



Jemena Gas Networks (NSW) Ltd

IT Investment Brief – SAP Upgrade

Non-Recurrent – Maintain



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Glossary

capex	Capital Expenditure
Current regulatory period	The period covering 1 Jul 2020 to 30 Jun 2025
CYxx	Calander Year xx
ECC	ERP Central Component
ERP	Enterprise Resource Planning
ICT	Information and Communications Technology
IS-U	Industry Specific – Utilities
Jemena	Refers to the parent company of Jemena Gas Network
JGN	Jemena Gas Network
Next regulatory period	The period covering 1 Jul 2025 to 30 Jun 2030
NPV	Net Present Value
opex	Operating Expenditure
RISE	Realize, Innovate, Sustain, and Enhance
RYxx	Regulatory year covering the 12 months to 30 June of year 20xx for years in the Next Regulatory Period. For example, RY25 covers 1 July 2024 to 30 June 2025
S4/HANA	SAP's next generation High-Performance Analytic Appliance
SAP	SAP accounting and Enterprise Resource Planning software
TCO	Total cost of ownership
totex	Total Expenditure

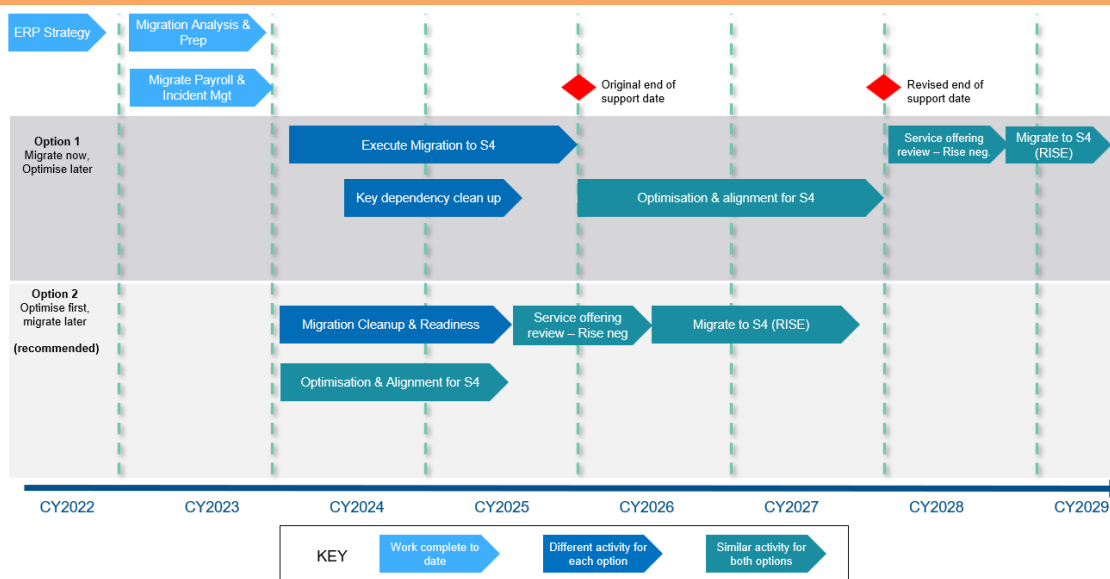
SAP Upgrade

Objective	The objective of this investment is to mitigate against the disruption of business service and associated impacts upon Jemena Gas Networks (JGN) 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 2025-30 period.		
Non-recurrent ICT sub-categorisation	<input checked="" type="checkbox"/> Maintaining existing services, functionalities, capability, and/or market benefits	<input type="checkbox"/> Complying with new/altered regulatory obligations / requirements	<input type="checkbox"/> New or expanded ICT capability, functions, and services
Background	<p>ERP system is critical to continue business operations</p> <p>Jemena relies on ERP software to manage its day-to-day core business operations including, financial, procurement, human capital, metering and billing, as well as performing critical asset management functions. Without these systems JGN's business operations will cease. The robustness and accuracy of this information (and therefore our ERP system) is critical in allowing us to continue delivering safe and efficient services to our customers.</p> <p>Jemena's current ERP system is reaching end-of-life and end of support</p> <p>Jemena currently uses SAP IS-U (Industry Specific – Utilities) version ECC 6, which runs on a Microsoft database. ECC 6.0 was originally released in 2005. Jemena upgraded to ECC 6 in 2011.</p> <p>In 2019 SAP released a major upgrade of the ERP and IS-U platforms, which is referred to as "S/4". This upgrade is designed to operate with SAP's High-Performance Analytic Appliance (HANA) database platform to increase operating performance in response to growing data and functionality. This means that as Jemena upgrades its SAP systems it will also have to upgrade the underlying database.</p> <p>SAP had announced that it would only support version ECC 6 until 2025, at which point customers would need to migrate to the new S/4HANA platform. However, in February 2020 SAP extended its support from December 2025 to December 2027. After this date SAP will offer an optional extended maintenance phase until December 2030, which would deliver limited functionality at a higher cost than current standard support.</p> <p>Previous consideration and strategy</p> <p>We previously considered our SAP end-of-life and migration strategy in 2020.¹ This strategy considered 6 options including using 3rd party support and undertaking Greenfields upgrades. The preferred option at the time was to perform a technical upgrade from SAP ECC 6 to SAP S/4 before 2025, on the expectation that support for ECC 6 would end in December 2025. The AER reviewed our decision and considered this approach prudent and efficient.²</p> <p>SAP RISE</p> <p>In January 2021 SAP released RISE 'Realize, Innovate, Sustain, and Enhance' a cloud subscription service which incorporates SAP S/4 as its core ERP component. The RISE service offering changes the manner in which our critical environment is supported, with SAP taking on the critical administrative support function.</p> <p>This change in product release, licencing and approach by the software vendor has meant that we needed to re-evaluate the most efficient means of managing ERP software upgrades, security and management.</p>		

¹ Jemena Gas Networks. *Investment Brief, SAP Migration Business Case, Bridging paper between the Jemena business case and JGN Submission, December, 2019*. See [here](#).

² AER 2020, *Jemena Gas Networks Ltd Access Arrangements 2020 to 2025, Attachment 5 capital expenditure, p. 25*. See [here](#).

Customer Importance	<p>A key activity of JGN's preparation of its 2025-30 Plan has been its engagement with its customers through an extensive program and forums made up of residential and business customers. The residential customer forum provided the following values on what they considered to be the most important in considering various initiatives:</p> <ul style="list-style-type: none"> • 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 want us to consider fairness in 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. <p>Our ERP system is critical to the delivery of affordable, safe and reliable services as it underpins our financial, metering and billing, human capital, asset management and reporting functions to meet our customers' expectations.</p>
Key Considerations	<p>In 2022 we updated our ERP strategy to convert our existing SAP ERP Licences to S/4HANA through a two-stage approach:</p> <ol style="list-style-type: none"> 1. Firstly, migrating our environment to S/4 HANA and maintaining our current service model, an in-house "On-Premise" licence, <i>then</i> 2. Converting to SAP's cloud offering RISE, a subscription licence model. <p>The primary benefit of this approach is reducing risk through a phased approach to first migrating to S/4 and then to the cloud.</p> <p>In 2023 we commissioned an external technical migration assessment that focused on the technical migration to S4. The technical assessment reviewed the custom code and functionality in place. This review found a high level of complexity and a number of technical dependencies and recommended that these dependencies be addressed prior to the migration exercise. This would require additional work to consider these technical issues and complexity before a migration is undertaken.</p> <p>We also commenced working with SAP toward the end of 2023 to arrange for the S4 licence conversion, maintaining the On-premises Licence construct. . However, the initial cost estimates for S4 On-premises Licence conversion increased from around [REDACTED] to [REDACTED].</p> <p>We also considered the RISE service offering and found that it is a [REDACTED].</p> <p>Given these factors we pivoted to initiate separate projects to migrate functionality out of SAP, including for our Payroll and Environment Health and Safety functions, which is the most efficient approach.</p>
Options	<p>As SAP has extended support of ECC 6 to December 2027, we have reconsidered the timing of the previously preferred option outline in our 2020 Investment Brief (to undertake a technical upgrade of SAP ECC 6 to S/4 HANA by 2025).</p> <p>We have identified several options:</p> <ol style="list-style-type: none"> (1) Migration by 2026 –maintaining the timeframes set out in our 2020 strategy. (2) Delayed Migration and focus on optimisation first. (3) Replacing SAP ERP with an alternative system. <p>The timing of options one and two in the context of the original and revised end-of-life dates are depicted in the diagram below.</p>



Option 1: Migration by 2026

Description

This option follows our initial approach in terms of timelines. We would migrate to the supported S/4HANA by 2026, following which optimisation activity would be undertaken before eventually migrating to the S4 RISE cloud offering.

Benefits

Early migration to S/4 HANA would target migrating well in advance of the revised 31 December 2027 cut-off date for ECC 6 support. This additional time would also provide scope to address technical challenges with 3rd party systems integrated with SAP that could arise, particularly issues related to security patching and version alignments well ahead of the December 2027 cut-off date.

This option meets the original December 2026 migration date and provides more time for the RISE service offering to be tested with others to ensure service stability.

Risks

This option does not allow for optimisation and stabilisation of the existing ECC 6 SAP and related systems prior to migration. Any protracted problems with the migration of third-party applications beyond the SAP support date could render all systems inoperable, as there is no possibility of rolling back.³ This would mean that the migration is more complex and there are increased risks of system disruption (including disruptions to non-SAP related systems in the Jemena Digital eco-system) to customers as a result.

It also means that it is likely that some components will be migrated in this option and then moved off SAP, potentially adding unnecessary time and cost.

The overall *total cost of ownership* (TCO)⁴ is considerably higher (refer “costs” below).

³ This risk of protracted problems with the migration of third-party applications can be mitigated under option 2.

⁴ The total cost of ownership (TCO) is the purchase price of an asset plus the costs of operation. Assessing the total cost of ownership means taking a bigger picture look at what the product is and what its value is over time. In a price reset context, it can mean that the efficient costs span multiple regulatory periods; this could give the appearance that costs within one regulatory period are higher in one option being considered. When considering the National Gas Objective—considering the *long-term interests of customers*—expenditure beyond a single regulatory period, using the TCO approach, is an appropriate test of efficiency.

Costs

\$2023	RY26	RY27	RY28	RY29	RY30
Total Capex	██████				
Non-recurrent Opex	██████	██████			
Recurrent-step Opex					
Total Opex	██████	██████			
Totex	██████	██████			

This is an Enterprise-wide initiative; Costs have been allocated in accordance with Jemena Group Cost Allocation Methodology.

This option will incur non-recurrent capex of ██████ and non-recurrent opex costs of ██████ over the 2025-30 period

Migrating to an interim S/4HANA on-premises solution first and then to SAP's preferred RISE solution also incurs a one-off licence conversion cost of ██████ at the Enterprise level (or ██████ for JGN) during the current regulatory period (not shown above) and additional licensing costs associated with S/4 HANA.⁵ (Refer to Attachment A – Total Cost of Ownership).

Summary

This option is not recommended given the additional cost to convert to S/4HANA first, which is significant when assessing from a TCO perspective, and the significantly higher risk profile relative to the alternative.

The net present value over 10 years, taking into consideration savings is ██████

JGN considers that it does not reflect good industry practice. Furthermore, it does not provide the lowest sustainable cost.

Option 2: Delayed Migration and focus on Optimisation first**Description**

Given the extension of ECC 6 support to 31 December 2027⁶, Jemena will use the additional time to undertake several migration readiness and optimisation activities identified as part of the technical assessments conducted by external consultants in 2023 prior to migration to S/4RISE.

These activities include:⁷

- Data Archiving and data quality improvement
- Technical remediation
- Future State readiness (technical dependencies), for example:
 - Finance – Simplification of structures, removing duplicated processes.
 - Digital Work Order Management System – ensure compatibility with RISE.

Benefits

This option provides a 'slower but steadier' migration. As a result, any risks associated with the migration can be prioritised and addressed prior to the change to RISE.

The benefits of taking the approach outlined in this option are expected to be seen through the following activities:

- Data archiving and quality assurance – resulting in improved system performance and data accuracy.
- Finance transformation – removal of duplicated processes and simplification of work activities.
- Future state readiness – more extensive and detailed preparation ensuring Jemena is technically “ready” to execute the S4 migration.

By addressing these technical dependencies first, unforeseen costs during migration will be minimised.

Critically, this option does not require an interim migration to S/4 HANA, and so does not incur the associated one-off Enterprise licence cost of ██████████ or ██████████ for JGN or the additional licensing costs associated with the interim S/4 HANA licence.

This option will also allow Jemena to avoid being a RISE early adopter and monitor the stabilisation of the service offering over its initial 1-2 years.

Risks

The key risk in delaying the migration activity is that we will run close to the timeframe announced as the end of Support for ECC 6, which is currently December 2027. However, if necessary, Jemena could pay an additional maintenance fee to remain supported to mitigate and program delay risk.

Costs

\$2023	RY26	RY27	RY28	RY29	RY30
Total Capex	██████████				
Non-recurrent Opex	██████████	██████████			
Recurrent-step Opex					
Total Opex	██████████	██████████			
Totex	██████████	██████████			

This is an Enterprise-wide initiative; Costs have been allocated in accordance with Jemena Group Cost Allocation Methodology.

This option will incur non-recurrent capex of ██████████ and non-recurrent opex costs of ██████████ over the 2025-30 period to optimise SAP prior to migration to S/4 RISE.

Summary

This option is recommended, as it does not incur a one-off conversion cost and has the additional benefit of undertaking a number of S4-dependent activities and optimisation opportunities to minimise migration risk and associated services to customers.

The net present value over 10 years, taking into consideration savings is ██████████

JGN considers that it best reflects good industry practice and provides the lowest sustainable cost.

⁵ These costs are avoided under option 2.

⁶ Announced by SAP in Feb 2020

⁷ At the time of developing the initial SAP migration business case in 2020, it was not possible to know these risks because of the high-level nature of the program design. Notwithstanding this, Jemena incorporated the detailed technical assessment in its early planning as part of effective risk management and governance to ensure proper sequencing of events and manage to expenditure.

Option 3: Identify and implement an alternative ERP system**Description**

This option entails replacing the entire ERP ecosystem that is otherwise serviced through the current SAP platform.

This option was not assessed on the basis that:

- The costs would be far more than an upgrade program (noting this would involve a whole of business change management; not just a systems upgrade).
- Such a migration could not be achieved before the deadlines noted in options 1 and 2.
- The integrated nature of Jemena's digital ecosystem is such that a major disruption of this type increases operational risk in all other systems.
- The risk profile increases substantially.

Summary

This option is considered infeasible given the inherent risks and, therefore, not pursued as a viable option for assessment.

JGN considers that it does not reflect good industry practice.

Options Summary

The table below summarises the quantitative and qualitative differences between the analysed options for expected cost during the current regulatory period.

	Capex (\$2023)	Project Opex (\$2023)	Ongoing Opex (\$2023)	10-year net NPV	Residual Risk
Option 1	██████	██████	Not applicable	██████	Moderate
Option 2	██████	██████	Not applicable	██████	Low
Option 3	Not applicable	Not applicable	Not applicable	Not applicable	High

Note that, as shown in appendix A, the 10-year net NPV for option 2 is substantially lower because the associated one-off Enterprise licence cost of ██████ (or ██████ for JGN) and the additional licensing costs associated with the interim S/4 HANA licence are avoided.

What We Are Recommending

JGN proposes to proceed with option 2: Delayed Migration and focus on Optimisation first. This option has a lower overall cost and reduces risks associated with RISE, both in terms of the service offering maturity as well as the time available to optimise our ERP before we undertake the migration.

The Enterprise 'total SAP cost of ownership' business case (which includes the one-off cost) associated with Option 2) is provided in Attachment A of this submission.

JGN considers that it best reflects good industry practice and provides the lowest sustainable cost.

Dependencies on other Investment Briefs	<p>This Investment Brief is also related and aligned to the following Investment Briefs for the 2025-30 period;</p> <ul style="list-style-type: none"> • Network Management Advanced Analytics - Investment in advanced analytics will enable the seamless integration of core data such as SAP • Cybersecurity Program - Technology advances, such as the shift to cloud, can generate opportunities for cybercriminals to apply new tactics, tools, and processes. Thus, the cybersecurity program will be essential with the SAP shift to SaaS. • Data Governance - Data platform will enable seamless integration with core data, such as SAP. SAP is dependent on the data governance capabilities project proceeding and will need to be reevaluated if it is not. • Works Management Extend Phase - Future state readiness work with DWOMS will prepare for migration to SAP • Gas Retail Markets Settlement - SAP is an input to the CABS system, if it is allowed to reach end-of-support it will risk the quality of data in the CABS system
Relationship to ICT Capital Forecast	<p>The supporting modelling for this investment brief is contained in the following investment framework model: JGN - RIN - 4.3.5 - ICT Investment Brief - SAP Upgrade – Costs and Benefits Analysis Model</p>



