



Jemena Electricity Networks (Vic) Ltd

Technology Plan

IT Investment Brief - Operational Technology Enhancements

Non-Recurrent - Maintain and New Capability



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Glossary

AER	Australian Energy Regulator
Current regulatory period	The period covering 1 Jan 2016 to 31 Dec 2020
CYxx	The calendar year which covers the 12 months to 31 December of year 20xx. For the current regulatory period, this is equivalent to RYxx
DMS	Distribution Management System
ICT	Information and Communications Technology
Intervening period	The period covering 1 Jan 2021 to 30 Jun 2021 covers the time between the current regulatory period and the next regulatory period. The Intervening period arises with the move from a calendar year regulatory year to financial.
FLISR	Fault Location Isolation and Service Rectification
Jemena	Refers to the parent company of Jemena Electricity Network
JEN	Jemena Electricity Network
Next regulatory period	The period covering 1 Jul 2021 to 30 Jun 2026
OMS	Outage Management System
RYxx	Regulatory year covering the 12 months to 30 June of year 20xx for years in the Next Regulatory Period and the 12 months to 31 December of year 20xx for years in the Current Regulatory Period. For example, RY20 covers 1 January 2019 to 31 December 2020 and RY22 covers 1 July 2021 to 30 June 2022
SCADA	Supervisory Control And Data Acquisition

SCADA DMS-OMS – Non-Recurrent

Objective	To ensure that Jemena Electricity Network (JEN) has appropriate tools to manage its distribution network.
Background	JEN has recently implemented a new platform for SCADA Distribution Management (DMS) and Outage Management (OMS). The projects detailed in this investment brief extend this foundation with further capabilities and to retain historical data.
Customer Importance	The tools described in the Investment Brief are necessary for the efficient operation of the distribution network. In an increasingly sophisticated and “smart” grid, the use of computerised control and data acquisition tools to manage operations becomes more critical to manage growing customer expectations. There are direct benefits to customers in improved safety and maintaining system performance in an environment of growing network complexity which results from the use of contemporary tools to control the network and manage outages in network operations.
Strategic Approach	Jemena is building upon the foundational elements of the SCADA DMS-OMS solution implemented in the current regulatory period by updating its data historian capability (non-recurrent maintain) and automating some functions relating to fault location and service rectification (new capability) that otherwise require manual intervention. As the size and complexity of the network increases and more Distributed Energy Resources appear on the network, improving automation is necessary to ensure we can maintain current levels of network service. Furthermore, removing manual intervention will reduce the risk of operator error leading to improved safety.
Options	<p>JEN has considered two alternatives to building upon the SCADA DMS-OMS platform; these include 1) do nothing and 2) investment in enhancements to provide additional capability.</p> <p>Option 1: Do nothing</p> <p>Description</p> <p>This option requires that no action is taken and no enhancement is made to these systems.</p> <p>Risks</p> <p>The data historian work is a necessary element of the newly implemented system and is the repository of the operational data that is acquired from the distribution network through the SCADA systems. Not performing this work would reduce the value of the implementation and potentially limit the system's usefulness. The DMS transition to auto-mode offers the potential to respond to system conditions more quickly and without it, events can take longer to be addressed.</p> <p>Benefits</p> <p>Do nothing returns no benefits and may limit the effectiveness of the investment made in this current period in the foundational platform.</p> <p>Summary</p> <p>This option is not considered optimal. The SCADA DMS-OMS platform is expected to provide improvements in the control of network operations and the management of outages and limiting the benefits obtainable from that platform is not in the long-term interests of customers of the network.</p>

Option 2: Enhance the SCADA DMS-OMS toolset**Description**

Jemena will perform enhancement work on the data historian, DMS and condition monitoring functions.

Direct Escalated Costs (mid-year 2021)

JEN's portion of costs for this option is outlined in the table below.

\$2021	Project ID	Type	RY22	RY23	RY24	RY25	RY26
Network Data Historian Consolidation	A906	Maintain	104,222	93,867			
The transition of ADMS FLISR function from advisory mode to auto-mode	A908	New Capability	96,205				
Total			200,427	93,867	0	0	0

This option will incur non-recurrent capital costs of \$294k for the enhancement of these systems.

Network Data Historian Consolidation – The data historian is an important part of the DMS-OMS and relates to the Data Acquisition role of SCADA. Operational data acquired from the distribution network is stored here for analysis and reporting. This is a necessary Non-recurrent – maintain activity to update the historian for the newly implemented SCADA platforms.

DMS Transition to auto-mode – Involves activating the automatic response capability in the DMS for Fault Location Isolation and Service Rectification (**FLISR**) to remove the manual decision from the control function to improve response times and reduce the risk of manual operator error thereby improving safety. This has been classified as a Non-recurrent – new capability.

Risks

Risks to budget and timeframe can be associated with enhancement projects, but these are routinely managed and considered low for these activities.

Benefits

The qualitative benefits of this option are expected to be seen through better use of the new SCADA DMS-OMS platform resulting in better outcomes for safety and reliability in asset management.

Summary

This option will enhance the existing systems at low cost and help deliver on the benefits that were expected from the implementation of the new SCADA DMS-OMS platform.

Options Summary

The table below summarises the quantitative and qualitative differences between the analysed options.

	Capex \$2021	Qualitative Risks	Qualitative Benefits
Option 1	N/A	Moderate	Potentially -ve
Option 2	-501,671	Low	High

What We Are Recommending

JEN proposes to proceed with option 2. The customer benefits through improved reliability, and better asset management is likely to far outweigh the investment cost.

Relationship to ICT Capital Forecast	The proposed option for this business case is contained in the ICT investment plan as non-recurrent Project IDs: A906, A908 & A11.
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