Appendix 4.19: Business intelligence business case

Revised regulatory proposal for the ACT electricity distribution network 2019–24

November 2018

evoenergy

Business Case

Business Intelligence

Project Name	Business Intelligence
Owner	[redacted]
Planned or actual start date	Q1 FY20/21
Planned end date	Q1 FY21/22

Synopsis

Implementing a Business Intelligence platform to consolidate data held in disparate applications and form meaningful, actionable insights will enable several initiatives and functions and return significant tangible and intangible benefits to the organisation.

Key Parameters

Project Title:	Business Intelligence	Project No:	N/A
Category	Operational program		
Program	Corporate and ICT Program		
Capex ($M)	$2.88m ($0.98m funded by Evoenergy)	Estimated Start Date	1/10/2020
Net Cost ($M)	$3.16m ($1.07m funded by Evoenergy)	Estimated Finish Date	1/10/2021

Background and Project Mandate

Note that this business case describes the Evoenergy components of a consolidated ActewAGL initiative delivering to all entities of the Joint Venture.

ActewAGL, like most modern organisations is facing an increased need to manage the increasing volume of data, from the digitisation of business, customer management and asset management functions. As additional data is available on asset usage, ActewAGL will have access to more and higher quality data than ever before. Business intelligence (BI) becomes an essential ICT capability to consolidate this data to draw meaningful insights. Importantly, BI will consolidate and replace a variety of existing operational reporting requirements into a single powerful capability.

ActewAGL could continue current practices of building reporting solutions and ad hoc queries to interrogate data from key systems and external data sources. This requires manually analysis of the reported data in order to find answers to key business questions (or to find new questions). Over time as data volumes grow, this approach is likely to be increasingly cumbersome and costly as compared to investment in a formalised BI capability.

Over the past decade, BI has matured as a business concept and its implementation has become significantly less risky (in terms of time and money). ActewAGL is not an early adopter of this technology and will now enjoy the benefits of a more orderly and lower cost investment as outlined in this document.

Business intelligence can transform raw data into meaningful and useful information to help identify and develop new opportunities for further optimising business efficiency and other value creation. When coupled with artificial intelligence, predictive analytics and machine learning, BI will generate insights into customer behaviour at a granular level, make predictions and recommendations around assets and drive improvements in performance through the automation of processes.

Investments in the large scale and holistic business applications described in this document, will enable the collection of even more data from assets, customers and third parties. BI solutions have come to the fore as an effective business management tool, as it gives businesses the ability to handle large amounts of data, in real time. This will enable ActewAGL to harness the power of data that will be collected about performance of its assets and usage of the electricity grid.

BI will provide the capability to gain meaningful insights about our business:

- Asset analytics, providing historical, current and predictive views to support decision making throughout asset lifecycles and better manage and utilise the network
- Customer Analytics to analyse customer behaviour to inform network planning and outage decisions to provide a positive customer experience
- Spend analytics to optimise supply side performance by integrating data from across the business, thereby enabling executives, managers, and frontline employees to make more informed and actionable decisions

- Fleet analytics for real-time analysis of driver and vehicle data collected by an onboard computer and fleet management software. It performs predictive maintenance for fleet thereby reducing the risk of unscheduled maintenance and prevent expensive failures.
- Financial analytics to integrate critical internal and external data from within the enterprise and transform it into actionable intelligence leading to improved business performance.
- HR analytics to improve decision making by helping find answers to key questions about workforce challenges and provides guidance to help solve them. It links workforce utilisation to strategic and financial goals for improved business performance.

BI is a key enabler for Information Technology/Operational Technology network integration, consolidating data to provide insights not currently available. These insights cover a broad range of key business issues, from network modelling and crew management to electric vehicle load optimisation.

Options Analysis

Options Overview

For business intelligence requirements, the following options were considered:

1. Do nothing
   Do nothing. Continue delivering standalone reporting functionality within systems or through SQL Server Reporting Services, requiring refresh during the period.

2. Business Intelligence Implementation
   Leverage a partner to deliver an analytics solution, integrate existing data and consolidate standalone reporting (mid-range estimates).

Cost of the Investment

This business case was estimated with the advice of an external provider as a part of an ICT Strategic review undertaken in 2017. Initiative costs will be refined through approach to the market and approved in a business case prior to implementation. The following costs are estimated to be incurred over the lifetime of the asset.

ICT Expenditure Type	Total Project	Evoenergy Allocation
Capital Expenditure	$2,888	$978
Operating Expenditure	$275	$93

Total	$3,163	$1,071

Note: All amounts are in $Thousands in nominal dollars. **Cost Allocated to Evoenergy in accordance with 'ActewAGL Cost Allocation Methodology'.**

Cost Comparison

The cost comparison for these options over a ten-year period follows. The cost comparison has been undertaken over 5 years to ensure that Evoenergy has taken a long-term view over all IT investments.

Evoenergy Expenditure Option	Implementation Cost	Lifecycle Cost over 10 years	Total
Do nothing	$62	$327	$389
Implement Business Intelligence	$1,071	$746	$1,817

1.1 Regulatory Impact

The expected capital expenditure over the next regulatory period is outlined in the below table.

ICT Expenditure	Year 1 2019/20	Year 2 2020/21	Year 3 2021/22	Year 4 2022/23	Year 5 2023/24	RCP Total
Enterprise wide	-	$2,199	$689	-	-	$2,888
Allocated to Evoenergy	-	$745	$233	-	-	$978

Note: All amounts are in $Thousands in FY 2019 real dollars. Cost Allocated to Evoenergy in accordance with 'ActewAGL Cost Allocation Methodology'.

Benefits

Due to the nature of benefits derived through analytics, identifying tangible, financial benefits prior to actionable insights is difficult. Implementing Business Intelligence is an enabler for several functions and initiatives planned throughout the upcoming period. The benefits map at Appendix 1 provides traceability between functions and initiatives enabled by BI and the outcomes achieved.

- Increased customer satisfaction:
  - Improve customer service through predictive complaints management and proactive response.
  - Develop real time forecasting model to calculate outage times and notify customers.
- Call centre optimisation
  - Identify root cause issues and process inefficiencies.
  - Leverage insight from voice analytics to guide service.
  - Provide early notification for customer with abnormal high usage
- Foundational capability for IT/OT convergence

- Integration of operational and customer data to enhance customer communications
- Proactive energy advice provision to customers

Risk Assessment

The risk assessment for these options follows.

Risk Statement		Option 1	Option 1 Rating	Option 2	Option 2 Rating
Inefficiencies associated with the delivery of Corporate Services are not identified, leading to wasted expense.	Likelihood	Almost Certain	Medium	Unlikely	Low
	Consequence	Minor		Minor	
Siloed or not-available procurement information results in poor value for services or products, leading to wasted expense.	Likelihood	Almost Certain	Medium	Unlikely	Low
	Consequence	Minor		Minor	
Planning without advanced insight leads to down time in the field and the need for reactive/manual interventions, leading to inefficient operations.	Likelihood	Almost Certain	Medium	Unlikely	Low
	Consequence	Minor		Minor	

Investment Appraisal

($000's)	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	Total
Capital Expenditure											
BI and Analytics Platform	-	2,199	689	-	-	-	-	-	-	-	2,888
Total Capital Expenditure	-	2,199	689	-	-	-	-	-	-	-	2,888
Evoenergy share (after CAM)	-	*745*	*233*	-	-	-	-	-	-	-	*978*
Operating Expenditure											
BI and Analytics Platform	-	275	275	275	275	275	275	275	275	275	2,475
Total Operating Expenditure	-	275	275	275	275	275	275	275	275	275	2,475
Evoenergy share (after CAM)	-	*93*	*93*	*93*	*93*	*93*	*93*	*93*	*93*	*93*	*837*
Project Benefits											
BI and Analytics Platform	-	-	-	-	-	-	-	-	-	-	-
Total Benefits	-	-	-	-	-	-	-	-	-	-	-
Evoenergy share (after CAM)	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	220	509	578	578	578	358	69	-	-	2,888
Tax	-	148	235	256	256	256	190	103	83	83	1,609
Net Cash Flows	-	(2,326)	(729)	(19)	(19)	(19)	(85)	(172)	(193)	(193)	(3,754)
PV of Net Cash Flows	-	(2,177)	(639)	(16)	(15)	(14)	(57)	(108)	(114)	(106)	(3,246)
Cumulative PV	-	(2,177)	(2,816)	(2,832)	(2,847)	(2,860)	(2,918)	(3,026)	(3,140)	(3,246)	-

	NPV (Entreprise)	NPV (Evoenergy)
ICT Platforms	(3,246)	(1,057)
Total NPV	(3,246)	(1,057)

Assumptions	
Cost of Capital	6.38%
Cost Increase	2.50%
Asset Effective life (years)	5
Tax Rate	30%
Evoenergy CAM	33%

Justification against NER objectives and criteria

Mapping to NER Capital Expenditure Objective(s)

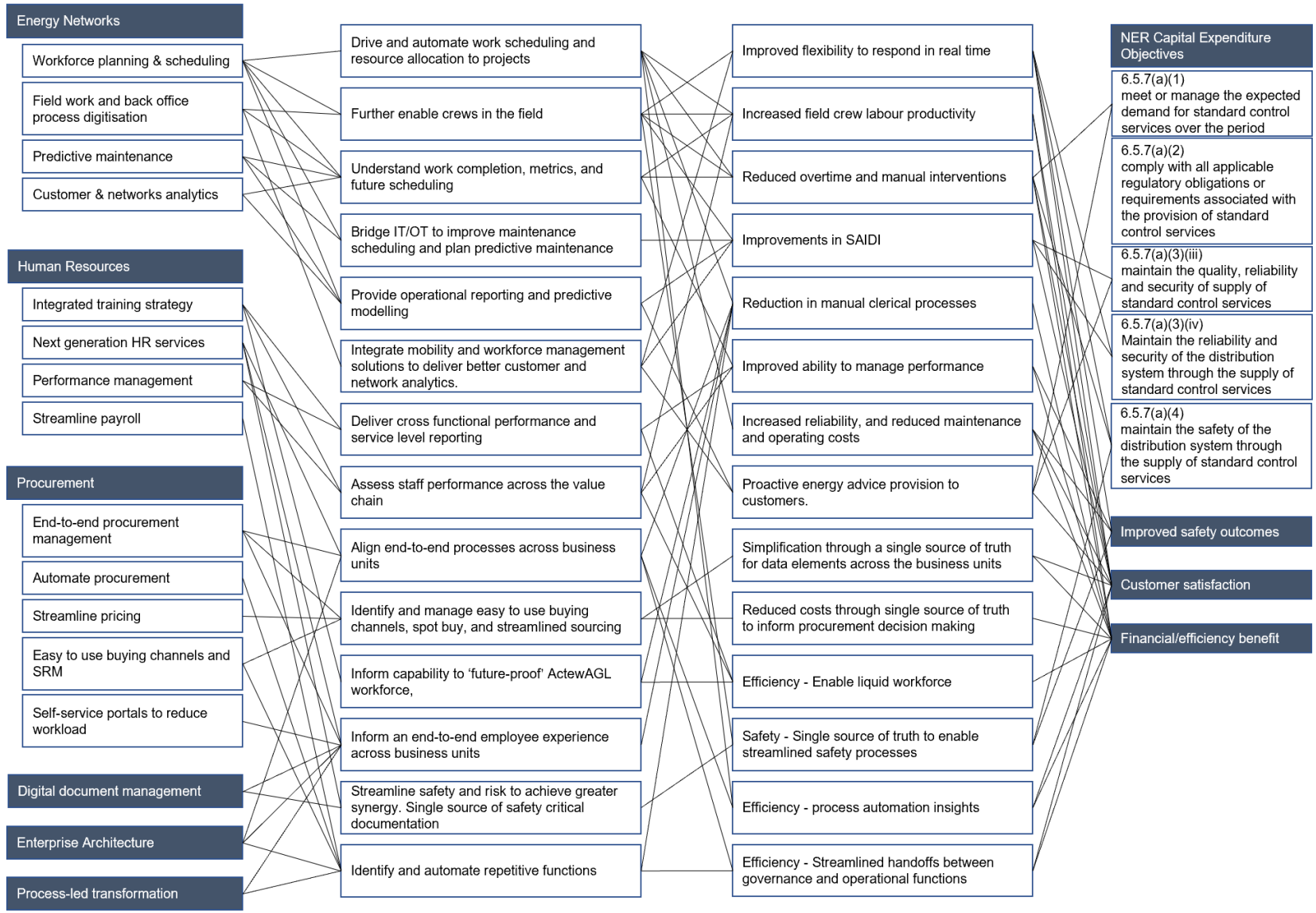
Mapping to the relevant 'Capital expenditure objective(s)' (Chapter 6, National Electricity Rules) *The forecasted capital expenditure is considered necessary to achieve:*	
6.5.7(a)(1) meet or manage the expected demand for standard control services over that period;	• Improve the ability to analyse and inform decisions regarding demand for standard control services
6.5.7(a)(2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services;	• The Business Intelligence program will indirectly support compliance through improving the quality and level of details required of the enterprise data and its input into regulatory and energy market reporting activities.
6.5.7(a)(3) to the extent that there is no applicable regulatory obligation or requirement in relation to: (i) the quality, reliability or security of supply of standard control services; or (ii) the reliability or security of the distribution system through the supply of standard control services, to the relevant extent: (iii) maintain the quality, reliability and security of supply of standard control services; and (iv) Maintain the reliability and security of the distribution system through the supply of standard control services.	• The Business Intelligence Program will support ActewAGL to understand the key metrics and performance indicators that will deliver the value to the business. This supports the ability to make informed decisions relevant to the business and more responsive organisation planning to ensure effective allocation of resources and investment to maintain the continued and efficient delivery of standard control services.
6.5.7(a)(4) maintain the safety of the distribution system through the supply of standard control services	• The preferred option will indirectly support the safety of the distribution through provision of better understanding of risk trends across distribution systems and the effective use of resources to mitigate. • Safety in the operation of the network will be improved through consolidated, streamlined safety processes, increased ability to respond in real time, and predictive maintenance of network assets.

Mapping to NER Capital Expenditure Criteria

Mapping to 'Capital expenditure criteria' (Chapter 6, National Electricity Rules) *The forecasted capital expenditure reasonably reflects each of the following:*	
6.5.7(c)(1) the efficient costs of achieving the capital expenditure objectives;	• The preferred option focuses on reducing the manual processes associated with the current reporting, reducing reliance on external contracts to develop BI and reporting capabilities, and increasing the quality of the reporting. The project will support the achievement of efficient cost to achieve reporting and business intelligence objectives.
6.5.7(c)(2) the costs that a prudent operator would require to achieve the capital expenditure objectives; and	• The capital expenditure includes cost efficiencies obtained from co-ordinating the timing of this project with implementation in other business units.
6.5.7(c)(3) a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objectives.	• The preferred option will support the delivery of the most effective solution, while also ensuring that the overall capital expenditure is comparable with other DNSP BI capital investments.

Recommendation

The recommendation is to implement the Business Intelligence platform.


Function/Initiative
is enabled by BI to…
resulting in....
to achieve…
Energy Networks
Workforce planning & scheduling
Field work and back office process digitisation
Predictive maintenance
Customer & networks analytics
Human Resources
Integrated training strategy
Next generation HR services
Performance management
Streamline payroll
Procurement
End-to-end procurement management
Automate procurement
Streamline pricing
Easy to use buying channels and SRM
Self-service portals to reduce workload
Digital document management
Enterprise Architecture
Process-led transformation
Drive and automate work scheduling and resource allocation to projects
Further enable crews in the field
Understand work completion, metrics, and future scheduling
Bridge IT/OT to improve maintenance scheduling and plan predictive maintenance
Provide operational reporting and predictive modelling
Integrate mobility and workforce management solutions to deliver better customer and network analytics.
Deliver cross functional performance and service level reporting
Assess staff performance across the value chain
Align end-to-end processes across business units
Identify and manage easy to use buying channels, spot buy, and streamlined sourcing
Inform capability to 'future-proof' ActewAGL workforce,
Inform an end-to-end employee experience across business units
Streamline safety and risk to achieve greater synergy. Single source of safety critical documentation
Identify and automate repetitive functions
Improved flexibility to respond in real time
Increased field crew labour productivity
Reduced overtime and manual interventions
Improvements in SAIDI
Reduction in manual clerical processes
Improved ability to manage performance
Increased reliability, and reduced maintenance and operating costs
Proactive energy advice provision to customers.
Simplification through a single source of truth for data elements across the business units
Reduced costs through single source of truth to inform procurement decision making
Efficiency - Enable liquid workforce
Safety - Single source of truth to enable streamlined safety processes
Efficiency - process automation insights
Efficiency - Streamlined handoffs between governance and operational functions
NER Capital Expenditure Objectives
6.5.7(a)(1) meet or manage the expected demand for standard control services over the period
6.5.7(a)(2) comply with all applicable regulatory obligations or requirements associated with the provision of standard control services
6.5.7(a)(3)(iii) maintain the quality, reliability and security of supply of standard control services
6.5.7(a)(3)(iv) Maintain the reliability and security of the distribution system through the supply of standard control services
6.5.7(a)(4) maintain the safety of the distribution system through the supply of standard control services
Improved safety outcomes
Customer satisfaction
Financial/efficiency benefit