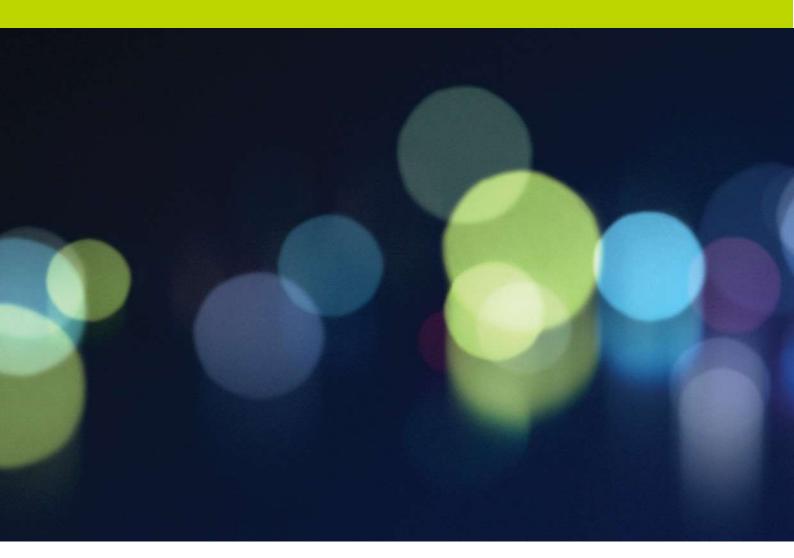
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ICT Asset Strategy

Endeavour Energy

Document Version: 1.1





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ICT Asset Strategy 2024-29



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1 Document Background

1.1 Purpose of this document

The purpose of this document is to outline Endeavour Energy's ICT Asset Strategy for the period 2024-2029.

1.2 References

Document	Version	Author
Future Investment Scenario Planning	Final report – March 2022	Endeavour Energy
Business Narrative Regulatory Reset 2024-2029	Draft V2 – February 2022	Endeavour Energy
Endeavour Energy Stakeholder & Community Reputation Benchmark Study	05 February 2022	Endeavour Energy

1.3 Document History

Date	Version	Comment	Author
08 August 2022	0.1	Initial Draft	
08 September 2022	0.2	Second Draft	
15 September 2022	0.3	Third draft	
30 September	1.0	Includes feedback from Rod Howard, Barry Pendle and Lisa Cueno	
02 November	1.1	Refreshed Investment Brief financials	



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2 Executive Summary

As we look to the future, the nature of the energy system and Endeavour Energy's role within it is changing. The net zero ambitions of our community require fundamental changes to the way we generate and use electricity.

For Endeavour Energy, the operation of a more intelligent, integrated, and dynamic network means we are transitioning from being a traditional "poles and wires" business to a central platform, coordinating a clean and equitable energy system, and enabling digital services for our customers. At the same time, we will be supporting unprecedented growth in Western Sydney and enhancing resilience to increasing risks from climate change, cyber security, and a more variable and decentralised generation mix.

The period 01 July 2024 – 30 June 2029 (referred to herein as 2024 – 2029) will be a crucial building block. Our prudent investments must deliver on immediate digital customer needs and increased use of data and insights to set the pathway for the future. This will ensure that Endeavour Energy continues to meet our customer's expectations while providing safe, sustainable, and efficient services.

Based on the feedback received from customers, Endeavour Energy has defined four priority themes for the next regulatory period. Each theme is reliant on investment in information and communications technology to deliver the information, infrastructure, and capability for the broad range of customers for Endeavour Energy, and the ecosystems of employees, contractors and suppliers required to deliver the services that customers expect.

- Meet core customer expectations for a safe, affordable and reliable electricity supply by simplifying capabilities and building on current foundations to unlock value. Endeavour Energy continues to invest in the replacement and renewal of assets across its network to meet our customers' expectations for a network that is safe for both our workers and the community we serve and provides a reliable electricity supply to our customers. Customers' expectations regarding network reliability have increased over time, while affordability remains an important concern.
- 2. Enable and facilitate customers' future energy choices and known preferences through the provision of smart, seamless digital service platforms, secure connectivity to behind the meter devices, and support for real-time flow of data. As customers seek to connect more distributed energy resources (DER) and increasingly use sophisticated digital platforms, the network and its management must evolve. This forms the fundamental objective of this investment theme. Our investments focus on ensuring that customers who choose to take up these new technologies can maximise the value derived and preventing the need for curtailment as a tool to manage reliability issues.
- 3. Provide a resilient network by supporting delivery of network services through enhanced platforms and services for increased protection against cyber security threats and to comply with regulatory obligations such as the Security of Critical Infrastructure Act; and to enhance data and analytics to make better informed enterprise decisions and information sharing requirements. Endeavour Energy's investments focus on ensuring resilient network for customers despite the changing nature of the energy sector, including extreme weather events which are



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increasing in frequency and intensity, and increasingly ambitious emissions reduction targets set by governments, businesses and communities to limit the impacts of climate change.

4. Support the sustainable growth of our communities by enabling and supporting the provision and operation of systems and non-system assets in greenfield areas such as the Western Sydney Parkland City (adjacent to the new Nancy Bird Walton International Airport) through better data and insights, enhanced operational capabilities and automation. Endeavour Energy is investing in accommodating for the directions of future growth and change across Greater Sydney. The step change in growth of customers across Western Sydney will open new geographical locations as well as increase the customer density of existing locations, necessitating investments in supporting field workers, supporting network infrastructure growth and scaling back-office operations.

Across these four priority themes, Endeavour Energy has identified quantitative and qualitative benefits generated from investment. As we look to support and facilitate investment in Data and Analytics, DER penetration and cybersecurity, the benefits from ICT enablement have been attributed across \$128.6 million of investment. Other quantitative benefits include productivity improvements, customer and employee time savings and benefits related to ensuring reliability for life support customers. These benefits are attuned with several qualitative benefits related to improved risk and safety of employees and customers, improved reputational benefits and improvement in commercial and customer relationships.

\$FY24M	FY25	FY26	FY27	FY28	FY29	Total 5 years	Total 10 years
#1 Customer Expectations	0.0	1.0	1.4	1.8	2.2	6.4	23.2
#2 Customer Future Choices	0.2	1.9	2.3	3.3	3.5	11.3	22.8
#3 Resilient Network	6.7	12.1	12.2	12.4	12.6	55.9	92.2
#4 Sustainable Growth	8.4	10.3	10.9	11.1	11.3	52.0	67.1
Total	15.3	25.3	26.8	28.7	29.6	125.6	205.3

The following table summarises the quantitative benefits for the four investment briefs.



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The following table summarises the non-recurrent and recurrent capital expenditure and operational expenditure for the four investment briefs

\$FY24M	Capital Expenditure		Operating Expenditure			Ongoing				
	New	Comply	Recur.	Total 5 years	New	Comply	Recur.	Total 5 years	Ongoing	Total 5 years
#1 Customer Expectations	7.4	-	6.4	13.8	4.0	-	1.1	5.1	0.9	0.9
#2 Customer Future Choices	3.6	-	14.4	18.0	1.5	-	5.7	7.2	0.6	0.6
#3 Resilient Network	25.3	16.3	30.5	72.1	7.1	4.4	12.4	23.9	6.1	6.1
#4 Sustainable Growth	17.7	-	7.5	25.2	3.3	-	2.3	5.6	2.3	2.3
Total	54.0	16.3	58.7	129.0	15.9	4.4	21.5	41.7	9.9	9.9

Table 1: 2024-2029 ICT Program Capital Expenditure Forecast

Given the future electricity network and ICT landscape will continue to evolve with uncertainty, Endeavour Energy is positioned to achieve cost savings now and, in the future, and also retain business continuity into the future. Our investments in the next regulatory period will enable Endeavour Energy to harness innovation to build a sustainable automated technology ecosystem that is agile and flexible.





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3 Introduction

3.1 Introduction

As we look to the future, the nature of the energy system and Endeavour Energy's role within it is changing. The net zero ambitions of our community require fundamental changes to the way we generate and use electricity.

For Endeavour Energy, the operation of a more intelligent, integrated, and dynamic network means we are transitioning from being a traditional "poles and wires" business to a central platform, coordinating a clean and equitable energy system, and enabling digital services for our customers. At the same time, we will be supporting unprecedented growth in Western Sydney and enhancing resilience to increasing risks from climate change, cyber security, and a more variable and decentralised generation mix.

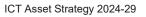
The period 01 July 2024 – 30 June 2029 (referred to herein as 2024 – 2029) will be a crucial building block. Our prudent investments must deliver on immediate digital customer needs and increased use of data and insights to set the pathway for the future. This will ensure that Endeavour Energy continues to meet our customer's expectations while providing safe, sustainable, and efficient services.

This document summarises Endeavour Energy's ICT strategy for the period 2024 – 2029:

- **Regulatory Period performance 2019 2024**. Over the current regulatory period, Endeavour Energy has made prudent investment decisions that have built a strong foundation for managing the changing environment and evolving customer expectations.
- ICT Strategic Direction 2024 2029. Endeavour Energy has set its ICT strategic direction to enable the Endeavour Energy corporate priorities to balance ongoing affordability for customers within investments that address customers' long-term interests.
- **Approach for planning for 2024 2029**. Endeavour Energy has adopted sound management practices to plan, deliver and govern ICT investments.
- **ICT Investment Program 2024 2029**. Endeavour Energy has selected a robust investment program for the period, with clear expectations of the outcomes, benefits and costs, and roadmap for delivery over the regulatory period.
- **Implications for 2030 and beyond**. Given the future electricity network and ICT landscape will continue to evolve with uncertainty, Endeavour Energy is positioned to achieve cost savings now and in the future, and also retain business continuity into the future.

The ICT Asset Strategy 2024 – 2029 is aligned to and informed by several other Endeavour Energy's internal and external documents, including:

• Technology Strategy 2022 – 2029, Endeavour Energy, March 2022





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3.2 Management Systems Artefact Framework

This ICT Asset Strategy report aligns with the Regulatory Asset Base Strategies for the non-system assets. The ICT Asset Strategy report will be enabled and delivered through the enterprise Technology Strategy, as Illustrated in the Endeavour Energy Management Systems Artefact Framework, Figure 1.

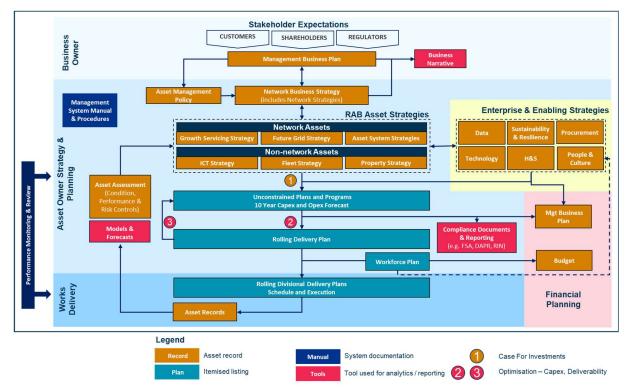


Figure 1 Endeavour Energy Management System Artefacts Framework





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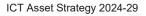
3.3 Scope of Endeavour Energy ICT Asset Strategy

The capital expenditure investments in the 2024-2029 proposal are aligned with the Endeavour Energy priority investment themes for the regulatory period. These are summarised below:

- Meet core customer expectations for a safe, affordable and reliable electricity supply by simplifying capabilities and building on current foundations to unlock value.
- Enable and facilitate customers' future energy choices and known preferences through the provision of smart, seamless digital service platforms and support for real-time flow of data.
- Provide a resilient network by supporting delivery of network services through enhanced platforms and services for increased protection against cyber security threats and to comply with regulatory obligations such as the Security of Critical Infrastructure Act; and to enhance data and analytics to make better informed enterprise decisions and information sharing requirements
- Support the sustainable growth of our communities by enabling and supporting the provision and operation of systems and non-system assets in greenfield areas such as the Western Sydney Parkland City (adjacent to the new Nancy Bird Walton International Airport) through better data and insights, enhanced operational capabilities and automation.

Within Endeavour Energy, ICT encompasses the investment, replacement, upgrade and support for devices, applications, systems, technology, and data across the following strategic planning segments in Figure 2. The delivery of the technology investments described in this ICT Asset Strategy will be enabled, informed and delivered through the enterprise Technology Strategy as described in the previous section.

ICT strategic planning segments	Outcome description for 2024 – 2029
Digital Access to Services	Enhance customer interactions via secure omnichannel engagement to provide efficient and reliable services'
Workforce Flexibility	Ensure our internal network users are equipped with services and devices applicable for the task to work efficiently anywhere, anytime '
Information and Insights	Provide staff access to appropriate tools, governance , processes and information to effectively perform role in order to support enhanced decision making '
Maintain IT & OT Systems	Supportable and fit-for-purpose business systems that can transform to evolving business requirements whilst fostering innovation





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ICT strategic planning segments	Outcome description for 2024 – 2029
Securing all ICT and Sensitive Data	Protect ICT infrastructure and data by being responsive, predictive and proactive to security risks in order to provide trust to the customer, Board and Security Industry standards
ICT Infrastructure	Reliable, adaptable and supported infrastructure that is resilient to failures and can adapt to emerging hosting and service delivery requirements in a timely manner
ICT enabling capabilities	Enhance ICT capability and automation to lead the role of ICT to drive innovation in response to business engagement

Figure 2: Endeavour Energy ICT Strategic Planning Segments





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4 Regulatory Period performance 2019 - 2024

Following partial privatisation in 2017, and several years of under investment below industry benchmarks, Endeavour Energy decided to prioritise, during the 2019 – 2024 regulatory period, a substantive ICT business transformation because it was identified as a critical enabling investment to deliver streamlined, integrated, and efficient systems to better manage the transitioning energy marketplace and changing customer demand.

The scope of the business transformation was consistent with approaches taken by peer organisations in similar situations and established a strong governance structure to oversee the implementation and its vendor and change management.

This investment saw Endeavour Energy spend above the forecast capital expenditure profile described in the previous Regulatory Proposal and the resultant Australian Energy Regulator (AER) allowance. This investment allowed Endeavour Energy to deliver key outcomes needed to support the business to be successful with customer-focussed services delivery. Following this period of renewal, Endeavour Energy is returning, in the latter part of the current regulatory period, to sustainable benchmark levels of capital expenditure.

4.1 ICT Capital Expenditure Performance

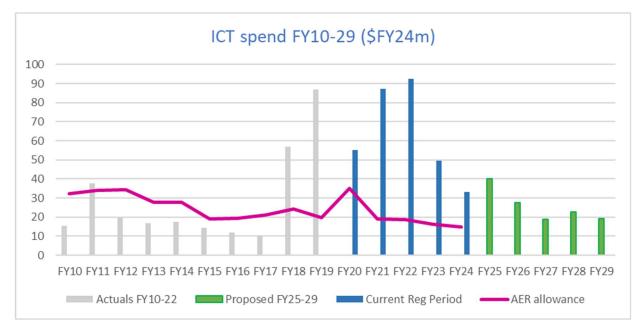


Figure 3 below details the actual and forecast ICT capital expenditure outcomes for the current regulatory period.

Figure 3: Current Regulatory Period ICT Capital Expenditure Summary





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Overall, our ICT Capital Expenditure for the current regulatory period is forecast to be approximately \$226.5M higher than the allowance for the period. The additional capital expenditure in the period was endorsed by the Endeavour Energy investment governance body and supports increased investment being undertaken as follows:

- **Optimus Program.** Endeavour Energy has undertaken a program to build a core SAP platform to replace legacy systems. This business transformation provides Endeavour Energy with a sustainable base level platform to consolidate systems of record for operational and customer facing purposes, mitigate business continuity risk while having a stable system capable of handling market rule changes.
- **ADMS Implementation.** The implementation of an Advanced Distribution Management System (ADMS) enabled Endeavour Energy to replace manual pin board control room operation and an ageing Outage Management System with a real-time, electronic management system reflecting the increasing convergence of network and non-system infrastructure.
- **SIP.** The implementation of a Security Improvement Plan (SIP) allowed Endeavour Energy to continue to operate and meet the Distributor's Critical Infrastructure Licence Conditions 9 and 10.

The Endeavour Energy governance board took prudent actions to identify and remediate the challenges with delivering the program.

- Endeavour Energy commissioned Pindara Consulting as an independent advisor, who in April 2019 cited a number of findings that were heeded by the Endeavour Energy governance Board and led to the pause and restart of the program through 2019. During the pause, Endeavour Energy took action to redefine the transformation governance structure, appoint a new Program Director and Program Delivery Director, and revalidate the design requirements. The Board resolved to restart the business transformation in December 2019, once the appropriate steps had been completed in response to the findings of the Pindara report.
- Upon completing the second, of four, program release, Endeavour Energy conducted lessons learned activities which surfaced potential improvements which led to Endeavour Energy redefining the foundational scope for the third release.
- Endeavour Energy commissioned Deloitte as an independent advisor to undertake a Post Implementation Review of Releases 1 – 3 of the Optimus Program¹ against the AER's expectations outlined in its Guidance Note *Non-network ICT Capex assessment approach for electricity distributors*². Based on the understanding and interpretation of the regulatory



¹ Deloitte, Optimus Release 1 – 3 Post Implementation Review, June 2022

² Australian Energy Regulator, Guidance Note, ICT Capex assessment approach for electricity distributors, November 2019 at https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/non-network-ict-Capex-assessment-review

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requirements, the study found that the Optimus Program's scope and implementation of the business transformation seemed prudent and efficient.

• The Board continues to closely monitor the Business Transformation through the established governance arrangements adopted throughout the program lifecycle.

With the completion of the Business Transformation in the 2021/22 financial year, the level of ICT Capital Expenditure is forecast to return to levels consistent with the AER allowance.

The digital transformation in the current regulatory control period has provided customer benefits, such as mitigating critical infrastructure security risks, meeting changing customer demand and delivering streamlined, integrated, and a stable platform to better keep pace with the transitioning energy marketplace.

4.2 Benchmarking ICT Totex

Endeavour Energy has a history of a low expenditure percentage of ICT Totex to revenue. The required additional investment in this regulatory period is similar to peer organisations that have conducted significant business transformation. Endeavour Energy is forecast to return to a median level of ICT Totex to Revenue by the end of the current regulatory period.

Benchmarking is typically used by regulators to assist with monitoring outcomes against the determinations of regulated businesses, developing performance reports and preparing for future determinations. For example, the AER collects and publishes Regulatory Information Notices (RIN) data to:

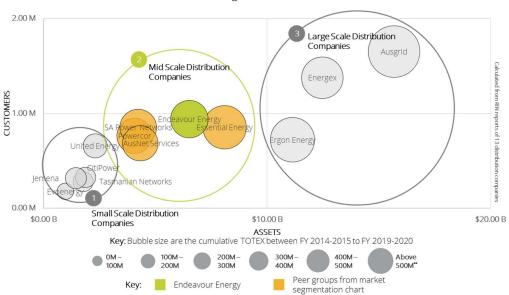
- Measure the relative efficiency of all electricity networks in the NEM; and
- To have regard to the benchmarking results when assessing Capex and Opex allowances for network businesses.

Endeavour Energy has identified its peer group as those companies with similar customers, assets and revenue base. The figure below identifies that peer group includes Essential Energy, AusNet Services, Powercor and SA Power Networks.





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Market Segmentation Chart¹

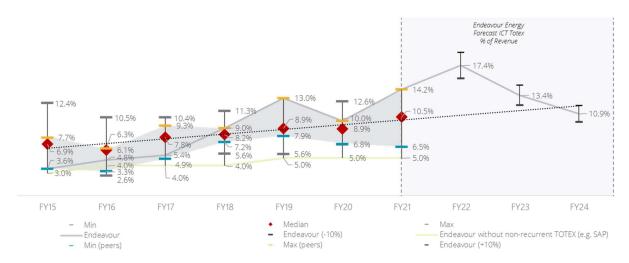
Figure 4 Market Segmentation. (1 Electricity network performance report 2020)

The figure below shows the ICT Totex as a percentage of Revenue compared to the peer group. Endeavour Energy has a history of having a low percentage of ICT Totex to Revenue. The FY18 and FY19 spend reflects Endeavour Energy's investment in the Optimus business transformation program. The Optimus Program is Endeavour Energy's first major ICT investment in ten years. In FY20 investment in the Optimus Program paused to re-evaluate its strategic intent, and restarted in December 2019. The Optimus Program was substantially completed in FY22, with Endeavour Energy expecting to return to a median level of ICT Totex to Revenue when compared to peers (between 9.8% and 12%) through the remaining years of the current regulatory period.





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4.3 Program Delivery Summary

Endeavour Energy has delivered, during this regulatory period, key outcomes needed to support the business to be successful with customer-focussed service delivery.

Endeavour Energy established, in March 2022, an enterprise Technology Strategy to focus on the outcomes needed to support the business to be successful with customer-focused service delivery, and to prepare the foundations for investment in the dynamic and evolving energy marketplace during the next regulatory period. A brief overview of our current period program delivery is provided below.

Technology Strategy planning segments	Technology Strategy Outcome Descriptions	Current Period Delivery Summary
Digital Access to Services	Increase customer engagement through faster, easier, multi-channel access to information and services, promoting trust in Endeavour Energy.	Implemented Customer Advocacy System with Claims and Complaints Foundations established for customer engagement (including website refresh, customer services platform, customer and Accredited Service Providers portals and apps) Established Voice of the Customer for customer surveys
Workforce Flexibility	Enhance the ability of our staff to work effectively from anywhere and collaborate with colleagues and partners using devices appropriate for the task.	Improved Single Sign On password experience Call Centre & Control Room System Upgrade Created Microsoft Teams Rooms for meeting collaboration Field mobility, mobile applications refresh and document/workflow automation on track



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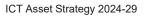
Technology Strategy planning	Technology Strategy Outcome	Current Period Delivery Summary
segments	Descriptions	
Information and Insights	Provide staff with appropriate tools to securely analyse and report on quality information in consolidated repositories	Created Data Lake and Data hub with analytics tools for Federated Data Analytics
		On track to complete employee self-service reporting & ETL refresh by the end of the regulatory period
Enterprise Platforms	Sustainable common platforms delivering core business functions, simplifying integration and information sharing and standardising business functions	Completed Optimus Releases 1, 2, 3, and 4 (Human Resource, Learning, Expense Management. Assets & Works, Finance, Procurement & Logistics, Environment Health & Safety, and Billing & Metering)
		Established SAP enhancement program
		Vegetation Management Systems remediation and stabilisation
		Integration platform foundations established, and on track to complete implementation before the end of the regulatory period.
Maintain IT & OT Systems	Supportable and fit-for-purpose business systems that can adapt to evolving business requirements.	Completed Advanced Distributed Management Systems Phase 1 (Core). Future phases are in progress and will continue into the next regulatory period.
		New Workers Compensation Replacement Solution for State Insurance Regulatory Authority Compliance
		Completed Finance Budgeting and Forecasting Remediation-Improvements.
		Replacement of the legacy core systems will be completed by the end of the regulatory period. Retained core systems are current and supported.
Securing all ICT and Sensitive Data	Protect ICT infrastructure and data by being responsive to threats and cyber-	Implemented licence condition controls through Security Implementation Program
	attacks and meet our regulatory obligations while being scalable, reliable, and flexible.	Implemented security infrastructure upgrades through Security Implementation Program
		Upgraded Perimeter firewalls
		Established secure certificate creation capability
		Enhanced access control management (Network access and Privileged access)
		Data Centre segmentation, identity & access management and centralised authentication are on track to be delivered during this regulatory period.
ICT Infrastructure	Reliable and supported infrastructure that is resilient to failures, has effective	Migrated to new server hosting platform
	disaster recovery characteristics and can	Upgraded Substation voice gateway



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Technology Strategy planning segments	Technology Strategy Outcome Descriptions	Current Period Delivery Summary	
	adapt to emerging hosting and service delivery requirements.	Co-location of primary data centre on track to be delivered during this regulatory period	
		Replaced or retired legacy infrastructure platforms.	
		Established high availability disaster recovery facilities	
		Refreshed End User Computing platforms	
		Refreshed Telecomms platforms	
		Completed cloud foundational implementation	
ICT enabling capabilities	Enhance ICT Governance and Delivery Capability to better respond to evolving business needs for ICT services and	Established configuration management database and ICT asset management	
	solutions	Implemented ICT service automation platform	
		Established PowerBI analytics for operational analysis	

Table 2: Current Regulatory Period ICT Program Status





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5 ICT Strategic Direction 2024 - 2029

Endeavour Energy's Priority Themes underpin our Purpose, Vision and Strategic Goals from 2024 - 2029.

Purpose	Powering communities for a brighter future					
Vision	To be amongst the	To be amongst the best performing networks in Australia as measured by safety, customer engagement and financial performance metrics				
Strategic Goals	1. Health, safety & environment	2. Employee engagement	3. Customer & communities	4. Performance	5. Growth through innovation	
	 Establish an organisation-wide culture of safety Establish streamlined systems and processes 	 Lift Performance through clear expectations and performance- oriented mindsets Build leadership capability 	 Establish easy connection with customers Enhance recognition by customers through valued interactions and relationships 	 Optimise work program and risk allocation Improve quality, speed and cost to deliver 	 Leverage existing asset base to create value Augment network with smart investments and new technology 	
Priority Themes	Safe, affordable reliable	& Resilier			Future Energy Choice	

Figure 6: Priority Themes

Each of the priority themes are reliant on investment in information and communications technology to deliver the information, infrastructure, and capability for the broad range of customers for Endeavour Energy, and the ecosystems of employees, contractors and suppliers required to deliver the services that customers expect.

The capital expenditure investments in the 2024-2029 proposal are according to the following themes:

- Meet core customer expectations for a safe, affordable and reliable electricity supply by simplifying capabilities and building on current foundations to unlock value.
- Enable and facilitate customers' future energy choices and known preferences through the provision of smart, seamless digital service platforms, secure connectivity to behind the meter devices, and support for real-time flow of data.
- Provide a resilient network by supporting delivery of network services through enhanced platforms and services for increased protection against cyber security threats and to comply with regulatory obligations such as the Security of Critical Infrastructure Act; and to enhance data and analytics to make better informed enterprise decisions and information sharing requirements
- Support the sustainable growth of our communities by enabling and supporting the provision and operation of systems and non-network assets in greenfield areas such as Western Sydney Airport through better data and insights, enhanced operational capabilities and automation.



5.1 Meeting core customer expectations for a safe, affordable, and reliable electricity supply

Endeavour Energy continues to invest in the replacement and renewal of assets across its network to meet our customers' expectations for a network that is safe for both our workers and the community we serve while providing a reliable electricity supply to our customers. Customers' expectations regarding network reliability have increased over time, while affordability remains an important concern.

Drivers	Benefits		Delivered through enterprise Technology Strategy Planning Segment	Investment
Core customer expectations. Customer expectations for differentiated, personalised and timely services, seamless transactions and accurate information, are increasing. Endeavour Energy will ensure that customers continue to play a central role in the operation of the network as it evolves to a platform for energy services.	Enhancement of customer satisfaction. Effectively and efficiently addressing feedback from customers and stakeholders will allow us to gain additional service insights and build stronger and enduring relationships. By investing in innovative solutions based on new technologies, we can improve our customer experience. We considered the benefits: customer time savings and agent time savings.	Improve customer energy decisions by providing access to real-time information and increased digital accessibility through self- service platform. This strategic response will enhance customer interactions via secure omnichannel engagement to provide efficient and reliable services and meet core customer expectations. Design data and information management strategy for enhanced customer insights and security. This strategic response will enhance access to and security of customer data.	Digital Access to Services	Over the period 2024 - 2029. <u>Capital Expenditure</u> New Capability - \$7.4M Recurrent - \$6.4M <u>Operating Expenditure</u> New Capability - \$4.0M Recurrent - \$1.1M <u>Ongoing Expenditure</u> OpEx costs - \$0.9M
Safe and private customer data. With customers seeking enhanced and personalised services, the management of data and associated security grows in importance. Endeavour Energy will monitor and manage our risks in compliance with legislative and regulatory requirements related to data privacy and security, while continuing to focus on market and customer evolutions and investments required to ensure the maintenance of integrity of customer information. Technology continues to rapidly advance, creating more ways for customer interests to be served through data sharing, including with	Meeting mandatory customer data privacy and security requirements. By ensuring the protection of customer data, we can improve the quality, integrity and coverage of data required for monitoring and reporting purposes, including specific requirements related to both life support and vulnerable customers. We consider benefits: mitigation of cyber security risk, value of inconvenience due to outages for life support customers and liability related to customer life support breaches.	Design data and information management strategy for enhanced customer insights and security. This strategic response will enhance access to and security of customer data.	Information & Insights	



Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
customers, other market participants and third parties.				
Reliable electricity supply. Customers want to be confident that they can turn on their lights, use their heating and cooling, stay connected with family and friends, and have the choice to work and learn from home. The future direction of the energy sector will continue to create challenges for maintaining reliability and we will need to invest in new initiatives that allow us to closely monitor our network.	Improvement of process and decision efficiency with real-time data capabilities. Endeavour Energy continues to improve the operational efficiency of processes, including in service delivery and data collection and analysis. The volume of data we are required to manage continues to increase as the market and customer needs and expectations with respect to services continue to evolve. It is critical that we have the appropriate technology to cater for these changes. We considered the benefits: value of data for improvement in asset management activities and productivity gains.	Improve visibility of technology infrastructure. This strategic response will improve infrastructure efficiency and effectiveness to maintain continuous and safe supply of network services.	Maintain Technology Infrastructure	
Affordable electricity supply. Our customers expect Endeavour Energy to recognise and respond to the pricing and affordability impacts of our investment plans and service delivery. Endeavour Energy must focus on deriving operational process and decision efficiencies with respect to asset management, work order management and back-end delivery. And look at the most efficient solution to ensure long-term interests of customers.	Enhancement of new products and services for customers. An evolving market and shift in customer needs and expectations require us to deliver and respond to a range of new technologies, products and services. By forward- planning and ensuring compatibility of our network and systems, we seek to promote efficient investment in, and efficient operation of, electricity services for the long-term interests of our customers. We considered the benefits: avoided system failure costs and productivity gains.	Maintain fit-for-purpose solutions to enhance customer and workforce experience. This strategic response will reduce reliance on unsupported and non-functional business systems to provide increased user productivity. Improve corporate platforms to provide common, fit-for-purpose platforms to enable staff to effectively perform their jobs. This strategic response will standardise corporate enterprise platforms to reduce manual overhead and decrease reliance on fragmented systems to perform processes.	Maintain IT & OT Systems Standardise Enterprise Platforms	



5.2 Enabling customers' future energy choices

As customers seek to connect more distributed energy resources (DER) and increasingly use sophisticated digital platforms, the network and its management must evolve. This forms the fundamental objective of this investment theme. Our investments focus on ensuring that customers who choose to take up these new technologies can maximise the value derived and preventing the need for curtailment as a tool to manage reliability issues.

Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
Customers' future energy choices. Increased access to digital services for internal and external stakeholders supports customer energy choices and the long-term interests of customers. Endeavour Energy will need to ensure customers, in choosing to access new technologies and services related to their energy usage, are able to maximise the value derived.	Greater customer satisfaction with smart infrastructure and energy market enablement. Effectively and efficiently addressing feedback and enquiries from customers and stakeholders will allow us to gain additional service insights and build stronger and enduring relationships. By investing in innovative solutions based on new technologies, we can improve our customer experience. We considered the benefits: customer time savings benefits, avoided system failure costs, agent time savings benefits and reduction in network curtailment value to DER integration.	Increasing access to digital services for external and internal stakeholders. This strategic response will enhance foundational platforms for the delivery of digitally enabled services to customers, particularly real-time power consumption visibility and partner and supplier self-service capability. Uplifting systems and platforms to enable future integrated energy system. This strategic response will transform platforms to reduce reliance on unsupported and non-functional systems and provide capabilities to enable future integrated energy system	Digital Access to Services Standardise Enterprise Platforms	Over the period 2024 – 2029 <u>Capital Expenditure</u> New Capability - \$3.6M Recurrent - \$14.4M <u>Operating Expenditure</u> New Capability - \$1.5M Recurrent - \$5.7M <u>Ongoing Expenditure</u> OpEx costs - \$0.6M
Future integrated energy system. As the grid continues to evolve, Endeavour Energy will need to find better ways of delivering and installing new technologies. This can be done through new commercial capabilities or stronger partnerships with existing organisations and new entrants. We will also need to ensure optionality that allows us to respond to changing pace and direction of the market and technologies. In addressing this driver, we are able to ensure that the scope of our investments is prudent in accommodating and promoting a more integrated energy system in the future.	Improvement of process and decision efficiency through real-time power consumption visibility, industrial Internet of Things data management and DER enablement. Endeavour Energy continues to improve the operational efficiency of our processes, including in service delivery and data collection and analysis. We need to have the right capabilities to integrate existing and emerging technologies. The future of our energy system is low carbon and customers are already using technologies that reflect this market shift. We considered the benefits: customer time savings benefits, avoided system failure costs,	Uplifting infrastructure enabling platforms to deliver DER services. This strategic response will uplift infrastructure enabling platforms to deliver DER enablement and management services. Enabling business systems and integrations to enable extended electricity pricing model. This strategic response will enhance organisational efficiency, increase integration and inter-operability, and enhance flexibility to adapt to regulatory changes. Using insights gained to enable data-driven decisions. This strategic response will enhance	Maintain Technology Infrastructure Standardise Enterprise Platforms	



Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
	agent time savings benefits and reduction in network curtailment value to DER integration.	the efficiency and accuracy of data insights and enable data-driven decisions.		
Sustainable future. Significant work has been undertaken to establish the foundations of our sustainability strategy, including development of a materiality assessment report in September 2021. One key insight from this report is our customers, stakeholders and employees are becoming more environmentally conscious. Results from our Focus Group Outcomes report (December 2021) show customers also care about the sustainability of our network for their communities, those more vulnerable and future generations. We need to ensure these long-term outcomes for the customers are achieved using the most efficient investment possible, meaning we need to start now.	services for customers and their communities, those more vulnerable and future generations. We	Enabling business continuity and ensuring delivery excellence by uplifting innovation capabilities and increasing operational efficiency and network connectivity. This strategic response will uplift technology capabilities to deliver solutions aligned to business outcomes.	Technology Enabling Capabilities	
Low carbon energy system. Governments, businesses and communities are setting increasingly ambitious emissions reduction targets to limit the impacts of climate change. Endeavour Energy is well placed to support its customers in achieving these targets by ensuring its network can cater for the increasing demand of renewables and DER such as solar PV, battery storage, and electric vehicles. Clear communication and investment strategies must be supported by new ICT capabilities including low voltage visibility and analytics, and DER hosting capacity.	Stronger partnerships with external parties. By automating processes and ensuring minimal errors when engaging with us, we become more approachable to new stakeholders and organisations looking to expand their innovation and, through this, support market development and customer choice. Future integrated energy system will require efficient ways of performing specific tasks, including forming partnerships with organisations to share expertise by allowing for a more integrated energy system. We considered the benefits: ICT innovation and reuse benefit.			



5.3 Providing a resilient network for the community adapting to changing climate and external hazards

Endeavour Energy's investments focus on ensuring resilient network for customers despite the changing nature of the energy sector, including extreme weather events which are increasing in frequency and intensity, and increasingly ambitious emissions reduction targets set by governments, businesses and communities to limit the impacts of climate change.

Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
 Anticipate. As climate change related extreme weather events such as bushfires, heat waves and severe storms continue to increase in frequency and intensity, it is critical to ensure that the network can provide a high level of reliability. Furthermore, investments will need to accommodate for the evolving nature of the energy sector over the long term. The ability to accurately forecast the future energy market transition has become an essential function for all energy companies. This applies to the long-term business planning, medium-term strategy and short-term response initiative related to the future energy market. Challenges to this include: adapting for future changes in the market, customer growth; aligning forecasting technology capability with increasing frequency and severity of climate events; and efficiently and effectively responding to network changes. 	Enablement of business cost saving related to our responsiveness to the energy market transition. Endeavour Energy can benefit from the increased digitisation of the workplace through improved productivity, cost savings, a more mobile and agile workforce, and generally increased flexibility and adaptability in an ever more complex energy market. Technology enables business cost saving within the field worker function through proactive maintenance with uplift in workforce communications, mobility, and access to platforms and tools. The ageing workforce also benefits from these investments, which lead to better asset utilisation in the long- term. These business cost savings enable us to achieve better price outcomes for customers. Improved risk mitigation through integrated platforms (unforeseen disruptive events). It is vital we address risks related to how the community adapts to changing climate and external hazards. Development of new insights into climate change and extreme weather disruptions to predict network grid impacts can improve the network risk profile and help address threats that disrupt the functioning of core operations. Additionally, investments can promote a culture conducive to effective risk management. This may also provide the needed support for our	 Uplifting workforce communications, mobility and access platforms and tools to provide an integrated and flexible workplace (anticipate). This strategic response will provide staff with a modernised experience through enhanced workforce applications and devices, connectivity, access to platforms and locations. Enhancement of applications and systems to ensure network operational efficiency and resiliency. This strategic response will enhance systems to improve operational efficiency and resiliency through uplifted workforce scheduling management and OT systems. Uplifting operational data and analytics systems and management to enable data-driven insights and decisions (anticipate). This strategic response will design and implement enhancements to records management, data platforms and analytics capabilities to enable modelling of business events, and controlled data sharing with stakeholders in compliance with regulations. 	Maintain IT & OT Systems Workforce Flexibility Information & Insights	Over the period 2024 - 2029 <u>Capital Expenditure</u> New Capability - \$25.3M Compliance - \$16.3M Recurrent - \$30.5M <u>Operating Expenditure</u> New Capability - \$7.1M Compliance - \$4.4M Recurrent - \$12.5M <u>Ongoing Expenditure</u> OpEx costs - \$6.1M



Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
	workforce to respond effectively to disruptions using the above insights.			
 Withstand. As electricity networks are critical assets, it is important to ensure security and resiliency against a wide range of threats including cyber security and physical threats. Two avenues to manage these threats are ensuring these networks can predict and detect security threats for early intervention and are flexible in ensuring compliance with changing regulatory requirements. The current method of planning outages for maintenance and resolving issues cannot cope with a more complex energy market because of the changing nature of future network capability and new form of data insights driven by increased number of energy sources. Challenges to this include: predicting and detecting location of event and how to respond; responding to increasing volume and richness of information from zone stations and the IoT sensors on the network, managing increased complexities as IT and OT data is shared across networks and zones, whilst ensuring adequate bandwidth and signal for remote devices; and improving outage planning technologies for a more complex energy market and providing adequate customer notice of anticipated outages. 	Meeting mandatory requirements for cybersecurity and SOCI. Increased focus on security will be required as cyber-attacks become more frequent and sophisticated. Investments in cyber security in the next regulatory period ensure we follow existing regulatory frameworks and are flexible enough to respond to any future changes to this framework. This allows us to better protect critical assets and data associated with customers and operations. This also supports the development of new capabilities related to the internal workforce and processes so that cyber- attacks can be monitored and handled appropriately. Improvement of process and decision efficiency (planned outages). Information and data collected through the implementation of new capabilities can be used to support and strengthen effective decision-making processes. As the amount of data available continues to increase, investments in the next regulatory period provide us with the right capabilities to manage this data and draw valuable insights related to predictive and condition-based maintenance. This allows us to manage any planned outages and ensure that customer experience has not been affected due to these.	Uplifting operational data and analytics systems and management to enable data- driven insights and decisions (withstand). This strategic response will design and implement enhancements to data platforms and analytics capabilities to enable modelling of business events (including planned outages), and predictive and prescriptive asset management. Enhancing cyber resiliency through uplift of cybersecurity platforms and enablers to provide insights on the security status of the technology environment and protect against evolving threats. This strategic response will review and uplift cybersecurity platforms and enablers to enhance cybersecurity and ensure compliance with regulations.	Information & Insights Secure All Technology	
Respond & Recover. As the transition to a lower- carbon energy sector in Australia continues and accelerates, customers still expect a consistent level of service in terms of reliable electricity supply during periods of any disruptions. The role of renewable electricity in the energy sector is	Meeting mandatory requirements for cybersecurity and SOCI. Increased focus on security will be required as cyber-attacks become more frequent and sophisticated. Investments in cyber security in the next regulatory period ensure we follow existing regulatory frameworks and are	Maintaining network infrastructure and uplifting future network capability to avoid service disruption and maintain safe and resilient supply of networks (respond & recover). This strategic response will uplift network infrastructure to ensure integration and	Maintain Technology Infrastructure	



Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
expanding as the costs of delivering new renewable technologies continue to decrease in the long term. This means management of unplanned outages, incident responses and business continuity related to disruptive events will require a dynamic solution due to the challenging and diverse nature of a lower-carbon energy sector. Challenges to this include: • ensuring business continuity despite increasingly connected energy and data sources to the control grid; and • learning from and responding to disruptive events.	flexible enough to respond to any future changes to this framework. This allows us to better protect critical assets and data associated with customers and operations. This also supports the development of new capabilities related to the internal workforce and processes so that cyber- attacks can be monitored and handled appropriately. Improvement of process and decision efficiency (unplanned outages). Investments to improve the efficiency of the internal system to respond to potential disruptions that can lead to unplanned outages. Insights from collected data at network and customer levels allow for effective and efficient intervention and response to disruptions and external threats through a combination of better integration between IT and OT infrastructure and automation. Digital capability forms an integral part of successful integration of real-time data with decision-making processes. New insights and ICT capabilities can improve the time taken for employees to build this knowledge. Improved risk mitigation through integrated platforms (unforeseen disruptive events). It is vital we address risks related to how the community adapts to changing climate and external hazards. Development of new insights into climate change and extreme weather disruptions to predict network grid impacts can improve the network risk profile and help address threats that disrupt the functioning of core operations. Additionally, investments can promote a culture conducive to effective risk management. This may also provide the needed support for our workforce to respond effectively to disruptions using the above insights.	connectivity, enable self-healing and self-scaling and enhance security.		



Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
Learn & Adapt. New ways of doing things can be developed from how Endeavour Energy has previously dealt with security threats and disruptive events. Valuable information and insights from these actions can inform how we implement new processes for our business units. To ensure we can successfully capture and properly incorporate these insights into future decisions and planning process, different platforms in the business need to work together seamlessly. Challenges to this include: • ensuring data management and governance in place to enable insights into previous actions to inform new processes; and • enabling automation capability to monitor and respond to disruptive events.	Improved risk mitigation through integrated platforms (insights from past events). These benefits are realised by addressing the fundamental process of risk management related to identifying, assessing and controlling security threats and climate change risks. To retain these benefits in the long term, supporting investments are needed to establish risk culture in the business and encourage workers to learn and adapt from past events. In the short term, we can control and minimise the costs related to these risks by providing support to the business to respond and recover quickly from potential disruptions. Improvement of process and decision efficiency (automate monitoring and response practices). Past events can provide valuable information for future planning of the network and customer strategy. In order to ensure that we can efficiently and effectively integrate the insights from these events to the internal process, we need to enhance the automation of monitoring and response practices for internal workforce.	Maintaining network infrastructure and uplifting future network capability to avoid service disruption and maintain safe and resilient supply of networks (learn & adapt). This strategic response will uplift network infrastructure to ensure integration and connectivity, enable self-healing and self-scaling and enhance security. Enhancing corporate and business system platforms to uplift asset maintenance, resource management and risk and compliance. This strategic response will enhance corporate and business system platforms to uplift asset and resource management, enable integrated identity management and identity authentication service (IDM/IAS) and business platforms, and enhance governance risk and compliance.	Maintain Technology Infrastructure Standardise Enterprise Platforms	



5.4 Supporting the sustainable growth of our communities

Endeavour Energy is investing in accommodating for the directions of future growth and change across Greater Sydney. The step change in growth of customers across the Western Sydney Parkland City (adjacent to the new Nancy Bird Walton International Airport) will open new geographical locations as well as increase the customer density of existing locations, necessitating investments in supporting field workers, supporting network infrastructure growth and scaling back-office operations.

Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
	Improved process and decisions in remote work. With predicted expansion of the asset base and network infrastructure, field workers play a larger role in managing future network infrastructure. Investments in remote work technologies and connected vehicles can enhance field workers productivity to ensure a safe and reliable electricity supply to the Western Sydney region. To maximise the benefits from network infrastructure, it is necessary to adopt better asset management to improve field workers' responsiveness to customers and operational planning. This ensures field workers are able to perform remote work safely and efficiently. Improved risk mitigation of management of planned work and proximity. Better corporate platforms allow for enhanced risk management in relation to system failure costs, through Al capabilities to support management of stock/inventory and scheduling of planned work and proximity. Enable productivity growth of maintenance and contractor workforce. With the expansion of infrastructure and customers in the Western Sydney region, it is important to scale corporate and emergency response services. Investments in contractor management systems and business systems training through virtual reality allows us to		Workforce Flexibility Standardise Enterprise Platforms	Over the period 2024 – 2029 <u>Capital Expenditure</u> New Capability - \$17.7M Recurrent - \$7.5M <u>Operating Expenditure</u> New Capability - \$3.3M Recurrent - \$2.3M <u>Ongoing Expenditure</u> OpEx costs - \$2.3M



Drivers	Benefits	Response	Delivered through enterprise Technology Strategy Planning Segment	Investment
	better manage maintenance works and training outcomes, thereby maximising the value created and ensuring provision of better services.			
Support network infrastructure growth through integrated asset management. Western Sydney is experiencing unprecedented growth at a rate nearly 40% higher than the rest of Metropolitan Sydney. The roll-out of new infrastructure across Western Sydney will require significant network investment. This cannot occur without supporting infrastructure, including ICT. Asset management related ICT offers a possible solution to accommodate for this growth because it builds on the current capability existing in the business.	Improved process and decisions in remote work. With predicted expansion of the asset base and fit-for-purpose network infrastructure, field workers play an even bigger role in managing future network infrastructure. Investments in the next regulatory period can enhance the productivity of field workers through remote work technologies and connected vehicles to ensure a safe and reliable supply of electricity to the Western Sydney region. To maximise the benefits from network infrastructure, it is necessary for us to adopt better asset management to improve field workers' responsiveness to customers and operational planning. This is to ensure that field workers are able to perform remote work safely and efficiently in response to the demand from the growth in Western Sydney region.	Implementation of data platforms and capabilities to enable predictive and prescriptive modelling and data-driven decision-making (support network infrastructure). This strategic response will uplift data platforms, systems and tools to enable machine learning and artificial intelligence data capabilities and predictive and prescriptive asset management models.	Information & Insights	
Scale back-office operations. Digitisation must occur from the primary substation all the way through to the customer and integrate with other parts of the energy system. This may involve current and future back-office operations. Efficient management of back-office operations will allow Endeavour Energy to focus on its core operations in delivering a safe and reliable supply of electricity to customers.	Improved productivity of back-office processes. While it is necessary for us to adopt better asset management to improve field workers' responsiveness to customers and operational planning to maximise the benefits from the growth in network infrastructure, it is also important to address the challenges related to back-office processes. Back-office workflow productivity is crucial for any business functions. This is why investments to improve the productivity of back-office secondary processes are important to ensure core operations of a business perform well. This also means a better price outcome and customer service for the customers.	Enhancing corporate and business system platforms to drive process enhancements, asset maintenance and resource management (support back office). This strategic response will uplift corporate and business platforms to enhance management of resources and drive process enhancements. Implementation of data platforms and capabilities to enable predictive and prescriptive modelling and data-driven decision-making (support back-office operations). This strategic response will uplift data platforms, systems and tools to enable machine learning and artificial intelligence data capabilities and predictive and prescriptive asset management models.	Standardise Enterprise Platforms Information & Insights	



Drivers	Benefits	Delivered through enterprise Technology Strategy Planning Segment	Investment
		Maintain Technology Infrastructure	



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6 Approach for planning, delivery, and governance of ICT investment Program

Endeavour Energy applies sound management processes for the planning, delivery and governance of the ICT investment program. The ICT Investment governance framework has evolved in line with Endeavour Energy's business needs and priorities and will continue to evolve as required.

Investments in both applications and infrastructure are planned according to industry capital planning practices. Investments are then defined, prioritised and delivered through Endeavour Energy's IT Program Delivery Lifecycle.

6.1 Future Scenario Planning

Power and Utility industry opportunities to build business value are continually evolving. We conducted a "future gazing" exercise, with the assistance of Deloitte, to explore the impact of future scenarios on our ICT investment priorities. The key activities from this exercise:

- Implications of AEMO investment scenarios. Considering the AEMO scenarios and the Endeavour Energy six identified drivers of change, we assessed the impact on each of the Endeavour Energy functional areas and alignment to the ICT planning segments.
- ICT Target capabilities. The required ICT capability of the business to address drivers for change over the current and the next regulatory periods were identified. The capabilities required to be delivered for the current regulatory period were incorporated into in-flight ICT investment plans. These capabilities will provide the foundation for initiatives to be delivered over the 2024 – 2029 period.
- 2024 2029 Roadmap. Aligned with the regulatory reset period 2024 2029 is a period of ICT uncertainty: expectations of ICT will evolve quickly, as will available ICT options. Hence, informed "future gazing" was used to create a view of the long-term role of ICT investment for Endeavour Energy.

The outcomes of this work were then used to extend the validation and planning work for each of Endeavour Energy's functional areas over the coming year to ensure that foundation capability is ready ahead of the next regulatory period, and to refine the role of the ICT planning segments for the 2024 – 2029 regulatory period.



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6.2 ICT Investment Planning

The methodology used to develop ICT investment briefs is shown in the figure below. The approach has involved four phases with the objective of outlining the investment logic for non-system ICT investment:

Presenting a target solution that clearly addresses an imminent and valuable outcome for the business. These activities define the strategic drivers, scope and target benefit to be achieved through capital expenditure.

- Proposing a prudent option to implement the target solution. These activities define actionable alternative options to consider, the evaluation criteria and selection process to determine a recommended option.
- Outlining an achievable roadmap that considers benefits, costs, stakeholders and dependencies. These activities outline the delivery program plan to deliver the recommended option.
- Presenting a compelling case for investment in the narrative. These activities compile the assumptions and models used to determine a target benefit and cost, and ensures appropriate consultation of the key messages for the investment.

	EXPLORE OPTIONS	PLAN DELIVERY	
Define the strategic context and the urgency for Investment	Define alternative solutions to achieve target state, considering alternative sourcing decisions for solution and delivery	Outline candidate delivery components to deliver the target solution	Compile assumptions used to define schedule, allocate resource, calculate a cost, and calculate a benefit
Define the scope for baseline and target solution	Agree the evaluation criteria for selection of solution	Perform gap analysis of target solution with in-flight programs	Model the benefits profile based on an agreed baseline position
Capture and define baseline description as required by scope			Model the cost profile with consideration for one-off and recurring costs
	Research alternative solutions using criteria defined	Define transition states and transition architectures, if required	
Develop the target solution across people, process and technology			Finalise an investment profile with key messages relevant to Endeavour Energy senior executive audience
	0 1	Conduct high-level business	
Define the target benefit opportunity	Compare options and recommend a preferred option	impact assessment , and agree organisational change management approach	
		Develop project plan and roadmap with consideration for timing of delivery of benefits, impact on the business users,	

dependencies and timing of costs

Figure 7: ICT Investment Brief Development Methodology

ICT Asset Strategy 2024-29



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- ICT Asset Strategy 2024 2029

6.3 Customer Engagement

Endeavour Energy proactively engages customers and stakeholders as part of our regular business processes, using the insights received in the development of an ICT strategy. Given the regulatory reset will shape our plans for the future, additional engagement has occurred to ensure customers are central to the development of those plans.

Endeavour Energy has established an engagement approach for the 2024 – 2029 regulatory determination that is collaborative, iterative, and responsive, is led from the top and will ensure meaningful engagement with different stakeholders across a variety of channels³. The approach has been developed with consideration for AER's published Better Resets Handbook (April 2021), and the public participation goals defined in the IAP2 Public Participation Spectrum.

The figure below illustrates the plan for engaging customer and stakeholders. Through Prioritise stage, the investment for non-system ICT expenditure was discussed with stakeholders through the issue-specific deep dives, and the feedback received is being used to prepare the draft regulatory proposal.

Discover (April 2021 – September 2021)

Understand customer preferences and co-design engagement approach

- Regulatory Reference Group
- Co-design engagement plan
- Exploratory customer research

Explore (October 2021 – April 2022)

Deeper exploration of key issues to develop a Preliminary Proposal

- Retailer and RRG engagement
- Consumer Challenge Panel
- State of the Network Forums

Preliminary Proposal (April 2022)

A substantial reference for informed engagement on potential future plans

Prioritise (May 2022 – October 2022)

Broad and deep engagement on what customers expect and value

- Customer deliberative forums
- Stakeholder deep dives for ICT investment



³ Endeavour Energy, "Engagement Plan: Endeavour Energy 2024-2029 Regulatory Control Period", April 2022.

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 Quantitative research
 Draft Proposal Published (October 2022) Draft proposal reflecting customer insights submitted to the AER
 Refine (November 2022 – January 2023)
 Refining our plans to submit a Final Proposal to customer and the AER
 Key stakeholder engagement
 You Say portal Closing all feedback loops
 Final Proposal (January 2023)

Figure 8 Engagement Process for 2024 - 2029 submission

6.4 Portfolio and Program Delivery and Governance Framework

Endeavour Energy's framework for program planning and delivery is depicted in the figure below:



Figure 9 Endeavour Energy's Program Planning and Delivery Framework

Each of the stages within the framework are described below:

6.4.1 Portfolio Planning and Prioritisation

The five-year ICT Capital Portfolio is derived from the enterprise Technology Strategy. The enterprise Technology Strategy investment roadmap is developed in consultation with the Executive Leadership Team to ensure strategic focus areas are addressed, and the investment roadmap is submitted to the Investment Management Committee. The approval process for a rolling five-year period also coincides with the AER proposal timetable.

Key governance arrangements in this phase:

• Annual Priority Investment Planning. Program and projects to be formally considered for inclusion in the ICT Capital Budget for the next financial year may include carry-over programs and projects that will not complete in the current financial year, and projects that are part of the ICT Capital Portfolio and earmarked to commence in the following financial year. Every year (typically in October), the list of initiatives is presented to the Executive Leadership Team and endorsed as the ICT Capital Budget for the following financial year, which is submitted to the Investment Management Committee to complete the approval process.





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- **Quarterly Review**. A quarterly review is conducted to assess the progress of the delivery of programs and projects within the ICT Capital Budget and quarterly financial forecast is prepared.
- **Program Governance**. The ICT Portfolio Governance Committee oversees the execution of the ICT Capital Budget within the financial year. The ICT Portfolio Governance Committee is responsible for validating and reaffirming program priority prior to business case submission, assessing the impact of unbudgeted projects, providing business commitment prior and during project delivery, optimising resource and environment utilisation across portfolios, and monitor and manage dependencies.

6.4.2 Program / Project Initiation

Once funding availability is confirmed, a program / project manager is assigned to identify and seek endorsement of the customer needs, define high level business requirements, manage the architecture / solution design, and develop the business case.

Key governance arrangements in this phase:

- **Business Case review and endorsement**. The ICT Portfolio Management Committee will review and, if appropriate, endorse project proposals based on the information provided in the ICT business case.
- **Business Case approval**. The endorsement and approval delegations depend on the total project expenditure inclusive of Capex, Opex and Contingency. Programs and projects must be approved.

6.4.3 Program / Project Delivery

On approval of the project business case, the project manager will prepare a Project Management Plan, mobilise the project team, and manage the project through the delivery lifecycle (plan, design, development, test, implement and closure). Before project mobilisation, the project manager will select the preferred methodology for delivery e.g., waterfall, agile or hybrid approaches.

Key governance arrangements in this phase:

- **Program and Project Management Planning**. The Program and Project Management Plans will set out the project governance structures, agreed level of communications with stakeholders, the project delivery milestones, agreed resourcing levels, roles and responsibilities of key roles with oversight and delivery of the project, risk management approach, change management approach, and testing approach. The Program and Project Management Plans are living documents and the project manager is responsible for maintaining an updated copy of this document throughout the project lifecycle.
- **Program and Project Steering Committees**. The project will consider the formation of an ICT Project Steering Committee. The Project Steering Committee's responsibility will direct the project for its success and that the overall business needs are being satisfied, including assessment of the project's viability and alignment with the company's overall strategic objectives.

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- ICT Asset Strategy 2024 2029
- **Project Controls**. The ICT Project Delivery Governance Matrix is used to determine the level of controls recommended during project delivery in the areas of risk management, business change and communication, test and quality assurance, and reporting and governance.
- **Design**. All detailed solution designs must be approved by the Enterprise Architecture Technical Review Group. This group confirm that realistic ICT low level designs are proposed and aligned with endorsed solution architectures from domain architects and assess that the solution could be implemented to meet the project requirements with acceptable levels of risk.
- **Procurement**. Procurement of goods and services related to ICT projects must comply with the company procedures. Project expenditure requires approval in accordance with company delegations. The project manager manages any contract delivery and the performance of the vendor in accordance with the obligations of the business owner.
- **Testing**. The ICT Testing Framework sets out the philosophy behind testing of ICT solutions and the standards and guidelines for undertaking the test effort.
- **Business Change Management**. A structured approach to change management is undertaken to minimise the impact of the project on business operations with the introduction of the new solution.
- **Production implementation**. The ICT Change Advisory Board manages the formal gate to decide solutions that can be implemented in the production environment. The Change Advisory Board reviews all User Acceptance Testing sign-offs, Transition Handover Documents and implementation communications before approving production implementations.
- **Program and Project status reports**. Program and project status reports are required to be completed monthly with a progressive schedule for planned delivery. The program and project status reports capture status, summary of expenditure, key milestones and risks that occur throughout the reporting period. The Program status reports will provide a view of the progress to achieving the priority themes for the regulatory period.
- Program and Project change management. Where a change is sought to a program or project's scope, resources, costs or timing, the project manager is responsible for lodging a Project Change Request with the ICT Portfolio Management Committee. Change requests must be endorsed and approved based on the revised estimated project / program value (that is, initial estimated project/program value plus the cumulative value of variations to direct costs and contingencies).
- **Recordkeeping**. All critical project governance documents are held on file by the Program Management Office. Project documentation is maintained by the project manager and filed and archived upon completion of the project in accordance with the company document management standards.





6.4.4 Project Completion

The project manager will conduct post implementation, complete lessons learned, and manage the acceptance from the sponsor to close the project. The Program Management Committee endorse the closure and timing of closure of the project. Upon closure the cost will be written off and capitalisation activities can then occur.

6.4.5 Business Benefit Realisation

The Business Benefits are confirmed during the project closure process. Evidence must be supplied in support of any claimed financial and business benefits and validated prior to submission to the Program Management Committee. Additional benefits realised by the project but not identified in the approved business case will be included in the project closure form



- ICT Asset Strategy 2024 2029

7 ICT Investment Program 2024 - 2029

The ICT Investment program outlines the programs of work to deliver against the four priority themes outlined in the ICT Strategic Direction 2024-2029. An investment brief has been prepared for each of the four priority themes. The section below summarises the benefits, costs, and program plans for delivery of each priority theme.

7.1 Forecast Benefit Realisation

7.1.1 Quantitative Benefits

In developing the cost profile underlying the ICT Strategic Direction of Endeavour Energy in 2024-2029, the associated quantitative benefits to enable the targets, services and technologies required to deliver across the investment themes were measured. These technology investments support the various Endeavour Energy functions' ability to enhance customer satisfaction, comply with customer data, reliability and security requirements, derive growth in Western Sydney, improve decision and process efficiencies in operation, develop stronger relationships with stakeholders and mitigate corporate risks. The identified benefits support and deliver these targets to support Endeavour Energy's internal and external delivery of service outcomes.

To support the AER's calculation of returns from ICT investment, we have apportioned the quantitative benefits according to the nature of investment and the proportion of cost of the underlying initiatives between recurrent and non-recurrent benefits. Further sub-categorisation of non-recurrent benefits is distributed between:

- Complying with new/altered regulatory obligations/requirements
- New or expanded ICT capability, functions and services

The process of calculating and validating the quantitative benefits realised from ICT investment involved thorough consultation across Endeavour Energy business units to ensure compliance with existing and future objectives of various teams. This was supported by extensive research and communication with external stakeholders to build the benefit profile delivered under the ICT program.

The quantitative benefit estimates in the table below are based on apportioning the total quantitative benefits according to the cost of the initiatives. The underlying metrics, targets, and assumptions for each benefit description is included in the separate Investment Briefs.⁴⁵⁶⁷



⁴ Investment Brief: Meeting core customer expectations for a safe, affordable, and reliable electricity supply, Endeavour Energy, 2022

⁵ Investment Brief: Enabling customers' future energy choices, Endeavour Energy, 2022

⁶ Investment Brief: Providing a resilient network for the community adapting to changing climate and external hazards, Endeavour Energy, 2022

⁷ Investment Brief: Supporting the sustainable growth of our communities, Endeavour Energy, 2022

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Priority Theme / Quantitative Benefit Description	Estimated Benefits (\$FY24 over 10 years)
Meeting core customer expectations for a safe, affordable and reliable elect	ricity supply
 Improved customer experience through provision of improved methods of delivering our services Minimised reliability and security risks by building business capabilities to ensure our systems monitor and respond to security threats to customer data Improved internal operational efficiency gains by improving technologies, products and services 	\$12.5M new capability \$10.7M recurrent capability
Enabling customers' future energy choices for a sustainable future, moving integrated and low carbon energy system	us towards the future
 Minimised disruptions to customers from future energy market transition by supporting investments in new technologies Improved processes and insights to deliver and incorporate existing and emerging technologies Improved monitoring and reporting to support sustainability outcomes Improved partnerships with other organisations to share and develop expertise through a more integrated energy system 	\$5.2M new capability \$17.6M recurrent capability
Providing a resilient network for the community adapting to changing climate	e and external hazards
 Enhanced cost savings through increased flexibility and adaptability to the energy market transition Adherence to mandatory cybersecurity and cyber threat regulatory requirements to endure disruptive events and enhance efficient responsiveness Improved insights and learnings from previous decisions, processes and events to improve the productivity and responsiveness to future challenges Improved risk culture and management to minimise effects of threats on the network through applying past learnings to future behaviours 	\$52.2M new capability \$3.6M compliance capabili \$36.5M recurrent capability
Supporting the sustainable growth of our communities	
 Providing the tools and capabilities to optimise responsiveness through improved productivity and safety of field workers Improved scheduling and management of the workforce to minimise safety and wellbeing risk of field workers. Improved outcomes to customers and stakeholders through enhanced productivity, training and collaboration of field workers. Enhanced efficiency of back-office processes to support the productivity of core operations and improve customer outcomes 	\$52.9M new capability \$14.2M recurrent capability
Total estimated quantitative benefits	\$122.8M new capability \$3.6M compliance capabili \$78.9M recurrent capability

Table 3 Quantifiable Benefits by AER Category



7.1.2 Qualitative Benefits

In addition to the quantitative benefits delivered from investment, there are various qualitative benefits generated from investment under the four investment themes to support Endeavour Energy's stakeholder outcomes in the 2024-2029 period. A summary of these benefits under the four investment themes are described below.

Meeting core customer expectations for a safe, affordable and reliable electricity supply. Qualitative benefits related to investments which support the safety and reliability of supply required to satisfy customer and community expectations include:

- leveraged personalised information of customers to inform strategy and planning,
- improved customer relationship and commercial partnership,
- increased community productivity,
- improved customer experience and improved engagement between the Board, executive team and customers, and
- improved perceived value of products and services to customers.

Enabling customers' future energy choices for a sustainable future, moving us towards the future integrated and low carbon energy system: Qualitative benefits related to investments which enable and support customer future energy choices include:

- greater customer aspirations related to new energy choices,
- increased community productivity,
- improved positive reputation related to the achievement of sustainability outcomes,
- increased confidence in the products and services by customers in dealing with potential disruptions, and
- promotion of a mindset of innovation in the business through better support systems.

Providing a resilient network for the community adapting to changing climate and external hazards: Qualitative benefits related to investments which ensure network resilience as it adapts to evolving climate and external hazards include:

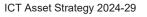
- improved risk and safety culture for the internal workforce,
- improved working conditions and experience of the employees through better risk management and digital capability,
- increased opportunity to attract and retain new talent by providing the right tools and equipment,



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 - improved reputation and brand related to the establishment of quality standard for the products and services offered to customers, community productivity gains, to build trust and strengthen relationships with customers and stakeholders in the management of their data and information.

Supporting the sustainable growth of our communities: Qualitative benefits related to investments which support the expansion growth of the network include:

- improvement of collaborative culture in the business due to the expansion growth of Western Sydney region,
- improvement in risk and innovation culture,
- community productivity gains,
- better customer experience and improve customer relationship and commercial partnership,
- attract and retain new talents and higher employee engagement.





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7.2 Forecast ICT expenditure

Non-System ICT Capex is categorised as Recurrent and Non-Recurrent expenditure. Further subcategorisation of non-recurrent ICT investments are apportioned between:

- New: New or expanded ICT capability, functions, and services
- Compliance: Complying with new / altered regulatory obligations / requirements
- Recurrent: Existing ICT capability, functions and services
- Ongoing: Operational expenditure impacting the introduction of project expenditure

These categories are then distributed between **capital expenditure** related to procurement of new and existing technologies, projects, services and product and **operating expenditure** related to everyday and/or regular expenditure to manage technologies, projects, services and product.

Endeavour Energy's ICT initiative have been assigned across the AER expenditure categories and estimated in detail using the costs accounts below, with input from subject matter experts and the capture of key assumptions:

- 1. **Program Costs.** Costs related to the resources required to manage the Program including the running of the program, the management of strategic response projects, assurance and policy and legislative analysis. Considering the Program Capability sourcing approach, the costs have been calculated using a time and material allocation to individual program delivery schedules.
- 2. Other Program Costs. Costs related to any travel and hotel accommodation requirements for project team members, the consumption of technology resources, and the office accommodation requirements. The costs have been calculated as a percentage of overall program costs.
- 3. **Develop and Deploy.** Costs related to the resources required to support the planning, design, build, test and deployment of solution components under new capability projects. Considering the Program Capability sourcing approach, the costs have been calculated using a time and material allocation to individual project resource requirements and project delivery schedules.
- 4. **Infrastructure Upgrades**. Where applicable, the costs associated with maintaining existing ICT services, functionalities, capability and/or market benefits, and occurs at least once every five years.
- 5. Infrastructure Acquisition. Costs related to the provision of solution components including compute power, digital storage, network devices, bandwidth equipment and rentals, software licences and security equipment. The costs have been calculated using a standard price per size of project.
- 6. Infrastructure Maintenance. Where applicable, a recurrent percentage of 5.78% of project costs have been applied to cover licence, break fix, and support calls for technology devices, digital storage, network devices, bandwidth equipment and rental, software licences and security equipment.
- 7. Service Management. Costs related to an uplift in costs required to cover additional operational support, likely from additional capacity from ICT service providers.



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 - 8. **Contingency.** Costs related to the increases due to risks that are known, as well as unknown. The costs have been calculated as 19% of overall total expenditure costs.

An assessment of the funding for each of the Endeavour Energy's ICT initiative was made to distributed the project-related and ongoing costs between **capital expenditure** (related to procurement of new and existing technologies, projects, services and product) and **operating expenditure** (related to everyday and/or regular expenditure to manage technologies, projects, services and product).

The following table summarises the non-recurrent and recurrent capital expenditure and operational expenditure for the four investment briefs. Please refer to Section 7.4 for detail on the programs of work, their outcomes and the investment required.

\$FY24M	Capital Expenditure		Operating Expenditure			Ongoing				
	New	Comply	Recur.	Total 5 years	New	Comply	Recur.	Total 5 years	Ongoing	Total 5 years
#1 Customer Expectations	7.4	-	6.4	13.8	4.0	-	1.1	5.1	0.9	0.9
#2 Customer Future Choices	3.6	-	14.4	18.0	1.5	-	5.7	7.2	0.6	0.6
#3 Resilient Network	25.3	16.3	30.5	72.1	7.1	4.4	12.4	23.9	6.1	6.1
#4 Sustainable Growth	17.7	-	7.5	25.2	3.3	-	2.3	5.6	2.3	2.3
Total	54.0	16.3	58.7	129.0	15.9	4.4	21.5	41.7	9.9	9.9

Table 4 ICT Program Expenditure Forecast





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The following graph shows the forecast ICT expenditure by AER category on an annual basis across the period 2024 - 2029.



Figure 10 ICT Program Capital Expenditure by AER Sub Category

AER assesses the non-system ICT capital expenditure according to the category of spend (November 2019). The following paragraphs analyse Endeavour Energy's ICT capital expenditure by the category of spend:

New or expanded ICT capability, functions and services. This subcategory of non-recurrent ICT expenditures "captures the expenditures relating to the acquisition of new or expanded ICT capability, functions and services". A positive NPV needs to be the case to justify the investment. Consideration should also be given to self-funding of the investment where benefits exceed costs. The highest NPV option may not always be the chosen one as another option may achieve benefits that are qualitative or intangible, but the qualitative assumptions related to these benefits will need to be supported by evidence.

\$FY24M	New Benefit	New Cost	NPV
#1 Customer Expectations	\$12.5M	\$7.4M	\$4.6M
#2 Customer Future Choices	\$5.2M	\$3.6M	\$1.4M
#3 Resilient Network	\$52.2M	\$25.3M	\$24.0M
#4 Sustainable Growth	\$52.9M	\$17.6M	\$31.6M

Table 5 NPV Calculations for each Investment Brief

Maintaining existing services, functionalities, capability and/or market benefits. This subcategory of non-recurrent ICT expenditures "captures non-recurrent ICT expenditures that are related to maintaining existing services. Any expenditures that are incurred periodically, but on a frequency that is longer than a five-year cycle, are captured by this category". Note that if additional cost is required for new or improved



capability and capability as part of this expenditure, this will need to be reflected in the other subcategories. A positive NPV may not always be the case to justify the investment and it is reasonable to choose the least negative NPV option from a range of feasible options including the counterfactual. In this case, prudency means possible multiple timing and scope of options of the investments and efficiency means options for alternative systems and service providers.

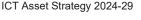
Please note that there was no investment allocated to this category for the regulatory period.

Complying with new/altered regulatory obligations/requirements. This subcategory of non-recurrent ICT expenditures "captures those expenditures that are driven by the need to comply with new or altered regulatory obligations or requirements". A positive NPV may not always be the case to justify the investment and it is reasonable to choose the least cost option. If there are possible multiple options to achieve compliance using external service providers, the costs and merits of these should be compared.

Investments in the next regulatory period in this subcategory are for cyber security purposes related to Endeavour Energy's licensing conditions about data protection and compliance with the Security of Critical Infrastructure Act 2018 and the Security Legislation Amendment (Critical Infrastructure Protection) Act 2022 to protect critical assets.

Recurrent ICT. "Recurrent ICT expenditures capture expenditures that are related to maintaining existing ICT services, functionalities, capability and/or market benefits, and occurs at least once every five years".

The current regulatory period has been a period of renewal for several capabilities, where there was significant investment that would fall into the Maintain non-recurrent subcategory (including major software asset upgrades/replacements, infrastructure replacement, data centre transition). For the next regulatory period, we will need to keep our ICT assets (both physical and intangible) more regularly updated (frequency less than every 5 years).





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7.3 IT Program Roadmap

The period to 2024 sets the foundation to deliver streamlined, integrated, and efficient systems to better manage the transitioning energy marketplace and changing customer demand. The IT Program Roadmap for 2024 - 2029 has been developed to build upon these foundations, with consideration for the realisation of the two main phases of work; Enable and Transform.

- **Enable** (FY25-27) will be dedicated to setting up Endeavour Energy to simplify capabilities and build on current foundations that will unlock value in the years to come. Initiatives within this period will primarily focus on standardising core platforms and systems, maintaining security and disaster recovery to meet regulatory requirements, uplifting data capabilities to enable further insights within the Transform phase.
- **Transform** (FY28-29) will focus on implementing strategic ICT capabilities that will change the way things have been done previously to save time and equip Endeavour Energy with the best decision-making tools. Initiatives within this period build upon capabilities established in the Enable period to improve customer experience through real-time data access and chat services, enabling distributed energy resource capabilities, providing staff with enhanced safety, communications, mobility and connectivity.

A high-level roadmap for ICT investments is depicted below, showing the programs being delivered by each priority investment theme and outcomes to be achieved.





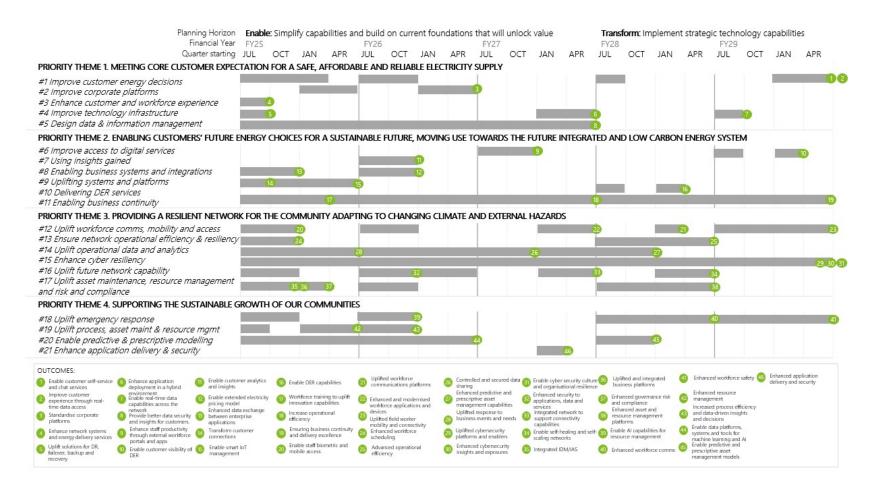


Figure 11: High-level roadmap for ICT investments.



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7.4 Summary of Key programs and projects

Each of the priority themes will be delivered through programs of work focused on the delivery of one strategic response. Note: these costs do not include the non-project related costs e.g., contingency, program management etc.

Program / Stream	Outcomes	Investment estimate			
Meeting core customer expectation for a safe, affordable and reliable electricity supply					
Improve customer energy decisions Enhance customer interactions via secure omnichannel engagement to provide efficient and reliable services and meet core customer expectations. 8 initiatives allocated to this stream.	 Improve customer experience through real-time data access Enable customer self-service and chat services 	<u>Capital Expenditure</u> New Capability - \$2.2M Recurrent - \$2.5M <u>Operating Expenditure</u> New Capability - \$3.7M Recurrent - \$0.8M			
Enhance customer and workforce experience Reduce reliance on unsupported and non- functional business systems to provide increased user productivity. 1 initiative allocated to this stream.	Enhance network systems and energy delivery services	<u>Capital Expenditure</u> New Capability - \$0.0M Recurrent - \$0.3M <u>Operating Expenditure</u> New Capability - \$0.0M Recurrent - \$0.1M			
Improve corporate platforms Standardise corporate enterprise platforms to reduce manual overhead and decrease reliance on fragmented systems to perform processes. 2 initiatives allocated to this stream.	 Standardise corporate platforms 	<u>Capital Expenditure</u> New Capability - \$0.0M Recurrent - \$0.0M <u>Operating Expenditure</u> New Capability - \$1.9M Recurrent - \$0.0M			
Improve technology infrastructure <i>Improve efficiency and effectiveness of</i> <i>infrastructure to maintain service continuity</i> <i>and safe supply of network services.</i> 3 initiatives allocated to this stream.	 Uplift solutions for disaster recovery, failover, backup and recovery Enhance application deployment in a hybrid environment Enable real-time data capabilities across the network 	<u>Capital Expenditure</u> New Capability - \$0.3M Recurrent - \$1.9M <u>Operating Expenditure</u> New Capability - \$0.0M Recurrent - \$0.3M			





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Program / Stream	Outcomes	Investment estimate
Design data and information management Uplift security access to customer data and records and related insights. 4 initiatives allocated to this stream.	 Provide better data security and insights for customers 	<u>Capital Expenditure</u> New Capability - \$2.8M Recurrent - \$0.6M <u>Operating Expenditure</u> New Capability - \$0.0M Recurrent - \$0.2M
Enabling customers' future energy choic integrated and low carbon energy system	-	us towards the future
Increase access to digital services Enhance foundational platforms for the delivery of digitally enabled services to customers, particularly partner and supplier self-service capability. 3 initiatives allocated to this stream.	 Enhanced power consumption visibility for customers and staff Enable customer visibility of DER 	<u>Capital Expenditure</u> New Capability - \$0.6M Recurrent - \$0.8M <u>Operating Expenditure</u> New Capability - \$0.2M Recurrent - \$0.3M
Enable future integrated energy system <i>Transform platforms to reduce reliance on</i> <i>unsupported and non-functional systems</i> <i>and provide capabilities to enable future</i> <i>integrated energy system.</i> 2 initiatives allocated to this stream.	 Transform customer connections Enable smart IoT management 	Capital Expenditure New Capability - \$0.0M Recurrent - \$2.7M <u>Operating Expenditure</u> New Capability - \$0.3M Recurrent - \$0.7M
Deliver DER services Uplift infrastructure enabling platforms to deliver DER enablement and management services. 2 initiatives allocated to this stream.	Enable DER capabilities	<u>Capital Expenditure</u> New Capability - \$0.0M Recurrent - \$0.7M <u>Operating Expenditure</u> New Capability - \$0.0M Recurrent - \$0.1M
Enable extended electricity pricing model Enhance organisational efficiency, increase integration and inter-operability and enhance flexibility to adapt to regulatory changes.	 Enable extended electricity pricing model Enhanced data exchange between enterprise applications 	<u>Capital Expenditure</u> New Capability - \$0.0M Recurrent - \$1.7M <u>Operating Expenditure</u> New Capability - \$0.0M Recurrent - \$0.4M



Program / Stream	Outcomes	Investment estimate
2 initiatives allocated to this stream.		
Enable data-driven decisions Enhance the efficiency and accuracy of data insights and enable data-driven decisions. 1 initiative allocated to this stream.	 Enable customer analytics and insights 	<u>Capital Expenditure</u> New Capability - \$1.0M Recurrent - \$0.0M <u>Operating Expenditure</u> New Capability - \$0.2M Recurrent - \$0.0M
Ensure delivery excellence Uplift technology capabilities to deliver solutions aligned to business outcomes. 8 initiatives allocated to this stream.	 Workforce training to uplift innovation capabilities Increase operational efficiency Ensuring business continuity and delivery excellence 	Capital Expenditure New Capability - \$1.1M Recurrent - \$4.8M <u>Operating Expenditure</u> New Capability - \$0.6M Recurrent - \$3.6M
Provide a resilient network for the comm	unity adapting to changing climate	and external hazards
Uplift workforce communications, mobility and access Provide staff with a modernised experience through enhanced workforce applications and devices, connectivity, access to platforms and locations. 10 initiatives allocated to this stream.	 Enable staff biometric and mobile access to internal platforms and locations Uplifted field worker mobility and connectivity Uplifted workforce communications platforms Enhanced and modernised workforce applications and devices 	Capital Expenditure New Capability - \$4.1M Recurrent - \$4.0M <u>Operating Expenditure</u> New Capability - \$1.0M Recurrent - \$2.1M
Ensure network operational efficiency and resiliency Enhance systems to improve operational efficiency and resiliency through uplifted workforce scheduling management and OT systems. 2 initiatives allocated to this stream.	 Enhanced workforce scheduling Advanced operational efficiency 	<u>Capital Expenditure</u> New Capability - \$2.7M Recurrent - \$0.0M <u>Operating Expenditure</u> New Capability - \$0.6M Recurrent - \$1.0M





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Program / Stream	Outcomes	Investment estimate
Uplift operational data and analytics Design and implement enhancements to records management, data platforms and analytics capabilities to enable modelling of business events, predictive and prescriptive asset management, and controlled data sharing with internal and external stakeholders in compliance with regulations. 8 initiatives allocated to this stream.	 Uplifted response to business events and needs Controlled and secured data sharing Enhanced predictive and prescriptive asset management capabilities 	<u>Capital Expenditure</u> New Capability - \$8.5M Recurrent - \$3.6M <u>Operating Expenditure</u> New Capability - \$0.8M Recurrent - \$7.0M
Enhance cyber resiliency ⁸ Uplift cyber security platforms and enablers, insights and exposures, and cultivate a cyber safety culture for staff and partners 6 initiatives allocated to this stream.	 Uplifted cybersecurity platforms and enablers Enhanced cybersecurity insights and exposures Enable cyber security culture and organisational resilience 	<u>Capital Expenditure</u> Comply – \$12.5M Recurrent - \$5.4M <u>Operating Expenditure</u> Comply – \$3.9 Recurrent - \$1.7M
Uplift future network capability Uplift network infrastructure to ensure integration and connectivity, enable self- healing and self-scaling and enhance security 6 initiatives allocated to this stream.	 Enhanced security to applications, data and services Integrated network to support connectivity capabilities Enable self-healing and self- scaling networks 	<u>Capital Expenditure</u> New Capability - \$0.0M Recurrent - \$7.1M <u>Operating Expenditure</u> New Capability - \$0.0M Recurrent - \$0.0M
Uplift asset maintenance, resource management and risk and compliance Enhance corporate and business system platforms to uplift asset and resource management, enable integrated identity management and identity authentication	 Integrated IDM/IAS Uplifted and integrated business platforms Enhanced governance risk and compliance 	<u>Capital Expenditure</u> New Capability - \$3.8M Recurrent - \$2.4M <u>Operating Expenditure</u> New Capability - \$3.9M



⁸ Initiatives within this program directly address cyber security risks, and it is important to note these may form part of the requirements by the Federal Government in response to the changes made on 22 November 2021 to the Security of Critical Infrastructure Act 2018. We are currently in the process of determining the right number of investments needed to meet this requirement, therefore this analysis may not be finalised before the completion of this investment brief. Any revisions to these initiatives in the future to address the requirements from the changes to the Security of Critical Infrastructure Act 2018 will be based on rigorous analysis.

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Program / Stream	Outcomes	Investment estimate				
service (IDM/IAS) and business platforms, and enhance governance risk and compliance 7 initiatives allocated to this stream.	Enhanced asset and resource management platforms	Recurrent - \$0.0M				
Supporting the sustainable growth of ou	Supporting the sustainable growth of our communities					
Uplift emergency response Enhance communications, flexibility and mobility in the workforce through the development of artificial intelligence and Augmented Reality/Virtual Reality (AR/VR) capabilities for field workers. 4 initiatives allocated to this stream.	 Enable artificial intelligence capabilities for resource management Enhanced workforce communications Enhanced workforce safety 	Capital Expenditure New Capability - \$6.8M Recurrent - \$1.1M <u>Operating Expenditure</u> New Capability - \$2.1M Recurrent - \$0.2M				
Uplift process enhancements, asset maintenance and resource management Uplift corporate and business platforms to enhance management of resources and drive process enhancements. 3 initiatives allocated to this stream.	 Enhanced resource management Increased process efficiency and data-driven insights and decisions 	Capital Expenditure New Capability - \$0.0M Recurrent - \$1.5M <u>Operating Expenditure</u> New Capability - \$0.3M Recurrent - \$0.4M				
Enable predictive and prescriptive modelling Uplift data platforms, systems and tools to enable machine learning and artificial intelligence data capabilities and predictive and prescriptive asset management models. 6 initiatives allocated to this stream.	 Enable data platforms, systems and tools for machine learning and artificial intelligence Enable predictive and prescriptive asset management models 	<u>Capital Expenditure</u> New Capability - \$6.5M Recurrent - \$3.1M <u>Operating Expenditure</u> New Capability - \$0.2M Recurrent - \$1.5M				
Enhance application delivery and security Enhance application delivery and security by implementing the required infrastructure for delivery of self-service deployment portal. 1 initiative allocated to this stream.	Enhanced application delivery and security	<u>Capital Expenditure</u> New Capability - \$0.4M Recurrent - \$0.0M <u>Operating Expenditure</u> New Capability - \$0.0M Recurrent - \$0.0M				



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8 Implications for 2030 and beyond

The period to 2024 sets the foundation to deliver streamlined, integrated, and efficient systems to better manage the transitioning energy marketplace and changing customer demand. The period 2024-2029 leverages this foundation and enables Endeavour Energy to simplify capabilities and start transforming strategic technology capabilities to save Endeavour Energy time and equip Endeavour Energy with the best decisions making tools.

For the period 2030 and beyond, the focus transitions from completing the transformation of strategy technology capabilities to harnessing innovation to build sustainable automated technology ecosystems that are agile and flexible.

The outcomes to be achieved beyond 2030 continue Endeavour Energy's priority themes:

- Meet core customer expectations for a safe, affordable and reliable electricity supply by simplifying capabilities and building on current foundations to unlock value.
 - o Enabling adaptive customer experience
 - o Transforming self-service through automation of services
- Enable and facilitate customers' future energy choices and known preferences through the provision of smart, seamless digital service platforms, secure connectivity to behind the meter devices, and support for real-time flow of data.
 - o Transforming platforms to facilitate external partnerships
 - o Developing technology solutions to support Business Divisions
 - o Enhancing power consumption visibility for customers
- Provide a resilient network by supporting delivery of network services through enhanced platforms and services for increased protection against cyber security threats and to comply with regulatory obligations such as the Security of Critical Infrastructure Act; and to enhance data and analytics to make better informed enterprise decisions and information sharing requirements
 - o Transforming the business resilience posture
 - o Providing pervasive information for field staff
 - o Extending data platforms to address emerging needs
 - $_{\odot}$ $\,$ Enhancing workforce connectivity with dedicated 5G & DAS infrastructure $\,$
 - o Implementing AI monitoring & self-healing network
 - o Implementing Predictive maintenance



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 - Support the sustainable growth of our communities by enabling and supporting the provision and operation of systems and non-network assets in greenfield areas such as Western Sydney Airport through better data and insights, enhanced operational capabilities and automation.
 - o Implementing wearable device & motion detection as part of end-user technology
 - Enhancing Al-driven process efficiency
 - Enabling virtual reality training





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