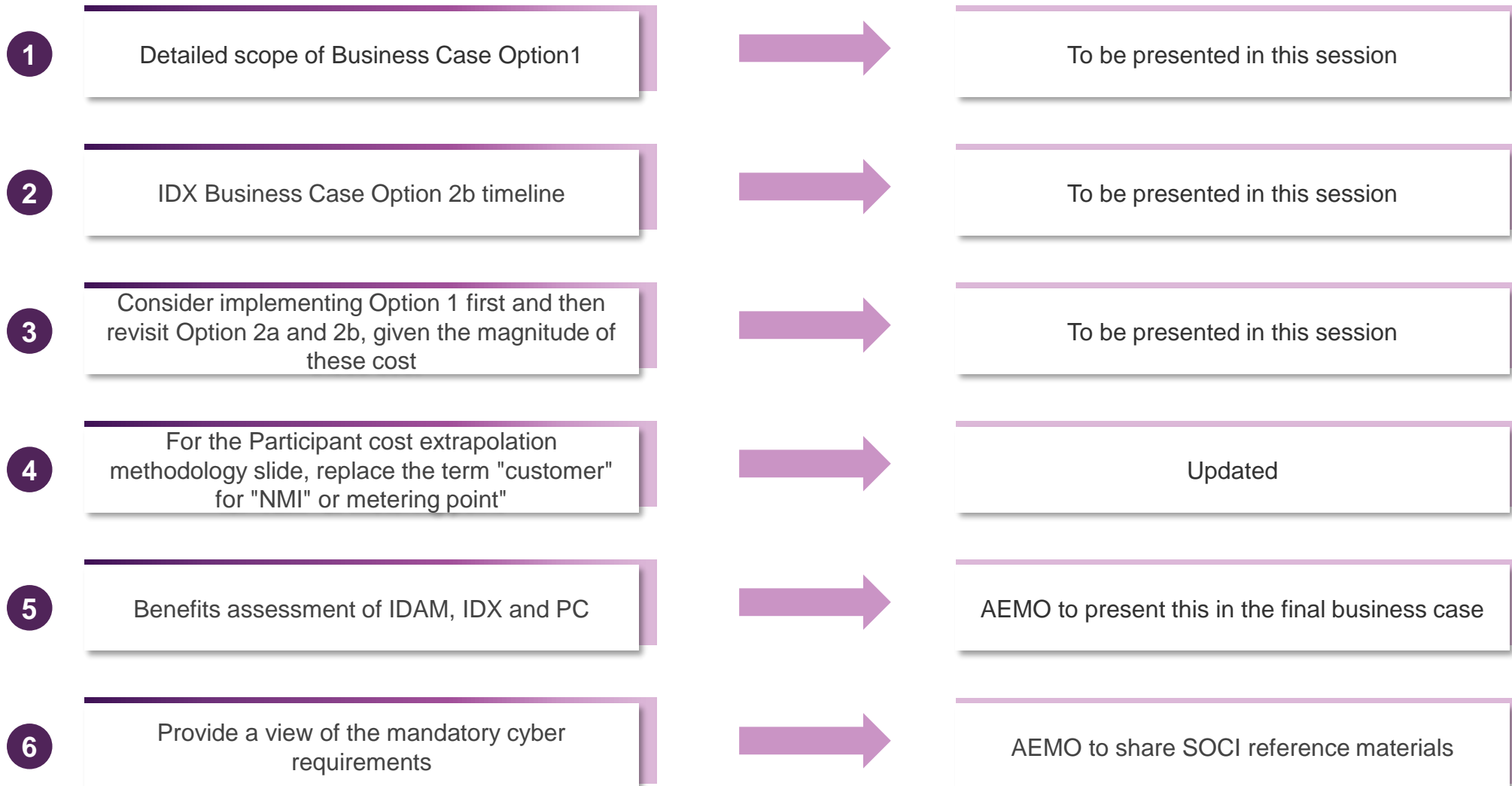
Timing is indicative. Additional engagement with Executive forum members under assessment.



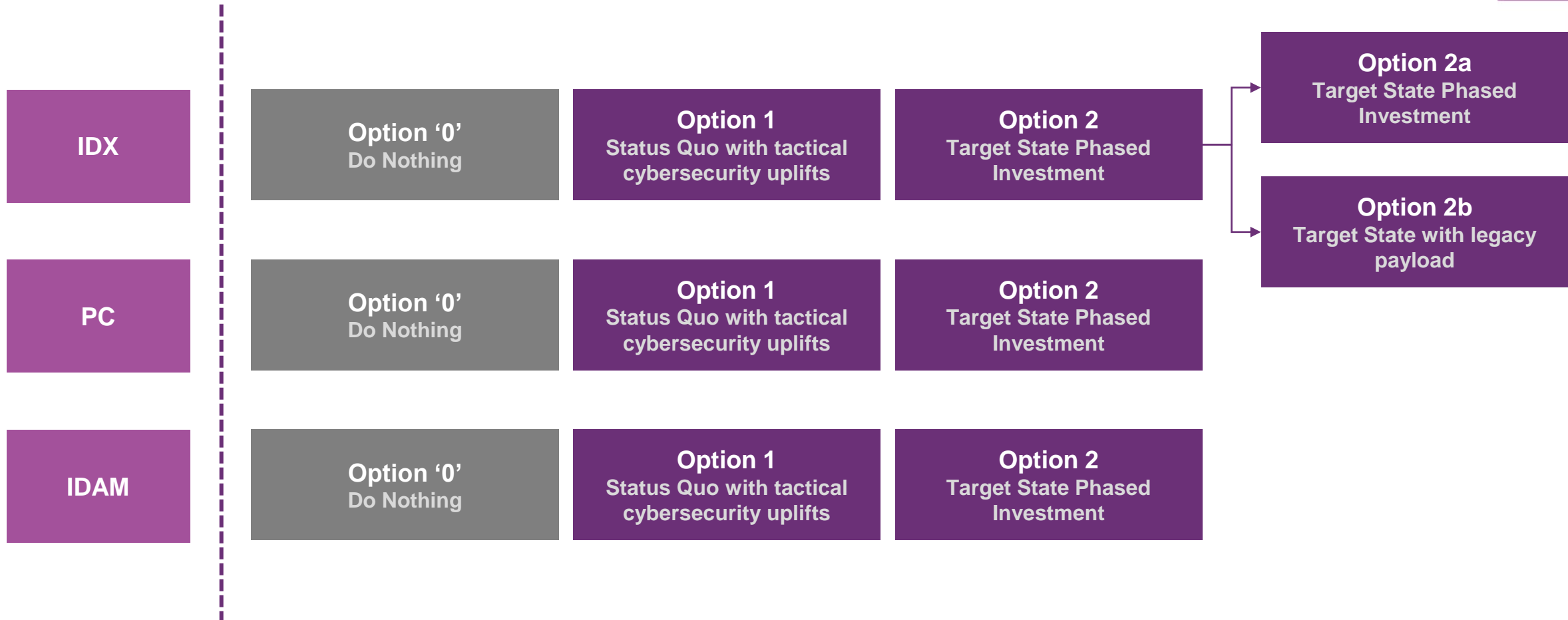
Session	Introduction	Discovery	Target State	Transition Strategy	Cost & Method	Business Case
Agenda	<ul style="list-style-type: none"> • Introduce initiatives • Outline workshop plan 	<ul style="list-style-type: none"> • Pain points and benefits • Survey 	<ul style="list-style-type: none"> • Concept walkthrough • 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

Industry Feedback and Actions from Session 5A

AEMO presented the Business Case Options and AEMO and Industry Implementation Cost during Session 5A. The following feedback was received from the industry during that session



Business Case Options Overview



Charting Future Success: Business Case Options

Discounted

Option 0: Do Nothing

The existing platforms will continue to be used in their current form.

Option “0” is not tenable as there are **mandatory legislative and security requirements** that AEMO and the Industry must meet

Option 1: Status Quo with tactical cybersecurity uplifts

IDX:

- Enhance data exchange cyber controls, addressing legislatively-driven requirements

Portal Consolidation:

- Integrating IDAM MVP to address legislatively-driven requirements

IDAM:

- MVP focused on addressing legislatively-driven requirements such as SOCI and AESCSF to enhance the security posture

Option 2: Phased Investment

Establish Foundational capability for energy transition and industry-driven priorities

IDX:

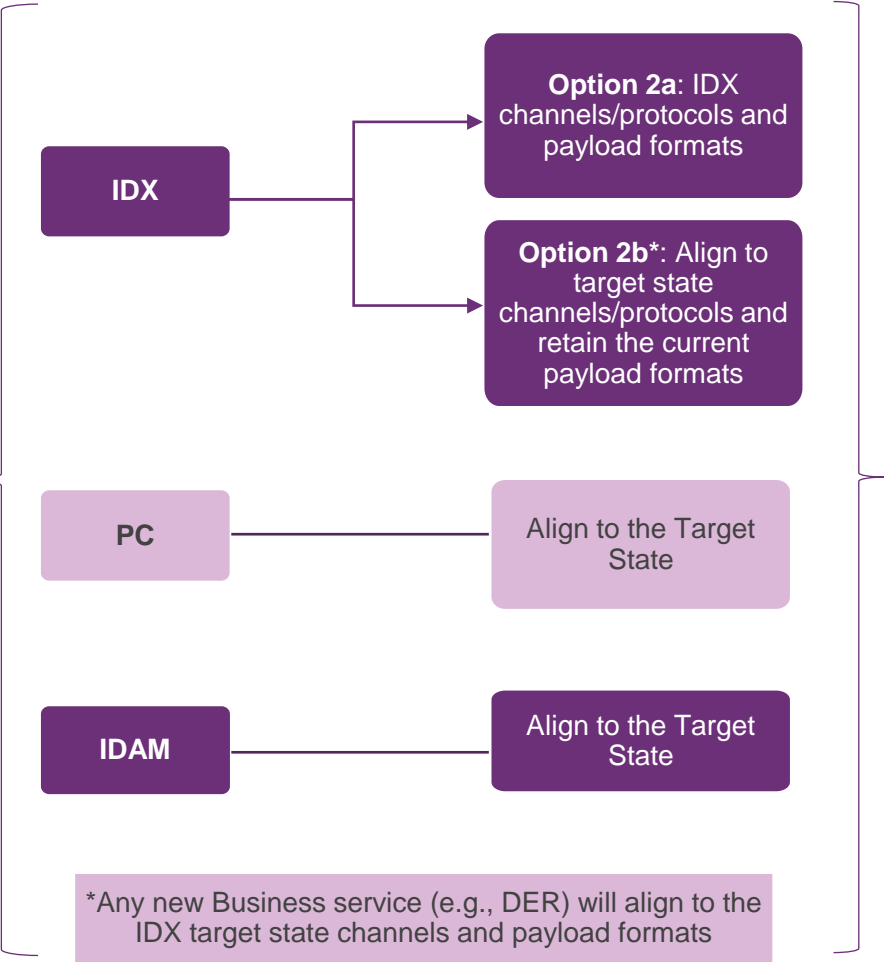
- Option 2a:** A phased investment approach delivering IDX channels/protocols and payload formats as defined in an agreed target state.
- Option 2b:** A phased investment approach delivering IDX channels/protocols and retain current payload formats for the legacy services.

Portal Consolidation:

- A phased investment approach delivering a holistic Portals functionality as defined in an agreed target state.

IDAM:

- A phased investment approach delivering a holistic IDAM capability as defined in an agreed target state.



Investment Approach for Option 2

With existing capability spanning multiple markets, dependencies across initiatives as well as new initiatives, **two investment approaches** have been identified **to achieve alignment to the strategic target state** - A single investment and a phased investment approach. A **phased investment** approach is proposed to identify a **first cut of capabilities (a subset of tranches)** to be assessed via this 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.

Option 2: Phased Investment

Establish Foundational capability for energy transition and industry-driven priorities

IDX:

- **Option 2a:** A phased investment approach delivering IDX channels/protocols and payload formats as defined in an agreed target state.
- **Option 2b:** A phased investment approach delivering IDX channels/protocols and retain current payload formats for the legacy services.

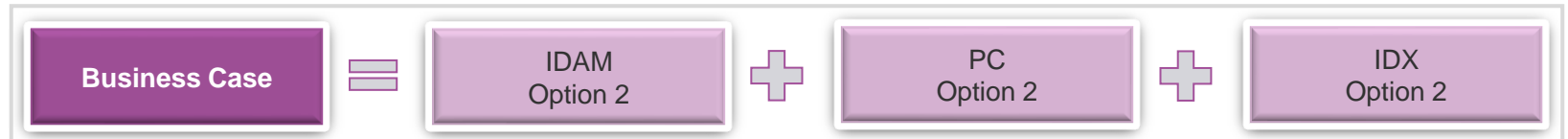
Portal Consolidation:

- A phased investment approach delivering a holistic Portals functionality as defined in an agreed target state.

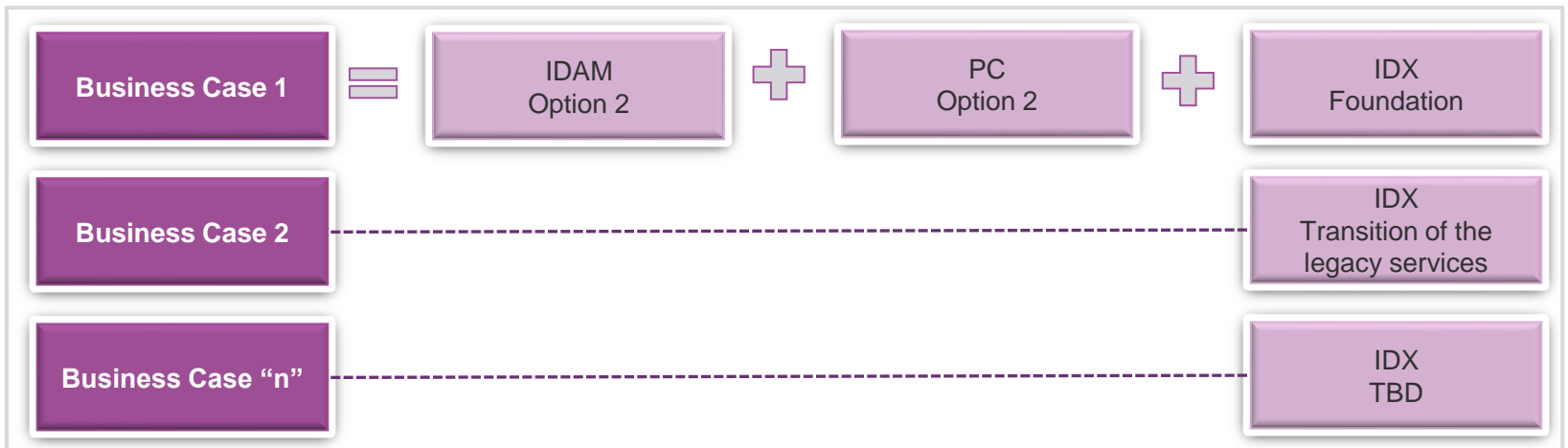
IDAM:

- A phased investment approach delivering a holistic IDAM capability as defined in an agreed target state.

Investment Approach A - Single Investment



Investment Approach B - Phased Investment



3. Option 1

Scope

Strawman Timeline

Action 1: Scope of Option 1

AEMO is categorised as a critical energy market operator and is subject to security regulatory obligations under the Commonwealth Security of Critical Infrastructure Act (SOCI). **Option 1 aims** to build an MVP focussed on uplifting the security posture addressing legislative-driven requirements such as SOCI, AESCSF. Option 1 focuses on transitioning the services pertaining to the **NEM market only**.

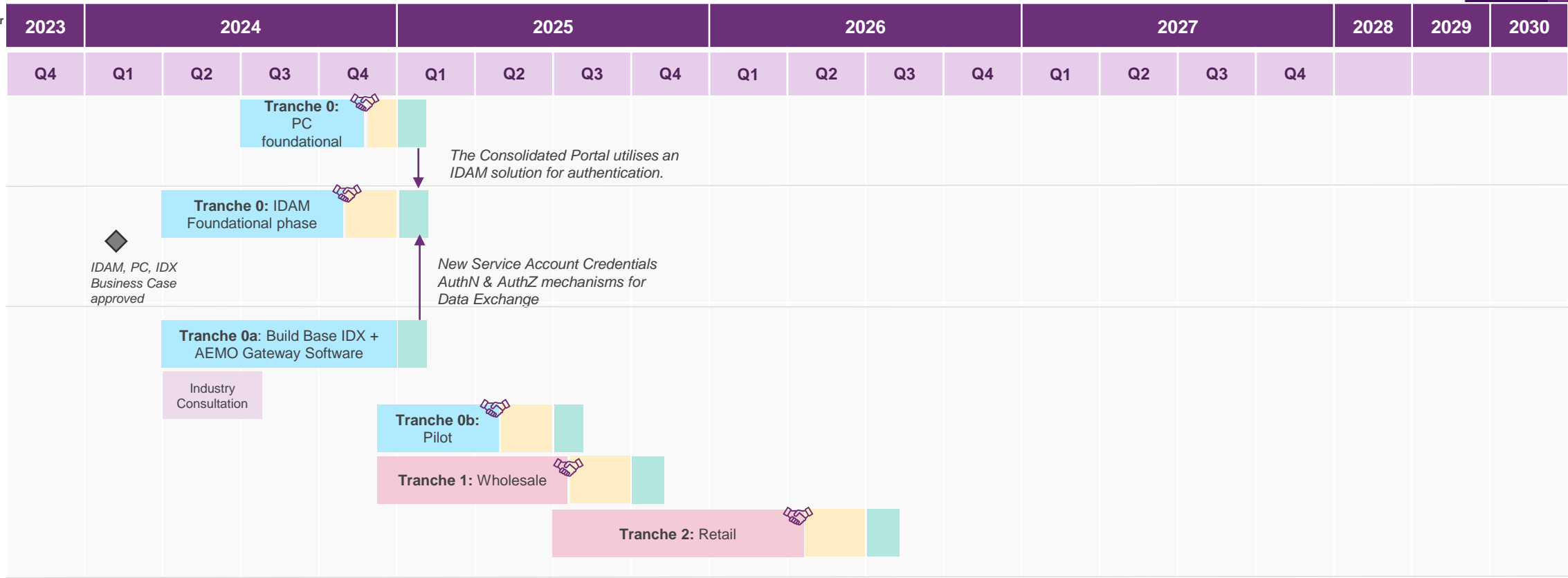
Indicative* Scope of Option 1

In Scope	Out of Scope
<p>IDAM</p> <ul style="list-style-type: none">✓ Implement Multi-Factor Authentication (MFA) to enable two-step authentication for the browser services✓ Enhance self-certification management process <p>IDX</p> <ul style="list-style-type: none">✓ Enhance the security of the data exchange:<ul style="list-style-type: none">a) Move from FTP to SFTP for file-based transferb) Move to OAuth for API interactions<ul style="list-style-type: none">• Basic Auth to OAuth• API keys to OAuth• Cert-based to OAuthc) Deliver secure solution for large file transfer e.g. MSATS snapshot reports <p>PC:</p> <ul style="list-style-type: none">✓ Enhance existing browser services to integrate with IDAM to address legislative requirements✓ Retire standalone MSATS browser URL, now available in Markets Portal	<p>IDAM</p> <ul style="list-style-type: none">× Consolidation of identity and entitlement stores within AEMO× De-duplication of user accounts× Support for identity federation× Self-service (for signup, password reset)× Advanced data sharing capabilities <p>IDX</p> <ul style="list-style-type: none">× Standing up foundational capabilities for upcoming reforms× Transition of the interfaces from other markets and fuels <p>PC</p> <ul style="list-style-type: none">× Browser services will not be internet-enabled

**Currently, AEMO is undertaking a risk assessment as a part of cyber strategy development to identify the risk related to inadequate security governance and cyber security posture. Option 1 scope is an indicative scope and will be finalised once the risk assessment is completed*

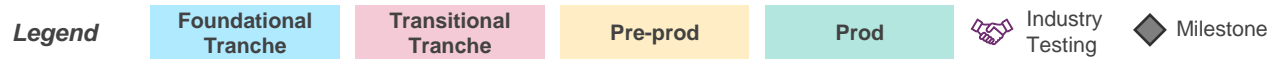
Action 2: Strawman Timeline for Option 1

Calendar years



Note:

- Retail Tranche Pre-requisite: Participants must have an OAuth provider
- In option 1, Tranche 3 (Retail non-B2B) has been incorporated in Tranche 2



Action 3: Consider implementing IDX Option 1 first and then revisit Option 2a

First phase scope:

Security updates

- Option 1 base implementation



- ✓ **Establish SFTP**
- ✓ **Establish OAuth** (from Basic Auth/API keys/Cert-based to OAuth)
- ✓ Deliver **secure solution for large file transfer** e.g. MSATS snapshot reports

Transition of existing services

- Option 1 Transition of existing services



- ✓ **Transition** to sFTP, OAuth and secure large file transfer

Foundation for new services

- Option 2 Tranche 0a



- ✓ Provide **readiness** for new NEM Reforms

Revisit scope:

Complete foundation for existing services

- Option 2 Tranche 0b

2nd Transition of existing services

- Option 2 Tranche 1
- Option 2 Tranche 2
- Option 2 Tranche 3

Key Considerations

As Option 1 targets existing platforms and isn't aligned to target state, the spend to achieve Option 1 will not materially reduce the spend required to revisit Option 2a. A revisit requires:

- **Two rounds of uplift** (one on legacy platforms and one on target state)
- **Two transition stages** across the market, Option 1 a 'big bang' and Option 2 a participant-led transition timeline
- **Duplicate testing effort** and associated bilateral/multi-party testing

4. AEMO Implementation Cost

Update to AEMO Implementation Cost – Option 1

Updated AEMO Cost Estimation Approach - Option 1



The **AEMO Implementation costs** for IDX have been re-assessed (for the highlighted tranches) to align to the updated option 1 scope inclusive of feedback from industry

IDX

	Cost scaling	Assumption	Updated Cost
Tranche 0a	<ul style="list-style-type: none"> 20% (of AEMO Gateway cost) 50% of Option 2a IC \$3M stand alone cost 	<ul style="list-style-type: none"> To enhance existing PdrBatcher/ Participant batcher to enable SFTP capability. To define deployable OAUTH and sFTP patterns To build MFT and OAUTH capabilities 	\$10M
Tranche 0b	10%	<ul style="list-style-type: none"> Security design and transition planning and consultations 	
Tranche 1	15%	<ul style="list-style-type: none"> Move to sFTP and Oauth, regression and industry testing 	
Tranche 2	20%	<ul style="list-style-type: none"> Move to sFTP Basic Auth, API keys and cert based to Oauth Regression and industry testing 	
Tranche 3	0%	<ul style="list-style-type: none"> No change 	

Increase of **\$5M** largely driven by OAUTH scope

PC

Tranche 0	20%	<ul style="list-style-type: none"> Security updates only 	<\$1M
Tranche 1	0%	<ul style="list-style-type: none"> No change 	
Tranche 2	0%	<ul style="list-style-type: none"> No change 	

No material change in total cost for PC

IDAM

Tranche 0	30%	<ul style="list-style-type: none"> Definition of patterns and potential build/license of capability of existing products 	\$4M
Tranche 1a	0%	<ul style="list-style-type: none"> User accounts remain in existing identity stores 	
Tranche 1b	0%	<ul style="list-style-type: none"> No new entitlement capabilities deployed 	
Tranche 2a	0%	<ul style="list-style-type: none"> No advanced capabilities deployed 	
Tranche 2b	0%	<ul style="list-style-type: none"> No decommission 	

No change in IDAM cost

5. Industry Implementation Cost

Extrapolated Industry Implementation Cost – Initial view

Extrapolated Industry Implementation Cost – Updated view

Updated Participant Implementation Cost Option 2a

- The Contestable Metering Service Provider costing assumption has been replaced based on submissions received since the 16th November presentation.
- Two new participant type categories has been added:
 - 'Distributor and Contestable Metering Service Providers'
 - 'Independent Generator'.
- A cost profile has been established for the two new categories reflective of updated submissions and feedback through industry one on one sessions with participants
- The costing methodology has been revised to apply median rather than average implementation costs for extrapolation (see details in next slide)

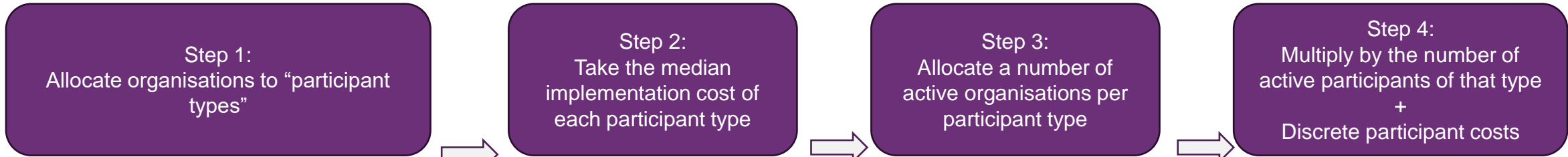
Participant types included in the industry cost

Type	Definition
Distributor	Has an LNSP role in the NEM, does not provide Contestable Metering Services
Contestable Metering Service Provider	Has an MDP, MPB, MPC role in the NEM, does not have an LNSP role.
Large Gentailer	>1.3 M NMIs*
Medium Gentailer	100K to 1.3M NMIs*
Small Retailer / Gentailer	< 100K NMIs*
Distributor and Contestable metering service Provider**	Has an LNSP role in the NEM and operates a contestable metering services business
Independent Generator**	Independent generator, does not have a Retail market role.

* As part of Action 4 (based on Industry feedback), the term “customer” has been replaced by “NMIs”

** New participant-type categories added to the industry implementation cost

Participant Implementation Cost – Updated extrapolation methodology for Option 2a



Type	Definition
Distributor	Has an LNSP role in the NEM, does not provide Contestable Metering Services
Contestable Metering Service Provider	Has an MDP, MPB, MPC role in the NEM, does not have an LNSP role.
Large Gentailer	>1.3 M NMIs
Medium Gentaile	100K to 1.3M NMIs
Small Retailer / Gentaile	< 100K NMIs
Distributor and Contestable metering service Provider	Has an LNSP role in the NEM and operates a contestable metering services business
Independent Generators	Independent generator, does not have a Retail market role

Median Implementation Cost = Midpoint (or the average of the midpoints if number of submissions are even) of the implementation costs submitted by participants*

**Following updated submissions and one-on-one sessions a move to the median from average has been proposed as more cost-reflective, allowing outlier submissions to be included in the total industry cost however not factored into the median calculation for their respective participant type*

Type	Total No
Distributor	-
Metering Services	-
Large Gentaile	-
Medium Gentaile	-
Small Retailer / Gentaile	-
Distributors and Contestable metering services**	-
Generators**	-

Total Implementation Cost for a participant type = Median Implementation cost × # of active organisations * + Discrete participant submission costs

** Noting the revised approach to determining a median cost, the median will be applied to participants who fit within the median profile or who have not provided an individual submission. Participants with discrete submissions will have their submitted costs included.*

Updated Participant Cost Estimation Approach - Option 1

Option 1 Scaling Methodology

		Cost scaling	Assumption
IDX	Tranche 0a	20%	Industry Consultation for move to SFTP and OAuth Establish updates for data exchange capability such as implementing OAuth Provider, OAuth client capability and SFTP Pilot testing
	Tranche 0b		
	Tranche 1	40%	Move to SFTP and Oauth, regression and industry testing
	Tranche 2	40%	Move to SFTP and Oauth, regression and industry testing
	Tranche 3	0%	No change

		Cost scaling	Assumption
PC	Tranche 0	15%	Security updates only
	Tranche 1	0%	No Portal movement
	Tranche 2	0%	No Portal movement

		Cost scaling	Assumption
IDAM	Tranche 0	20%	Industry Consultation for defining patterns and protocols. Agree on the transition strategy for MFA
	Tranche 1a	5%	User accounts enrolment for MFA
	Tranche 1b	0%	No new entitlement capabilities deployed
	Tranche 2a	0%	No advanced capabilities deployed
	Tranche 2b	0%	No decommission

Assumptions

- Based on participant feedback and detailed option 1 scope related to implementing OAuth provider, there has been an increase in the IDX scaling factor for Tranche 0a and 0b
- Based on participant feedback, the increase in cost scaling for IDX Tranche 1 and Tranche 2 is due to participants identifying regression and bilateral industry testing as key activities.
- Option 1 broadly reflects implementation on the agreed effective change date, without the extended sunset approach of Option 2, reducing the opportunity to leverage market or internal changes.

Updated Participant Implementation Cost

Initial

Initiative	Option 1	Option 2a	Option 2b (IDX only)
IDX	\$34 M +/- 40%	\$315 M +/- 40%	\$220 M +/- 40%
PC	< \$1 M +/- 40%	\$15 M +/- 40%	\$15 M +/- 40%
IDAM	\$2 M +/- 40%	\$46 M +/- 40%	\$46 M +/- 40%



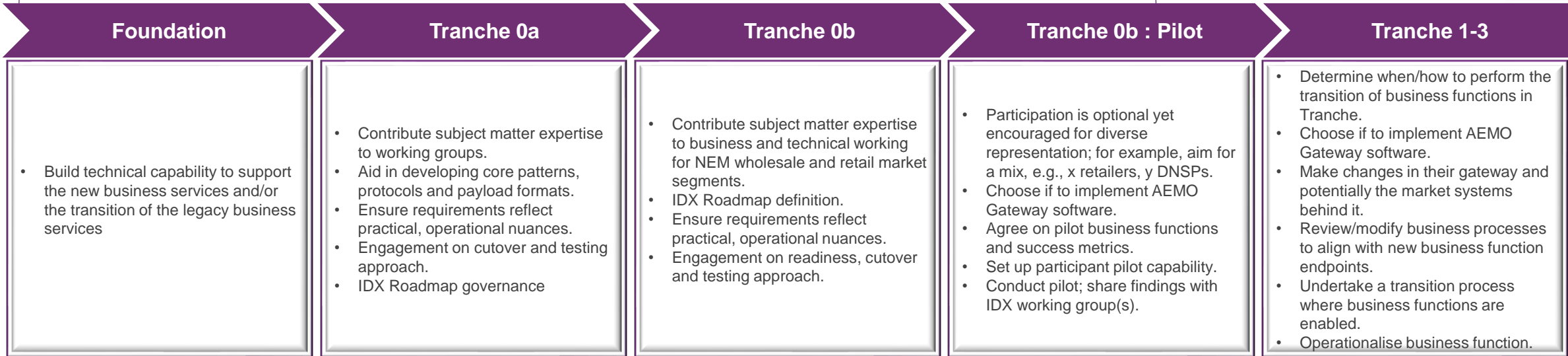
Updated

Initiative	Option 1	Option 2a	Option 2b (IDX only)
IDX	\$85M +/-40%	\$286M +/-40%	\$200M +/-40%
PC	< \$1M +/-40%	\$13M +/-40%	N/A
IDAM	\$2M +/-40%	\$38M +/-40%	N/A

Based on Industry 1:1s and updated methodology

IDX Transition – What does the Industry need to do?

Participants can choose to implement the IDX foundation at any time before Tranche 1-3



Template

	Foundation	T:0a	T:0b - Consultation	T:0b - Pilot	Tranche 1 NEM Wholesale	Tranche 2: NEM Retail (JSON Payload)	Tranche 3
Using own Gateway	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$
Using AEMO Gateway software	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$	\$\$

The participants can implement the Foundation phase at any point before transitioning of the business services for NEM wholesale and retail, based on the participant's specific requirements.

Updated IDX Extrapolated Industry Costs (all figures are +/- 40%): Detailed

Initiative	Type	Size	# of organisations	Median	Option 2a	Scaling factor calculation	
						Option 1	Option 2b
IDX	Distributor	N/A	8	\$7.1M	\$127M	\$37M	\$89M
	Contestable Metering Service Provider	N/A	7	\$4.0M	\$28M	\$8M	\$19M
	Gentailer	Large	3	\$24M	\$72M	\$20M	\$50M
	Gentailer	Medium	10	\$2.8M	\$28M	\$3.0M	\$6.0M
	Retailer	Small	10	<\$1M	\$2.6M	<\$1M	\$1.8M
	Combined Distribution and Metering business	N/A	3	\$8.8M	\$26M	\$10M	\$18M
	Independent Generator	N/A	10	<\$1M	\$2M	<\$1M	\$1.4M
	Total	-	51	-	\$286M	\$85M	\$200M

6. Discussion open questions

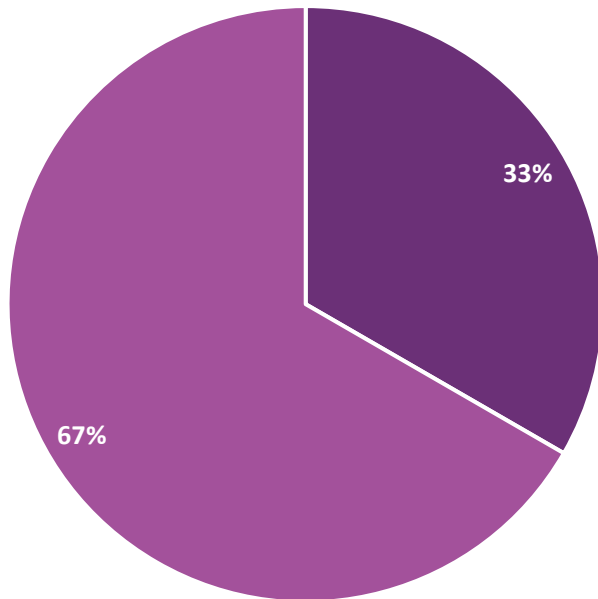
Industry Implementation Cost Alignment check-in



Given the updates for the participant's costs presented today, are you comfortable that these costs are representative of an appropriate view of the cost for your participant type (such as Gentailer, Distribution Network, etc.) and industry, as a whole?

Poll Results – Cost Alignment Check-in

Given the updates for the participants cost presented today, are you comfortable that these costs are representative of an appropriate view of the cost for your participant type (such as Genter, Distribution Network, etc.) and industry, as a whole?



- I am comfortable that revised costs presented today represent the suitable basis for the business case of the participant cost for my organisation and industry, as a whole.
- Further work is required to more fully understand the cost and aligned to the investment approaches and my organisation would like to further contribute to the cost refinement process

Number of Responses

	Slido Extract @ Individual votes	Consolidated @Org. level*
Total responses	13	12
I am comfortable	4	4
Further work required	9	8

*AEMO consolidated the responses received from different organisations, considering one vote per organisation. The graph represents the consolidated responses and incorporates updated responses received from the organisations' post workshop.

Extract from tool Slido

5B: Given the updates for the participants cost presented today, are you comfortable that these costs are representative of an appropriate view of the cost for your participant type (such as Genter, Distribution Network, etc.) and industry, as a whole? Share

Multiple Choice Poll 13 votes 13 participants

I am comfortable that revised costs presented today represent the suitable basis for the business case of the participant cost for my organisation and industry, as a whole. - 4 votes 31%

Further work is required to more fully understand the cost and aligned to the investment approaches and my organisation would like to further contribute to the cost refinement process - 9 votes 69%

I am uncomfortable, there is a material misalignment in cost either for my organisation or industry as whole and I will provide further information - 0 votes 0%

7. Next steps & close

Next steps

Activity	Timing
Release of working draft Business Case	Friday 15 December 2023
Comments on working draft Business Case NEMReform@aemo.com.au	Friday 12 January 2024
Walk through session: Business Case Package	Wednesday 17 January 2024 (TBC)

Please note that AEMO Offices will be closed from 23 December to 1 January 2024

Please reach out



NEMReform@aemo.com.au



[AEMO | NEM Reform Foundational & Strategic Initiatives Focus Group](#)





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.

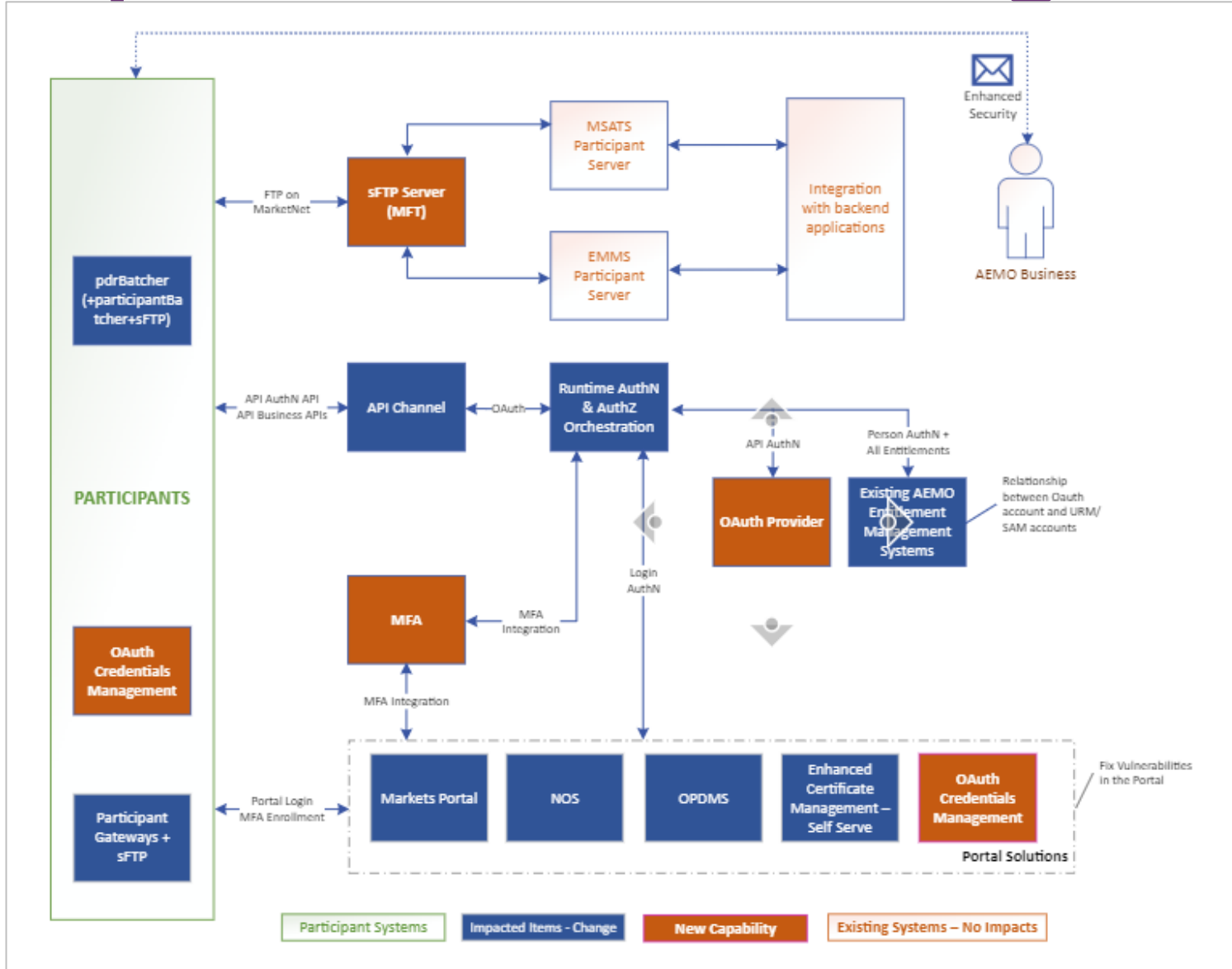
Please visit: <https://aemo.com.au/en/consultations/industry-forums-and-working-groups>

Appendix B

Option 1 Context Diagram



Option 1 Context Diagram



Appendix C

Extrapolated Industry Implementation Cost



Updated Extrapolated Industry Costs (all figures are +/- 40%):

						Scaling factor calculation	
Initiative	Type	Size	# of organisations	Median	Option 2a	Option 1	Option 2b
IDAM	Distributor	N/A	8	\$1.4M	\$19M	\$1.1M	NA
	Contestable Metering Service Provider	N/A	7	\$0.8M	\$5.5M	<\$1M	
	Gentailer	Large	3	<\$1M	<\$1M	<\$1M	
	Gentailer	Medium	10	\$0.9M	\$9.4M	<\$1M	
	Retailer	Small	10	<\$1M	<\$1M	<\$1M	
	Combined Distribution and Metering business	N/A	3	\$1M	\$2.6M	<\$1M	
	Independent Generator	N/A	10	<\$1M	\$1.0M	<\$1M	
	Total		51	-	\$38M	\$2M	
PC	Distributor	N/A	8	\$1M	\$8M	<\$1M	
	Contestable Metering Service Provider	N/A	7	<\$1M	<\$1M	<\$1M	
	Gentailer	Large	3	<\$1M	<\$1M	<\$1M	
	Gentailer	Medium	10	<\$1M	\$2.1M	<\$1M	
	Retailer	Small	10	<\$1M	<\$1M	<\$1M	
	Combined Distribution and Metering business	N/A	3	\$1M	\$3M	-	
	Independent Generator	N/A	10	-	-	-	
	Total		51	-	\$13M	<\$1M	