Business case: ICT Non-Recurrent – Customer Technology Program: Meter Data Insights System Replacement

2025-30 Regulatory Proposal

Supporting document 5.12.20

January 2024

SA Power Networks

Empowering South Australia

Contents

Glossary

Acronym / term	Definition
AER	Australian Energy Regulator
Capex	Capital expenditure
CRM	Customer relationship management system
DXP	Digital experience platform
ICT	Information and Communication Technology
IT	Information Technology
MDI	Meter data insights
NECF	National Energy Customer Framework
NEM	National Electricity Market
NER	National Electricity Regulation
NPV	Net present value
Opex	Operating expenditure
RCP	Regulatory control period
SAAS	Software as a Service
5MS	Five-minute settlement

1. About this document

1.1 Purpose

This document provides a business case to justify expenditure for the 2025–30 Regulatory Control Period (**RCP**) on the replacement of the Meter Data Insights system (**MDI**), which comprises one component to our non-recurrent Information and Communication Technology (**ICT**) replacement expenditure.

1.2 Expenditure category

- Non-network ICT capital expenditure (**capex**): Non-Recurrent – Large upgrades or replacement
- Non-network ICT operating expenditure (**opex**): Base year adjustment – Software as a Service (**SAAS**) related

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
5.12.17 - Customer Program: Website replacement Business Case	SA Power Networks	Jan 2024
5.12.18 - Customer Program: Consolidate Customer Portals Business Case	SA Power Networks	Jan 2024
5.12.19 - Customer Program: Customer Notification System Replacement Business Case	SA Power Networks	Jan 2024
5.12.21 - Customer Program: CRM Replacement & Data Consolidation Business Case	SA Power Networks	Jan 2024
5.12.22 - Customer Program: Personalised on Demand Services Business Case	SA Power Networks	Jan 2024
5.12.27 - Program Overview - Customer Technology Program	SA Power Networks	Jan 2024
IT Asset Management Plan	SA Power Networks	Jan 2024

2. Executive summary

The Meter Data Insights system (MDI) is a business-critical application that enables an extensive range of network, billing and tariff decision-making, as well as supporting customers in making energy investment decisions. The MDI is an in-house-built analytics and modelling engine that uses customer meter data and enables SA Power Networks personnel to understand and model scenarios to assist customers in making decisions. Example uses include:

- Understanding an individual customer's energy demand to assist them with the most suitable tariff selection and to manage their load within capacity limitations.
- Providing information to assist in negotiation of new retail contracts or to identify the benefits of a solar generation installation to offset energy use.
- Planning customer projects associated with either extension of a customer's current facilities or a new premise.
- Calculating historic demand and consumption quantities to support disputes and general investigations related to claims and services issues.

This service is mostly leveraged to support large and medium-sized business customers (though the system services a much wider range of customers), including large wind, solar and battery generators.

Given the sheer scale and number of the energy market changes, MDI is starting to experience issues related to capability and performance. These issues will increase over the next few years as volumes of data and the complexity of queries increases. The increasing issues include:

- Evolving tariffs, including time of use for small and residential customers
- Much higher volumes of data being requested by customers
- Customers requesting an increased number of scenarios to be analysed
- Much increased volumes of data being analysed as the smart meter rollout continues

For our service to keep pace with evolving demand and the ongoing rollout of smart meters, we need to replace the existing solution with one that is fit for purpose and capable of providing the analytics and modelling capabilities required to support our customer and business decision-making out to 2030 and beyond.

The total expenditure for this preferred option **is $2.4 million[1], of which $2.3 million is within the 2025–30 RCP. The 2025–30 RCP forecast is $0.4 million of non-recurrent capex, $1.7 million of non-recurrent opex, and $0.1 million of recurrent opex[2].** The net present value (**NPV**) over the 10-year period is $3.3 million and the overall residual risk rating is Low.

Other options considered were:

- **Option 0 - Maintain the existing systems and services as is:** not recommended as our current analytics capability is unable to work effectively with the nature of customer enquiries and the significant increases in data volumes. There were no quantified benefits, so the NPV was ($0) and the residual risk was High.
- **Option 2 - Replace the current solution and enable new self-service capabilities:** not recommended due to the risk of complex system from a cost, ongoing maintenance and resource capability point of view. The NPV was -4.6. The residual risk was Medium.

[1] Unless otherwise specified, all financial figures in this business case are in real June 2022 dollars

[2] The recurrent opex of will be funded through business efficiencies. This is included for completeness on the NPV and we are not proposing a step change. We will seek to offset the costs with expected benefits.

Table 2: Costs, benefits and risks of alternative options relative to the base case over the 10-year period, $m, $ June 2022 real[3].

	Total program costs			2025–2030 costs			Benefits	NPV[4]	Risk level[5]
Option	**Capex**	**Opex**	**Total**	**Capex**	**Opex**	**Total**			
Option 0 – Maintain the existing systems and services as is (Base case)[6]	–	–	–	–	–	–	–	–	High
Option 1 – Replace the current solution (Recommended)	0.4	2.0	2.4	0.4	1.9	2.3	6.7	3.3	Low
Option 2 – Replace the current solution and enable new self-service capabilities	0.3	10.4	10.7	0.3	7.1	7.4	5.6	-4.6	Medium

The Recommended option (Option 1) was selected because it ensures:

- customer energy decision-making and experience will be improved via better modelling capabilities and response times
- our systems keep pace with the changing volumes of data and tariff complexity
- current overheads are remediated due to system capability gaps, resulting in teams applying manual and inefficient workarounds to achieve reporting and analytical requirements.

[3] Note: Totals presented in tables throughout this document may not exactly match the sums of individual figures due to rounding
[4] 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%.
[5] The overall risk level for each option after the proposed option is implemented.
[6] The costs and NPV of option 0 (base case) have been set to zero as the costs associated with this option have been included as benefits of other options as appropriate.

3. Background

3.1 The scope of this business case

MDI is an in-house-developed analytics and modelling engine that is used to assist customers in making energy-related decisions and our business in making network-related decisions for customers. MDI extracts customer consumption data from the billing-related meter data and then allows the user to run basic scenarios to assist the customer enquiry. For more complex enquiries and analysis, the user must extract the data into Microsoft Excel or similar.

Table 3 highlights some of the key MDI use cases used by a variety of groups across the organisation.

Table 3: MDI key use cases

Reporting and analytics capability	Use cases
• Energy consumption for major customers, major generation quantities and samples of smaller customer load profiles.	• Reconciliation of billed charges • Updates to annual financial forecasts
• Understand individual customer's energy demand to assist them with the most suitable tariff selection and to manage their load within capacity limitations (day to day or due to expansion of plant and equipment or operations).	• Tariff determination • Management of load within capacity limitations
• Provide information to assist in negotiation of new retail contracts or to identify the benefits of a solar generation installation to offset energy use.	• Monthly demand figures • Detailed interval data extracts over a period
• Planning customer projects associated with either extension of customer's current facilities or new premises. Leveraged to assist in determination of customer rebates and applicable contributions for capital projects as part of the National Energy Customer Framework (**NECF**).	• Monthly demand • Rebate determination • Project investment
• Provide ability to calculate historic demand and consumption quantities to support disputes and general investigations related to claims and services issues.	• Historic demand and consumption • Billing of customers • Dispute management and general investigations

The scope of this business case is to replace the MDI with a solution that will enable the same key capabilities but enabled for larger data sets and more complex customer scenarios and tariff options.

3.2 Our performance to date

In 2023, we used MDI to support the processing of approximately:

- 300 customer enquiries and requests for historic demand and consumption information
- 1200 customer dispute management investigations (billing disputes, claims, service issues)
- 300 embedded generation application requests
- 2,500 rebate quotes

MDI has evolved significantly over the last decade in response to evolving and increasing customer enquiries. Significant manual effort goes into to determining large customers' regulatory tariffs, network

asset utilisation, infrastructure management and load monitoring. Data is frequently extracted from the MDI solution and manually compared with other datasets, largely off-system in Excel spreadsheets.

When we calculate tariff, billing and credit enquiries, we manually check and extract the data into an Excel spreadsheet, which is then analysed by dedicated team members. This end-to-end process required to respond to customer enquiries can take up to a few weeks per enquiry.

The complexity and lack of transparency around the data sources, coupled with the significant risk of human error during the extraction process, leads to a high risk of providing incorrect information to customers. This is crucial to rectify as we provide roughly 2,500 rebate quotes per year, equating to roughly $50 million of revenue to SA Power Networks that must be properly accounted. Therefore, a rigorous, systematic and traceable approach to rebate calculations is necessary to move away from current controls reliant on out-of-system processes.

3.3 Drivers for change

There is need to replace the solution to ensure these changing business needs are addressed.

Customer requirements and business needs

- **Rapidly changing energy market and increasing complexity:** The energy market is increasing in complexity with the introduction of new energy choices and options. The introduction of demand tariffs, two-way energy flows and flexible components make it more difficult for customers to navigate and increase their interaction with SA Power Networks to assist them. However, we are currently unable to provide timely analysis to our business customers for evaluating tariff options or clearly demonstrate the impact of rate or tariff structure changes on them. As the complexity and customer needs continue to grow, an improved analytics and reporting capability provides an opportunity for us to guide and advise customers to help them optimise their energy choices for their businesses and home.
- **Changing and increasing customer requests for data:** Digital capabilities are transforming service experiences across all sectors, and the baseline of what customers expect from distributors is steadily rising. Our customer teams receive regular requests from business customers for large quantities of metering data, which challenges our current solution capabilities and the time needed to respond. Customers expect timely and accurate information to help them make informed decisions, and they expect us to gradually improve over time. We need to continue to invest in our customer insights and reporting capabilities to continue to keep pace with our customer requirements in a rapidly changing environment.
- **Network project officers need to determine agreed maximum demand when planning customer projects:** The current MDI solution does not provide this level of detail, so instead, a combination of eight other data sources are used, including physical forms and documents and/or a site visit to install load testers. Hence, the inefficiency and difficulty in determining the existing and historical agreed maximum demand for customers can be alleviated by an improved MDI solution.
- **Additional capabilities to provide better services:** There has been an increasing need for better network utilisation management and the ability to answer the growing number of customers' energy questions efficiently and effectively. To help our customers make informed decisions, it's important to provide options analysis to our business customers. This will assist them in evaluating tariff options and assessing the impact of rate or tariff structure changes on them.
- Furthermore, proactive management of agreed demand capacities with customers and increased insights into asset utilisation for asset management plans and feeder automation has become increasingly important. Our current MDI tool is unable to support these additional functionalities to meet customer demand.

Regulation changes driving increasing data volumes

- **5-minute interval data:** Five-Minute Settlement (**5MS**) commenced in the National Electricity Market (**NEM**), which shifted the 30-minute wholesale electricity spot market settlement period to five minutes to provide better pricing outcomes and to enable more efficient bidding, operational decisions and investments[7]. With the 5MS commencement, the MDI solution needed to process and store around six times more meter data:
  - 30-minute interval data collection = 17,520 data points collected per annum
  - Five-minute interval data collection = 105,000 data points collected per annum
- **Smart meter rollout:** The Australian Energy Market Commission (AEMC) has put forward a recommendation for a 100% uptake of smart meters by 2030. Since 2017, new and replacement meters have been installed in South Australian homes and small businesses and the data received from the 30-minute usage data has increased at an exponential rate. As the smart meter rollout rate approaches 100%, data volume will continue to grow.

These areas are all interconnected and build, one upon another, demonstrating the need for change. For example:

- The increased interval data enables us to create more cost-reflective tariffs.
- The tariffs drive more requests from customers for interval data to enable them to structure their energy use efficiently to minimise their costs.
- The customers' drive to use energy more efficiently creates a need to provide our customers with a tariff-options analysis and help them better understand their energy pricing.
- The higher penetration of interval meters can give our Network teams a better view of the utilisation of assets at five-minute intervals throughout the day. This will enable better, more-targeted investments in the network.

Remaining on the current setup – a solution that is unable to process larger datasets and meet current customer demand, and that relies on labour-intensive processes – places SA Power Networks' customer services and analytics capabilities at significant risk.

3.4 Industry practice

Almost all electric utilities are facing the same challenges as SA Power Networks relating to the increasing volume and diversity of data available to them and the necessity to manage and use that data to deliver their operational and strategic goals. In response to this situation, many utilities – indeed many organisations across different sectors of the economy – are focusing efforts on their data management strategies. Ausgrid, for example, recently proposed a $30 million investment to expand its centralised data platform, noting substantial customer operational efficiencies and the need to meet regulatory requirements[8].

[7] AEMO | 5MS Commencement
[8] Ausgrid – Att. 5.9.f – Data & analytics program – 31 Jan 2023 – Public.pdf (aer.gov.au)

4. The identified need

The underlying driver for investment action to be considered in this business case is to maintain our existing services though a fit-for-purpose system that can effectively handle the increasing data volumes, driven by the 5MS and the smart meter rollout, and the increasing complexity of customer requests for information regarding management of their energy services.

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 (**NER**), National Electricity Law and jurisdictional regulations. As a result of these considerations, the identified need for replacing MDI is as follows:

- To respond to customers' concerns[9], identified through our consumer and stakeholder engagement process, regarding their explicit service level recommendations that we:
  - assist customers to keep their energy costs down
  - enable customers to make good decisions during the energy transition
  - 'are easy to deal with' through efficient problem and dispute resolution.
- To maintain compliance with applicable regulatory obligations/requirements10, in this case with specific reference to:
  - ensure our systems can sustainably and cost-effectively manage the smart meter data driven by Five Minute Rule changes and the ongoing smart meter rollout
  - ensure we adhere to the SA Power Networks Connections Policy[11] for connections charges payable by customers[12], as MDI is used to determine connection rebates.
- To ensure the best long-term efficient cost for our customer and network services through prudent automation of key processes.

[9] This is pursuant to Clause 6.5.7(c)(5A) of the NER, which requires regard to be had to the extent to which forecast expenditure seeks to address the concerns of distribution service end users identified by the distributor's engagement process.

[10] This is pursuant to Clause 6.5.7(a)(2) of the NER, which requires expenditure in order to comply with all appliable regulatory obligations or requirements associated with the provision of standard control services.

[12] The Connection Policy has been prepared in accordance with the requirements in Chapters 5A and 6 of the National Electricity Rules (Rules) and the Australian Energy Regulator's (AER's) Connection charge guidelines for electricity retail customers, under Chapter 5A of the National Electricity Rules, version 3.0 (AER connection charge guidelines for electricity retail customers)

5. Comparison of options

In this section we discuss the three options considered for MDI services.

5.1 The options considered

Table 4: Summary of options considered

Option	Description
Option 0 – Maintain the existing systems and services as is (Base case)	The current MDI solution will continue to operate as is, with minor upgrades to existing functionality as part of a continuous-improvement/business-as-usual processes.
Alternative options	
Option 1 – Replace the current solution (Recommended)	MDI solution will be replaced to address current and anticipated future challenges and business needs. The existing systems and technologies will be upscaled to incorporate and process larger datasets. The data processing workflow will be reviewed and optimised to eliminate manual processes and improve solution performance. Missing functionalities and additional datasets, such as residential customer data, will be added to enhance analytical capabilities.
Option 2 – Replace the current solution and enable new self-service capabilities	The MDI solution will be replaced to address both current and foreseeable future challenges and business needs. All the capabilities noted within Option 1's approach will be delivered. New tools will be introduced that will allow customers to self-service to support their decision-making.

5.2 Options investigated but deemed non-credible

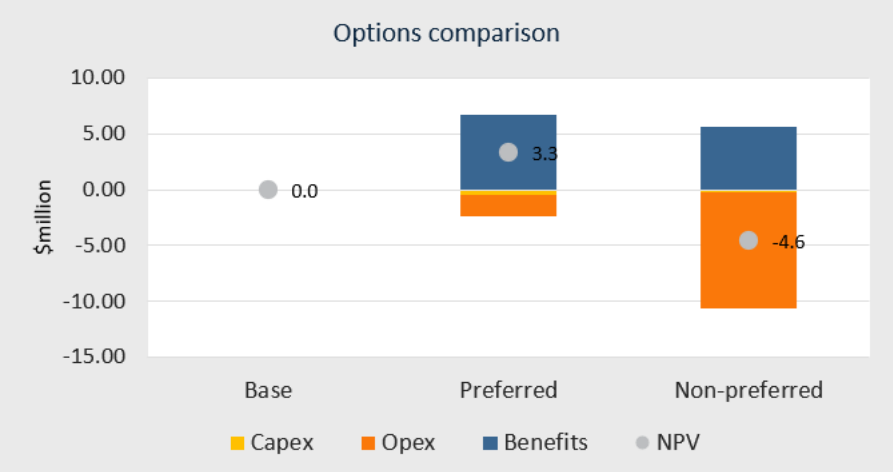
We investigated alternative products, however these were deemed not fit for purpose based on our specific reporting and analytical requirements, which are not readily available in the vendor market.

5.3 Analysis summary and recommended option

5.3.1 Options assessment results

Table 5: Costs, benefits and risks of alternative options relative to the base case over the 10-year period, $m, $ June 2022 real.

	Total program costs			2025–2030 Costs			Benefits[13]	NPV[14]	Risk level[15]	Ranking
Option	**Capex[16]**	**Opex[17]**	**Total**	**Capex[18]**	**Opex[19]**	**Total**				
Option 0 – Maintain the existing systems and services as is (Base case)[20]	–	–	–	–	–	–	–	–	High	Not credible
Option 1 – Replace the current solution (recommended)	0.4	2.0	2.4	0.4	1.9	2.3	6.7	3.3	Low	1
Option 2 – Replace the current solution and enable new self-service capabilities	0.3	10.4	10.7	0.3	7.1	7.4	5.6	-4.6	Medium	2



Assumptions

[13] Represents the total capital and operating benefits, including any quantified risk reductions compared to the risk of Option 0 (base case), over 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.
[14] 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%.
[15] The overall risk level for each option after the proposed option is implemented. Refer to Appendix C – Risk Assessment for details.
[16] Represents the total capex associated with the proposed option over the 10-year cash flow period from 1 July 2025 to 30 June 2035.
[17] Represents the total opex increase associated with the proposed option above the current level of opex, over the 10-year cash flow period from 1 July 2025 to 30 June 2035.
[18] Represents the total capex associated with the proposed option over the 5-year cash flow period from 1 July 2025 to 30 June 2030.
[19] Represents the total opex increase associated with the proposed option above the current level of opex, over the 5-year cash flow period from 1 July 2025 to 30 June 2030.
[20] The costs and NPV of option 0 (base case) have been set to zero as the costs associated with this option have been included as benefits of other options as appropriate.

Key assumptions to note in relation to the NPV results above include:

- While Section 5.5.2, below, includes projected cost increases under Option 0, the NPV of these has been assumed to be a cost avoidance benefit of Options 1 and 2 when calculating their NPVs. This enables them to be more easily compared to a zero base for Option 0.
- It is expected that cost reductions identified will be used to offset the additional recurrent costs of new services/platform capabilities and reduce/avoid the realisation of future cost increases.
- Current rates of growth in smart meters of approximately 54,000 additional smart meter data streams per annum (the increased growth rates associated with the proposed Accelerated Smart Meter Rollout is considered in the separate compliance-related business case).

5.3.2 Recommended option: Option 1 - Replace the current solution

Option 1 – Replace the current solution is considered the preferred option as it recognises the value of the investment made in the data systems implementation to date, and provides a solution that addresses current challenges and business needs in a cost-efficient manner.

The business benefits, costs and associated risks outlined for each option in Section 5 support this recommendation. Additional key reasons for the recommendation are:

- Existing systems and technologies will be leveraged in a cost-efficient manner.
- Current business demands associated with business and regulatory changes are addressed.
- Work efficiency will be improved through automated processes and optimised visualisation performance.
- Customer experiences and customer relationships will be improved via faster response times.
- Analytical capabilities will be enhanced to advise customers on tariff management and energy decisions and provide insights for internal teams to manage assets and make informed decisions.
- Data quality and solution confidence will be improved.
- Need for ongoing maintenance will be kept at the minimum level.

Appendix A lists the cost models for each option. Appendix B details the SAAS opex adjustments request for the preferred option. Appendix C provides the detailed risk analysis for each option.

5.4 Comparison of options: Option 0 – Maintain the existing systems and services as is

5.4.1 Description

The current MDI solution will continue to function as is. Minor upgrades to existing functionality will be undertaken as part of a continuous-improvement and business-as-usual processes. Challenges related to analysis and reporting over the data volume increase, missing functionalities and manual processes will continue to impact day-to-day customer service and reporting capability.

The challenges experienced by the current MDI solution prevent us from meeting customers' and internal teams' meter-data analytics demand. Data analytics requirements and a needed redesign of reporting and visualisation tools to manage the increasing volume of data will not be undertaken.

The need for manual processes to complete required analysis of data, not only increases the workaround processing load on our customer-facing teams, but also affects our trust in the results of the analytics.

This, in turn, affects customer experience over the long term, as well as our ability to manage the energy transition through demand-management activities.

Moreover, as the volume of data we are required to process will increase significantly, the challenges with processing, analysing and visualising such large datasets will continue to escalate.

In this option, we will retain our existing MDI system and provide minor upgrades to existing functionality as part of a continuous-improvement and business-as-usual processes. The internal team will still need to rely on manual processes for a significant portion of the reporting and analytics requirements that are currently not supported by MDI.

Based on the above, this option is not recommended.

5.4.2 Costs

Table 6: Option 0 – Costs by cost type ($m June 2022 real)

Cost type	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	1.4	-	-	-	-	1.4	–	–	–	–	–	**1.4**
One-off Opex	-	-	-	-	-	-	–	–	–	–	–	**–**
Recurrent opex	0.0	0.1	0.2	0.3	0.3	0.8	0.3	0.3	0.3	0.3	0.3	**2.1**
Total	1.4	0.1	0.2	0.3	0.3	2.2	0.3	0.3	0.3	0.3	0.3	**3.4**

5.4.3 Risks

Table 7: Option 0 – Risk assessment summary

Risk consequence category	Risk description	Current risk level[21]
Performance and growth – Financial impact	The cost of manual work required for sustaining the MDI solution to satisfy business and customer demands will continue to escalate.	High
Customers – Failure to deliver on customer expectations **Culture and workforce** – Misalignment in the beliefs and behaviours of workers, management, and customers **Performance and growth** – Unauthorised access, modification or control of system	Poor data quality due to missing data and low process transparency reduces customer trust in us.	High
Customers – Failure to deliver on customer expectations **Performance and growth** – Failure to effectively deliver project objectives and/or benefits	Lack of analytics and reporting capabilities due to missing functionality and manual processes requires additional resources to meet customer demands.	High
Customers – Failure to deliver on customer expectations **Governance** – Non-compliance with regulatory, legislative and/or other obligations	Inability to process, analyse and report on large data volume will impact on our ability to provide advice to customers.	Medium

[21] The level of risk post current controls (ie. after considering what we currently do to mitigate the risk).

Technology and data capabilities – Disruption of access to, or use of, systems	Poor solution performance resulting from inefficient design.	High
Performance and growth – Failure to effectively deliver project objectives and/or benefits	Time and cost risks associated with complex system integration and solution design.	High
Overall risk level		High

Table 8: Option 0 – Risk cost estimates by category

Risk consequence category	Risk description	Risk cost[22]
Performance and growth – Financial impact	The cost of maintaining the solution, including system adoption cost and ongoing storage cost, continues to grow, as will the cost of generating insights and information for analytics and customer services.	$500K – $1.5M
Performance and growth – Failure to effectively deliver project objectives and/or benefits	Inability to use data to inform business decision-making and achieve efficiency gains.	$500K – $2M
Performance and growth – Failure to effectively deliver project objectives and/or benefits	Time and cost risks associated with complex system integration and solution design.	$500K – $2M
Overall risk costs		**$1.5M – $5.5M**

5.4.4 Quantified benefits

This option has no quantified benefits.

5.4.5 Unquantified benefits

This option has no unquantified benefits.

5.5 Comparison of options: Option 1 – Replace the current solution (Recommended)

5.5.1 Description

The MDI solution will be replaced to address the current business needs and mitigate the challenges associated with reporting and analysing the increased data volume. It will implement new capabilities needed to eliminate the current manual processes.

Existing systems and technologies will be leveraged to execute the replacement in a cost-efficient manner. This will improve services provided to our large customers and help internal teams make informed decisions via uplifted data analytical capabilities.

The MDI solution replacement will continue to leverage the core enterprise data platform to meet the data storage, data warehousing and data transformation needs of the business. The solution will be upscaled to support the computational capabilities required to analyse the increased volume of interval metering data.

[22] Estimated cost of consequence(s) to SA Power Networks or its customers in an event this risk eventuates over the NPV analysis period.

The solution will be reviewed and updated to eliminate manual effort, improve data quality and fill any missing information gaps. This review will ensure the predetermined key customer datasets (specifically, customer service alteration data) are correctly extracted and loaded for analysis. Customer data will be processed and transformed in an automated manner to improve data quality and trust in data.

Existing visualisation tools will continue to service data analytics requests. The current solution design will be optimised while the computational effort will shift to a new solution, improving performance and providing consistent and reliable information to meet customers' enquiries and support the internal team's reporting needs.

Analytics capabilities, such as being able to handle more-complex tariff comparisons to meet customer needs, will be built.

Option 1 addresses current challenges and business needs in a cost-efficient manner. Therefore, Option 1 is recommended.

5.5.2 Costs

Table 9: Option 1 – Costs by cost type ($m June 2022 real)

Cost Type	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	0.4	-	-	-	-	0.4	–	–	–	–	–	**0.4**
One-off opex	1.7	-	-	-	-	1.7	–	–	–	–	–	**1.7**
Recurrent opex	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	**0.2**
Total	2.2	0.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	**2.4**

5.5.3 Risks

Table 10: Option 1 – Risk assessment summary

Risk consequence category	Risk description	Residual risk level[23]
Performance and growth – Financial impact	The cost in sustaining the MDI solution to satisfy business and customer demands continues to grow.	**Low**
Customers – Failure to deliver on customer expectations **Culture and workforce** – Misalignment in the beliefs and behaviours of workers, management, and customers **Performance and growth** – Unauthorised access, modification or control of system	Poor data quality due to missing data and low process transparency impacts customer trust in SA Power Networks.	**Low**
Customers – Failure to deliver on customer expectations **Performance and growth** – Failure to effectively deliver project objectives and/or benefits	Delays or errors in providing insights and information to customers and internal teams reduces customer trust in SA Power Networks and tarnishes our reputation. This may impact SA Power Networks' ability to influence and interact effectively with regulators, government, and other utilities.	**Low**
Customers – Failure to deliver on customer expectations	Inability to process, analyse and report on large data volume will impact our ability to provide advice to customers.	**Low**

[23] The level of risk post current controls (ie after considering what we currently do to mitigate the risk).

Governance – Non-compliance with regulatory, legislative and/or other obligations		
Technology and data capabilities – Disruption of access to, or use of, systems	Poor solution performance resulting from inefficient design.	**Low**
Performance and growth – Failure to effectively deliver project objectives and/or benefits	Time and cost risks associated with complex system integration and solution design.	**Low**
Overall risk level		**Low**

The risk cost calculation is not applicable given the very low residual risk levels.

5.5.4 Quantified benefits

Quantified benefits for this option relate to:

Cost avoidance

- Staff costs avoided – the ability to automatically answer the growing number of customer enquiries enables more a significant increase in enquiries without impacting staff numbers ($0.7 million)
- Avoidance of relying on a solution that no longer meets business requirements, leading to technical debt overhead to maintain ($0.6 million)
- Avoidance of load testing of transformer costs where MDI does not provide demand information, so electrical mechanics attend sites to confirm what the current limiting device is set at, as well as confirmation of service fuses and even confirmations with the Customer team ($0.8 million)
- Avoided increase in costs that would be incurred under Option 0 – Base case ($3.4 million).

Customer benefit

- Reduced customer time spent waiting for answers on tariffs and best options, enabling customers to take advantage of delays sooner ($1.1 million).

Table 11: Option 1 – Benefits by expenditure type ($m June 2022 real)

Cost type	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
Cost savings	-	-	-	-	-	-	-	-	-	-	-	–
Cost avoidance	1.4	0.3	0.4	0.5	0.5	3.0	0.5	0.5	0.5	0.5	0.5	**5.6**
Customer benefit[24]	-	0.1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	**1.1**
Risk monetisation	-	-	-	-	-	-	-	-	-	-	-	–
Total	1.4	0.4	0.5	0.6	0.6	3.5	0.6	0.6	0.6	0.6	0.6	**6.7**

[24] Distinguishing the business benefits from direct benefit to customers, calculated as Customer Value of Time, which is consistent with submissions by other DNSPs such as CitiPower, Ausgrid, and Endeavour Energy.

5.5.5 Unquantified benefits

- Existing systems and technologies will be leveraged in a cost-efficient manner
- Current and future business demands associated with business and regulatory changes are addressed
- Customer experiences and customer relationships will be improved via faster response times
- Analytical capabilities will be enhanced to advise customers on tariff management and energy decisions and provide insights for internal teams to manage assets and make informed decisions
- Data quality and solution confidence will be improved.

5.6 Comparison of options: Option 2 – Replace the current solution and enable new self-service capabilities

5.6.1 Description

This option delivers all the capabilities noted within Option 1, with the addition of addressing future challenges and business needs, including provision of self-service capabilities for MDI reporting and analytics to customers.

Option 2 recognises the investment and commitment we have made to implementing modern technology by leveraging the existing data platforms and storage tools. This option includes redesigning and reconfiguring the MDI solution to provide the key functionalities required to support the business and meet customer demands. The workflow will be reviewed and updated to ensure data quality and eliminate manual input. The visualisation tools will continue to service our data analytics needs, with more complete functionality and optimised performance.

Similar to Option 1, Option 2 will include residential and business customer data in the new solution, although more-detailed customer information will be made available. Customer-facing teams will be consulted to gather requirements for additional datasets and analytics needs, to help improve work efficiency. The new datasets identified will be extracted and maintained in the MDI solution. In addition, new tools and analytical reports will be introduced to enable provision of self-services to our customers.

Currently, our MDI solution tends to focus on providing insights and information to support our medium and large business customers manage their tariffs and make informed decisions. As complexity in tariffs continues to increase, our residential and small business customers will also require assistance with tariff management and energy decisions. The new tools and reports will allow our internal teams to support residential and small business customers to make informed decisions on tariff management and save costs on energy consumption.

A new portal will be implemented for customers to access data anytime and anywhere, without being restricted to our team's availability. Customers can access and interact through the portal and download their meter data, as needed. This could reduce the need for data enquiries, improve transparency and enhance our relationship and trust with our customers.

Although Option 2 improves the services to customers and enables self-service, the NPV is not as favourable as Option 1, hence Option 2 is not recommended.

5.6.2 Costs

Table 12: Option 2 – Total cost by cost type ($m June 2022 real)

Cost type	2025–26	2026–27	2027–28	2028–29	2029–30	Total 2025 – 30	2030–31	2031–32	2032–33	2033–34	2034–35	Total 2030–35
Capex	-	-	-	0.3	-	0.3	-	-	-	-	-	**0.3**
One-off opex	-	-	-	3.3	-	3.3	-	-	-	-	-	**3.3**
Recurrent opex	0.7	0.7	0.8	0.9	0.7	3.8	0.7	0.7	0.7	0.7	0.7	**7.1**
Total	0.7	0.7	0.8	4.4	0.7	7.4	0.7	0.7	0.7	0.7	0.7	**10.7**

5.6.3 Risks

Table 13: Option 2 – Risk assessment summary

Risk consequence category	Risk description	Residual risk level[25]
Performance and growth – Financial impact	The cost in sustaining the MDI solution to satisfy business and customer demands continues to grow.	**Low**
Customers – Failure to deliver on customer expectations **Culture and workforce –** Misalignment in the beliefs and behaviours of workers, management, and customers. **Performance and growth** – Unauthorised access, modification or control of system	Poor data quality due to missing data and low process transparency impacts customer trust in SA Power Networks.	**Low**
Customers – Failure to deliver on customer expectations. **Performance and growth** – Failure to effectively deliver project objectives and/or benefits	Lack of analytics and reporting capabilities due to missing capabilities and manual processes drives increase in resources to meet demand and impacts customer trust in SA Power Networks.	**Low**
Customers – Failure to deliver on customer expectations. **Governance** – Non-compliance with regulatory, legislative and/or other obligations	Delays or errors in providing insights and information to customers and internal teams reduces customer trust in SA Power Networks and tarnishes our reputation. This may impact SA Power Networks' ability to influence and interact effectively with regulators, government, and other utilities.	**Low**
Technology and data capabilities – Disruption of access to, or use of, systems	Poor solution performance resulting from inefficient design.	**Medium**
Performance and growth – Failure to effectively deliver project objectives and/or benefits	Time and cost risks associated with complex system integration and solution design.	**Medium**
Overall risk level		**Medium**

[25] The level of risk post current controls (ie after considering what we currently do to mitigate the risk).

Table 14: Option 2 – Risk cost estimates by risk category

Risk consequence category	Risk description	Risk cost[26]
Performance and growth – Failure to effectively deliver project objectives and/or benefits	Time and cost risks associated with complex system integration and solution design.	$500K – $2M
Overall risk costs		**$500K – $2M**

5.6.4 Quantified benefits

As with Option 1, the quantified benefits for this option relate to:

- Improved tool performance, speeding up customer response times, improving internal teams' work efficiency through automated processes and optimising visualisation performance
- Staff costs avoided – the ability to automatically answer the growing number of customer enquiries enables a significant increase in enquiries without impacting staff numbers
- Reduced customer time spent waiting for answers on tariffs and best options, enabling customers to take advantage of delays sooner
- Avoidance of relying on legacy systems that are no longer supported by the vendor, leading to technical debt overhead to maintain.

Table 15: Option 2 – Benefits by expenditure type ($m June 2022 real)

Cost type	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
Cost savings	-	-	-	-	-	-	-	-	-	-	-	-
Cost avoidance	-	-	-	1.7	0.5	2.1	0.5	0.5	0.5	0.5	0.5	**4.7**
Customer benefit[27]	-	-	-	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	**0.9**
Risk monetisation	-	-	-	-	-	-	-	-	-	-	-	**–**
Total	-	-	-	1.8	0.6	2.4	0.6	0.6	0.6	0.6	0.6	**5.6**

5.6.5 Unquantified benefits

All Option 1 unquantified benefits also apply to Option 2.

- Existing systems and technologies will be leveraged in a cost-efficient manner
- Current business demands associated with business and regulatory changes are addressed
- Customer experiences and customer relationships will be improved via faster response times
- Analytical capabilities will be enhanced to advise customers on tariff management and energy decisions and provide insights for internal teams to manage assets and make informed decisions
- Data quality and solution confidence will be improved.

[26] Estimated cost of consequence(s) to SA Power Networks or its customers in an event this risk eventuates over the NPV analysis period

[27] Distinguishing the business benefits from direct benefit to customers, calculated as Customer Value of Time, which is consistent with submissions by other DNSPs such as CitiPower, Ausgrid, and Endeavour Energy.

In addition, Option 2 specific unquantified benefits include:

- Customers will be able to self-service their MDI enquiries, at a time and place that is convenient to them
- Foreseeable future changes and business and customer demands are addressed
- The solution aligns with the increasing customer expectation of providing personalised and interactive services to customers
- The solution aligns with the market trend of increasing information transparency and visibility.

6. Deliverability of recommended option

6.1 Customer Technology program

This MDI Replacement project forms a part of the Customer Technology program of work (see supporting document 5.12.27 ICT Non-recurrent Customer Technology program for more detailed explanation). The program is comprised of an integrated set of six initiatives, designed to replace or upgrade a number of our core customer systems and deliver the expected long-term technology capabilities needed to maintain current service levels, meet the increase in customer demand as a result of the energy transition, as well as our overall increase in network activity, and to do so in secure cost-effective manner.

Key benefits are:

- **For our customers:** save time when interacting with us, improved customer experience, improved access to data, service requests and status updates
- **For our employees:** efficiently manage enquiries, requests and resolution status to customers.

This program is summarised in Figure 1, below. We expect this program will deliver significant benefits to customers.

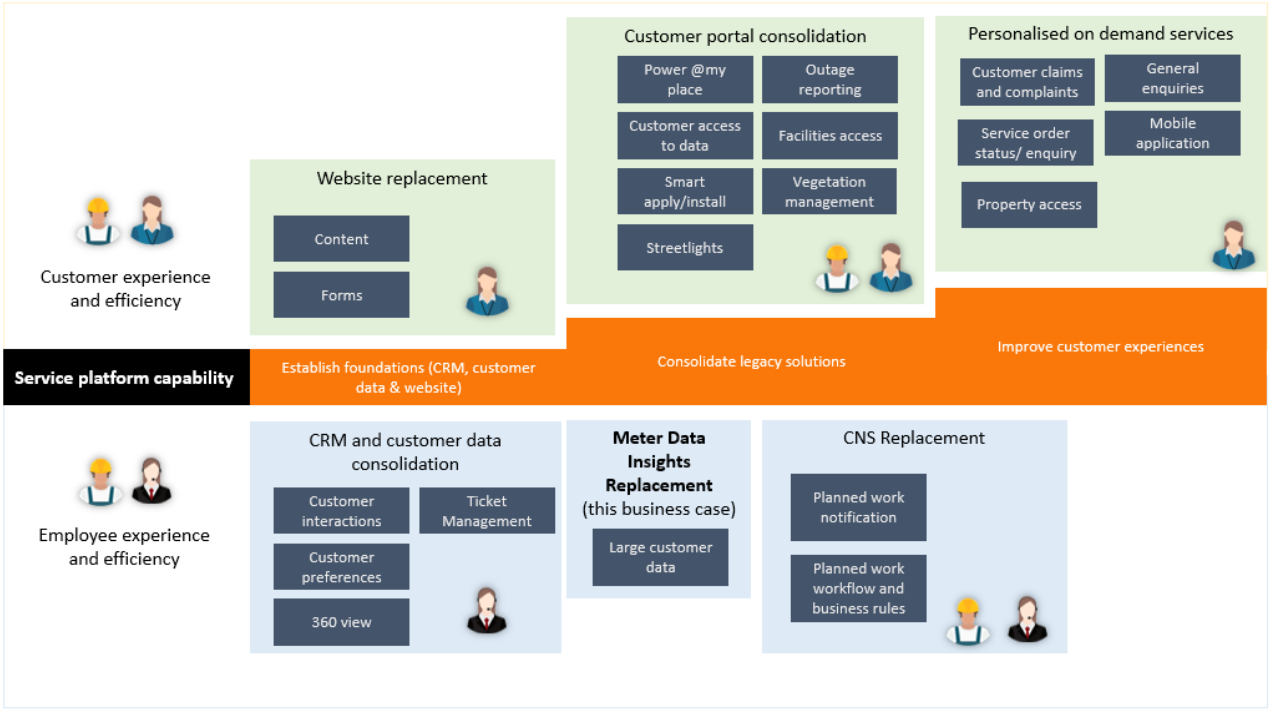


Figure 1: Proposed 2025–2030 Customer Technology Program

We have built an effective program that iteratively and cost-effectively builds capability, manages risk and delivers on the long-term customer requirements. The program of work allows a prudent approach to portal consolidation while maximising the customer experience outcomes.

This delivery approach assumes shared project resources across the customer program (program manager and a pool of skilled delivery Full Time Equivalent (FTE), including architect, business analyst, developers and testers). The approach avoids ramp-down/ramp-up costs and supports a lower cost/more efficiency delivery. This approach is consistent with the program delivery methodology used for similar projects at SA Power Networks. If a program approach is not adopted, the efficiency opportunity is missed, resulting in an estimated increase of 15-20% in costs for this replacement.

Key delivery risks relate to:

- Resourcing constraints, access to the required expertise required to support the replacement of the MDI solution
- Timing of other interdependent data-related projects, such as accelerated smart meter rollout, and associated data management and volume increases.

The noted risks are mitigated through a delivery approach that will ensure:

- Highly skilled project delivery staff who have previous experience in delivering similar solutions at SA Power Networks
- Access to highly skilled technical SMEs who have built a strong understanding of the underlying data platform and MDI solution
- Access to vendor capabilities offered in the market to support implementation activities
- Access to business SMEs with strong understanding of the processes and access to a comprehensive knowledge repository, which continues to be maintained.

7. How the recommended option aligns with our engagement

7.1 Alignment to customer expectations

7.1.1 Focused Conversations

The full Customer Program was discussed during the "Customer Experience and Interaction" Focused Conversation workshop in September 2022[28]. Three scenarios were presented to six groups of customer representatives and advocates (18 people):

- **Scenario 1 basic self-service** – the base scenario and represented "as is" no change scenario.
- **Scenario 2 customer system replacement and consolidation** – this scenario was composed of all the projects within the Customer Technology Program involving replacements and upgrades (including the Customer Relationship Management System (**CRM**) and customer data replacement)– reflecting what needs to be done to maintain our existing levels of customer service in a rapidly transitioning energy environment.
- **Scenario 3 digital customer experience uplift** – this scenario added significant customer experience and digital channel improvements – reflecting 'new value' for customers.

The customer representatives were presented with details and the pricing impacts for each scenario. Following detailed conversations, four of the six groups strongly supported Scenario 3, and two groups supported Scenario 2, as well as parts of Scenario 3. Hence Scenario 3 were supported by the majority of participants.

The MDI replacement reflects what needs to be done to maintain our existing levels of customer service in a rapidly transitioning energy environment while supporting customer decision-making during the energy transition.

7.1.2 People's Panel

Given the strong support from the Focused Conversation, Scenario 2 was presented as 'for information' to the People's Panel so they had an understanding of the costs and bill impacts. The People's Panel was asked to discuss and provide input to Scenario 3. This is discussed further in the Personalised-on Demand Services Customer Technology program business case.

[28] Customer Experience and Interactions | Talking Power

8. Alignment with our vision and strategy

As the energy sector transitions, our role as an energy distributor and our customer expectations are also evolving. Our customer vision, as stated in the Customer Strategy 2022–2026[29], is to *'make energy easy for every customer, every day'*. Using the data we collect to assist customers make better energy-related decisions is at the core of enabling our customers to be part of that transition. Replacing the MDI solution allows our teams to provide improved services to our customers and provides useful information that supports our customers to make better energy decisions in today's complex environment.

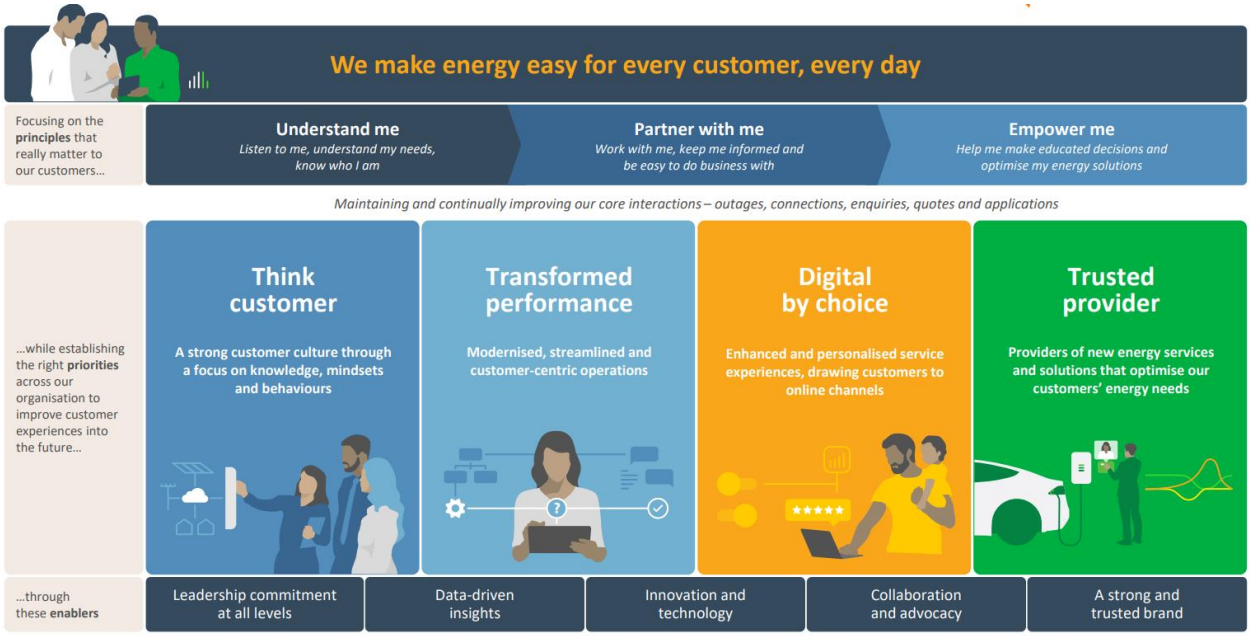


Figure 13: SA Power Networks Customer Strategy

Through our Customer Charter[30], we have made the commitment to our customers that "*we will keep you informed and be easy to deal with*" and that *'we will make it easy for you to contact us when and how you want to…'*. These expectations of customers were more clearly articulated to SA Power Networks through extensive qualitative and quantitative research that occurred across the SA Power Networks customer base in late 2021.

[29] SAPN Customer Strategy 2022–2026

[30] https://www.sapowernetworks.com.au/public/download.jsp?id=10324#:~:text=At%20SA%20Power%20Networks%20we,supply%20point%20on%20your%20property.

9. Reasonableness of cost and benefit estimates

9.1 Cost estimates

The proposed costs for each option were estimated through completing a detailed project cost model that was structured according to our standard IT project methodology. This approach structures an IT project into six phases, which are further broken down into a total of 20 sub-phases that are then used to plan and cost the project. (Refer Table 16)

Table 16: Structure of SA Power Networks IT project methodology

Phase	Sub-phase
Phase 1 – Planning, project management and coordination	Planning, project management and coordination
Phase 2 – Feasibility, innovation and POCs	Feasibility, innovation and POCs
Phase 3 – Develop and plan	Plan
	Requirements
	Business case
	Vendor selection
Phase 4 – Implement – Design and architecture	Implement – Design and architecture
Phase 5 – Implement – Build and test	Software licensing (12-month upfront purchase)
	Hardware infrastructure changes
	Client device purchases
	Development
	Configuration
	Integration
	Data conversion and migration
	Testing
Phase 6 – Implement – Deploy	Training delivery
	Training materials and preparation
	Warranty
	Change management
	SME backfill

The nature of each project was flagged as to whether it was to be based on a software-as-a-service (SaaS) solution or was to be an on-premise implementation. This ensured that the modelling resulted in the appropriate accounting treatment of the expenditure – as operating or capital expense.

The effort required for the specific roles relevant to each phase of the project (eg, project manager, architect, developer, tester etc) was estimated based on our staff and external consultants' experience of similar past projects in SA Power Networks and at other organisations. This effort was split according to our standard internal staff/external services mix of 20% internal staff and 80% external services and costed using our standard IT cost estimation methodology and standard resource rate card.

Where possible, external expenses, such as licence fees and external system integrator costs, were based on actual quotes, published licence fees/rates etc or market research[31]. In other cases, staff and external consultants' experience of the costs incurred in similar projects at SA Power Networks and other organisations was used to provide a reasonable estimate of the costs. All costs were initially calculated bottom-up and then validated/refined with top-down analysis. Cost worksheets are included as an attachment.

[31] SAPN-DXP Market scan results (v2.0) – BDO 2021

9.2 Benefit estimates

An extensive and iterative process involving business and IT representatives was undertaken to define a set of reasonable benefits for this project. A summary of the process undertaken, and the key benefit types identified, is shown in Section 9.2.1.

This process aligns with our Value Framework and ICT forecasting methodology. The use of factual historical data and future forecasts derived, where possible, from external sources, such as AEMO, ensures an industry best-practice approach that meets Australian Energy Regulator (**AER**) and community expectations and results in a justifiable and reasonable estimate of the benefits. Where relevant, we have undertaken sensitivity analysis to understand the degree to which the benefits vary with changes in the key assumptions, to ensure the robustness of the calculations.

9.2.1 Benefit estimation process overview

Other cost savings and efficiency gains

- Several cost savings and efficiency gains were identified through discussion with business representatives. Estimates of the impact of the investment on these cost areas were made based on actual current costs being incurred, the knowledge and experience of our business and IT staff, and advice from external consultants, as appropriate. In all cases, the benefits were assumed to start from the year following completion of the investment.
- A significant contributor to the benefits from this (and other) customer technology business cases is avoiding the future cost impact of 'Technical Debt'. Continuing to use and maintain old and out of date IT infrastructure and systems has significant implications for the future cost of not only that specific infrastructure, but of any maintenance and development activity in the IT environment. There is an increased cost overhead involved in the ongoing maintenance of compatibility and integration of these old systems with any new developments, as well as with each other. This has been estimated, based on the level of dependency with key projects and systems in the IT portfolio. The benefit of avoiding this cost of technical debt has been phased in and apportioned between relevant projects, based on the estimated reusability of the capability delivered by each project.
- The time saving from the reduced number of Contact Centre calls, including on-hold time etc, was also translated into a saving in time for the customer. This was costed using the average South Australian weekly earnings rate from the Australian Bureau of Statistics (ABS). (Note: this was NOT part of the Option 0 costs referred to above, as it does not represent a direct cost to the business).

10. Reasonableness of input assumptions

There were no growth/trend assumptions required in developing the costs and benefits for this project. Specific cost savings were based on current actual costs and volumes as provided by SA Power Networks business representatives.

The inputs to the benefit calculations are documented in Section 9, above, and in the Benefits Model.

A. Appendix A – Cost models

Option 0:

Customer Technology Program estimate – No change.xlsm

Option 1:

Customer Technology Program estimate – Preferred.xlsm

Option 2:

Customer Technology Program estimate – Non-Preferred.xlsm

B. Appendix B - Base-year opex adjustment (preferred option)

The following provides a summary of the requested opex changes for the base year adjustment.

Category	Project/Business Case	2025–26	2026–27	2027–28	2028–29	2029–30	Total 2025 – 30
Base-year adjustment: Accounting treatment change	Website Replacement	-	-	1.2	0.9	-	2.1
	Portal Consolidation	-	-	3.4	3.2	3.1	9.7
	MDI Replacement (this business case)	**1.7**	**-**	**-**	**-**	**-**	**1.7**
	CRM Replacement and Customer Data Consolidation	3.7	5.1	0.5	-	-	9.4
	Personalised on Demand Services	-	-	-	1.4	6.0	7.4
	Total base-year opex adjustment	**5.5**	**5.1**	**5.1**	**5.5**	**9.1**	**30.3**

Accounting treatment change

Topic	Detail
Background	Accounting rule clarification in early 2021 confirmed that the costs of configuring and customising application software in a cloud-computing or SaaS arrangement should not be capitalised, with the business no longer having control over the asset. The impact for the MDI project is switching from capex to opex as these products are more readily offered as SaaS solutions.
Request	A base-year opex adjustment of $1.7 million as a component of the overall Customer Technology Program adjustment of $30.3 million.

C. Appendix C – Risk assessment

				Current risk (Option 0)			Residual risk (Option 1)			Residual risk (Option 2)		
ID	**Risk scenario**	**Consequence description**	**Consequence category**	**Consequence**	**Likelihood**	**Risk level**	**Consequence**	**Likelihood**	**Risk level**	**Consequence**	**Likelihood**	**Risk level**
1	The cost in sustaining the MDI solution to satisfy business and customer demands.	The cost of maintaining the solution, including system adoption cost and ongoing storage cost, continues to grow.	**Financial impact** – Cash loss or earning impacts	2	4	Medium	2	2	Low	2	3	Low
		The cost of generating insights and information for analytics and customer services.	**Financial impact** – Cash loss or earning impacts	2	5	High	2	3	Low	2	3	Low
2	Poor data quality due to missing data and low process transparency.	Delays or errors in providing insights and information to customers and internal teams means additional staff are required to perform the manual workarounds required to support analytics capability.	**Customers** – Failure to deliver on customer expectations	2	5	High	2	3	Low	2	3	Low
		Staff, including Field Services, do not build trust in the system, and continue to employ the current manual workarounds.	**Culture and workforce** – Misalignment in the beliefs and behaviours of workers, management, and customers **Performance and growth** – Unauthorised	3	5	High	2	2	Low	2	2	Low

			access, modification or control of system									
3	Lack of analytics and reporting capabilities due to missing functionality and manual processes.	Delays or errors in providing insights and information to customers and internal teams, reducing customer trust in SA Power Networks and tarnishing our reputation. This may impact our ability to influence and interact effectively with regulators, government, and other utilities.	**Customers** – Failure to deliver on customer expectations	2	5	High	2	3	Low	2	3	Low
		Inability to use data to inform business decision-making and achieve efficiency gains.	**Performance and growth** – Scope – Failure to effectively deliver project objectives and/or benefits	2	5	High	2	2	Low	2	2	Low
5	Inability to store and process large data volume.	Misalignment with regulatory requirements of retaining smart meter data.	**Customers** – Failure to deliver on customer expectations.	2	4	Medium	2	1	Negligible	2	1	Negligible
			Governance – Non-compliance with regulatory, legislative and/or other obligations	3	3	Medium	3	2	Low	3	2	Low
6	Poor solution performance resulting from inefficient design.	Poor solution performance and service interaction.	**Technology and data capabilities** – Disruption of access to, or use of, systems	3	5	High	3	2	Low	3	3	Medium
7	Risks associated with complex system integration and solution design.	Time and cost risks and additional efforts and expertise required for ongoing support.	**Performance and growth** – Scope – Failure to	3	4	High	3	2	Low	3	3	Medium

	effectively deliver project objectives and/or benefits			
	Overall risk level[32]	**High**	**Low**	**Medium**

[32] For each option, the overall risk level is the highest of the individual risk levels.