Jemena Gas Networks (NSW) Ltd

Technology Plan

2025 - 2030

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Glossary

Current Regulatory Period	The five-year regulatory period covering 1 July 2020 to 30 June 2025
Guidance Note	The AER's ICT Guidance Note, released 2019
Investment Briefs	A supporting business case for investment and operational implementation of a given non-recurrent project
Jemena	The parent company of Jemena Gas Networks (NSW) Ltd.
Next Regulatory Period	The five-year regulatory period covering 1 July 2025 to 30 June 2030
Office 365	Office suite of desktop systems
Picarro	Picarro is the leading provider of enhanced optical spectroscopy analytical solutions that empower the world with timely, trusted, and actionable data
Previous Regulatory Period	The five-year regulatory period covering 1 July 2015 to 30 June 2020
Totex	The total of operating expenditure and capital expenditure

Abbreviations

AA	Access Arrangement
ACCC	Australian Competition and Consumer Commission
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AESCSF	Australian Energy Sector Cybersecurity Framework
AI	Artificial Intelligence
ASD	Australian Signals Directorate
CAM	Cost Allocation Methodology
Capex	Capital Expenditure
CX	Customer Experience
ECC	ERP Central Component
ERP	Enterprise Resource Planning
ESG	Environmental, Social and Governance
IaaS	Infrastructure As a Service
ICT	Information, Communications and Technology
IoT	Internet of Things
JGN	Jemena Gas Networks (NSW) Ltd
MDMS	Meter Data Management System
ML	Machine Learning
MSATS	Market Settlement and Transfer System
MSI	Market System Integrator Application
NECF	National Energy Customer Framework
NGR	National Gas Rules
NIST	National Institute of Standards and Technology
NMS	Network Management System
NPV	Net Present Value
Opex	Operating Expenditure
PaaS	Platform As a Service
PSC	Project Steering Committee
RIN	Regulatory Information Notice
RTS	Real-time Systems
SaaS	Software As a Service
STTM	Short Term Trading Market System
TCO	Total Cost of Ownership

Overview

This plan sets out the essential technology tasks Jemena Gas Networks (NSW) Ltd (JGN) carries out to ensure that our systems remain sustainable and secure and that we always maintain operational safety to safeguard the security and reliability of the gas networks in NSW. In parallel with these objectives, we explore opportunities to introduce new and innovative technology options to optimise how services are delivered to customers.

The following critical factors have been considered during the development of our initiatives for the 2025-30 regulatory period (next regulatory period, 2025-30 period):

Regulatory Compliance
Jemena (JGN's parent company) prioritises maintaining legal and regulatory compliance, which can require adopting new technologies or modifying existing systems. Thus, we prioritise building an adaptable and responsive Information and Communications Technology (ICT) environment to accommodate necessary changes efficiently. This approach ensures regulatory compliance and strengthens organisational resilience against evolving technology standards.

Accounting Treatment
Changes in the way accounting standards are interpreted, such as those introduced by International Financial Reporting Standards (IFRS), are impacting our ICT ecosystem because of the changing nature of ICT expenditure types, influencing asset recognition and management practices. Furthermore, the varying treatment of capital expenditure (capex) to operating expenditure (opex) among other regulated network businesses highlights the importance of adhering to regulatory frameworks and compliance requirements in our ICT investments.

Industry Trends
The industry trend towards Software-as-a-Service (SaaS) and recurring subscription services is significantly reshaping the ICT environment through the changing nature of products offered by vendors. This shift entails a move from capex to opex in our expenditure programs and ICT transformation efforts, necessitating adjustments in our approach towards pay-as-you-go models and opex-oriented strategies, particularly in cloud migration initiatives. Vendor shifts towards annualised subscriptions require more active management to optimise costs.

SaaS service providers hold significant market power due to factors like high switching costs and data advantages. Dominant vendors may limit choice, promote lock-in, and stifle innovation. Industry trends are shaped by their actions, with potential impacts on competition, increased cost of services, and innovation dynamics across the SaaS ecosystem.

Over the past few regulatory periods, our focus has been on building a solid foundation consisting of up-to-date applications and cloud-based platforms. Our cloud platform grants us a versatile and cost-efficient level of technological capability. Moreover, we maintained enough flexibility to effectively handle new responsibilities, including managing increasing cybersecurity threats, increased use of data and analytics and a greater focus on access to information and customer data rights. Moving forward, we anticipate continuing to uphold and utilise our core solutions if it is prudent and efficient to do so, which we expect to be the case well into the next period.

Our Customers
Over the last 18 months, an extensive series of customer engagement sessions have been held, and our customers have provided us with considered and insightful feedback, which has been instrumental in developing our 2025-30 revision access arrangement (2025 Plan). Our gas customers are very clear on the key values that they expect our ICT plan to address, which we have used as key focus areas when developing each of our initiatives for the 2025-30 period. These are explored in detail in Section 5.2 but can be summarised as affordability, reliability and safety, fairness, choice, and the environment.

1. Introduction

1.1 Purpose and structure of this document

This document explains our proposed ICT opex and capex for the 2025-2030 period to ensure our gas network distribution system, and the services we provide, remain safe, reliable, and secure. This is necessary to ensure that we respond to our customers' needs and that we do so in way that our gas distribution services remain affordable. This document addresses capex that falls within the definition of software expenditure previously reviewed by the Australian Energy Regulator (AER), as well as opex. Throughout this document, capex and opex are collectively referred to as Information and Communications Technology (ICT) total expenditure (totex), which is applicable to the reference service provided by JGN.

Unless otherwise stated, all financial numbers in this document are presented in real $2023 AUD.

This document is structured and flows as follows:

- Introduction: Explains the document's relevance to other ICT supporting documents, outlines the role of ICT in our business, and discusses our customer-centric approach.

- Regulatory and Accounting Context: Discusses regulatory frameworks such as the AER's expenditure guidance, the Australian Energy Sector Cybersecurity Framework and IFRS impacting the gas distribution landscape and treatment of expenses.

- Technology Context: Provides insights into our ICT infrastructure and highlights key industry trends influencing our ICT strategy and technological investments.

- Current Regulatory Period: Offers an overview of our technology capex for the current regulatory period, including compliance with AER's 2020-25 Final Decision.

- Next Regulatory Period ICT Objectives and Outcomes: Outlines our extended technology roadmap, encompassing applications and infrastructure, for the Next Regulatory Period. This includes the planned objectives and strategic themes guiding our ICT capex forecast.

- Forecasting Expenditure Approach: Details the principles, processes, methods, and tools used to forecast our ICT capex for the next regulatory period.

- Forecast ICT Expenditure: Addresses project-related costs and additional ongoing maintenance expenses associated with ICT projects, including trailing operational expenses.

- Governance Framework: Describes the governance framework supporting our ICT capex and outlines how we will source and deliver our ICT capex program during the next regulatory period.

1.2 Relationship to other ICT supporting documents

This Technology Plan provides information about our ICT totex forecast for the 2020-25 period. The plan represents a collective output of business and technology strategies, roadmaps, policies, and standards that support the efficient running of the distribution network business and technologies used to provide services.

A significant part of our ICT totex is directed at maintaining the performance of our ICT assets to ensure they continue to allow us to deliver the services our customers expect. We undertake operational risk assessments with life cycle and capacity plans to identify when an ICT system's risk profile may change so that we can optimise the scope and timing of remediation solutions. Reviews are also undertaken regularly to evaluate the performance of software and hardware; these evaluations consider the current level of performance compared to the expected service levels, the frequency of incidents or interruptions, end-user or customer response times when using a service, and many other key performance criteria.

We also consider the rate of expected growth in usage of an ICT service which may include the number of new customer connection points, the number of system users and new or changed regulatory obligations that occur from time to time. Once performance evidence indicates the degradation of a service, then changes are planned and implemented to remediate the problem.

This Technology Plan and the resulting investment requirements is influenced by several internal and external inputs which are captured and then assessed to determine whether a capability gap exists for any new or changed capability or anticipated service level requirement. Examples of external influences include customers and customer representatives, small business groups, large customers, and retailers. Also, we are subject to changes in regulatory obligations that come from regulatory and legal authorities, including the Australian Energy Market Commission (AEMC), Australian Energy Market Operator (AEMO), Australian Competition and Consumer Commission (ACCC) and State Governments.

Internally, technology is classified primarily as an enabler of the business. Therefore, investment requirements can be based on business requirements requested by teams with responsibility for the planning and delivery of services to customers. Jemena's ICT group also contribute to the list of projects in this Technology Plan, which focuses on technology infrastructure and operational requirements to ensure the state of the technology ecosystems remains fit for purpose.

Irrespective of the initiation source of a proposed technology change or requirement, a robust and standardised governance process is employed, including establishing business requirements, assessing proposed timing and prioritisation, planning and financial approval—crucially, ensuring all investments made are in the long-term interests of our customers.

Figure 1 shows the relationship between this Technology Plan and other ICT documents and financial models, which form part of JGN's next regulatory proposal. These materials form a part of our overall 2025-30 Plan.

Figure 1: JGN AA proposal artefacts
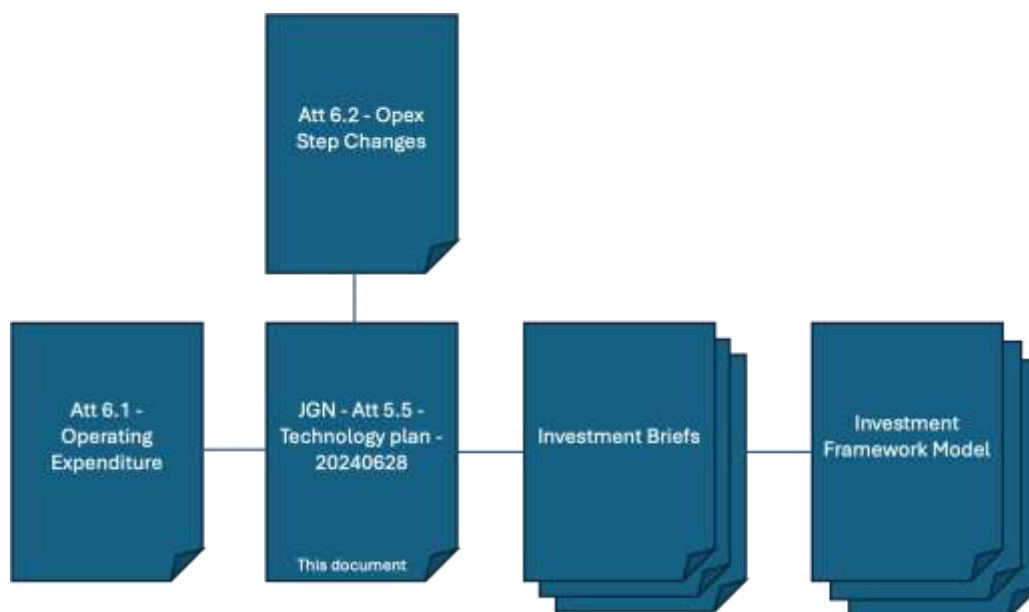
2. Regulatory and Accounting Context

2.1 Regulatory Context

Meeting regulatory compliance often necessitates implementing new technologies or alterations to existing systems. In this context, it is imperative for us to position our ICT environment to be adaptable and responsive, capable of accommodating these necessary changes. By ensuring the agility and flexibility of our ICT landscape, we not only fulfill our regulatory commitments to work towards the long-term interests of our customers, but also reinforce our organisational resilience in the face of regulatory shifts and evolving compliance standards.

There are emerging reporting and legislation requirements that JGN is obliged to comply with, which have been a driving factor behind some of our initiatives. These include:

National Institute of Science and Technology (NIST) Cybersecurity Framework[1] and Australian Energy Sector Cybersecurity Framework (AESCSF)[2]

Jemena uses the NIST Cybersecurity Framework and the AESCSF to assess its cyber-security risk and has an appropriate level of maturity when measured against these frameworks.

In addition to these frameworks, we use threat intelligence from Government and commercial organisations to inform the planning and implementation of appropriate controls and risk-reduction strategies. This approach allows us to deploy controls based on current techniques, tools and procedures used by cyber-adversaries today and into the future. Jemena currently uses general cybersecurity threat intelligence services provided by external agencies that are experts in their field. As products and vendor offerings around security evolve, we may change systems over time.

Security of Critical Infrastructure Act 2018 (SOCI)[3]

Jemena must adhere to the SOCI Act requirements, maintaining and reporting the supply chain risk register as part of its critical infrastructure risk management program. This includes monitoring contracts for risk identification and mitigation planning. An example of this is our initiative to implement a Contract Lifecycle Management System that strengthens our infrastructure security by ensuring risk management is dealt with appropriately, automating risk monitoring, enhancing accuracy and compliance, and facilitating collaboration and transparency.

Modern Slavery Act 2018 (MSA)[4]

The MSA aims to increase transparency and accountability in supply chains, raise awareness of modern slavery issues, and encourage businesses to take proactive steps to prevent and address exploitation and human trafficking. Our Contract Lifecycle Management System initiative details the importance of implementing effective procurement practices to assess and address modern slavery risks across our operations and supply chains. Proactive risk mitigation, including supplier screening and tiering of the supply chain, is crucial. Without a monitoring system, there is a heightened risk of non-compliance with this legislation.

Scope 3 Emissions Reporting[5]

Jemena is committed to assessing Scope 3 emissions, which include emissions from upstream and downstream activities in our supply chains, as part of our Environmental, Social and Governance (ESG)

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[1] National Institute of Science and Technology (NIST) Cybersecurity Framework

[2] Australian Energy Sector Cyber Security Framework (AESCSF)

[3] Security of Critical Infrastructure Act 2018 | (legislation.gov.au)

[4] Modern Slavery Act 2018 | (legislation.gov.au)

[5] Mandatory climate-related financial disclosures | Commonwealth Governmentt (treasury.gov.au)

strategic theme and mandatory climate-related financial disclosures. We will begin reporting from 1 January 2025, with the first report scheduled for publication in 2026.

To address the challenges in emissions reporting caused by reliance on individual supplier reports or internal estimations, we are proposing the implementation of a Contract Lifecycle Management System. This system provides a centralised data repository, standardised contract templates, automated reporting and tracking, supplier performance monitoring, and integration with environmental management systems. These features enable comprehensive reporting and analysis, ultimately improving the accuracy and efficiency of our Scope 3 emissions assessment process.

JGN must continue to maintain our systems to comply with existing obligations. Key systems which are directly involved with our market interactions, for example, the Short-Term Trading Market System (STTM), need to be maintained in a supportable way that allows them to be able to be modified to accommodate future market initiatives.

We must also continue to respond to new obligations, and in many cases, achieving regulatory compliance requires new or changed systems' capability.

2.2 Changing Reporting Requirements Impacting ICT

Since developing our 2020 Plan, several significant changes have been made to the way we capture and record ICT-related expenditures. These significant changes present complex challenges requiring us to develop a financial model that complies with all of the changes concurrently. The most significant change is reporting a large portion of our ICT costs as opex rather than capex. A summary of these changes and the need for concurrency is depicted in Figure 2 below.

Figure 2: Changes impacting ICT

Changes to IFRS accounting interpretations and the treatment of opex v capex for subscription service (e.g. SaaS) arrangements

The AER has set out a framework for assessing ICT expenditure on a Totex basis

The expenditure guideline largely considers opex and capex on a standalone basis, however, does consider opex/capex tradeoff

Our proposal navigates these multiple frameworks as well as addresses the changes over time

RIN reporting (forward-looking) and incentive metrics (backward-looking) requires expenditure to be reported differently

International Financial Reporting Standards

The recent regulatory changes issued by the IFRS Interpretation Committee in April 2021 have significant implications for the accounting treatment of ICT costs, including SaaS costs. Under the new guidelines, costs associated with configuring or customising SaaS platforms and ongoing subscription fees are now classified as opex when they were previously classified as capex. Conversely, expenses related to software development

activities that enhance, modify, or add capability to existing on-premises systems are to be treated as capex in relation to intangible software assets.

These changes directly impact how Jemena has had to account for ICT-related costs. Specifically, the transition from categorising certain expenses as capex to opex has led to a significant increase in operating expenses, which were previously reported as capex. The timing of these changes is depicted in Figure 3 below.

Figure 3: IFRS publication timeline and impact
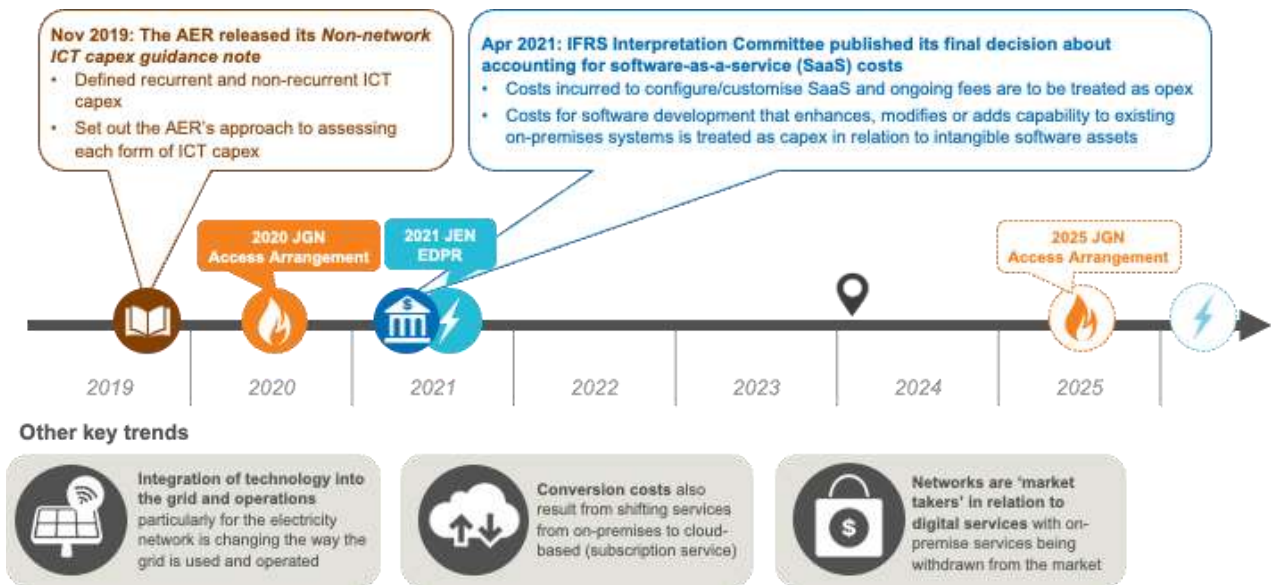
In our Draft 2025 Plan[6], we demonstrate the change in the treatment of these expenses and the transition over time.

AER Expenditure Guidelines

Firstly, the industry-wide move towards SaaS is reshaping our capital programs, particularly in replacing Data Centre assets. This shift entails a transition from capex to opex as we embrace pay-as-you-go models. Furthermore, our ICT transformation efforts, including cloud migration, are evolving towards opex-oriented strategies, requiring us to adapt our approach accordingly.

Secondly, vendors are increasingly transitioning towards recurring subscription services, moving away from traditional licence plus maintenance models. This rapid shift towards annualised subscriptions, aimed at safeguarding revenue, has implications for our ICT ecosystem, including the "orphaning" of heritage products previously under licence. Additionally, the proliferation of fully hosted SaaS solutions is narrowing our ICT options.

Moreover, changes in accounting standards, such as those introduced by IFRS, are altering the recognition of assets in ICT projects. These changes restrict the scope of projects eligible for asset recognition and reduce the capture of first-year costs in assets, requiring us to reassess our asset management practices.

Lastly, it's essential to note that the IFRS reporting treatment of capex to opex conversion in regulation varies among network businesses. This discrepancy underscores the need for careful consideration of regulatory frameworks and compliance requirements as we navigate the transition from capex to opex in our ICT investments.

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[6] Jemena Gas Networks Draft 2025 Plan, section 5.3.6

AER ICT Guidelines

Assessing the efficiency of ICT expenditure across distribution businesses can be complex, especially because of the different approaches taken by each business to deploying ICT systems and accounting for ICT expenditure. This is compounded all the more due to the rapidly changing technology landscape, which makes the comparison of ICT expenditure across distribution businesses more difficult.

In 2019, the AER developed an ICT Expenditure Guidance Note (Guidance Note)[7] that set out a methodology to standardise its approach to considering ICT proposals in regulatory submissions. Whilst the Guidance Note was designed for the electricity distributions businesses, it can be equally applied to gas distribution businesses. Also, we note that the guideline has not been updated for the impact of IFRS reporting requirements. Having said that, JGN has considered this guideline note in developing its 2025 Plan.

Regulatory Information Notice Reporting

During the 2020-25 period, the AER introduced annual Regulatory Information Notice (RIN) reporting obligations onto JGN. This new set of obligations requires JGN to report financial and non-financial information to the AER annually for analysis purposes. In addition to the annual RIN, JGN must provide RIN related information as a part of its 2025 Plan; this information is similar to the annual RIN reporting, however, covers a wider timeframe, including the current regulatory period and next regulatory period.

The RIN sets out specific format, interpretation, and framework for reporting financial and non-financial information each year. This framework has linkages to account standards, audit standards, and other reporting requirements, making it quite unique relative to the other reporting and costing requirements.

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[7] AER, Guidance Note - Non-network ICT capex assessment approach for electricity distributors, 28 Nov 2019.

3. Technology Context

This section explains our current ICT environment and the key industry ICT trends impacting how we deliver services to our customers.

3.1 Industry trends and impacts on Jemena

We explore some of the key industry trends impacting the technological landscape, recognising their influence on our operations. As we navigate these dynamic shifts, our focus is on crafting a strategy that embraces technologies and innovation[8] whilst effectively addressing evolving industry dynamics. Central to our approach is our commitment to meeting customer expectations and regulatory obligations, underpinned by the objective of continuing to improve the expenditure efficiency of our ICT operating model.

Figure 4: Industry changes and trends impacting JGN's ICT

3.1.1 Cloud Computing & Vendor Dominance

Cloud technologies have become a dominant force in the industry, driving significant trends across the energy distribution sector and away from more traditional on-premises systems.[9] Several prominent trends related to cloud technologies are shaping the industry landscape:

1. **Scalability and Agility:** Cloud platforms offer unparalleled scalability, allowing energy distribution businesses to swiftly adjust their computing resources based on demand. This flexibility enables companies to effectively manage workload fluctuations, adapt to changing market conditions, and expand their services with relative ease.

2. **Data-driven Insights:** Cloud-based analytics tools provide energy distribution companies with powerful data analysis capabilities. By leveraging cloud services, businesses can gain valuable insights from vast amounts of operational data, enabling them to make informed decisions, optimise grid performance, predict maintenance needs and more accurately forecast energy demand (including peak, seasonal and sector-specific patterns).

3. **Integration and Collaboration:** Cloud technologies promote integration and collaboration across various systems and stakeholders within the energy distribution ecosystem. Through cloud-based integration platforms, companies can efficiently connect internal and external systems, facilitating

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[8] Innovation is important regardless of whether a business is in the inception, growth, maturity, or declining phases of product and service development. The only difference is the type and approach to innovation.

[9] Accenture. (2020). *The cloud imperative for the energy industry*. Cloud Computing in the Energy Industry | Accenture

streamlined data exchange, process automation, and enhanced collaboration with partners, suppliers, and customers.

4. **Enhanced Security and Compliance:** Cloud service providers prioritise robust security measures, strengthening the protection of sensitive data and compliance with data security regulations. By leveraging cloud technologies, gas distribution businesses can strengthen their cybersecurity defences, benefiting from advanced encryption, threat detection, and access control mechanisms offered by reputable cloud providers.

5. **ICT Transformation and Innovation:** Cloud adoption drives ICT transformation initiatives within the energy distribution industry. By migrating legacy systems and applications to the cloud, gas distribution businesses can modernise their IT infrastructure, optimise operations, and leverage emerging technologies such as the Internet of Things (IoT), artificial intelligence (AI), and machine learning (ML) for advanced grid management, smart metering, customer engagement and other services expected by our customers.

The utilities industry consensus seems to be that embracing cloud technologies empowers businesses such as ours to remain efficient, meet customer expectations, and unlock new opportunities for innovation and growth in a rapidly evolving energy landscape. Thus, there has been an industry-wide shift to SaaS.

Vendors further drive this shift as they phase out on-premises services and support. This shift often involves orphaning legacy products previously offered under a licensing model. For example, SAP has announced support for its current ECC 6 will cease in 2027, after which it will offer an optional extended maintenance phase until December 2030, ▮▮▮ ▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ flexibility and optionality of services are constrained. This has significant implications for businesses like ours, as it ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ With SaaS, the software is hosted and maintained by the vendor, and their customers access it via a subscription rather than purchasing a license. Along with the recent changes to interpreting IFRS—which introduced changes that limit what ICT projects can be recognised as assets (capex) and reduced the capture of first-year costs in the asset—this has generated a large increase in opex costs for distribution businesses. Therefore, we must carefully consider potential capex to opex trade-offs and alternative vendor solutions when assessing cloud solutions.

JGN recognised the potential through the adoption of cloud computing as a key enabler of the Jemena ICT transformation program in FY20, swapping its life cycle and growth capex plans and executed it's "Cloud Adoption" program - migrating 100+ corporate applications in FY22 (including customer-facing workloads) to a public cloud environment hosted by Amazon Web Services (AWS). Jemena's adoption of Cloud computing remains consistent with good industry practice, and accordingly, Jemena continues to increasingly utilise cloud-based services. For instance, the Office 365 suite provides end-user services such as email, collaboration, management reporting, active directory, and device management services. Cloud platforms are also in place to support analytics, mobile services, cloud integration and portal services. 'Success Factors' provides cloud-based services for HR management and employee training. In addition, a key component of our technology platform is our integration layer, which is provided by 'webMethods' and runs on our AWS platform.

This technology will continue to be extended to support most new workloads underpinning the way services are provided to the business and customers. We continue to monitor the maturity of office suite solutions as cloud technology develops further, and, in line with our governance processes, will consider alternative options at the expiration of our current agreements relating to this service.

3.1.2   Cybersecurity

Digitalisation has permeated and altered all aspects of our day-to-day lives; organisations and individuals now have more access to information, communication options and an environment that adapts to the way people and organisations want to work and interact. This has created opportunities to evolve business models, better understand customers, create simpler processes and improve business efficiency. However, with this comes

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[10] Locating ICT assets and services within Australia is a legal and regulatory requirement for JGN.

increased exposure to cybersecurity risks, and with the increasing digitisation of gas distribution networks, cybersecurity and data privacy have emerged as critical concerns for utilities and our customers.

Cybersecurity risks continue to challenge companies in Australia and across the critical infrastructure sector. In 2022, cyber incidents reported to the Australian Signals Directorate (ASD) have seen the utility sector move into the top 10 industries based on the volume of reported incidents (see Figure 5).[11] Additionally, The ASD's 2023 Cyber Threat Report highlights that the number of cyber incidents in Australia are maintaining their upward trend.[12] In FY23, approximately 94,000 cyber incidents were reported to the ASD, a 24% increase from the 76,000 reported the previous year and a rate of growth that greatly out paces the business growth. In the same period, 143 cybersecurity incidents were related to critical infrastructure operational technology and across Australia, significant data breaches resulted in millions of Australians having their information stolen. Cyber threats are expected to continue increasing, with Gartner predicting[13] that by 2025, 30% of critical infrastructure worldwide will experience a breach that will result in the halting of either operations or mission-critical cyber-physical systems.

Figure 5: ASD's top 10 industry sectors for cybersecurity incidents in FY22

Industry Sector	Percentage
Electricity, Gas, Water and Waste Services	3%
Financial Insurance Services	4%
Manufacturing	4%
Construction	4%
Professional, Scientific and Technical Services	7%
Education and Training	7%
Information Media and Telecommunications	8%
Health Care and Social Assistance	9%
Government - State/Territory/Local	10%
Government - Commonwealth	24%
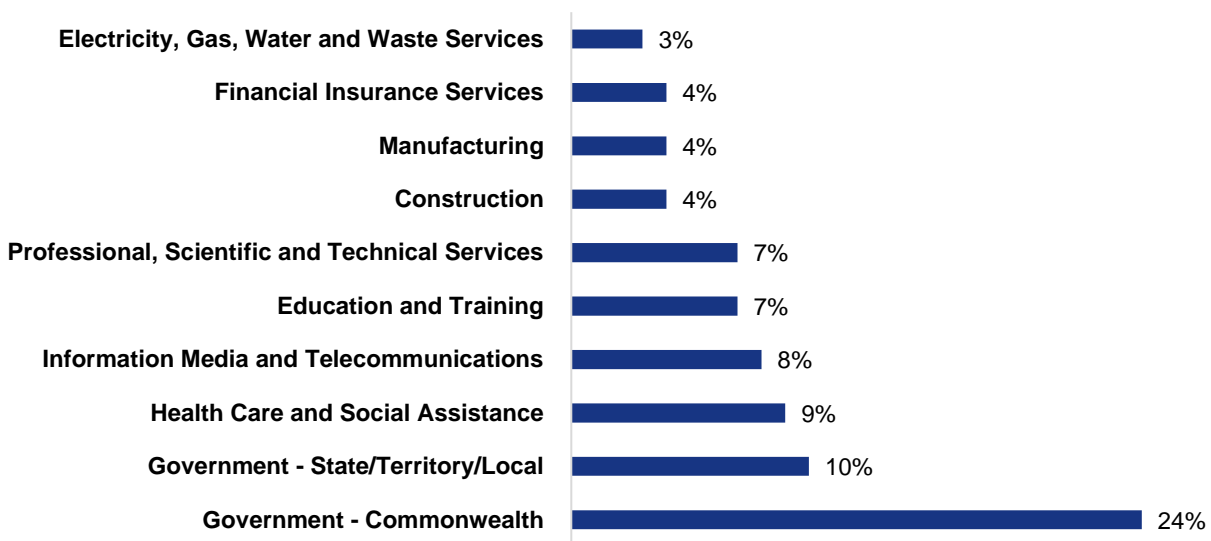
Cybersecurity is a key threat for several material risks as identified under Jemena's implementation of the Security of Critical Infrastructure legislation. Under this legislation, Jemena is required to identify and mitigate material risks to the continued operation of the asset in its Risk Management Plan. JGN has been identified as a critical asset under this legislation, and therefore, JGN has critical obligations that it must comply with.

To date, we have undertaken a significant level of effort and activity to make our technology environments more resilient so that in the event of an attack we are prepared and ready to restore services as quickly as possible and with minimal loss. Jemena invests in its cybersecurity function with an ongoing recurrent commitment that allows us to manage known and emerging risks. By continually assessing threat intelligence, Jemena has increased its cybersecurity capability over the past five years, investing in staff and technology to implement key controls as outlined Table 1.

Table 1: Cybersecurity capabilities

Key Control	Objective / Description
User Awareness	User awareness aims to improve security by mitigating potential human error, protecting against social engineering and phishing attacks, enabling

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[11] ACSC-Annual-Cyber-Threat-Report-2022_0.pdf

[12] ASD Cyber Threat Report 2022-23

[13] Gartner predicts 30% of critical infrastructure organisations will experience a security breach by 2025 | Gartner (gartner.com)

Key Control	Objective / Description
	early threat detection and reporting, ensuring compliance with regulations, and safeguarding the company against malicious attacks.
Mail Filtering	Blocks targeted inbound email attacks targeted at credential phishing, business email compromise, supply chain fraud, etc.
Managed Detection and Response	Managed detection and response (MDR) are a cybersecurity service that combines technology and human expertise to perform threat hunting, monitoring, and response of end point devices. MDR enables rapid identification and response to limit the impact of threats.
Network Segmentation	Network segmentation involves partitioning a network into smaller networks with an aim to restrict the level of access to sensitive information, hosts and services.
Vulnerability Management	Vulnerability management is the process of identifying, evaluating, treating, and reporting security vulnerabilities in systems and the software that runs on them.
Zero Trust Exchange	Isolates network connectivity limiting exposure of services directly to the internet, reducing risks of distributed denial of service attacks.
Geographical Blocking	Automatically restricts access to the corporate system making them accessible from within the Australian geographic region only.
Identity Management	Limiting, authorising, and managing access to enterprise resources to keep systems and data secure.
Security Incident Response	Planned response in preparation to monitor, contain, eradicate bad actors or malware resulting from a cyberattack.
System Backup	Backups enable recovery of systems and encrypted or lost data
Disaster Recovery	Plans, processes, and capability to restore ICT systems and data after an event that disrupts ICT operations, such as a natural disaster, a cyberattack, or a hardware failure.

Going forward, cybersecurity is a priority investment area over the next regulatory period as the consequences of a successful breach or incident are critical to the safety and security of the distribution system and the services we provide to customers.

3.1.3   Data driven technologies: Analytics, Machine Learning, and Digital Metering

The proliferation of tools that harness the power of data is transforming the way gas distribution companies in Australia manage their operations and assets.[14] By harnessing the vast amounts of data generated by smart meters, network sensors, and other IoT devices, utilities can derive actionable insights to improve decision-making and operational efficiency.

Data analytics enables utilities to analyse historical consumption patterns, identify anomalies, and forecast future network demand accurately. This capability is particularly valuable for optimising gas distribution, scheduling maintenance activities, planning infrastructure upgrades, improving customer service and enhancing network resilience. Additionally, AI and predictive analytics algorithms can detect potential equipment failures before they occur, enabling utilities to take proactive measures to prevent disruptions and minimise downtime.

Utilities around the world are increasingly adopting and investing in improving their analytical capabilities to take advantage of data collected and to surmount increasingly complex challenges. Recent examples include:

- Ausgrid's $30 million data and analytics program[15] aims to provide data in the right channels and format to empower customers, enhance internal capabilities to meet the changing needs of the community and undertake scenario-based optimisation to improve operational efficiency and safety outcomes. New capabilities include a data lake expansion and data to intelligence, asset data analytics

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[14] How Big Data is Changing Utilities | Dimensional Insight (dimins.com)

[15] Ausgrid 2023, Attachment 5.9.f Data & analytics program

and predictive maintenance capabilities. Key quantifiable benefits are the optimisation of asset management as their field force.

- AusNet's $40 million information management program[16] to extend the information management platform to enable access to timely, accurate data (across all core systems, assets, and processes) enabling more advanced data analytics and reporting to support better decision-making across the gas business.

- ATCO Gas's data and analytics program[17] enables opportunities to introduce the capability to increase productivity, improve forecasting accuracy, better understand asset performance and proactive maintenance, and predict gas leakage through a combination of internal systems and external satellite data.

Machine Learning (ML) is developing quickly from its emerging technology status into a mature technology. The rationale for machine learning and its association with AI creates an entirely new paradigm when it comes to interrogating data and behavioural patterns across the distribution network. Machine learning is enabling companies to develop sophisticated models that can predict energy demand, optimise grid operations, and even detect energy theft. By training machine learning algorithms on historical data, companies can forecast future demand patterns and plan energy distribution accordingly.

Digital metering technology is revolutionising the gas distribution network in Australia by enabling real-time monitoring and management of gas usage. These smart meters leverage IoT technology to transmit data, providing valuable insights into consumption patterns and network performance. By integrating smart meters into the gas distribution infrastructure, utilities can enhance efficiency, optimise distribution, and detect leaks or faults promptly. Globally, the utilities sector is expected to increase investment in smart meter analytics threefold between 2021 and 2030.[18]

Digital metering and IoT integration empower consumers with greater visibility and control over their gas usage, potentially leading to more informed energy conservation and cost management decisions. Additionally, in the longer-term utilities can leverage the data generated by smart meters to implement demand-response programs, improve billing accuracy, and proactively address maintenance issues, thereby enhancing overall network reliability and customer satisfaction.

These trends are leading to several key impacts:

- There is a shift towards a more data-driven approach to decision-making. Companies are investing in data analytics capabilities and hiring data scientists to extract insights from the growing volume of data available.

- The role of field technicians is evolving. With the implementation of AI and machine learning, technicians can focus on more complex tasks and proactive maintenance rather than spending time on routine inspections.

- With better data analytics, companies can provide more accurate billing, personalized energy usage insights, and even offer tailored energy-saving recommendations. This enhances customer satisfaction and promotes energy conservation.

- At the foundation of these new capabilities are several requirements that have a key impact on the ability to deliver value. These include the quality, breadth, availability, and retention of data used. While these are existing practices already performed in some fashion, the scope and depth of the requirements in these areas changes significantly to enable data-driven outcomes. This is an often-forgotten uplift requirement.

In the 2025-30 period, we will need to invest in these capabilities, such as analytics, asset investment technologies, Geospatial Systems, Digital Metering, and enhanced data governance to keep up with the pace of change and to maintain performance relative to our peers. We will continue examining opportunities to utilise data driven technologies and continue planning and investing in this space as it becomes prudent.

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[16] Ausnet. (2022). ASG – GAAR – ICT Program Brief Information Management – 11 July 2022 – PUBLIC.pdf (aer.gov.au)

[17] ATCO. (2023). *Gas 2025-29 Plan*. 2025-29 Plan (erawa.com.au)

[18] Utility spending on smart meter analytics to triple through 2030 (smart-energy.com)

3.1.4   Environmental and Sustainability

Since the Paris Agreement came into force in 2016, there has been growing momentum from across the community to take action to reduce greenhouse gas emissions, including carbon dioxide and methane, to address climate change. The overarching goals are to hold the increase in global average temperatures to well below 2°C above pre-industrial levels and pursue efforts to limit temperature increase to 1.5°C.

The Australian Government has committed to, and enshrined in legislation, to reduce greenhouse gas emissions by 43% by 2030 (relative to 2005 levels) and net zero by 2050. The Australian Government has also committed to reducing methane emissions, a potent greenhouse gas with a Global Warming potential about 80 times greater than carbon dioxide over a 20-year period, by 30% by 2030. Similarly, the New South Wales Government has committed to, and enshrined in legislation, reducing greenhouse gas emissions by 70% by 2035 (relative to 2005 levels) and net-zero by 2050.

Achieving these goals will require substantial change across the community. As the Australian Minister for Climate Change and Energy has remarked:[19]

> *The biggest change – I used to say the biggest change since the Industrial Revolution. I've revised that. It's bigger than the Industrial Revolution and on a more constrained time frame because we've got seven years between now and 2030, which is the key period for holding the world as close as possible to 1.5 degrees of warming.*

Achieving net-zero by 2050 and the 2030 and 2035 interim emissions reduction targets set by the New South Wales government has large and fundamental implications for JGN. As a material amount of greenhouse gases are emitted in the consumption of natural gas the future role of the network is highly uncertain, likely dependent on the pace of electrification, government policies to support decarbonisation and electrification as well as the technological and economic development of green gases.

A material amount of greenhouse gases is also emitted as a result of transporting gas through our network. JGN is one of the 215 largest emitters of greenhouse gases in Australia, primarily due to the 'fugitives' methane which is lost through leaks and operational activities. From 1 July 2024 we have regulatory obligations under the National Greenhouse and Energy Reporting scheme to purchase safeguard mechanism credits units.

Accordingly, JGN's has developed a two-tiered emissions reduction strategy to:

1. **Reduce fugitive emissions JGN incurs in transporting gas**. Primarily, by more accurately identifying measuring and reporting fugitive methane emissions, and then taking action to repair or replace sections of our network and change operational work practices.

2. **Increase customer access to renewable gases –** such as biomethane and hydrogen, to reduce emissions from our customers' consumption of gases transported by our network. This involves facilitating the connection of sources of renewable gas to our network and undertaking works to prepare the JGN network readiness for hydrogen.

ICT initiatives are fundamental enablers to ensuring that JGN can appropriately navigate these changes, comply with ongoing policy changes, and support the JGN's emissions reduction program and achievement of net-zero, as set out in *Attachment 4.1 - Emissions reduction program-20240628-Public*.

In particular, ICT platforms will be required to support:[20]

- **Increased agility to be able to quickly adapt investment programs to rapid and sudden changes**. ICT platforms will be essential to ensuring that JGN has the capability to quickly re-optimise its investment portfolio to external changes, such as movements in changes in the valuation of reducing greenhouse gas emissions (for instance, from Australian Carbon Credit Unit price movements), market-price changes (as widely seen in the post-COVID contractor market) or for government policy

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[19] Minister for Climate Change and Energy, *Speech on Australian and New Zealand: Energy and Climate Cooperation*, 9 June 2023.

[20] Jemena emissions reduction strategy - 2021 SGSPAA Group Sustainability Report

changes (e.g. the Victorian and ACT decisions to phase-out new connections or the changes to BASIX).

- **Improved analytical capabilities.** While the future is highly uncertain, we know that all plausible pathways will be unlike our current operating environment. Accordingly, we will need to draw on ICT platforms and enhanced analytical capabilities to ensure that our operational practices meet our needs and our investment decisions result in the lowest sustainable costs of delivering services. This will require drawing upon large volumes of information from disparate data sets to draw insights on how to best reduce cost, risks and emissions. For example, we will need to draw on network performance data (for instance, direct measurement of emissions across our network using Picarro technology and pressure gauges) to model our network and understand the optimal approach to reduce emissions and ensure efficient investment required to maintain reliability and integrity of supply.

- **Comply with new and ongoing policy and regulatory changes around measurement and reporting of key network information** associated with renewable gases (e.g. blend and injection information) emissions and climate disclosures, particularly given the global trend movement, expected to be replicated in Australia, in moving towards 'higher order' (a direct measure of actual emissions of the use of more sophisticated engineering data) measures of emissions.

- **Re-optimise our works delivery** given the changes in our work program, driven by decarbonisation trends. ICT platforms will ensure that we can continue to optimise our works delivery as new connections decline and there is an increasing need to invest in maintaining the safety, security and integrity of our ageing network.

- **Improve supply chain optimisation and Green Procurement:** ICT strategies extend to supply chain optimisation and green procurement which are increasingly important given the focus on upstream and downstream emissions as well as the need to procure new lower or zero emissions alternatives to existing components and equipment.

3.2   Current ICT environment at Jemena

From a technology capability viewpoint, our current architecture is both modern and progressive, providing a fit for purpose set of core technologies that ensure continued resilience in the face of a changing external environment. As described in Section 3.1, key industry trends are impacting the gas distribution network and it's crucial to highlight how these trends are directly impacting our ICT environment. We're witnessing significant shifts that necessitate adjustments in our approach to ICT investment and expenditure.

Jemena (JGN's parent company) uses a shared services delivery model for its range of assets, with a significant portion of technology being shared between its regulated gas and electricity distribution networks (see Figure 6). This approach enables Jemena to achieve enhanced efficiencies for both regulated businesses by sharing the relatively fixed costs of a large portion of ICT capex across a larger customer base, as opposed to incurring these costs individually. However, it is important to note that not all systems can be shared among multiple businesses, in which case costs have been allocated in accordance with Jemena Group Cost Allocation Methodology.

**Figure 6: Shared ICT environment at Jemena**
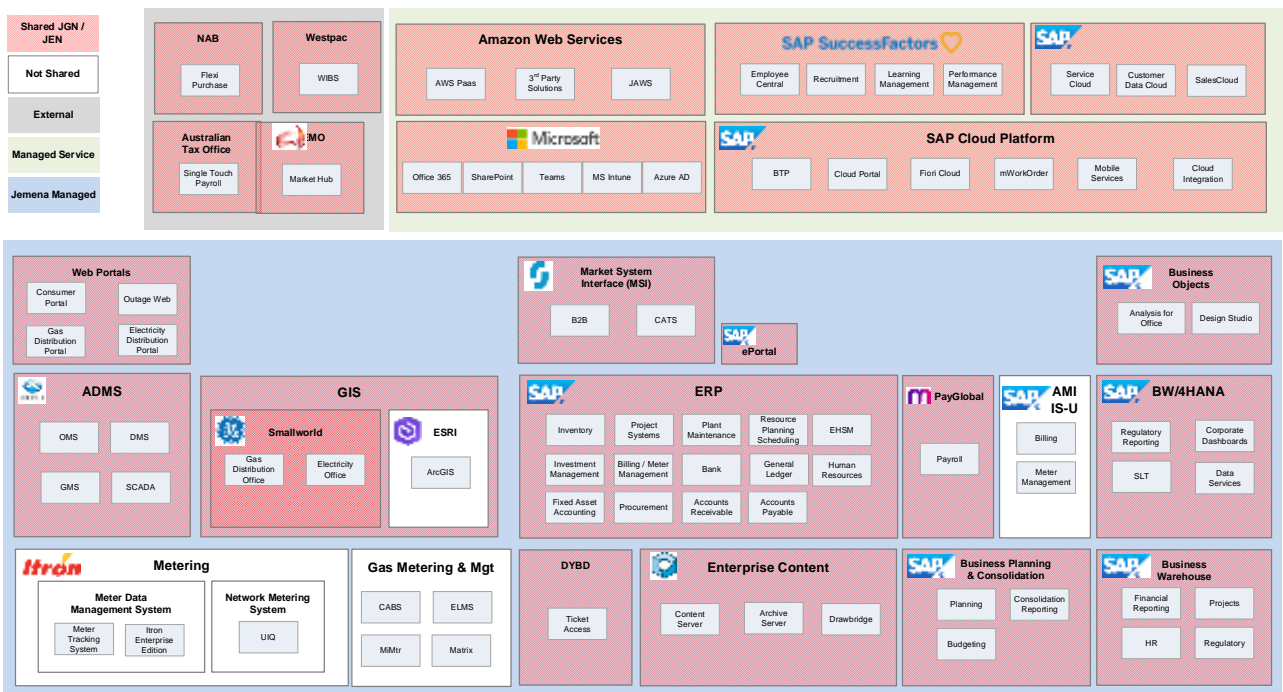
4. Current Regulatory Period

This section provides an overview of our ICT totex in the current regulatory period (i.e. 2020-21 to 2024-25), including against the ICT allowance set out in the AER's Final Decision for the 2020-25 period.

4.1 Previous and Current Regulatory Period Totex

The starkness of the transition from capex to opex expenditure is best depicted in Figure 7.

Figure 7: Previous and current regulatory periods opex and capex comparison
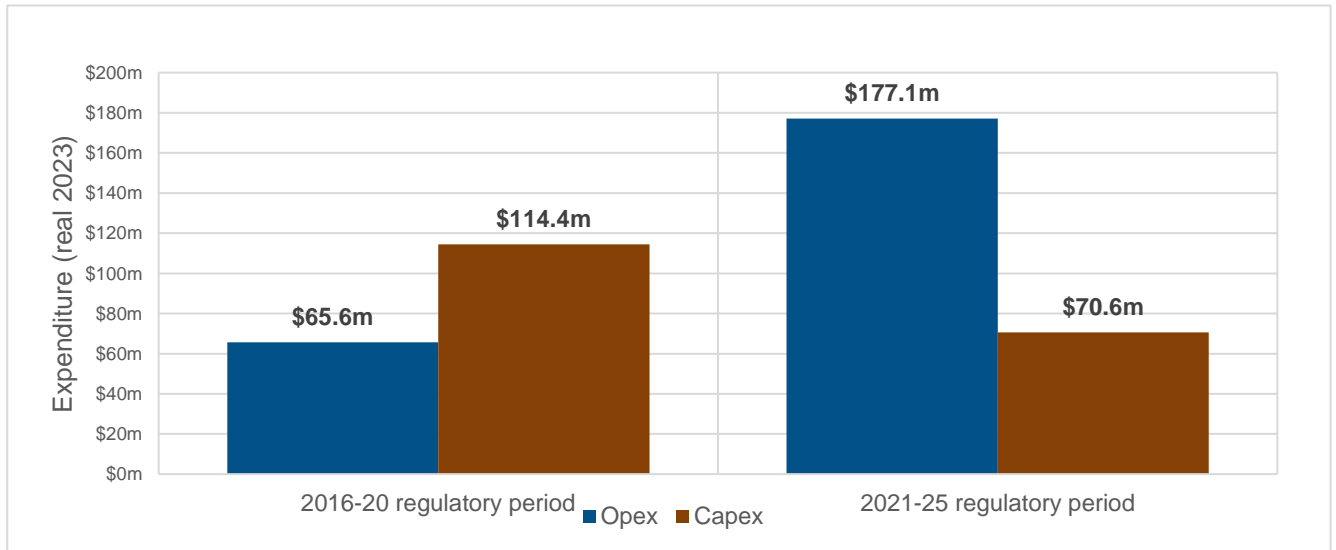
Note: the 2021-25 period comprises a blend of actual and forecast values through to the end of the current regulatory period.

Over the past two regulatory periods (covering 2016 to 2025), there has been a noticeable decrease in capex, while opex has seen a marked increase as discussed in further detail in Section 7.3, ICT opex step change, of this document. Furthermore, there has been a heightened emphasis on bolstering cybersecurity measures, optimising data management practices, and enhancing cloud engineering capabilities, necessitating increased investment in these critical areas to safeguard operations and infrastructure, which has resulted in the need for increased ICT spend. This shift underscores a strategic realignment towards operational efficiency and resilience in the face of evolving technological and regulatory landscapes and is detailed further below.

Increase in recurrent opex from the last period to this period

- **Jemena's cost allocation methodology** up to 31st December 2020 resulted in capitalisation of ICT opex to capex categories other than ICT Capex. This resulted in a decrease of approximately $74M last period and approximately $8M first 6 months of the regulatory year to 30th June 2021 when it was discontinued with effect from 1st January 2021.

- **SCADA team re-allocation of costs:** As a result of the increasingly close link between ICT and SCADA, the costs associated with the SCADA team moved into the ICT budget.

- **Investment in Cybersecurity:** Jemena has continued to invest in cyber security, with a seven-fold increase in expenditure since 2019; These investments have been crucial to maintaining robust cybersecurity defences in an increasingly digital landscape.

- **Enhanced Data and Analytics Capabilities:** With an increasingly digital environment and the prevalence of data, we have invested in uplifting data and analytics capability which has seen a 50% increase in associated opex spend from 2019 to 2023.

- **Cloud engineering capability to support the transition to Cloud-Based Storage Solutions:** The strategic shift away from on-premises (capex) to cloud-based storage solutions as a service has been a key contributor to a decline in capex and uplift in opex. There has been investment in new cloud engineering capability to derive benefits from this new model.

- **Licensing costs have increased:** We have also seen rising licensing fees from key vendors such as SAP, Microsoft, and Optus that have contributed to the escalating opex reflecting the ongoing reliance on proprietary software solutions.

Decrease in capex from last period to this period

- **Accounting Treatment of SaaS Expenditure:** In April 2021, the International Financial Reporting Interpretations Committee (IFRIC) released a guidance note requiring SaaS-related expenditure to be treated as opex. Consequently, this has shifted approximately $13M from capex to opex over 2020-25 period. The AER treated such expenditure as part of JGN's capex allowance for the 2020-25 period.

- **Completion of Large ICT Projects:** During the 2015-20 period, several significant ICT projects were completed, compared with 2020-2025 which included fewer projects as a result of the pandemic. One of the key projects completed during the 2015-20 period was the replacement of our legacy, out-of-support, highly customised core system, GASS+ which was replaced by SAP (approx. $40m in capex).

- **Deferral of key Projects:** As outlined in Section 4.3, Major projects and programs, two key projects, SAP upgrade (preparation phase) and Gas Retail Market Settlement Major Application Lifecycle were deferred from the current period to next period. For the purposes of JGN's current Access Arrangement, the deferred ICT projects are immaterial and therefore have not been included in the Post Tax Revenue Model for the purposes of determining the Capital Expenditure Sharing Scheme (CESS).

4.2 Actual and estimated ICT capex against AER allowance

We will largely deliver on our ICT capex program of work commitment for the 2020-25 period, with some programs delivered as opex.

Our actual and estimated capex for the 2020-25 period is $70.6M compared with the AER's allowance in its Final Decision of $117.9M, leaving an underspend of $47.3M.

Throughout the 2020-25 period, we have followed our robust ICT Project Management Lifecycle and Governance process. Before making a final investment decision, we carefully evaluate each proposed project, which can sometimes lead us to implement alternative, more economic solutions or adjust timelines compared to those outlined in our initial price review forecast. Additionally, we prioritise ICT projects across our portfolio by continually reviewing emerging risks, priorities, and regulatory requirements. As a result, the delivery of projects or allocation of funds may differ from what was initially forecast.

As outlined in Section 4.1Previous and Current Regulatory Period Totex, in the 2020-25 period, several programs have been partially deferred, including the SAP ERP upgrade, as detailed in Table 3. These decisions reflect a deliberate approach to prudent investment and risk management, where we prioritise careful planning and execution to optimise resources and align with customers' expectations. This proactive approach enables us to maintain fiscal responsibility while maximising the impact and effectiveness of our projects over the long term.

Although optimising the ICT program contributes to the capex underspend, in some instances, we requested funding for capex but ultimately utilised opex instead, particularly for cloud-based solutions. This is because cloud-based services are now typically recognised as opex rather than capex.

Figure 8: Current 2020-25 period capex compared against AER's final allowance
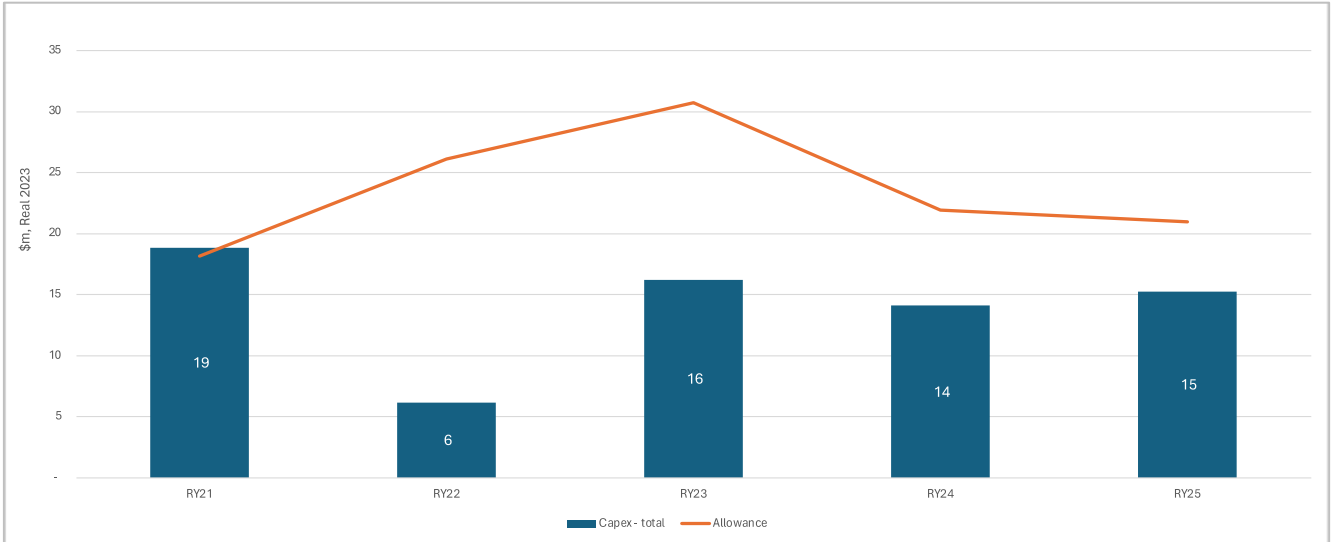
4.3   Major projects and programs

We are expecting to deliver most of the ICT program in our forecast for the Current Regulatory Period, see Table 2. A summary-level assessment has been included in Table 2 to demonstrate the results achieved throughout the 2020-25 period. Table 3 details the reason why we have deferred some projects to be delivered across the next regulatory period.

As well as the detail provided here, post-project implementation reports (PIRs) are available to provide further detail on the projects completed as part of the 2020-25 period.

Table 2: Key capabilities delivered in the 2020-25 period

What was planned and delivered	Description
Customer Experience (CX) Uplift Foundation	Optimisation of existing technology to create a seamless, personalised, customer-focused ICT experience to enable customers to self-serve, manage their energy needs and interact with us in a manner that they choose.
Cloud Adoption (Migration)	To migrate our corporate workloads to our selected primary cloud provider, establishing the cloud as a central component in our business and ICT strategies. This initiative enables on-demand, pay-as-you-go cloud services as a viable alternative to on-premises infrastructure.
CWIP Initiative Phase 1 and 2	To capitalise JGN assets in a timely manner at their correct cost, to ensure regulatory and statutory compliance and to resolve reconciliation between accounting and tax depreciation that will result in cash tax refunds. This initiative will automate the capitalisation, which is auditable, traceable and scalable for variants/scenarios that could be enhanced over time.

What was planned and delivered	Description
Digital Workorder Management	MRS and mWorkOrder enterprise scheduling and dispatch platform provides an end-to-end integrated solution for planning, demand forecasting and scheduling of fleet, plant and field personnel that enables efficient integration of the ICT WOM's supply chain. It optimises the end-to-end process supply chain and enables JGN FSD by giving them access to the people, systems, and information as and when required from the field.
JGN Life Support (LS) & CDR Changes	To provide better customer experience to transact customer information using B2B agreed protocols and the market participants to have up to date customer contact details and life support details. JGN LS changes is a new functionality to have market specific life support notification (LSN) instead of having Life Support as an attribute of the existing Customer Detail Notification (CDN).
Asset Management and Geospatial Information System Enhancements	Lifecycle and augmentation drove changes following the implementation of the Gas GIS in 2018 and improvements to the linkages and refinement of the processes relating this system to the asset and works management functions.
Proactive Connection Update	Providing an automated, flexible, and digitised process to enable proactive communication and notification to customers regarding their connection status. Phase 1 delivered for 'Existing home (e-G Connections). Phase 2 delivered: Path Value Connections; New home connections; Abolishment's; Leak Test certificate upload & streamlined validation; Site ready photo upload and streamlined validation.
Meter Data Logger Lifecycle (MDL) Upgrade	The current medium density and high-rise customer segments bills are estimated due to current limitations of the MDL systems. The MDL pilots a new NB-IoT platform, utilizing LWM2M open standards for ~10% of MDL sites. • Replace 500 modem devices and SIM cards • Introduce a new MDL device management software platform and provide a new backend system that replaces the unsupported applications of Epitome and risk of software failure • To reduce the dependency of one vendor and have an open system for competition with other suppliers • To provide a path to a true open-standards IoT platform
IT Infrastructure and end-user services	Need to perform lifecycle replacement and platform augmentation. In the absence of lifecycle upgrades of equipment and tools, the additional ICT support cost of extended support agreements increases costs.
Demand Billing Remote Reading (DBRR)	In the wake of 3G network being decommissioned in June 2024, the DBRR solution will find a replacement hardware and software supplier who is lower in cost, will increase customer service and ideally interoperable. The new solution will also be compatible with 4G comms protocol.
Digital Timesheets	Implement Digital Timesheets across JGN to provide an enhanced User experience with auditability, governance, and controls with integration to Payroll systems.
SCADA GenE DMS & OMS Phase 2	The GENe SCADA system from GE was retired and replaced with a new system from Open Systems International which included: • New Supervisory Control and Data Acquisition (SCADA) system including a suite of gas functions. • New Outage Management System (OMS) • New Step Order Management system (SOM) • New Operational logging tool (EpiLOG)

What was planned and delivered	Description
	The new system was integrated with JGN operational and outage processes. "Essential eight" security controls were enabled for application and operating system patching.
Enterprise Asset Management – Asset performance analytics for JGN	Deliver an analytics environment comprising of an interactive analysis tool (dashboard extending the PoC delivered, in production setting), automated data integration and transformation to produce curated datasets for advanced users, and granular data to support further advanced analytics.

Table 3: Key capabilities partially or fully deferred to the 2025-30 regulatory period

What was planned but not delivered	Description	What Changed
Gas Retail Market Settlement Major Application Lifecycle	This initiative focussed on the separation of the Short-Term Trading Market (STTM) function from the Contract Administration & Billing System (CABS) and Emergency Load Management (ELMS) system into a bespoke application. Initial work includes moving the application infrastructure to the cloud and addressing cyber security vulnerabilities.	Following a detailed assessment of the architecture options, the proposal for the 2025-2030 regulatory period is to decouple two applications, ELMS (for internal users only) and CABS (for both internal and external users), and rewrite these applications, including the STTM component for CABS, to alleviate key issues outlined in the IB "Gas Retail Markets Settlement Major Application Lifecycle."
ERP – SAP S4/HANA (Preparation phase)	Consisting of SAP ECC, core functionality migration ahead of declared end-of-support in 2027. A phased migration approach will cover finance, procurement, human resources, and other corporate functions, leaving the asset and works management modules to be addressed in a future regulatory period. Development of a detailed business case, solution architecture, and market tender, along with project planning for the subsequent period activity for the following submission.	Market analysis of costs has resulted in a higher-than-expected cost requiring a deferment.

5.   Next regulatory period ICT objectives and outcomes

This section explains the objectives, outcomes, and strategic themes of our forecast ICT totex for the next regulatory period.

5.1   ICT strategy

Our ICT strategy represents a proactive response to the shifting demands of the market, as detailed in Section 3, Technology Context, and the evolving needs of our customers, as detailed in Section 5.2, The voice of our customers. Alongside these external challenges that drive adaptability in the provision of ICT-related services, and throughout the 2020-25 period we have also sought to create a less complex and more generic set of technologies and platforms that will have longer-term benefits for our customers.

In today's digital landscape, it is more important than ever to be smarter and innovate in how we approach new challenges and opportunities. Innovation allows us to uncover new efficiencies, leverage emerging technology and reimagine traditional processes to enhance productivity and effectiveness. An example of innovation can be seen across our proposed Network Management Advanced Analytics platform, which highlights how utilities worldwide are innovating by investing in improving their analytical capabilities and leveraging data collected to address increasingly complex challenges.

When determining our ICT totex for the next regulatory period, the following key principles have been applied to ensure our investments align with organisational objectives and priorities:

- **Reliability and Availability:**
  Systems must be reliable and available to minimise downtime and ensure operational continuity. This emphasises the importance of robust infrastructure, redundancy measures, and proactive maintenance strategies to mitigate the risk of service disruptions and interruptions.

- **Security:**
  Security is paramount to protect data, systems, and networks from unauthorised access, breaches, and cyber threats. This principle involves implementing comprehensive security measures, such as encryption, access controls, intrusion detection systems, and regular security audits, to safeguard sensitive information and maintain the integrity of ICT assets.

- **Scalability and Flexibility:**
  Designing for future needs involves creating ICT infrastructure and systems that can adapt to changes in demand and technological advancements. This emphasises the importance of scalability and flexibility in accommodating growth, evolving requirements, and emerging technologies without requiring extensive rework or costly upgrades.

- **Performance Optimisation:**
  Planning, monitoring, and optimising hardware, software, and network performance are essential to ensure efficient operations and user satisfaction. This shows our dedication to ongoing performance monitoring, capacity planning, and optimisation efforts to identify bottlenecks, improve resource utilisation, and enhance overall system performance.

- **Standardisation:**
  Standardising ICT processes, configurations, and procedures promotes consistency and minimises potential human error. This highlights our commitment to establishing standardised frameworks, best practices, and protocols to streamline operations, facilitate interoperability, and simplify management across ICT environments.

- **Compliance and Governance:**
  Ensuring compliance with relevant laws, regulations, and industry standards is imperative to mitigate legal and regulatory risks. This principle involves implementing robust governance frameworks,

policies, and controls to uphold data privacy, security, and ethical standards while adhering to regulatory requirements and industry guidelines.

- **Cost Optimisation:**
  Evaluating the cost-effectiveness of ICT investments and optimising costs while maximising value and performance is essential to achieving financial sustainability. This principle involves conducting thorough cost-benefit and options analyses, optimising resource allocation, and implementing cost-saving measures without compromising quality, security, or service levels.

- **Alignment with Business Objectives:**
  Aligning ICT spend and services with business needs ensures that technology investments contribute directly to organisational goals and objectives. This principle involves close collaboration between ICT and business stakeholders to prioritise initiatives, allocate resources effectively, and deliver ICT solutions that support strategic priorities and drive business outcomes.

Our prudent and efficient level of proposed ICT totex will ensure we can realise the ongoing sustainability of our ICT systems that support our investments and operations and continue to maintain the safety, reliability and security of our distribution system and services to customers. Each proposed project and work program within our forecast is necessary to sustain our current systems or undertake upgrades to ensure they remain fit for purpose in a constantly changing technology and network environment where our customers' requirements and expectations continue to evolve.

5.2   The voice of our customers

To understand the needs and expectations of our customers and stakeholders and to ensure that they could genuinely shape our ICT strategy, we have undertaken an extensive engagement program over an 18-month period, which has tackled head-on the critical challenges associated with the energy transition towards net zero, and uncertainty surrounding the future role of gas networks. Figure 9 outlines our customer engagement objectives that helped guide us on our customer engagement journey.

Figure 9: Our Customer Engagement Objectives
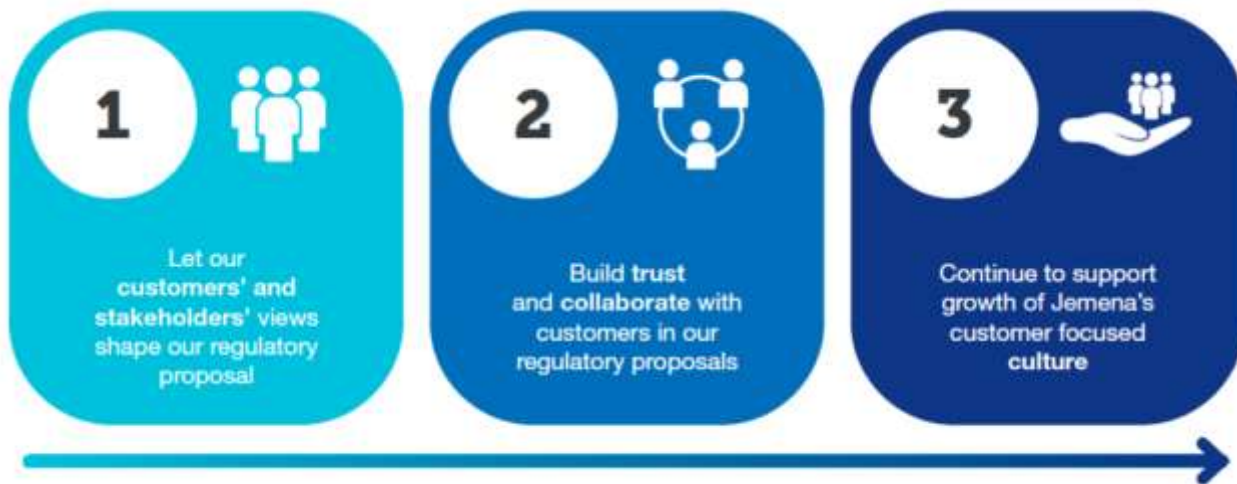
A key activity in preparing JGN's plan for the next regulatory period has been its customer engagement. Through an extensive program and forums—made up of residential and business customers and industry representative groups—we have heard first-hand from those most impacted by the investment and operational decisions we make. The residential customer forum provided the following values on what they considered to be the most important in considering various initiatives. These five fundamental customer values are:

- **Affordability:** We heard that balancing the rising cost of living is a priority for our customers so that no one is left behind due to the energy transition. Our customers want us to consider affordability over the short and long term when making decisions.

- **Reliability and safety:** We heard that customers want a safe and reliable gas service.

- **Fairness:** Our customers wanted us to consider fairness in the context of the energy transition and its impacts on both existing and future generations, and on our more price-sensitive customers.

- **Access to the gas network (Choice):** We heard that customers want the choice to be able to use gas both now and into the future, and that there should be diversity of supply.

- **Environment:** We heard from customers that they want us to contribute to a more sustainable environment in the future.

We believe that our suite of ICT initiatives are aligned with these customer values. To ensure that customer preferences shape our strategy, we conducted detailed testing on two specific ICT initiatives: Digital Metering and Customer Experience Uplift. This feedback has been integrated into our ICT planning process and used to develop the Investment Briefs that support our totex forecast in the next regulatory period, for example:

- After careful consideration and deliberation based on customer feedback, we have decided not to seek funding for the proposed Customer Experience Uplift initiative in the next regulatory period. This initiative included a suite of digital services aimed at enhancing the customer experience. However, it became evident that the proposed initiative did not fully align with our customers' preferences and priorities. As a company dedicated to maintaining a customer-centric approach, we are committed to honouring the valuable insights provided by our customers. Consequently, we have made the decision to remove this initiative from our 2025 Plan.

- Conversely, the rollout of Digital Metering to premises facing persistent access issues received strong customer support. Based on the feedback from our customers, we will be installing 8,000 digital meters at premises with aged and defective internal meters that have faced ongoing accessibility challenges.

6. Forecasting Expenditure Approach

6.1 Forecasting methodology

To forecast expenditure in the next regulatory period, we have largely adopted the approach outlined in the AER's non-network ICT capex Guidance Note. While this was developed to assess the efficiency of electricity distribution businesses' ICT expenditures, it can also be applied to gas distribution businesses.

The approach we take to forecasting both capex and opex is:

Capex – expenditure that is capital in nature is forecast using two approaches:

- **Recurrent capex** – this category of forecast expenditure is determined by taking the five-year average capex that arises between FY19 and FY24. The forecasting approach works on the assumption that this type of expenditure occurs on a cyclical (recurrent) basis, with cycles occurring between one and five years. We take the capex over FY19 to FY24 as this is the most recent known capex.

- **Non-recurrent capex** – this category of forecast expenditure occurs on cycles of more than five years or has not previously occurred at all. This type of expenditure is not present in the 2020-25 period and, therefore, cannot form a part of the recurrent capex. The approach to forecasting projects that have non-recurrent capex (and project opex as noted below) is depicted in Figure 10.

The forecast for capex forms a part of our 2025 Plan.

Opex – ICT opex is forecast to (i) determine the ICT opex step change costs that forms a part of our overall opex proposal and (ii) inform the totex assessment as outlined in the Guidance Note. Aside from the opex step change, our efficient ICT opex forecast is included within JGN's overall base year.

To inform ICT opex efficiency under the Guidance Note, our approach to forecasting ICT opex adopts the AER's base – step - trend approach, mirroring the approach taken to forecasting JGN's overall opex proposal. Applying this method is the equivalent of a subset of the overall opex forecast, as detailed in the AER Expenditure Forecast Assessment Guideline:[21]

- **Base year** – we take the ICT opex in the penultimate year of the current regulatory period (the 2023/24 regulatory year) and use this as the opex required in each year of the next regulatory period. We adjust our base year by:
  - Removing the non-recurrent ICT opex.
  - Adding non-recurrent ICT opex necessary to implement projects that have non-recurrent capex. (Note: Prior to the IFRS Interpretation in 2020,[22] these costs would have been capex in nature; however, these are now considered opex and as such are treated this way).

- **Step change** – we calculate the ICT opex step changes by:
  - Adding ongoing support opex necessarily incurred to support non-recurrent systems deployed. These systems may also have non-recurrent capex at the time of implementation.

- ICT opex forecast and step change, whilst presented in this document, also form a part of the *Attachment 6.1 - Operating expenditure* and *Attachment 6.2 – Opex step change*.

- Section 7, Forecast ICT Expenditure, outlines each of these components in our proposal for the next regulatory period and the net effects.

- Trend – We adopt a trend escalator consistent with the scale escalation used in the overall opex forecast. See *Attachment 6.1 - Operating expenditure.*
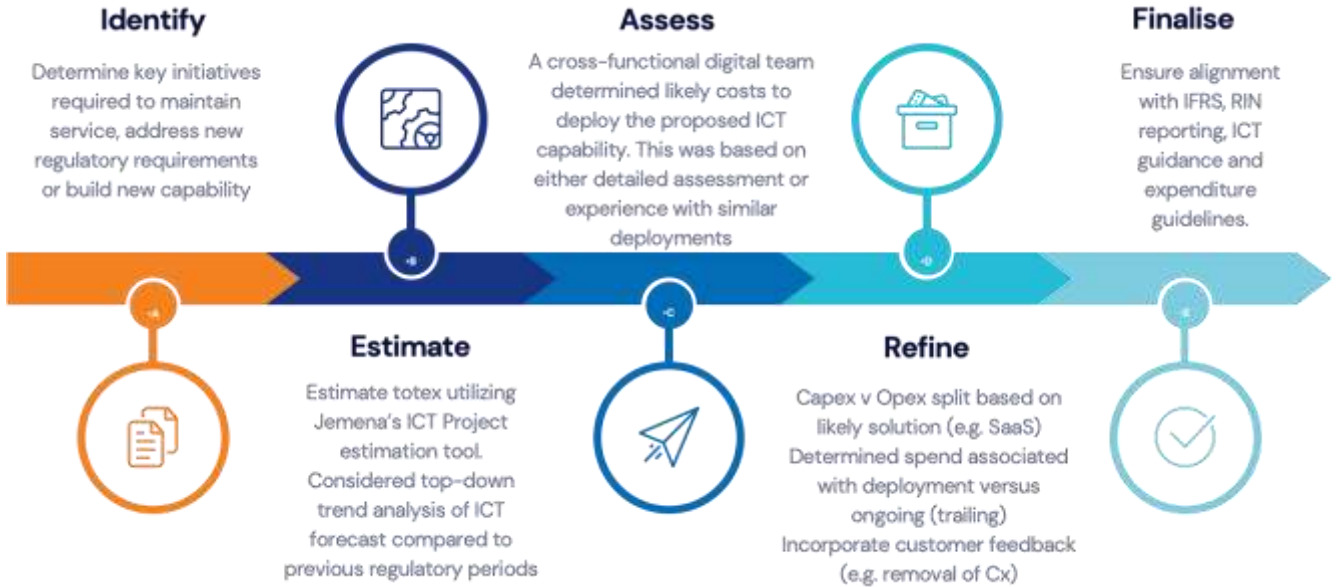
The combination of ICT capex and opex makes up the totex amount.

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[21] AER - *Expenditure forecast assessment guideline – distribution*, August 2022. Whilst this guideline applies to electricity distribution networks, we have applied it to our approach.

[22] See section 2.2.

In addition to adopting the AER's forecast methodology, we undertake a comprehensive assessment to consider factors as outlined in Section 3, the Technology Context, and Section 5, Next regulatory period ICT objectives and outcomes. The way in which we incorporate these inputs is depicted in Figure 10.

Figure 10: JGN forecasting expenditure approach

Identify
Determine key initiatives required to maintain service, address new regulatory requirements or build new capability

Assess
A cross-functional digital team determined likely costs to deploy the proposed ICT capability. This was based on either detailed assessment or experience with similar deployments

Finalise
Ensure alignment with IFRS, RIN reporting, ICT guidance and expenditure guidelines.

Estimate
Estimate totex utilizing Jemena's ICT Project estimation tool. Considered top-down trend analysis of ICT forecast compared to previous regulatory periods

Refine
Capex v Opex split based on likely solution (e.g. SaaS) Determined spend associated with deployment versus ongoing (trailing) Incorporate customer feedback (e.g. removal of Cx)

Allocation of ICT expenditure

To aid our assessment process, ICT expenditure is allocated into several categories, similar to the basis on which we develop the forecasts but explained across both opex and capex. By making this distinction, we can tailor our analysis techniques. The definition of each category of ICT expenditure is outlined in Table 4.

Table 4: Jemena allocation of ICT expenditures

Expenditure Type	Description
Recurrent – Base	Recurrent expenditure is project activity – usually lifecycle upgrades – that would normally occur at least once in every five-year regulatory period. Generally, all hardware replacement is recurrent, and most software updates occur with cycle times of less than 5 years.
Recurrent – Step	This refers to the ongoing operational expenses associated with a project or initiative that continue beyond its initial implementation phase. As such, they did not occur in the 2015-20 regulatory period (current regulatory period) but will do so in the future, now that they have been deployed.

These expenses may include costs related to maintenance, licensing fees, support, and ongoing operational activities required to sustain the benefits or functionality delivered by the project.

This distinction is most useful when submitting a price reset to indicate where new systems have been deployed and now require ongoing expenditure.

It can be applicable between regulatory periods and in circumstances where a system is deployed early in a period and then requires work to support it later in the period. |

Expenditure Type	Description
Non-recurrent – compliance	This is used for initiatives which implement changes to comply with new / altered regulatory obligations. This is also used for certain cyber-security initiatives.
Non-recurrent – maintain	This is used for initiatives focused on maintaining existing services, functionalities, capabilities and/or market benefits. This would also apply when a major platform change is released by a vendor or when a new product is selected to replace an existing tool. A once-off migration to a cloud model could also qualify.
Non-recurrent – new capability	This is used for initiatives that are deploying new or expanded ICT capabilities, functions, and services to deliver customer or business benefits. These projects are expected to be NPV positive.

7. Forecast ICT Expenditure

Consistent with the approach outlined in the Section 6, Forecasting Expenditure Approach, this section outlines our proposed ICT Expenditure for the 2025-30 period.

7.1 Recurrent expenditure

With large components of our forecast ICT expenditure being derived from historical data, it is necessary to understand how past expenditures and trends over the previous and current regulatory periods, along with corrective actions, impact the forecast.

7.1.1 Recurrent capex

To determine recurrent capex, we take the historical FY19 to FY24 average expenditure and use this as the basis for forecasting capex into the next regulatory period. Applying this methodology, we determine that capex in the next period should be $5.2M ($2023) per annum.

7.1.2 Recurrent opex

Recurrent opex is calculated to analyse expenditure per the Guidance Note; it is not used as a part of this proposal. Recurrent opex is determined by taking the base year ICT opex and using this as the opex required for each year of the next regulatory period. Using this approach, we determine the annual opex amount to be $40.6M ($2023) per annum.

7.2 Non-recurrent expenditure

We have classified our forecast non-recurrent expenditure, to reflect the underlying drivers of our specific initiatives (refer Table 5), as detailed in the Guidance Note.

Table 5: ICT value drivers

IT value driver	Description
Maintaining existing services, functionalities, capability and/or market benefits	• Many of our investments where we implement and maintain ICT systems that underpin the basic processes of managing the gas network and performing the meter-to-market functions. • Expenditures for maintaining existing services may not always yield positive NPV. Therefore, opting for the least negative NPV among feasible options is prudent. Justification of the chosen option is based on a business case considering various timing, scope options, and alternative service providers, with past expenditures factored in where applicable.
Complying with new / altered regulatory obligations / requirements	• Any activity which is specifically required to respond to regulatory requirements. • It is likely that the costs of such investments will exceed the measurable benefits. As such, the least cost option will likely be reasonably acceptable regarding the NER expenditure criteria. Should there be options to achieve compliance using external service providers, the costs and merits of these have also been compared.

IT value driver	Description
New or expanded ICT capability, functions and services	• Investments that are performed to deliver additional benefits to either the business or to consumers which are not specifically regulatory requirements. • We consider that these expenditures require justification through demonstrating benefits exceed costs (positive NPV). We will make our assessment therefore through assessing the cost-benefit analysis. Where benefits exceed costs, consideration has also been given to self-funding of the investment.

7.2.1 Non-recurrent projects planned

Table 6 provides a summary of the ICT initiatives that are 'non-recurrent' for the next regulatory period. Full Investment Briefs for each of these are attached to this submission. Details of these documents are included in the Appendix (A1).

Table 6: Projects planned over the next regulatory period

Investment Brief Title	Explanation
Maintaining existing services, functionalities, capabilities and/or market benefits	
SAP Upgrade	Mitigate against the disruption of business service and associated impacts upon distribution services and customers by proactively managing the end-of-life support risk associated with Jemena's enterprise resource planning (ERP) information system, with the vendor forecasting the termination of support before the end of the next regulatory period.
Gas Retail Market Settlement – Major Application Lifecycle	Efficiently maintain the critical functions of JGN's Contract Administration & Billing System (CABS) and Emergency Load Management System (ELMS) application, which are critical systems for the functioning of gas markets and networks in NSW and other jurisdictions.
Enterprise Content Management Uplift	Modernise and consolidate content management platforms for JGN staff to maintain compliance with regulatory obligations while delivering efficiency and safety outcomes for customers and other stakeholders through better access, security, organisation and management of operational and investment content.
Data Foundations and Governance	Uplift JGN's data foundation and governance capabilities, delivering maximum value from JGN's data to ensure compliance with various industry-specific regulations and standards related to security of our data.
Enhancements to Geospatial Systems	Further optimise the JGN's Geospatial systems by focusing on improving the asset data and supporting processes that these spatial systems underpin. This will improve asset data capture, analysis, accessibility, reporting and sharing of information required to continue to promote efficient, safe and reliable service delivery to customers.
Cloud Capacity Growth	This change is to ensure JGN maintains the necessary ICT capabilities to operate the gas network safely, securely and efficiently. Jemena's anticipated growth in cloud storage and associated services means additional opex will be required to ensure Jemena maintains reliable ICT service delivery.
Asset Investment Optimisation	Implement an effective Asset Investment Planning (AIP) platform for JGN to optimise asset investment decisions, enhance infrastructure reliability, and maintain regulatory compliance. This aims to optimise the allocation of resources for asset maintenance, upgrades, and replacements, while minimising risks, and achieving long-term operational efficiency, as well as minimising disruption for customers and reducing emissions.

Investment Brief Title	Explanation
Complying with new / altered regulatory obligations / requirements	
Cybersecurity Program	Deploy capabilities in step with technology advancement that provide fit-for-purpose protection and response in line with cybersecurity threats, supporting JGN in promoting efficient, safe and reliable service delivery to customers.
Contract Lifecycle Management	Implement a Contract Lifecycle Management System to effectively manage third-party contractors and ensure operational efficiency, cost-effectiveness, and regulatory compliance (e.g. SOCI, modern slavery, mandatory climate-related financial disclosures). This will also help mitigate risks associated with inefficiencies, errors, compliance and regulatory risks, and loss in revenue.
New or expanded ICT capability, functions, and services	
Network Management Advanced Analytics	Implement a set of integrated analytics capabilities within JGN, consistent with good industry practice, that will support decision making and achieve the lowest sustainable cost of providing services.
Chronic No Access Digital Metering pilot	Install 8,000 digital meters at premises with aged and defective internal meters that have faced ongoing accessibility challenges.
Works Management Schedule Optimisation	Build Works Management Schedule Optimisation capability for JGN enabling it to streamline maintenance, enhance resource utilisation, and minimise downtime; and improve operational efficiency and ensure the reliability and safety of the team and network.

Jemena's ICT capex expenditure is aligned with our strategic principles (outlined in Section 5.1) to strengthen operational resilience and foster innovation amid external pressures. Each investment decision is guided by our key principles:

- Reliability and Availability: Prioritising robust infrastructure and proactive maintenance minimises downtime, ensuring uninterrupted operations.

- Security: Comprehensive security measures safeguard data, systems, and networks against cyber threats, upholding ICT asset integrity.

- Scalability and Flexibility: ICT systems are designed to adapt to future growth and technological advancements, avoiding costly rework.

- Performance Optimisation: Continuous monitoring enhances hardware, software, and network performance, ensuring efficiency and user satisfaction.

- Standardisation: Streamlined operations and interoperability are achieved through standardised frameworks and protocols.

- Compliance and Governance: Robust governance ensures adherence to legal and ethical standards, mitigating risks and upholding data privacy.

- Cost Optimisation: Cost-benefit analyses and optimisation measures ensure cost-effectiveness without compromising quality or security.

- Alignment with Business Objectives: Collaboration between ICT and business stakeholders ensures technology investments contribute directly to organisational goals, enhancing competitiveness. These principles strengthen our ICT capabilities, foster innovation, and position us for sustainable growth amidst industry challenges.

7.2.2   Forecast Non-recurrent ICT Expenditure

Table 7 outlines our proposed ICT expenditure for non-recurrent projects in the next regulatory period.

Table 7: Proposed ICT non-recurrent expenditure for the next regulatory period

Non-recurrent ICT sub-categorisation	Initiative Name	JGN Draft Expenditure ($m – FY23 real)			
		Deployment			Ongoing
		Non-recurrent capex	Non-recurrent opex	Non-recurrent Totex	Recurrent step opex
Maintaining existing services, functionalities, capability, and/or market benefits	SAP Upgrade*[23]	0.52	6.97	7.49	0
	Gas Retail Market Settlement – Major Application Lifecycle	4.47	0.29	4.76	0.08
	Enhancements to Geospatial Systems	1.71	0	1.71	0.55
	Cloud Capacity Growth*	0	0	0	3.27
Complying with new/altered regulatory obligations / requirements	Data Foundations and Governance*	0	2.04	2.04	0.78
	Enterprise Content Management Uplift*	0	4.78	4.78	0.77
	Cybersecurity Program*	0	7.1	7.1	2.77
	Contract Lifecycle Management*	0	0.99	0.99	0.69
New or expanded ICT capability, functions, and services	Asset Investment Optimisation	0	1.0	1.0	2.8
	Network Management Advanced Analytics	4.02	4.02	8.04	2.06
	Chronic No Access Digital Metering pilot	5.12	1.24	6.35	0.36
	Works Management Schedule Optimisation	0	2.99	2.99	0
		15.84	**31.42**	**47.25**	**14.13**

7.2.3   Project justification – investment brief for non-recurrent projects

We have prepared a series of Investment Briefs (refer to Appendix A1) to accompany this Technology Plan.

This section provides details on the structure and objectives of these documents. They are intended to be easily understandable and to provide an extra level of insight into how we will meet our future state challenges through the specific projects within our forecast ICT totex program.

Each Investment Brief establishes and summarises the overarching objective and problem statements that will be addressed, as well as the high-level scope, what options have been considered to deliver the most prudent and efficient technology solution. The options analysis provides a preliminary assessment of the options to implement an effective solution to achieve the objective of the Investment Brief. As part of our ICT Governance process, when we are considering making any investment, we will undertake further options analysis using the

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[23] *Enterprise Initiatives. Costs have been allocated in accordance with Jemena Group Cost Allocation Methodology.

most recently available information, including a detailed costing activity and benefits assessment relating to the implementation of each option.

The Investment Briefs also describe how each project in our program of work aligns with our customers' key values and what they regard as important.

These Investment Briefs provide summary-level information about our ICT totex forecast. It is important to note that JGN does not create detailed business cases for technology projects until the time the project reaches its final initiation step. We consider our approach to preparing Investment Briefs rather than full business cases for projects within our totex forecast reflects a prudent and efficient approach, given:

- There are material costs associated with the production of a business case, with these costs ultimately flowing through to JGN's customers. All projects contained in our totex forecast have been scoped well in advance of the actual start date of any project given the need to develop a forecast for the next regulatory period. Technology changes are frequent, and technology roadmaps are always subject to change and provide guidance rather than facts. The significant time between the preparation of our 2025 Plan and the initiation of a project within the next regulatory period means that changes in technology and business requirements are highly likely, which will then be reflected in the business case. If ICT business cases are pre-prepared, it is highly likely that they will need to be re-prepared, adding additional cost to a project.

- The time horizons required by preparing an access arrangement proposal forecast (up to 7 years) can be significantly longer than the normal investment horizon for these types of technology assets in a business that is not subject to economic regulation using five-year periods. Technology vendors are highly unlikely to participate in tender processes so far in advance of projects being initiated or otherwise may provide non-binding responses, provide for costs updates / cost recovery, or build significant risk premiums in their responses. This can make vendor responses of limited use when forecasting the efficient cost of undertaking a project in the future. In contrast, our project estimation methodology (outlined in Section 6.1) reflects the efficient costs we have incurred in undertaking similar projects historically.

Table 8 sets out the details the template we have used for our Investment Briefs.

Table 8: Investment brief template

Section	Information provided
Objective	The objective of this initiative
Non-recurrent ICT sub-categorisation	View of initiative based on the 3 AER sub-categorisations
Background	The reason behind this initiative Description of some of the key problems that we are looking to solve
Customer Importance	How have we considered our customers and how might this impact them
Key Considerations	When exploring options, what have been our key considerations in driving our decision making on a particular Option
Options	Overview of options in including benefits, risks and financials
Options Summary	Reasoning on why we have chosen the preferred
What we are recommending	Recap of chosen option

| Section	Information provided
Dependencies on other investment briefs	Any linked dependencies with other investment briefs included in the 2025-30 proposal
Relationship to ICT Capital Forecast	Relationship to ICT Capital Forecast models

7.3   ICT opex step change

Consistent with the methodology outlined in Section 1, Forecasting methodology, we have:

- Removed non-recurrent opex from the base year.

- Added forecast non-recurrent project-related opex to the base year (see Section 7.2, Non-recurrent Expenditure, for details).

- Added opex step change for new capability from the non-recurrent spend that needs to be supported and maintained moving forward which is captured as the "recurrent-step opex" (see Section 7.2, Non-recurrent Expenditure, for details).

For our 2025-30 Plan, we demonstrate each of these components and their net impact in Figure 11.

Figure 11: Regulatory forecast opex, by year
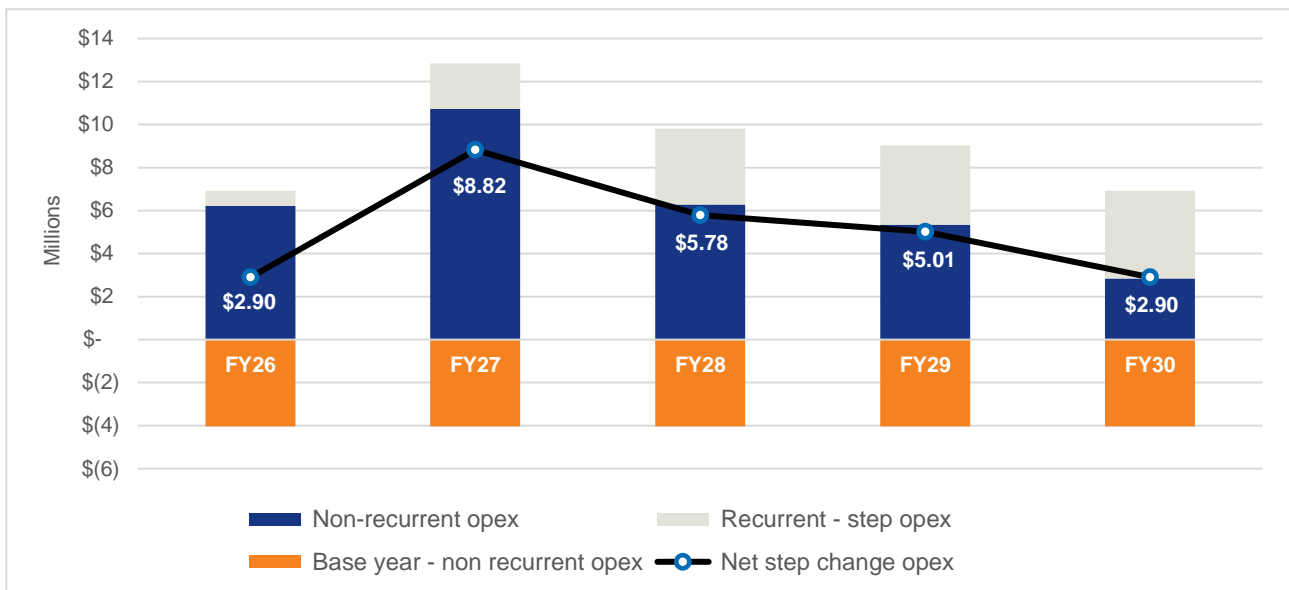
Further details on the opex base year adjustment and step change can be found in *Attachment 6.1 operating expenditure forecast*.

7.4   ICT Totex in the previous, current, and next regulatory period

When we bring the ICT recurrent and non-recurrent capital expenditure together with the operating base, step and trend, we determine JGN's overall forecast totex. Figure 12 shows the forecast totex required for the 2025-30 period, along with a comparison to the totex in the 2015-20 and the 2020-30 regulatory periods.

Figure 12: Regulatory forecast, by year
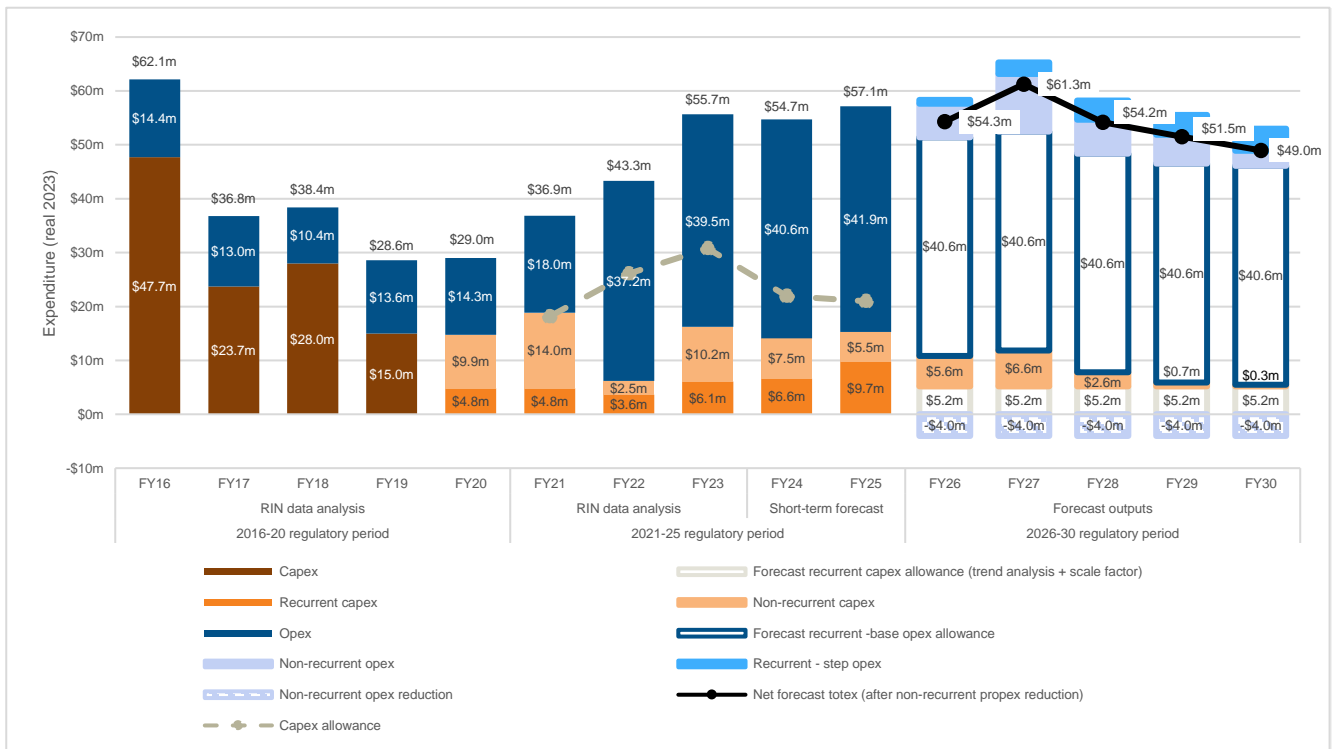
The 2025-30 period forecast shows an increase in opex and overall totex compared to the preceding two regulatory periods. Jemena has observed a $22.6M increase in total expenditure from $247.7M for the 2020-25 period to $270.3M for the 2025-30 period. Over the three regulatory periods, there has been an increasing shift away from capex, to opex. As discussed in previous sections, this has been driven by the evolving needs and priorities of the regulatory environment where there is a growing recognition of the importance of ongoing operational investments alongside capital investments to ensure the sustainability and resilience of our infrastructure and operations.

This step change in cost profiling is explored in greater detail in; Section 4, Current Regulatory Period, Section 5, Next Regulatory Period ICT Objectives and Outcomes, and Section 7, Forecast ICT Expenditure, of this paper, where the underlying factors driving this shift are explained.

Non-recurrent capex and opex depicted in the above graph, can be attributed to key assumptions underpinning cost estimates, as shown in Table 9. These assumptions are predominantly based on whether the future solution will be on-premises (capex) or cloud-based subscription model (opex) as described in the first column of this table.

Table 9: Key drivers of costs across our 2025-30 initiatives

Key drivers of cost	Initiative Name	Non-recurrent capex	Non-recurrent opex	Recurrent step opex
Migrating from on-premises (capex) to SaaS (opex)	SAP Upgrade	0.52	6.97	0
Remaining On-Premises with No Significant Change in Capex/Opex Split	Gas Retail Market Settlement – Major Application Lifecycle	4.47	0.29	0.08

|				
	Enhancements to Geospatial Systems	1.71	0	0.55
	Chronic No Access Digital Metering pilot	5.12	1.24	0.36
AWS cloud costs (opex)	Cloud Capacity Growth	0	0	3.27
Assumes Cloud Solution and Ongoing Subscription Model (opex)	Data Foundations and Governance	0	2.04	0.78
	Enterprise Content Management Uplift	0	4.78	0.77
	Cybersecurity Program	0	7.10	2.77
	Contract Lifecycle Management	0	0.99	0.69
	Asset Investment Optimisation	0	1.00	2.80
	Works Management Schedule Optimisation	0	2.99	0
Given the availability of various solution options, assumes a 50/50 split between on-premises (capex) and subscription-based (opex) model	Network Management Advanced Analytics	4.02	4.02	2.06
		15.84	**31.42**	**14.13**

8.   Governance Framework

In alignment with our organisational objectives and strategic goals, this section explains the governance framework established to support our ICT projects and related expenditure from idea to implementation and how we will source and deliver our ICT program in the next regulatory period.

8.1   Procurement and contract governance framework

Our robust governance framework underpins our procurement and contract management activities. This framework helps us manage our compliance obligations and deliver safe and value-based outcomes aligned to our group's values, strategic priorities and goals.

**Figure 13: procurement and contract governance framework**
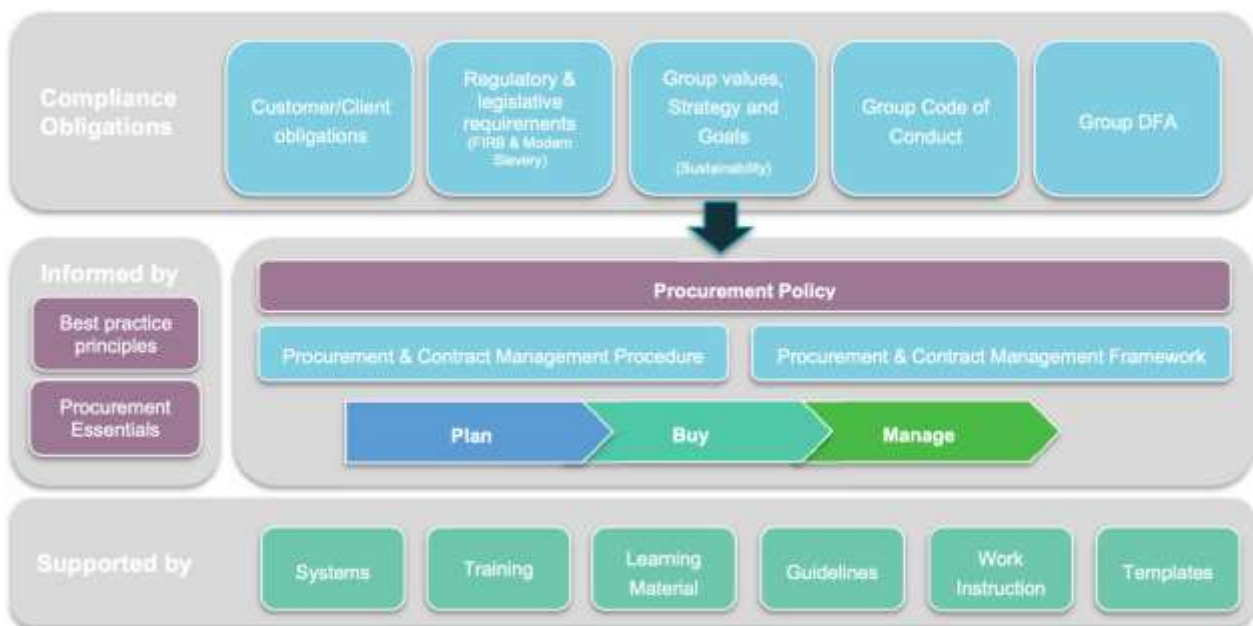
This competitive procurement process will play a pivotal role in selecting vendors to support our ICT program of work by ensuring transparency, fairness, and accountability throughout the vendor selection process. It supports:

- Clear definition of requirements, objectives, and evaluation criteria

- Mitigation of bias or favouritism

- Thorough due diligence including vendor assessments and background checks

- Validation of vendor capabilities, reliability, and reputation

- Informed decision-making aligned with strategic objectives

- Consideration of value for money

## 8.2   Ongoing governance to ensure efficient vendor expenditure
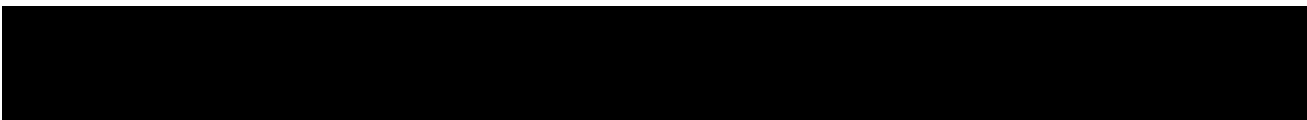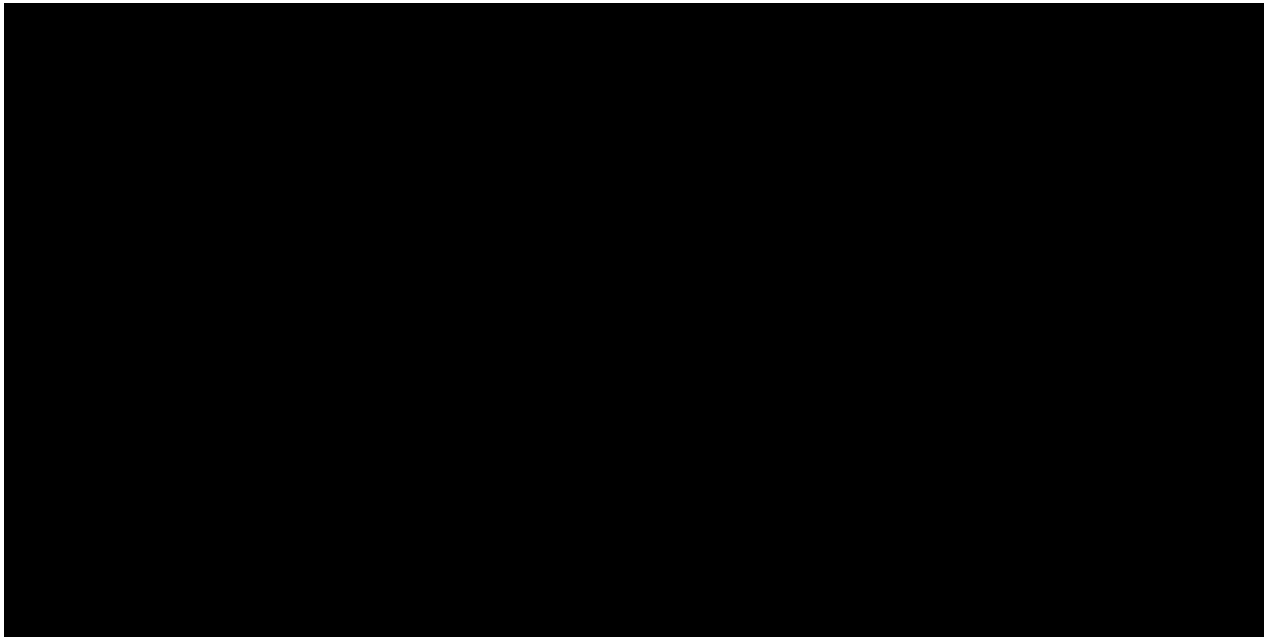
Despite this, Jemena applies ongoing governance to keep costs down. Key levers assessed on an ongoing basis include architecture reviews and risk, timing, and scope of ICT projects. By weighing up options associated with these levers, Jemena ensures we are continuing to test our investment decisions on an ongoing basis and adapt accordingly to ensure efficient expenditures.

Figure 14: Effective decision-making
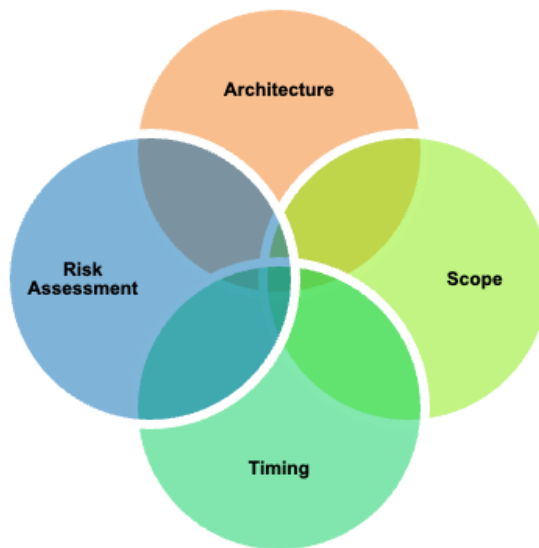
An example of where we have applied this approach is with SAP, our ERP system:
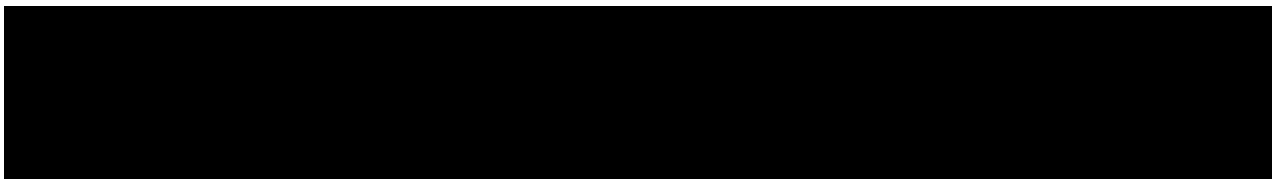
8.3   ICT Governance Framework

Our ICT governance framework supplements our core business governance and program delivery model and defines—for ICT projects—who has input, who has agreed and who is accountable for decision-making processes. The governance framework is an integral part of Jemena's investment and corporate governance approaches and helps drive alignment between ICT decisions and broader organisational goals and strategies, ensuring decisions are timely yet robust and helps to reduce the cost and risk profile of projects for efficient delivery. We outline the ICT project management governance framework in Figure 15.

Figure 15: ICT Project Management Governance Framework
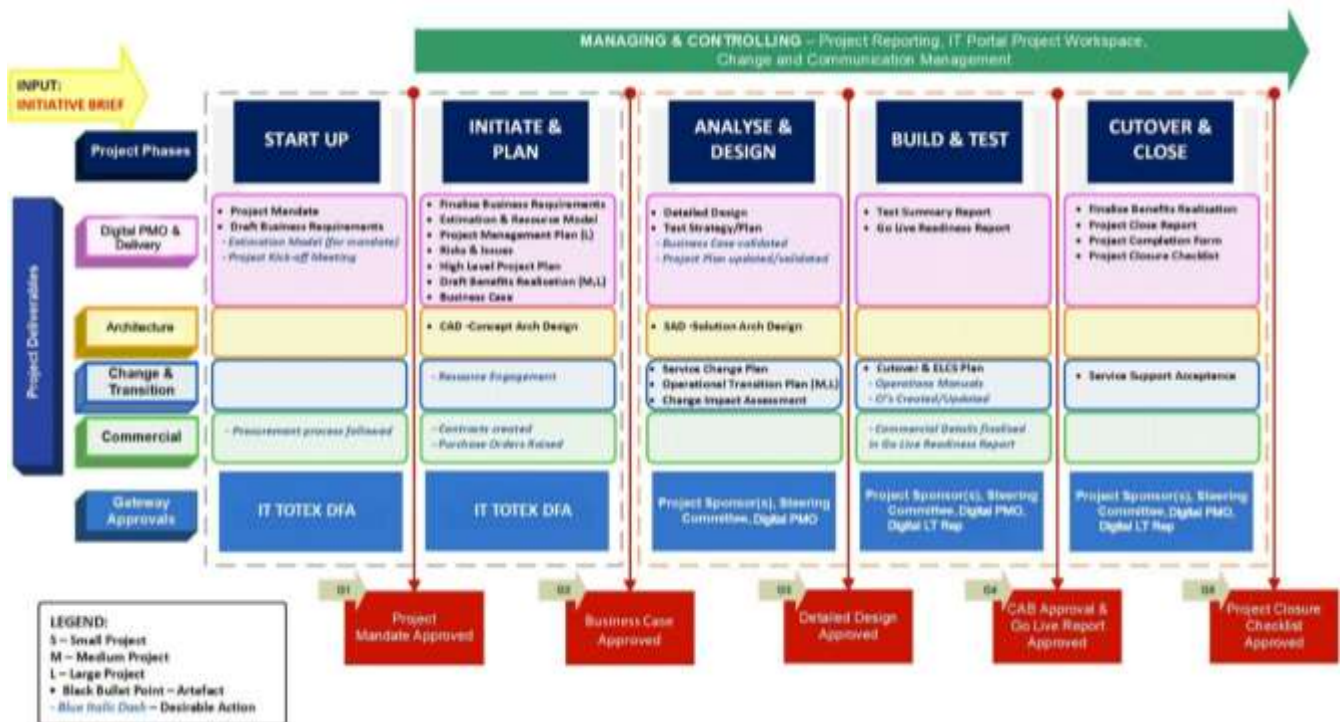
Regular monitoring and reporting under the governance framework ensures that the senior executives and management have a standard and structured view of the ICT program of work, work-in-progress and the overall status on which to make decisions based on the most relevant and up to date information, including:

- Overall portfolio performance (including portfolio health, spending, forecast, status, risks, issues, dependencies and milestones),
- Project status updated for every project, by stage, gate and overall,
- Performance compared to budget and schedule,
- Benefits specification, realisation and reporting,
- Funding requirements by stage, years and months,
- Financial forecasts, *and*

- Risks and Issues.

Governance and decision-making forums that assure quality and business outcomes of delivery, include Project Steering Committees and Project Working Groups.

8.4 Key principles of ICT delivery success

Jemena has a proven track record in successfully and efficiently delivering its ICT program of works, largely as planned, across multiple assets and regulatory periods. We have taken several considerations into account when developing our program of ICT project expenditure for the next regulatory period, and we are well-placed to efficiently deliver all required technology investments to support the delivery of the services our customers expect due to:

- Our long-term planning, which considers interrelationships between projects and programs of work in the regulatory periods before, during and after the forecast period,

- Our long-standing practice of calling upon specialist external contract labour for ICT project work, providing access to a large pool of resources that is 'elastic' and thereby minimising the potential for resource contention to slow down project progress as well prudency in delivery by having the right capability available at the right time.

- Our approach to setting contractor labour hire rates is dynamic and adaptable, ensuring that our estimates remain aligned with the ever-evolving market dynamics while providing a fair reflection of prevailing conditions.

- Planning and sequencing to ensure reduced contention between projects around resourcing and capabilities and efficient delivery by having the enabling technology in place,

- Sound portfolio performance review via the senior management to ensure project success and delivery certainty and efficiency,

- Senior management review, assessment and approval of project funding to ensure the best investment decision and efficient and effective delivery processes, and

- The diversity of project types for the next regulatory period. By their very nature, ICT projects involve key specialties, both within the ICT group and from the business. Diversity within the project mix enables the smoothing of workloads for key ICT personnel and subject matter experts from the business (who participate in projects) across Jemena and over the various planning horizons.

- Given the long lead time involved in preparing this submission, evolving customer needs, emerging technologies and regulatory changes, we individually assess each proposed project before making a final investment decision; in some cases, this can result in us implementing different solutions (or different timings) to those set out in our price review forecast.

Appendix

A1. Investment Briefs

Investment Brief Title	Document Reference
SAP Upgrade	JGN – RIN – 4.3.5 - IT Investment Brief - SAP Upgrade
Gas Retail Market Settlement – Major Application Lifecycle	JGN – RIN – 4.3.5 - IT Investment Brief - Gas Retail Markets Settlement - Major Application Lifecycle
Enterprise Content Management Uplift	JGN – RIN – 4.3.5 - IT Investment Brief - Enterprise Content Management Uplift
Data Foundations and Governance	JGN – RIN – 4.3.5 - IT Investment Brief - Data Foundations and Governance
Enhancements to Geospatial Systems	JGN – RIN – 4.3.5 - IT Investment Brief - Enhancements to Geospatial systems
Cloud Capacity Growth	JGN – RIN – 4.3.5 - IT Investment Brief - Cloud Capacity Growth
Asset Investment Optimisation	JGN – RIN – 4.3.5 - IT Investment Brief - Asset Investment Optimisation
Cybersecurity Program	JGN – RIN – 4.3.5 - IT Investment brief - Cybersecurity Program
Contract Lifecycle Management	JGN – RIN – 4.3.5 - IT Investment Brief - Contract Lifecycle Management
Network Management Advanced Analytics	JGN – RIN – 4.3.5 - IT Investment Brief - Network Management Advanced Analytics
Chronic No Access Digital Metering Pilot	JGN – RIN – 4.3.5 - Investment Brief - Chronic No Access Digital Metering Pilot
Works Management Schedule Optimisation	JGN – RIN – 4.3.5 - IT Investment Brief - Work Management Schedule Optimisation