Business case: ICT Non-Recurrent – ESB AEMO Post 2025 Roadmap Changes

2025-30 Regulatory Proposal

Supporting document 5.12.29

January 2024

SA Power Networks

Empowering South Australia

Contents

Glossary

Acronym / term	Definition
AEMO	Australian Energy Market Operator
B2B	Business to Business
B2M	Business to Market
Capex	Capital expenditure
DNSP	Distribution Network Service Provider
ESB	Energy Security Board
ICT	Information and Communication Technology
IDAM	Identity Access Management
IDX	Industry Data Exchange
MSATS	Market Settlement and Transfer Solution
NEM	National Electricity Market
NPV	Net present value
NMI	National Meter Identifier
Opex	Operating Expenditure
PC	Portal Consolidation
RCP	Regulatory Control Period
ROM	Rough Order of Magnitude

1. About this document

1.1 Purpose

This document details the justification for non-recurrent Information and Communication Technology (**ICT**) compliance related expenditure to deliver the changes required in our core National Market systems as a result of the market changes required by the Australian Energy Market Operator (**AEMO**) as part of the Energy Security Board (**ESB**) Post 2025 energy market reforms.

1.2 Expenditure category

- Non-network ICT capital expenditure (**capex**): non-recurrent - compliance

1.3 Related documents

Table 1: Related documents

Title	Author	Version / date
5.12.1 - IT Investment Plan 2025-30	SA Power Networks	Jan 2024
Digital and Data Strategy	SA Power Networks	Jan 2024
IT Asset Management Plan	SA Power Networks	Jan 2024

2. Executive summary

The ESB[1] provides whole of system oversight for energy security and reliability to drive better outcomes for consumers. The ESB, in collaboration with the Australian Energy Market Commission, Australian Energy Market Operator and the Australian Energy Regulator, has the remit of making the National Electricity Market fit-for-purpose. The ESB's Post 2025 project addresses essential change in a world of expanding consumer choices and new technologies; identifying that without reform you can't get the full value of emissions reduction offered by the renewables revolution.

In August 2023, **AEMO**[2] proposed Network Market system changes which will be required to allow them, as part of their National Electricity Market (**NEM**) Reform Program, to deliver many of the ESB Post 2025 reforms, along with various other energy market changes.

This will require an uplift of all its market systems including improved data management systems, improved data security and modernisation of their Industry Data Exchange communication protocols. This foundational and strategic initiative is currently planned to be rolled-out throughout 2025-35 and AEMO, with industry participation, have created a roadmap of activities and draft timelines to achieve this.

Ultimately this modernisation of AEMO systems will form an obligation on SA Power Networks (via the standard market mechanisms and rules) to become complaint with the new requirements of the National Market and our distribution licence conditions, this compliance is fundamental to our participation in the market as a Distribution Network Service Provider (**DNSP**).

Being unable to efficiently implement regulatory compliance changes will result in the risk of Financial/Regulatory Penalties, intervention by the Regulator and possible reputational impact on SA Power Networks' public image.

The identified need of this business case is to remain compliant with national market changes and our DNSP license conditions and obligations.

From the AEMO roadmap there are three key changes we have identified that will have a material impact on our national market and billing services. These are:

- Portal Consolidation - enable stakeholders with the ability to self-manage their user experience by delivering a new web and mobile user portal that provides personalised, secure, single pane of glass access to data and services;
- Identity and Access Management (**IDAM**) of Industry participants – A modern identity management system will be introduced which reduces the need for participants to have multiple credentials and improves cyber security controls; and
- Industry Data Exchange (**IDX**) between market participants – A new data exchange system will be built providing improved security and standards across protocols, payloads, connectivity and authentication.

These proposed changes are currently out for consultation by AEMO and the nature of, and expected deadlines for, the compliance requirements will be determined during 2024.

Our initial estimation for these changes is approximately $21.1 million, with between $2.0 million and $11.9 million being in the 2025-30 Regulatory Control Period (**RCP**), depending on the timing of the obligations (2025-30 RCP or 2030-35 RCP). Hence, we have put a placeholder for **$2 million capex** in the 2025-30 initial submission, expecting a revised business case for the Final Submission.

[1] Energy Security Board | Post 2025 electricity market design project (aemc.gov.au)
[2] AEMO | NEM Reform Program

The preferred option, Technical Change, has been selected because it provides for the continued integrity and security of our core National Market systems, as well as continuity of critical customer services. It also ensures we can continue to meet our Critical Infrastructure and Energy Market obligations.

In addition, it ensures that as the only DNSP in the state, SA Power Networks can still facilitate industry and market testing with other participants operating in the South Australian Electricity market. These participants and their customers would be seriously impacted if they were not able to test their connectivity to the NEM via our market systems, especially at a time of major technical change.

Other options we considered are:

- Not updating our National Market systems (i.e., 'Do nothing'); or
- Compliance through process change.

Table 2: Non-Recurrent Expenditure Options assessment summary relative to the Option 0 base case, $million, Jun 2022 real[3]

	Total Program Costs			2025-2030 Costs			Program or 10 Year Estimates		Residual Risk Rating[4]
Option	**Capex**	**Opex[5]**	**Total**	**Capex**	**Opex**	**Total**	**Benefits**	**NPV[6]**	
Option 0 – Do Nothing	-	-	-	-	-	-	-	-	**Extreme**
Option 1 – Process Change	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	**Extreme**
Option 2 Technical Change	21.1	-	21.1	2.0	-	2.0	-	-16.5	**Medium**

[3] Note: Totals presented in tables throughout this document may not exactly match the sums of individual figures due to rounding
[4] The overall risk level for each option after the proposed option implemented. Refer to Appendix B – risk assessment for details
[5] Operating expenditure
[6] Net present value (NPV) of the proposal over 10-year cash flow period from 1 July 2025 to 30 June 2035, based on discount rate of 4.05%.

3. Background

Our Network Market systems provides connectivity and data-sharing capabilities which enables us to successfully participate in the Australian Energy Market, this includes:

- AEMO developed systems required to fulfil our NEM obligations;
- Business-to-Business communications to other market participants, sharing information such as customer and site (including life support) details, meter data, one-way notifications (meter faults and planned interruptions), service orders (requests and responses) and network billing – invoice data; and
- Business-to-Market connectivity to ensure that configuration data is kept in sync with AEMO's Market Settlement and Transfer Solution (MSATS) system for customer administration and transfer, and meter data management.

Secure, reliable, real-time, access to AEMO market systems is also critical to service delivery for many of our customer-facing services, such as:

- High-priority service order processing, including meter reading/connects/disconnects/special-reads.
- Provision of meter data to customers (regulatory requirement)
- Customer information for our call centres;
- Power outage notifications via SMS to customers
- GIS (Geographic Information System) mapping services for asset management, and
- customer website applications and information.

SA Power Networks has obligations as a DNSP, billing and customer data flows through this platform. This annual throughput includes:

- $1.4 billion in distribution network charges
- 238,000 high-priority service orders
- 9 million market transactions
- 10,000 new customer connections
- 22,500 life support customers, and
- support and maintenance of around 900,000 National Meter Identifier (**NMI**)s and associated customer information, as well as 1.2 million meters.

This system is also key to ensuring that timely, accurate information regarding life-support customers, site risk and health and safety requirements, are available to our staff, not having this information could result in potential injuries or loss of life.

Nationally, the Energy Security Board, in collaboration with the Australian Energy Market Commission, Australian Energy Market Operator and the Australian Energy Regulator, is making the National Electricity Market fit- for-purpose. Their **Post 2025** project addresses essential change in a world of expanding consumer choices, new technologies, and large-scale capital replacement. They have identified that without reform we can't get the full value of emissions reduction offered by the renewables revolution[7].

[7] Energy Security Board | Post 2025 electricity market design project (aemc.gov.au)

Energy Ministers have endorsed these reforms and have tasked ESB with their delivery. The ESB is establishing a program of work to deliver these reforms, in consultation with consumer and industry representatives. The suite of reforms is designed to fix immediate problems; design now what needs to happen next; and set up pathways forward so everyone has clarity and confidence about what must be done.

Once all these reforms are in place, the national electricity market will:

- Allow consumers to benefit from rapidly changing technologies in our power system;
- unlock the value of flexible demand and distributed energy resources;
- Work alongside government schemes which are delivering on their policy commitments including emissions reduction; and
- Provide clear signals for timely and efficient investment to deliver reliable, secure, and affordable electricity for consumers.

AEMO, as part of their NEM Reform Program, have proposed Network Market system changes which will be required to deliver many of the ESB's Post 2025 reforms, along with various other energy market changes.

This will require a massive uplift of all its market systems including improved data management systems, improved data security and modernisation of their Industry Data Exchange communication protocols. This foundational and strategic initiative is currently planned to be rolled-out throughout 2025-35 and AEMO, with industry participation, have created a roadmap of activities and draft timelines to achieve this (example provided below).

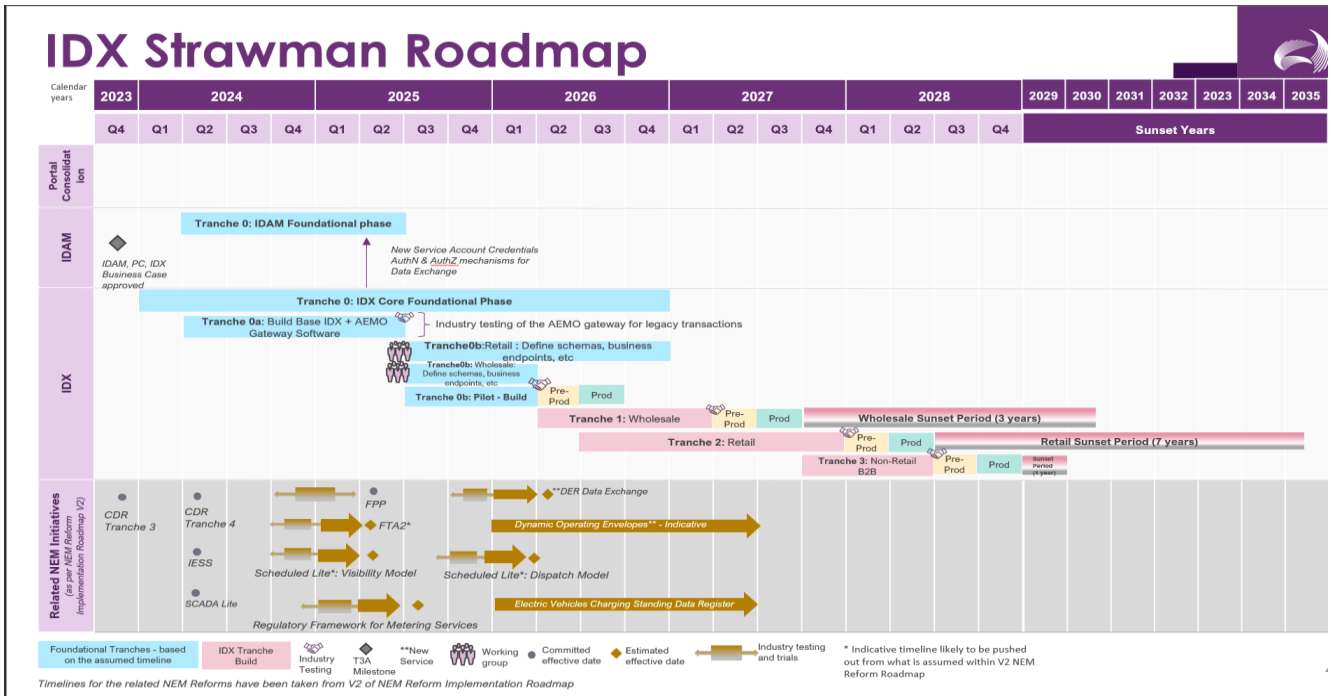

Figure 1. Example of AEMO roadmap for system changes

3.1 The scope of this business case

AEMO proposes providing national market participants with new AEMO-Supplied software products that have improved data management systems, improved data security and modernises their Industry Data Exchange (IDX) communication protocols.

The Market transaction types impacted by this change are:

Business to Business (**B2B**):

- NMID – National Metering Identifier Discovery;
- CATS – Customer Administration and Transfer; and
- MDMT – Meter Data Management Transaction

Business to Market (**B2M**):

- SORD – Service Orders;
- CUST – Customer Details; and
- SITE – Site Details.

This business case covers the modification of our **internal** Network Market systems required to enable our systems to use the new AEMO software.

The following items are considered as being in scope for this business case:

(a) IDX – Industry Data Exchange

1. Build internal version of the equivalent of AEMO Gateway Software in order to test data validation, message flow, priority, monitoring and error logging;
2. Change B2B communications software;
3. Change B2M communications software;
4. Internal Testing;
5. Industry Testing; and
6. Deployment.

(b) Portal Consolidation (PC):

1. Repointing of internal systems to use the new Market Settlement and Transfer Solution (**MSATS**);
2. Tranche 0 – Foundations;
3. Tranche 3 – Settlements;
4. Tranche 4 – Distributed Energy Resource Register.

(c) IDAM – Identity Access Management

1. Tranche 0 – Build base platform;
2. Tranche 1a – User roles and identity management;

3. Tranche 1b – User entitlement;
4. Tranche 2a – Advanced capabilities; and
5. Re-write MSATS automated scripts to use new identity management software.

3.2 Drivers for change

3.2.1 NEM Reform Implementation Roadmap:

AEMO has undertaken a series of planning activities to better understand the scope and scale of the ESB's reform initiatives and AEMO's strategic or foundational enabling initiatives that need to be delivered as part of the NEM Reform Program. These activities have culminated in the development of the NEM Reform Implementation Roadmap which details an integrated timeline for implementing the full suite of initiatives under the NEM Reform Program.

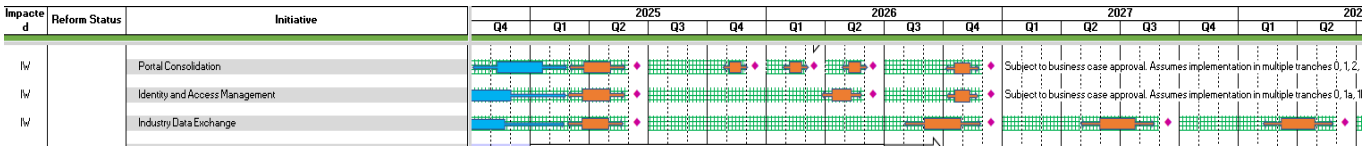

Figure 2. Extract from NEM Reform Implementation

The Post-2025 reform initiatives have been divided into the four interrelated reform pathways:

- Resource Adequacy Mechanisms (RAMS);
- Essential System Services (ESS);
- Integrating Distributed Energy Resources (DER) and Flexible Demand (DER & FD); and
- Transmission and Access (TA).

In addition to the reform initiatives, AEMO has identified a subset of enabling initiatives. Each of these initiatives represents either a:

- Foundational investment in an AEMO legacy system to deliver an uplift to base capability on which reforms are dependent; or
- Strategic investment where system uplift is required at some time in the future and AEMO sees the opportunity for this life-cycle type investment to be brought forward and delivered in the same timeframes as the reforms for efficiency purposes.

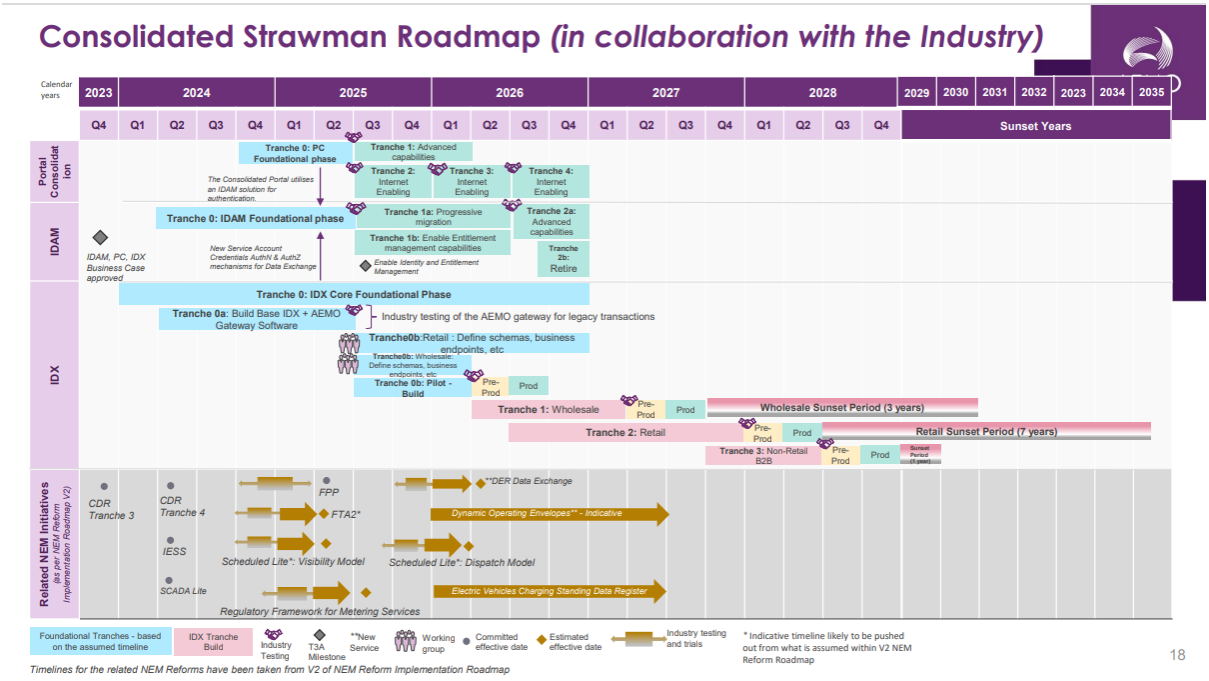

Figure 3. Consolidated AEMO roadmap

The foundational investments relative to this business case are currently planned for the 2025-2030 period and have been outlined on the consolidated roadmap (above). These are:

- Portal Consolidation - enable stakeholders with the ability to self-manage their user experience by delivering a new web and mobile user portal that provides personalised, secure, single pane of glass access to data and services.;
- IDAM – Identity and Access Management of Industry participants – A modern identity management system will be introduced which reduces the need for participants to have multiple credentials and improves cyber security controls; and
- IDX – Industry Data Exchange between market participants – A new data exchange system will be built providing improved customer data security and standards across protocols, payloads, connectivity and authentication.

3.2.2 National Market Rules

In order to remain compliant SA Power Networks must adhere to National Market Rules and more specifically have access to AEMO's market systems and participants. The following are the rules where non-compliance will impact our customers and our ability to deliver services.

National Electricity Rules	
Metering	
Metering Data Providers must be able to exhibit to the reasonable satisfaction of AEMO the following capabilities, as applicable, for the categories of Metering Data Provider accreditation sought:	
S7.3.3	Capabilities of Metering Data providers
S7.3.3(d)	Authorised access to metering software for the: (1) **collection of metering data;** (2) establishment, maintenance and operation of a **metering data services database for the storage and management of metering data and NMI Standing Data.**

S7.3.3(f)	Systems for the processing of metering data including: (1) processes for the **verification and commissioning** of metering data and relevant NMI Standing Data pertaining to each metering installation into the **metering data services database**; (2) **processes for validation, substitution and estimation of metering data;** (3) **processes for the storage, adjustment and aggregation of metering data**; and (4) **the secure storage of historical data**.
S7.3.3(i)	The establishment of a quality system which will: (1) underpin all operational documentation, processes and procedures; (2) facilitate good change control management of procedures, **IT systems and software;** (3) provide audit trail management of metering data and NMI Standing Data; (4) maintain a security control management plan; (5) **maintain security controls and data integrity; and** (6) maintain knowledge and understanding of the Rules and relevant procedures, standards and guides authorised under the Rules.
S7.3.3(j)	Understanding of the required logical interfaces necessary to support the provision of metering data services including the interfaces needed to: (1) **access AEMO's systems for the management and delivery of metering data;** (2) **support B2B procedures**; and (3) **support Market Settlement and Transfer Solution Procedures for delivery and update of NMI Standing Data.**
DNSP - Distribution Network Services Provider	
7.13	Disclosure of NMI information
7.13.2	NMI and NMI checksum (a) A Distribution Network Service Provider must, at the request of a retailer, and within 1 business day of the date of the request, **provide the retailer with the NMI and NMI checksum** for premises identified in the request by reference to: (1) a unique meter identifier held by the Distribution Network Service Provider; or (2) a street address; or (3) the code used by Australia Post to provide a unique identifier for postal addresses. (b) If a computer search by the Distribution Network Service Provider does not produce a unique match for the information provided by the retailer, the Distribution Network Service Provider must provide the retailer with any computer matches achieved up to a maximum of 99.
7.16	Market Settlement and Transfer Solution
7.16.2(c)	Market Settlement and Transfer Solution Procedures (c) All Registered Participants, Metering Providers, Metering Data Providers and Embedded Network Managers **must comply** with the Market Settlement and Transfer Solution Procedures.
7.17	B2B – Business to Business Arrangements
7.17.2(c)	B2B e-Hub Participants To be eligible for accreditation as a B2B e-Hub Participant, a person must:

	(1) satisfy AEMO that it is **complying** with and will comply with the Rules and the procedures authorised under the Rules; and (2) satisfy such other requirements as reasonably determined by AEMO, which may include (but are not limited to): (i) **systems and information technology requirements necessary for secure use of the B2B e-Hub;** and (ii) fee payment and credit support requirements.

4. The identified need

To maintain existing services through achieving new compliance requirements to ensure our continued access to the Australian Energy Market

In considering potential responses to this driver, we engaged with our customers on their desired service level outcomes balanced against price outcomes and considered our regulatory requirements under the National Electricity Rules, National Electricity Law and jurisdictional regulations. As a result of these considerations, the identified need for our NEM Reforms project is:

A. to continue to comply with applicable regulatory obligations / requirements[4], in this case with specific reference to:
   - As the only DNSP in South Australia, we have a responsibility to ensure our systems are available, reliable and secure.
   - We must ensure SA Power Networks continues to meet its obligations as a DNSP, Metering Data Provider and a Metering Coordinator within the NEM – ensuring life-support, metering data management, service orders and customer billing functions.

B. to maintain the safety of our distribution network and system.

C. As a distributor, we have regulatory obligations with respect to cyber security to ensure all application security vulnerabilities are remediated in accordance with the risk and threats they pose. In addition, we need to ensure the security of the national market by ensuring our cyber systems are completely up to date.

5. Comparison of options

5.1 The options considered

Table 3: Summary of options considered.

Option	Description
The base case **Option 0 – Do nothing**	Do not comply with regulatory change.
Option 1– Process Change	Compliance through process change.
Option 2 – Technical Change	Compliance through modifying processes and existing systems.

5.2 Options investigated but deemed non-credible

We considered an option of deferring any changes to our Network Market systems until the next RCP in 2030-35, however as SA Power Networks is the only DNSP in the state, SA Power Networks facilitates industry and market testing with other South Australian market participants. These participants and their customers would be seriously impacted if they were not able to test their connectivity to the NEM via our market systems, especially at a time of major technical change means that the option of deferring this upgrade until after 2030 has not been considered credible.

5.3 Analysis summary and recommended option

5.3.1 Options assessment results

Table 4: Costs, benefits and risks of alternative options relative to the base case over the 10-year period, $m, $ Jun 2022 Real.

Option	10 Year Program Costs			2025-30 Program Costs			10 Year Benefits[8]	10 Year NPV[9]	Overall Risk Rating[10]	Ranking
	Capex	Opex	Total	Capex	Opex	Total				
Option 0 – Do nothing	-	-	-	-	-	-	-	-	**Extreme**	
Option 1 – Process Change									**Extreme**	
Option 2 – Technical change	21.1	-	21.1	2.0	-	2.0	-	-16.5	**Medium**	1

Assumptions

The following assumptions are applicable under all options:

- The proposed changes of the AEMO software will be limited to IDX, PC and IDAM;
- The Sunset period for reduced support of current versions of this software will commence in January 2029;
- The timelines currently provided by AEMO in their roadmap are realistic; and

[8] Represents the total capital and operating risk reduction and over the 10-year cash flow period from 1 July 2025 to 30 June 2035 expected across the organisation as a result of implementing the proposed option.
[9] Net present value (NPV) of the proposal over 10-year cash flow period from 1 July 2025 to 30 June 2035, based on discount rate of 4.05%.
[10] The overall risk level for each option after the proposed option implemented. Refer to Appendix B – risk assessment for details.

- The Energy Security Board and AEMO will continue to drive delivery of these changes during our 2025-2030 Regulatory Control Period.

5.3.2 Recommended option

The proposed option is **Option 2 – Technical change**. This addresses the requirement of our systems to be technically aligned with the operational systems provided by AEMO, more specifically the changes identified in their NEM Reform timeline covering identity management, communication protocols and provision of a new market portal. Our project will be delivered in line with the timeline provided as part of the AEMO roadmap. This option:

- Ensures continued operation of our current systems and services;
- Provides a long-term stable environment;
- Focusses on minimising system changes and undertaking an appropriate level of testing to minimise implantation risks; and
- Identifies that a well-planned and comprehensive program of work is required to address these changes.

This option will maintain our existing customer and business services by ensuring that our core Network Market systems are fit for purpose, secure and reliable. It ensures the continued reliable and efficient provision of services to our customers.

However, given the current uncertainty of the timing of the AEMO NEM Reform being made a compliance item we have decided only to enter a provisional estimate of $2.0 million in our reset expenditure submission which will be re-assessed once more is known about this potential regulatory requirement. While the total costs may be greater than $20 million, at the present time much of this falls post 2030. However this could change as the dates are solidified during 2024.

Table 5: Provisional expenditure estimate (June 2022, $)

Cost Type	2025-26	2026-27	2027-28	2028-29	2029-30	Total 2025 - 30
Capex	0	0.5	0	0.1	1.4	**2.0**
Opex	0	0	0	0	0	**0**
TOTAL	**0**	**0.5**	**0**	**0.1**	**1.4**	**2.0**

Appendix A provides the links to the cost and benefit models for each option. Appendix B provides the detailed risk analysis for each option.

5.4 Option 0 – Do Nothing (Do not comply with regulatory rule change)

5.4.1 Description

As maintaining excellence in regulatory management is a strategic imperative for SA Power Networks and a failure to address this requirement will create extreme risk for SA Power Networks, the option of not addressing the NEM Reform changes has not been considered.

5.4.2 Risks

Table 6: Risk assessment summary

Risk consequence category	Current risk level[11] (Option 0)
Safety - Harm to a worker, contractor or member of the public	High
Performance and Growth - Financial impact	Extreme
Network - Failure to transport electricity from source to load	High
Customers - Failure to deliver on customer expectations	Extreme
Overall risk level	Extreme

5.5 Option 1 – Process Change

5.5.1 Description

This option would involve implementing physical process change and 'work arounds' to avoid changes to core market and meter data management systems. Market data transmissions are high volume, 2 way transactions with complex business rules that occur through internal and external (AEMO Hub) interfaces. Due to the nature and volume of the data involved and the market requirements for capturing and transacting this data, it is considered that neither increased labour resources nor modification of business processes can provide a credible solution to address the NEM Reform changes. This option would not mitigate the extreme risk for SA Power Networks.

5.5.2 Risks

Table 7: Risk assessment summary

Risk consequence category	Current risk level[12] (Option 0)	Residual risk level[13] (Option 1)
Safety - Harm to a worker, contractor or member of the public	High	High
Performance and Growth - Financial impact	Extreme	Extreme
Network - Failure to transport electricity from source to load	High	High
Customers - Failure to deliver on customer expectations	Extreme	Extreme
Overall risk level	Extreme	Extreme

[11] The level of risk post current controls (ie after considering what we currently do to mitigate the risk).
[12] The level of risk post current controls (ie after considering what we currently do to mitigate the risk).
[13] The future level of risk once treatments proposed in this option have been implemented.

5.6 Option 2 – Technical Change

5.6.1 Description

This option involves a one-off capital investment to modify existing systems, and processes to address proposed NEM Reform changes. Given the impact on SA Power Networks' market facing systems, a well-planned and comprehensive program of work will be required to meet the requirements of any technical changes mandated by AEMO during our 2025-30 RCP. Our approach to compliance focuses on minimising system changes and undertaking an appropriate level of testing to minimise implementation risks. Our highly connected systems fulfil many key functions within SA Power Networks' operations and the market, therefore testing forms a major component of this program of work.

5.6.2 Costs

The forecasts for Option 2 have been prepared on a bottom-up basis. The timing of costs reflects alignment to the current AEMO roadmap. We have prepared two estimates:

(a) A $2 million **capex** place holder in our 2025-30 initial submission, expecting a revised business case for the Final Submission; and

(b) A $11.9 million **capex** Rough Order of Magnitude (**ROM**) prudent estimate for 2025-2030 in this business case, expecting a revised ROM for the Final Submission based on an approved roadmap being available at that time.

Table 8: Option 2 Costs by Cost Type ($m Jun 2022 Real) - Placeholder

Cost Type	2025 H1	2025-26	2026-27	2027-28	2028-29	2029-30	Total 2025 - 30	2030-31	2031 -32	2032-33	2033-34	2034-35	Total 2025-35
Capex	-	-	0.5	-	0.1	1.4	**2.0**	6.3	6.5	6.3	-	-	**21.1**
Opex	-	-	-	-	-	-	**-**	-	-	-	-	-	**-**
TOTAL	**-**	**-**	**0.5**	**-**	**0.1**	**1.4**	**2.0**	**6.3**	**6.5**	**6.3**	**-**	**-**	**21.1**

Table 9: Option 2 Costs by Cost Type ($m Jun 2022 Real) – ROM - Proposes a $11.9 million capex ROM (Rough Order of Magnitude) prudent estimate, for the potential spend in 2025-2030 RCP, as the nature of, and expected deadlines for the compliance requirements, will be determined during 2024.

Cost Type	2025 H1	2025 -26	2026 -27	2027 -28	2028 -29	2029 -30	Total 2025 - 30	2030 -31	2031 -32	2032 -33	2033 -34	2034 -35	Total 2025 -35
Capex	-	3.2	0.8	1.0	2.0	4.9	**11.9**	6.3	3.0	-	-	-	**21.1**
Opex	-	-	-	-	-	-	**-**	-	-	-	-	-	**-**
TOTAL	**-**	**3.2**	**0.8**	**1.0**	**2.0**	**4.9**	**11.9**	**6.3**	**3.0**	**-**	**-**	**-**	**21.1**

5.6.3 Risks

Table 10: Risk assessment summary

Risk consequence category	Current risk level[14] (Option 0 & 1)	Residual risk level[15] (Option 2)
Safety – Harm to a worker, contractor or member of the public	High	Medium
Performance and Growth – Financial impact	Extreme	Medium
Network – Failure to transport electricity from source to load	High	Medium
Customers – Failure to deliver on customer expectations	Extreme	Medium
Overall risk level	Extreme	Medium

5.6.4 Advantages and Disadvantages

The advantages and disadvantages of Option 2 are summarised in the table below.

Table 11: **Advantages and disadvantages**

Advantages	Disadvantages
Achieves compliance and minimises the system changes required across our Network Market systems.	Upfront capital investment will be required to build a project test environment as the business as usual test systems will continue to be needed operationally.
Addresses both process and technical changes.	Increases in data storage is unknown but are expected to be minimal and absorbed by SA Power Networks.
Proposes an appropriate level of testing to reduce implementation risks.	Increases in computer network bandwidth is unknown but are expected to be minimal and absorbed by SA Power Networks.
Proposes a well-planned and comprehensive program of work.	

[14] The level of risk post current controls (ie after considering what we currently do to mitigate the risk).
[15] The future level of risk once treatments proposed in this option have been implemented.

6. Deliverability of recommended option

SA Power Networks successfully completed two major National Market projects in May 2021 (Billing Programme) and March 2022 (SAP to Cloud), with zero loss of data and minimum business disruption achieved by both projects. This recommended option incorporates lessons learned from those projects, including:

- Limiting the impact on business teams by aligning testing to their business processes and ensuring sufficient time for testing (including industry tests);
- Ensuring the appropriate test landscape (environments) and test resources (people, test scripts and strategies) are available without impacting our operational 24 by 7 Network Market systems; and
- Ensuring availability of AEMO support for pre-cutover testing and cut-over support and Retailers assistance with industry testing.

7. How the recommended option aligns with our engagement

Customers expect that we will maintain our existing levels of service and risk, and there is also an expectation on SA Power Networks to manage our assets prudently and cost-effectively ensuring they are fit for purpose.

However, this project was not discussed during the customer engagement process due to the fact that the initial AEMO requirements did not become clear until after the customer engagement process was complete.

8. Alignment with our vision and strategy

Our Digital & Data Strategy outlines the long-term strategic direction for ICT. The focus of the strategy is on the provision of efficient and reliable core systems, and a range of digitisation that ensures our workforce has appropriate skills for the technology implemented. A high-level view of our Digital & Data Strategy is depicted in Figure 4, below.

Figure 4: Digital & Data Strategy

Our **Digital and Data Strategy** identifies that new approaches to core IT provide significant opportunities to adopt a more flexible, scalable and cost-effective core environment. This can only be achieved with the provision of a modern toolset with the latest methods and technology. This supports the business to address the following:

Tighter system integration
The network of the future will leverage a wider use of technologies, which will also include tighter integration between IT and Operational Technology (OT) systems. This will provide greater insights and 360-degree views of our operational network, assets, work and customers, resulting in more seamless customer experiences.

Openness
A significant expansion in energy market participation will create an increased need to collect and exchange data with external parties in real or near real-time format. Core IT systems and services will need to enable a more diverse and open environment, and this presents a range of challenges, including open standards, integration and cyber security.

Post 2025 Electricity Market Design

SA Power Networks is also aligning our strategies to the proposed changes identified by the Energy Security Board to address essential change in a world of expanding consumer choices and new technologies.

9. Reasonableness of cost and benefit estimates

Costing for this business case has been prepared on a bottom-up basis by creating a fully resourced high-level plan for each option. This estimate has been validated and refined in multiple ways:

- Review by our Portfolio and Program delivery teams, who are familiar with the approaches identified and the complexity of the requirements, based on our own experiences of similar sized projects;
- Assessment by our internal technical team using experience gained from successful implementation of our Network Market systems in 2021; and
- The review was based on current information provided by AEMO regarding the technical changes they plan to make on their systems to deliver the ESB's Post 2025 reforms.

10. Reasonableness of input assumptions

We have used independently benchmarked labour rates. While labour costs have increased significantly in the current market due to increased demand and workforce shortage associated with the COVID-19 pandemic, we are conservatively assuming that costs will stabilise at current levels. While it is very possible that in the next RCP, real dollar unit rates will either continue to increase or will revert to pre-pandemic levels, there is no basis on which to assume that either of these scenarios will occur.

A. Appendix A – Cost models

Option	Approach
Option 2	Technical Change – 2M
Option 2	Technical Change – 21M

B. Appendix B - Risk assessment

				Current risk (Options 0 – Do Nothing)			Residual risk (Option 1 – Process Change)			Residual risk (Option 2 – Technical Change)		
ID	**Risk scenario**	**Consequence description**	**Consequence category**	**Consequence**	**Likelihood**	**Risk Level**	**Consequence**	**Likelihood**	**Risk Level**	**Consequence**	**Likelihood**	**Risk Level**
1	SA Power Networks is unable to comply with NEM regulatory obligations or is unable to participate in the market or are unable to calculate network charges and produce a network bill	Network reliability - The operation and reliability of the distribution network is heavily dependent on the data provisioned by our integrated systems and any network reliability issue can, in turn, result in liability and/or increased frequency and duration of network outages for customers	**Network** - Failure to transport electricity from source to load	4	3	High (7)	4	3	High (7)	4	2	Medium (6)
			Customer - Failure to deliver on customer expectations	4	3	High (7)	4	3	High (7)	4	2	Medium (6)
		Network outage management teams unable to identify, notify and maintain reliability of supply to critical and life support customers. There are potentially catastrophic consequences associated with not being able to identify critical and life support customers. SA Power Networks has more than 22,500 NMIs recorded for life support customers.	**Safety** - Harm to a worker, contractor, or member of the public	5	3	High (8)	5	3	High (8)	5	1	Medium (6)
		Productivity reduces, tasks are completed slower, impacting cash flows and financial transactions. Potential breach of SLAs resulting in financial impact > $2m and < $10m	**Performance and Growth** - Financial Impact	4	4	High (8)	4	4	High (8)	4	1	Low (5)
		Ability to generate accurate regulatory and reliability reporting, which is heavily dependent on IT systems, could be compromised. Resulting in Regulatory / Financial penalties > $2m and <$10m)	**Performance and Growth** - Financial Impact	4	5	Extreme (9)	4	5	Extreme (9)	4	1	Low (5)

	for customers.	Reputational damage due to customer impacts requiring repeated intervention by ombudsman or regulators	**Customer** - Failure to deliver on customer expectations	4	5	**Extreme (9)**	4	5	**Extreme (9)**	4	1	**Low (5)**
		Market Billing – ability to generate DUoS (Distribution Use of Services) billing to Retailers impeded, placing the main corporate cash flow at risk and potentially restricting business operations. Total loss of trust in our billing systems	**Performance and Growth** - Financial Impact	5	5	**Extreme (10)**	5	5	**Extreme (10)**	4	2	**Medium (6)**
		Overall				**Extreme (10)**			**Extreme (10)**			**Medium (6)**