South Australian Power Network's ICT expenditure 2015-20

Australian Energy Regulator

9 July 2015

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1 Executive Summary

The SA Power Networks (SAPN) Regulatory Proposal for the period 2015-2020 outlines a range of outcomes it plans to achieve. To deliver on these, SAPN has proposed a program of IT works with a capital investment of $286.92[1] million and operating expenditure of $188 million. In addition, capital expenditure on non-IT[2] business tasks associated with the implementation of the IT projects is estimated at $43 million.

SAPN note this investment is significantly higher than IT investment in the 2010-2015 Regulatory Control Period (RCP) and explain it is required to enable five initiatives:

1. **Manage system lifecycle changes** – some systems will approach "end of life" and need upgrade or replacement to meet changing business requirements.
2. **Enable compliance** – new regulatory and legal obligations include Regulatory Information Notice (RIN) reporting, Australian Privacy Principles and Harmonisation legislation.
3. **Move towards cost-reflective pricing tariffs and customer preferences** – to meet the Australian Energy Market Commission's (AEMC) Power of Choice Review and customer preferences.
4. **Drive business efficiencies** – in the sector, rising maintenance and replacement costs of ageing assets, severe weather events and bushfire management all demand more efficient practices. Within the business, increased workforce mobility and the need for optimised planning, scheduling and execution of work also drive ongoing improvements.
5. **Service levels and risk management** - increased complexity and business criticality of technology and higher security threat levels demand effort to maintain ongoing service levels.

SAPN's IT function reports that it has experienced increased demand for delivery of improved, agile services that support core business applications and infrastructure. They anticipate that the portfolio of business applications will grow and they will become more critical to business operations. This growth will put more emphasis on the IT function to deliver reliable systems that perform well, are supported efficiently and are used to their best capability across the organisation. Moreover, the organisation will increasingly rely on mobile technology and the availability of efficient business functionality for work tasks regardless of device, location or environment.

Over and above the network-related demand, SAPN has had to increase its software upgrades and equipment renewals in line with supplier recommendations for systems installed during the current regulatory period. The compounding effect of the new business systems, data storage, network capacity, disaster recovery and integration with existing systems has resulted in the reported need for increased investment.

The IT Program of Works features six investment themes designed to enable these initiatives. The themes are depicted in Figure 1 below.

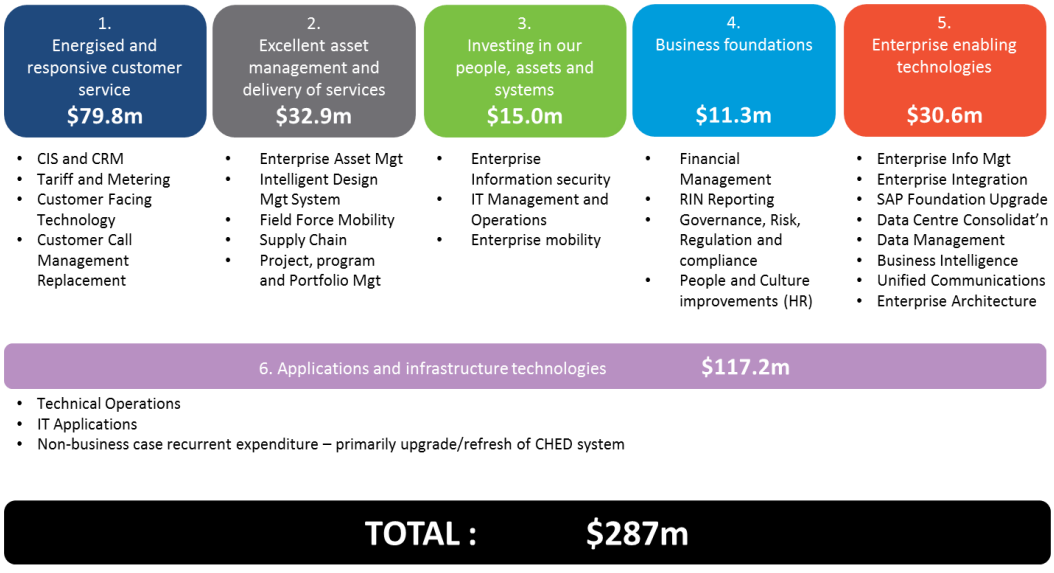
[1] Unless otherwise stated, all costs in this document are expressed in real FY2013/14 dollars

[2] Non-IT costs represent business tasks associated with development and implementation of non-recurrent IT capital projects (e.g. change management, business analysis). These costs are included in the IT forecast model for the purpose of estimating the total cost of ownership, but have been allocated to other business units.

Figure 1: Six investment themes provide structure for proposed IT Projects in the regulatory period

SAPN's proposed program works involves 27 IT projects across the six investment themes as shown in Figure 2 below.

Figure 2: Proposed IT Projects for the regulatory period



This report provides a systematic review of the SAPN IT program of work from two perspectives:

1. A bottom-up evaluation of the justification for individual IT projects against the requirements of the NEM.
2. An assessment of the practical deliverability of the program of work within the regulatory control period.

1.1 Individual project evaluation

The proposed capital investment to deliver SAPN's program is $286 million, as shown in Table 1.

Table 1: SAPN - Proposed capital investment program

$000 real 2013-14		2015-16	2016-17	2017-18	2018-19	2019-20	Total
Energised and Responsive Customer Service (non-recurrent expenditure)							**79,810**
BC01- CIS and CRM	50,200	8,500	1,920	4,270	22,530	12,990	50,210
BC20 – Tariff and Metering	21,140	4,330	2,490	8,010	4,370	1,940	21,140
BC02a – Customer Facing Technology	7,680	90	1,300	1,300	1,300	3,690	7,680
BC02 – Customer Call Management Replacement	790	0	390	390	0	0	780
		12,920	6,100	13,970	28,200	18,620	
Excellence in Asset Management and Delivery of Services (non-recurrent expenditure)							**32,900**
BC03 – Enterprise Asset Management	13,140	1,530	3,780	2,980	2,760	2,090	13,140
BC10 – Intelligent Design Management System	7,360	1,250	2,640	1,090	1,300	1,080	7,360
BC16 – Field Force Mobility	6,350	2,900	1,140	160	720	1,430	6,350
BC05a – Supply Chain	3,100	1,370	1,390	170	170	0	3,100
BC05b – Project, Program and Portfolio management	2,950	2,040	550	280	40	40	2,950
		9,090	9,500	4,680	4,990	4,640	
Investing in our People, Assets and Systems (non-recurrent expenditure)							**15,040**
BC26 – Enterprise Information Security	6,690	2,450	1,290	1,450	610	870	6,670
BC29 – IT Management and Operations	6,120	1,910	1,540	1,740	630	310	6,130
BC14 – Enterprise Mobility	2,230	1,340	220	240	180	260	2,240
		5,700	3,050	3,430	1,420	1,440	
Business Foundations (non-recurrent expenditure)							**11,330**
BC04 – Financial Management	4,740	1,220	1,320	1,020	690	490	4,740
BC32 – RIN Reporting	3,700	1,440	1,450	770	40	0	3,700
BC31 – Governance, Risk, Regulation and Compliance	1,530	0	0	20	420	1,090	1,530
BC11 – People and Culture Improvements (HR Systems)	1,360	600	160	240	270	90	1,360
		3,260	2,930	2,050	1,420	1,670	
Enterprise Enabling Technologies (non-recurrent expenditure)							**30,610**
BC24 – Enterprise Information Management	6,960	3,040	1,350	950	860	760	6,960
BC18 – Enterprise Integration	6,280	2,880	2,410	830	40	120	6,280
BC09 – SAP Foundation Upgrade	5,820	3,270	0	290	600	1,650	5,810
BC17 – Data Centre Consolidation	4,120	3,330	790	0	0	0	4,120
BC22 - Data Management	2,420	1,080	1,020	280	20	20	2,420
BC21 – Business Intelligence Enablement	2,420	690	1,050	550	80	50	2,420
BC12a – Unified Communications	1,770	580	850	300	40	0	1,770
BC07 – Enterprise Architecture	820	540	100	180	0	0	820
		15,410	7,570	3,380	1,640	2,600	
Applications and Infrastructure Refresh (recurrent expenditure)							**117,250**
BC27 – Technical Operations	41,650	9,170	7,940	7,790	8,370	8,380	41,650
BC28 – IT Applications	59,870	13,490	12,340	11,340	11,320	11,380	59,870
Non business case recurrent expenditure – primarily jointly owned CHED system u	15,730	2,820	3,410	3,580	2,350	3,570	15,730
		25,480	23,690	22,710	22,040	23,330	
		71,860	**52,840**	**50,220**	**59,710**	**52,300**	**286,940**

Our assessment confirms that core applications will need replacement or updates in the five year regulatory period to support network operating functions. These are outlined in Figure 3 below.

Figure 3: Core applications that need replacement or upgrade

Energised and responsive customer service	Excellent asset management and delivery of services	Investing in our people, assets and systems	Business foundations	Enterprise enabling technologies
• Tariff/ Metering • Customer Facing Tech • Customer Call Centre Mgt	• Intelligent Design Mgt • Field Force Mobility	• Enterprise information security	• Financial Mgt • RIN Reporting • Governance, Risk, Regulation and Compliance	• SAP Upgrades • Data Centre • Data Mgt • Unified Comms

Some proposed programs have components beyond core resilience and service requirements that aim for operational efficiency. Where these are supported by clear analysis with a positive return to reduce costs to customers, they have been incorporated. Projects that cannot be justified either for essential service delivery or demonstrable benefits have been excluded from our proposed revised view of justified expenditure. Table 2 is a summary of our conclusions on individual projects in SAPN's capital program. The total **$209,315 million** shown is a 27% reduction of the original SAPN proposal.

Table 2: Assessment of project justification against NEM criteria

$000 real 2013-14	2015-16	2016-17	2017-18	2018-19	2019-20	Total	
						47,595	
BC01- CIS and CRM	5,262	923	1,195	4,881	18,690	30,950	Non-discretionary. Change to cloud and reduce contingency
BC20 – Tariff and Metering	672	1,551	3,440	1,894	628	8,185	Accepted, with costs reduced to only basic capability and contestable metering.
BC02a – Customer Facing Technology	90	1,300	1,300	1,300	3,690	7,680	Accepted as prudent.
BC02 – Customer Call Management Replacement	0	390	390	0	0	780	Accepted as prudent.
	6,024	4,164	6,325	8,074	23,008		
						13,710	
BC03 – Enterprise Asset Management	0	0	0	0	0	0	Removed - discretionary.
BC10 – Intelligent Design Management System	1,250	2,640	1,090	1,300	1,080	7,360	Accepted as justified for delivery of future capacity.
BC16 – Field Force Mobility	2,900	1,140	160	720	1,430	6,350	Accepted as justified for delivery of future capacity.
BC05a – Supply Chain	0	0	0	0	0	0	Removed - discretionary.
BC05b – Project, Program and Portfolio management	0	0	0	0	0	0	Removed - discretionary.
	4,150	3,780	1,250	2,020	2,510		
						6,670	
BC26 – Enterprise Information Security	2,450	1,290	1,450	610	870	6,670	Accepted as necessary to deliver security requirements.
BC29 – IT Management and Operations	0	0	0	0	0	0	Removed - discretionary.
BC14 – Enterprise Mobility	0	0	0	0	0	0	Removed - discretionary.
	2,450	1,290	1,450	610	870		
						9,970	
BC04 – Financial Management	1,220	1,320	1,020	690	490	4,740	Accepted as partially non-discretionary.
BC32 – RIN Reporting	1,440	1,450	770	40	0	3,700	Accepted as prudent.
BC31 – Governance, Risk, Regulation and Compliance	0	0	20	420	1,090	1,530	Accepted - discretionary but action needed and not material.
BC11 – People and Culture Improvements (HR Systems)	0	0	0	0	0	0	Removed - NPV unproven.
	2,660	2,770	1,810	1,150	1,580		
						14,120	
BC24 – Enterprise Information Management	0	0	0	0	0	0	Case well made but NPV is quite negative.
BC18 – Enterprise Integration	0	0	0	0	0	0	Removed - discretionary. Qualitative benefits not converted to postive NPV.
BC09 – SAP Foundation Upgrade	3,270	0	290	600	1,650	5,810	Accepted - mostly non-discretionary.
BC17 – Data Centre Consolidation	3,330	790	0	0	0	4,120	Accepted - mostly non-discretionary.
BC22 - Data Management	1,080	1,020	280	20	20	2,420	Accepted - discretionary but action justified.
BC21 – Business Intelligence Enablement	0	0	0	0	0	0	Removed - discretionary with negative NPV.
BC12a – Unified Communications	580	850	300	40	0	1,770	Accepted - mostly discretionary but positive NPV.
BC07 – Enterprise Architecture	0	0	0	0	0	0	Removed - discretionary with negative NPV.
	8,260	2,660	870	660	1,670		
						117,250	
BC27 – Technical Operations	9,170	7,940	7,790	8,370	8,380	41,650	Recurrent - not reviewed
BC28 – IT Applications	13,490	12,340	11,340	11,320	11,380	59,870	Recurrent - not reviewed
Non business case recurrent expenditure – primarily jointly owned CHED system upgrades and refreshes	2,820	3,410	3,580	2,350	3,570	15,730	Recurrent - not reviewed
	25,480	23,690	22,710	22,040	23,330		
	49,024	**38,354**	**34,415**	**34,554**	**52,968**	**209,315**	

1.2 Program deliverability

In a parallel activity, Nous has considered the deliverability of the total SAPN IT work program and taken into account two factors:

1. **The overall scale of the program**. The original program proposed by SAPN plans to replace or significantly upgrade almost every area of IT, especially in the first two years of the regulatory period. As their Roadmap[3] shows, the program has a large and complex set of interdependent deliverables. In our view, it would be optimistic to plan to deliver this large program in such rapid succession, particularly when the organisation must significantly scale up to tackle the challenge.
2. **Interdependencies within the program.** The project by project evaluation covered in the previous section potentially reduces the scale of the task by 27%, but this introduces some logical inconsistencies due to dependencies that would be broken if the program were implemented as a literal translation of Table 2.

To tackle both issues, we evaluated the timing of the sub-programs and actions required to restore logical consistency to the reduced program of work. We also considered the potential staging of some program elements to provide more breathing space for a logical flow-through of related components. This results in a further refinement of the proposed IT work program to one that is both logically consistent and more deliverable than the original.

Based on a starting point as the profile in Table 2, changes made to the program of delivery are:

- reinstate part of the **Enterprise Asset Management** project.
- restore **Enterprise Mobility** as an enabler of **Field-Force Mobility**, but staged differently.
- defer the accepted cloud-based **CIS and CRM** project by a year.
- restore a component of **Enterprise Integration** to support a downstream dependency.

This results in a reduction in investment to **$206,958 million** with a logically consistent and more achievable work program. Table 3 provides the adjusted capital profile.

While the totals in Table 2 and Table 3 are almost the same, the profile of expenditure in Table 3 is the Nous recommendation of the capital that would support an achievable program with major dependencies in place.

[3] See Appendix F of the SAPN IT Investment Plan 2015-2020

Table 3: Revised SAPN work program with dependencies restored

$000 real 2013-14	2015-16	2016-17	2017-18	2018-19	2019-20	Total	Changes from Table 2
						28,906	
BC01- CIS and CRM	0	5,262	923	1,195	4,881	12,261	Project deferred by one year
BC20 – Tariff and Metering	672	1,551	3,440	1,894	628	8,185	
BC02a – Customer Facing Technology	90	1,300	1,300	1,300	3,690	7,680	
BC02 – Customer Call Management Replacement	0	390	390	0	0	780	
	762	8,503	6,053	4,389	9,199		
						23,302	
BC03 – Enterprise Asset Management	1,530	3,423	2,623	2,433	1,733	11,742	Core components reinstated
BC10 – Intelligent Design Management System	1,250	2,640	1,090	1,300	1,080	7,360	
BC16 – Field Force Mobility	0	0	2,900	1,140	160	4,200	Deferred by two years
BC05a – Supply Chain	0	0	0	0	0	0	
BC05b – Project, Program and Portfolio management	0	0	0	0	0	0	
	2,780	6,063	6,613	4,873	2,973		
						8,650	
BC26 – Enterprise Information Security	2,450	1,290	1,450	610	870	6,670	
BC29 – IT Management and Operations	0	0	0	0	0	0	
BC14 – Enterprise Mobility	0	1,340	220	240	180	1,980	Reinstated with one year deferral
	2,450	2,630	1,670	850	1,050		
						9,970	
BC04 – Financial Management	1,220	1,320	1,020	690	490	4,740	
BC32 – RIN Reporting	1,440	1,450	770	40	0	3,700	
BC31 – Governance, Risk, Regulation and Compliance	0	0	20	420	1,090	1,530	
BC11 – People and Culture Improvements (HR Systems)	0	0	0	0	0	0	
	2,660	2,770	1,810	1,150	1,580		
						18,880	
BC24 – Enterprise Information Management	0	0	0	0	0	0	
BC18 – Enterprise Integration	1,800	1,400	1,400	40	120	4,760	Core components reinstated
BC09 – SAP Foundation Upgrade	3,270	0	290	600	1,650	5,810	
BC17 – Data Centre Consolidation	3,330	790	0	0	0	4,120	
BC22 - Data Management	1,080	1,020	280	20	20	2,420	
BC21 – Business Intelligence Enablement	0	0	0	0	0	0	
BC12a – Unified Communications	580	850	300	40	0	1,770	
BC07 – Enterprise Architecture	0	0	0	0	0	0	
	10,060	4,060	2,270	700	1,790		
						117,250	
BC27 – Technical Operations	9,170	7,940	7,790	8,370	8,380	41,650	
BC28 – IT Applications	13,490	12,340	11,340	11,320	11,380	59,870	
Non business case recurrent expenditure – primarily jointly owned CHED system upgrades and refreshes	2,820	3,410	3,580	2,350	3,570	15,730	
	25,480	23,690	22,710	22,040	23,330		
	44,192	**47,716**	**41,126**	**34,002**	**39,922**	**206,958**	

1.3 Project non-IT costs

Nous assessed the reasonableness of the proposed capital expenditure on non-IT[4] business tasks associated with SAPN's project implementations. The non-IT capital investment proposed in the original program of work is estimated at $43 million. After review, Nous has found opportunities for reduction in this investment.

After revisions to the program as reflected in Table 3, several projects recommended for rejection have associated non-IT capital investment which would no longer be required. This reduces the non-IT costs by $16.78m.

Over and above this amount, Nous considers the non-IT capital component of the following projects can also be reduced:

- **CIS and CRM** allocations for project management, change management and contingency have been reduced. The revised capital expenditure for this project of $30.95m includes a revised allocation of $9m for project management, change and contingency cost which is at a level considered adequate. This does not include 20% contingencies included in hardware and software allocations. Therefore the additional $4m non-IT costs have been removed.
- **Tariffs and Metering** partial investment has been accepted, reduced to reflect basic capability and contestable metering only (which reflects 39% of the original level of investment). The non-ICT business change costs have been reduced pro-rata to $1.68m.
- **Enterprise Asset management**, with a reduced scope to reflect implementation of core components only. The revised capital expenditure is 89% of the original investment. The non-ICT business change costs have been reduced pro-rata to $6.6m.
- **Field Force Mobility,** being deferred for two years. The revised capital expenditure is 39% of the original investment. The non-ICT business change costs have been reduced pro-rata to $1.18m.
- **RIN Reporting** Project (of $10.4 m) is significantly overstated and can be reduced to $4.3m.

This results in lower overall investment of $22.9m (a 46% reduction) and the outcome is summarised in Table 4. The detailed analysis for the relevant projects is provided in *Section 2*.

[4] Non-IT costs are represented by SAPN as business tasks associated with development and implementation of non-recurrent IT capital projects (e.g. change management, business analysis). These costs are included in the IT forecast model for the purpose of estimating the total cost of ownership, but have been allocated to other business units.

Table 4: Non-IT Costs for 2015-20 Regulatory Period – Original and Reviewed

Non-IT Costs $000 real 2013-14	Total proposed	Nous review	
Energised and Responsive Customer Service (non-recurrent expenditure)			
BC01- CIS and CRM	4,086	0	Non-discretionary. Change to cloud and reduce contingency
BC20 – Tariff and Metering	4,319	1,684	Accepted, with costs reduced to only basic capability and contestable metering.
BC02a – Customer Facing Technology	0	0	Accepted as prudent.
BC02 – Customer Call Management Replacement	0	0	Accepted as prudent.
Excellence in Asset Management and Delivery of Services (non-recurrent expenditure)			
BC03 – Enterprise Asset Management	7,461	6,640	Core components reinstated. 89% of Non-IT costs reinstated to align.
BC10 – Intelligent Design Management System	1,235	1,235	.
BC16 – Field Force Mobility	1,798	1,187	Deferred by two years. Costs apportioned accordingly for the period (66%)
BC05a – Supply Chain	860	0	Removed - discretionary.
BC05b – Project, Program and Portfolio management	3,625	0	Removed - discretionary.
Investing in our People, Assets and Systems (non-recurrent expenditure)			
BC26 – Enterprise Information Security	3,793	3,793	Accepted as necessary to deliver security requirements.
BC29 – IT Management and Operations	80	0	Removed - discretionary.
BC14 – Enterprise Mobility	0	0	Removed - discretionary.
Business Foundations (non-recurrent expenditure)			
BC04 – Financial Management	3,793	3,793	Accepted as partially non-discretionary.
BC32 – RIN Reporting	10,430	4,350	Accepted as prudent.
BC31 – Governance, Risk, Regulation and Compliance	137	137	Accepted - discretionary but action needed and not material.
BC11 – People and Culture Improvements (HR Systems)	677	0	Removed - NPV unproven.
Enterprise Enabling Technologies (non-recurrent expenditure)			
BC24 – Enterprise Information Management	0	0	Case well made but NPV is quite negative.
BC18 – Enterprise Integration	0	0	Removed - discretionary. Qualitative benefits not converted to postive NPV.
BC09 – SAP Foundation Upgrade	8	8	Accepted - mostly non-discretionary.
BC17 – Data Centre Consolidation	0	0	Accepted - mostly non-discretionary.
BC22 - Data Management	108	108	Accepted - discretionary but action justified.
BC21 – Business Intelligence Enablement	0	0	Removed - discretionary with negative NPV.
BC12a – Unified Communications	0	0	Accepted - mostly discretionary but positive NPV.
BC07 – Enterprise Architecture	0	0	Removed - discretionary with negative NPV.
Applications and Infrastructure Refresh (recurrent expenditure)			
BC27 – Technical Operations	0	0	
BC28 – IT Applications	0	0	
Non business case recurrent expenditure – primarily jointly owned CHED system upgrades and refreshes	0	0	
	42,410	**22,935**	

2 Project evaluations

This section considers projects in their own right. The following Section 3 examines the deliverability of the program and adjustments required to restore lost dependencies.

2.1 Theme 1: Energised and responsive customer service

SAPN wishes to be well placed to deliver on their Customer Service Strategy outlines a vision for 2016 – 2020 which proposes to *"build on a solid foundation of systems to maintain services and functions that customers value, delivered in a consumer-friendly way"*. South Australian energy consumers' expectations should also be met and SAPN must comply with NER expenditure objectives. To deliver on these demands, SAPN plans to:

- replace their customer management systems with "a modern, flexible billing engine and customer management capability" to align with NER objectives, deliver on the business driver to *"Maintain current levels of service"* and align with the regulatory driver of *"Change in operating environment"*.
- improve customer billing accuracy with a new capability in low voltage (LV) network monitoring after the smart meter roll out across South Australia.
- upgrade systems to deliver on customers' expectations of high quality information, immediacy and personalisation in every interaction with SAPN. They will have access to multiple channels and utilise user-friendly interfaces.
- improve the quality of their customer interactions with an improved Call Centre capability, clearer information and a more responsive service.

Four projects are proposed in this program of work to deliver on the demands within the current level of reliability and cost. The total investment required is $79.81m as shown in Table 5 below.

Table 5: Summary of Theme 1 projects

Reference	Project name	Investment $m
BC01	CIS and CRM	50.2
BC20	Tariff and Metering	21.1
BC02a	Customer Facing Technology	7.7
BC02	Customer Call Management Replacement	0.8
	Total	**79.81**

The projects are reviewed in the remainder of this section.

2.1.1 Customer Information System (BC01)

Key findings:

- The current CIS/CRM system is technically obsolete and will be unsupported in 2022 (at expiration of the current service agreement).
- Due to the system's "end-of life", the proposed investment is non-discretionary.
- Nous proposes that the "cloud supported" CRM option outlined in the business case be selected as the most efficient option with best NPV.
- The project has a clear interdependency with the Tariffs & Metering and Enterprise Integration projects. Also possibly with SAP, Call Centre Management and Customer Facing Technology projects. The Tariff & Metering Business Case assumes that the CIS OV platform is upgraded first.

Recommendation:

- Accept the costs proposed by SAPN, subject to adjustments covered in Section 3.

2.1.1.1 Project summary

This project[5] will replace the customer information system (CIS OV) and the customer relationship management (CRM) system so that SAPN delivers on its customer service vision for 2020, meet South Australian energy consumers' expectations and comply with NER expenditure objectives.

2.1.1.2 Need

SAPN's billing and customer related systems (CIS OV) are at "end of life" and technically obsolete. Although the vendor indicated they would not provide support after 2016, SAPN has extended this until 2021 on the condition that *" future enhancements to current CIS OV functionality within the scope and capabilities of the current technology stack"*. This limits potential system modifications over that period. After consultations with stakeholders (in TalkingPower™), SAPN developed the Customer Service Strategy. Achievement of this relies on an accurate, secure and supported suite of billing and customer related systems that are flexible and responsive to change.

The CIS OV 'technology stack' comprises several technologies from vendors with various "end of support" dates. Failure of one component can lead to a failure in the overall system, so component-related risks are magnified throughout system. An independent[6] risk assessment identified interim risk measures but residual risk will increase until the systems are replaced. SAPN sees that it must meet distribution licence obligations and maintain its ability to:

- collect and process meter data then analyse and report on it for network bills and regulatory reporting
- manage service orders
- manage Meter Assets
- manage customer and property information
- conduct Network Load Analysis
- respond to market changes.

In Nous opinion, maintaining a supported CIS environment is sound practice and justified for SAPN to meet its customer obligations.

[5] The project and its business case were externally reviewed by Deloitte.
[6] Conducted by Ernst and Young

2.1.1.3 Options

SAPN identified the following four options:

- **Option 1: Integrated CIS supplemented with CRM:** similar to current architecture - modular solutions and consolidation of functionality into existing systems including SAP ERP.
- **Option 2: Modular implementation differentiated by the Hosting approach.**
  - **Option 2a: Modular Solutions with "On Premise" CRM** - SAPN operates and manages the systems.
  - **Option 2b: Cloud hosting** - a third party provides service and SAPN subscribes to it. Cloud Services Strategy recommends a considered approach to use of cloud services with a focus on non-critical capabilities as understanding of the associated service models and value proposition develops.
- **Option 3: Do Nothing** – maintain current arrangement.

The SAPN recommendation is **Option 2a,** to introduce an "on-premise" modular solution operated and managed by SAPN IT function.

Nous considers that the most conservative (internal) option has been chosen. Nous proposes that **Option 2b, "Cloud supported"** CRM option outlined in the business case is the most efficient option, as supported by the best NPV. It is not chosen by SAPN mainly through concerns about the unproven nature of cloud processes

The Nous view is that there are well established industry out-sourcing and cloud processes that can minimise risk, especially in customer management solutions. On this basis, we determine that the capital profile of Option 2b is both efficient and prudent.

2.1.1.4 Scope

The scope of this project is organisation-wide across SAPN. Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.1.1.5 Cost

The total investment over the 11 year implementation period from (2014/15 to 2024/25 is $93.1m. During the regulatory period, the proposed capital project delivery cost is $53.9m. The alternative profile, based on cloud delivery, supported by Nous is shown in Table 6.

Table 6: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	6.40	1.19	1.45	5.90	22.64	37.49

Nous notes that labour costs are a large proportion of the costs for Option 2a and even more so for Option 2b. The business case prepared by Deloitte states[7] that based on their standard estimating approach, a hardware overhead of 20% of labour costs and a software overhead of 20% of labour costs has been applied. In addition, allocations for project management (15% of labour costs) and change management (10% of labour costs) have also been applied. The business case further states that

[7] See page 71, *"Deloitte: CIS & CRM Business Case"* dated 31 March 2014 v..32 FINAL.

Deloitte's prior implementation experience for projects of a similar size and nature necessitates a contingency of 30%, which has been applied in this business case. In addition, a 10% contingency has been applied based on the SAPN standard contingency rate.

In Nous opinion, this is a highly conservative approach with multiple contingencies being applied to cover similar possible events. The 30% allowance by Deloitte may be tenable if it covers all contingencies To apply all of these allowances separately is not reasonable.

SAPN subsequently revised the original business case[8] and the more recent financial modelling notes[9] that *"the project management and business analysis costs were transferred from IT to the business owner's area*". The required investment in the revised business case is slightly reduced. However, although it is noted that in some cases the daily rates used to calculate labour estimates reduced, the document does not note any reduction in the contingencies applied. Nous therefore assumes that the contingency levels remain the same.

We have reconstructed the project contingencies for Option 2b in Figure 4 by extracting the 30% Deloitte and 10% SAPN contingencies from the labour component alone. We have left the hardware and software contingencies intact. By the analysis, we estimate that the total of contingencies applied, project management and change management is approximately $19m or 76% of the original labour cost.

Figure 4: Proposed contingencies in CIS CRM Project for option 2b "Cloud" $m

	Original	Nous recommendation	Basis
Labour	25,214	25,214	
Software	8,800	8,800	
Hardware	2,300	2,300	
Base total (before contingency)	**36,314**	**36,314**	
Deloitte standard contingency (estimated)	7,564	-	
SAPN standard contingency (estimated)	2,521	2,521	10% of labour
Project Management	5,500	3,631	10% of total base
Change Management	3,700	2,521	10% of labour
Total	55,600	44,989	
In Regulatory Period	**37,497**	**30,950**	

Nous has recalculated the contingency that should reasonably be applied to this project and this is also shown in in the column titled "Nous recommendation". In this view, the recommended contingencies are 10% of the total project base for project management, 10% of labour for change management and the overall 10% of labour for the SAPN standard contingency. Note that the 20% contingencies on hardware and software are still embedded in the amounts in both columns. This brings the total investment required to $45m with $31m being in the 2015-20 regulatory period.

[8] See "Review and Summary of CIS CRM Business Case" dated 7 October 2014 version 1.0, by SAPN.
[9] Reference page 12 of the SAPN "Review and Summary of CIS CRM Business Case" dated 7 October 2014.

2.1.1.6 Timing

The proposed timing with peak delivery at the end of the 2015-20 period is appropriate given the end-of-life of the existing solution.

2.1.1.7 Conclusion

Based on our above review, Nous considers that the proposed technology investment is non-discretionary due to end-of life of existing system. Whilst action is required to address the issue, the most conservative (internal) option has been chosen by SAPN. Nous proposes that **Option 2b, "Cloud supported"** CRM option outlined in the business case is the most efficient option, as supported by the best NPV.

For the recommended Option (2b), the project contingencies should be reduced as described in Section 2.1.1.5. Nous' recommendation with the Cloud option and a reduced level of contingency is shown in Table 7 below.

Table 7: Nous conclusion – CIS and CRM forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	8.8	2.0	4.5	24.2	14.4	53.91
Option 2b (Nous recommendation)	6.40	1.19	1.45	5.90	22.64	37.49
Nous recommendation with reduced	**5.26**	**0.92**	**1.20**	**4.88**	**18.69**	**30.95**
Difference	-3.24	-1.00	-3.07	-17.65	5.70	-19.26

2.1.2 Tariff and Metering (BC20)

Key findings:

- Nous considers part of the proposed investment is prudent as it will prepare SAPN for future tariff structures and contestable metering.
- The proposed investment includes base infrastructure for future capabilities and new network control services. However, economic justification is not presented for the new distribution functions in their own right.

Recommendation:

- Accept part of the investment, reduced to reflect basic capability and contestable metering only.

2.1.2.1 Project summary

This project has a number of components to prepare SAPN systems to support future tariff structures, interval metering, contestable metering as well as deliver a range of control options over both distribution and low-voltage networks. This means there are several components of costs to be considered, some relating to basic capability to handle new structures and others relating to the delivery of new service and control functions.

2.1.2.2 Need

SAPN customers increasingly participate in the energy market through investments in solar generation and active management of their energy use. Emerging technologies (such as battery storage and electric vehicles) change the network from one-way energy distribution to active two-way distributed consumption and generation resources. This creates challenges in network operation and customer charging. In response, SAPN plans to

- adopt more cost-reflective network tariffs for small market customers
- install 'smart ready' meters as standard to support these tariffs
- leverage smarter metering to monitor power quality in the low voltage (LV) network.

From July 2017, SAPN expects to transition over 50,000 customers annually to the new tariff, with a supporting engagement program and call centres to provide information. To leverage the benefits of smarter meters, SAPN will move to a standard interval meter for regulated metering services and establish systems, processes and market interfaces to enable the benefits. Telecommunications will be enabled on a subset of SAPN 'smart ready' meters to introduce a core capability in network monitoring across specific areas of the LV network.

In Nous opinion, these changes in metering, tariff application and distributed generation will be a part of all distribution operations in the near future and it will be prudent for SAPN to prepare for the core capability.

The business case also considers a range of new control and monitoring actions that can capitalise on the smart metering and communications capability that will be introduced by the basic infrastructure. An example is sending a 'ping'to a meter to test its condition and basic quantities such as instantaneous voltage and power consumption. The case considers the reduction in manpower required if a visit can be averted to check these conditions. However, there is no detailed quantification of the benefits. On face value, these additional services may make sense, but in the absence of NPV analysis, we are unable to confirm that the additional services would be efficient.

In a similar way, a further program of Low-Voltage condition monitoring is planned. This again has qualitative benefits, but the NPV calculations show a net cost for this program over an extended period.

We consider that these higher level options are discretionary and not justified for inclusion in the capital program. To the extent that operational benefits will exist, SAPN will be able to self-fund the development.

2.1.2.3 Options

SAPN identified options for the LV monitoring program but we have not examined the relative merits in view of its exclusion from the proposed expenditure.

2.1.2.4 Scope

Nous proposes that the approved scope be limited to the core infrastructure for new tariff structures and contestable metering.

2.1.2.5 Cost

Nous has extracted the costs for the tariff and metering infrastructure from the business case, with a pro-rata allowance for project management, as follows:

Table 8: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
IEE, MTS upgrades to support interval metering	-	-	2,130	1,258	97	3,485
Infrastructure growth	107	178	249	320	392	1,246
Contestability - Business processes	484	1,234	242	-	-	1,960
Security systems			599	119		718
IT program management - pro rata	81	139	220	197	139	776
Pro-rata %	672	1,551	3,440	1,894	628	8,185

2.1.2.6 Timing

The proposed timing for the core infrastructure is appropriate.

2.1.2.7 Conclusion

Based on our above review, Nous considers that the proposed investment is a mix of base infrastructure for future capabilities and new network control services. Nous accepts that it is prudent to prepare for future tariff structures and contestable metering. However, economic justification has not been presented for the new distribution functions in their own right. The business case numbers have been extracted for basic capability and contestable metering only. Our recommendation is shown in Table 9.

Table 9: Nous conclusion – Tariff and Metering forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	4.33	2.49	8.01	4.37	1.94	21.14
Nous recommendation	**0.67**	**1.55**	**3.44**	**1.89**	**0.63**	**8.19**
Difference	-3.66	-0.94	-4.57	-2.48	-1.31	-12.95

2.1.3 Customer Facing Technology (BC02a)

Key findings:

- Nous considers that the proposed investment is accepted as prudent, given that standards for quality of customer service will continue to evolve.

Recommendation:

- Accept the investment.

2.1.3.1 Project summary

This project will upgrade SAPN's customer facing systems[10] to deliver on customer expectations for information, immediacy and personalisation. It will introduce enhanced data sources and integrate systems to improve customer information and make it available through multiple channels with user-friendly interfaces for customers to access their information.

2.1.3.2 Need

SAPN states that their customers expect to access accurate information through a variety of channels available on any device. In addition, regulatory reform requires distributors to monitor consumer sentiment and address concerns. These demands mean SAPN wishes to have customer-friendly systems and accurate customer records, particularly when new tariff and metering is introduced.

SAPN's Customer Service Strategy outlines a vision and the Customer Technology Plan has the roadmap to achieve a *"single view of customer' through integration of multiple information sources with customer access"*. SAPN views their current customer facing systems as immature, disparate and lacking functionality to deliver on customer expectations and investment is needed to provide this.

Anticipated benefits

SAPN foresees the benefits of implementation as:

- Approximately $0.86m savings in delivery costs ten years (after system replacement) and $0.2m savings per annum (from decommissioning the Customer Compliments and Complaints system).
- Improved completion rate of customer enquiries/requests (better customer and outage data).
- Higher first call resolution rates (from more accurate and complete customer data).
- Reduced calls to customer call centres (after provision of customer self-service capability).
- Shorter response times (better customer interaction data and navigation of systems).
- Potential reduction in time spent on end-to-end dispute management.
- Improved customer satisfaction and public image (through timely and accurate information).
- Improved reporting and customer analytics capability (from better customer interaction data).

In Nous opinion, these views of customer expectations are realistic and it will be prudent to plan for improvement in capability.

2.1.3.3 Options

SAPN identified the following three options:

- **Option 1: Do nothing** – continue to use current systems without enhancement.
- **Option 2: Demand driven customer facing capabilities** – enhance customers' channels with self-service toolset and improved Web Content Management and Knowledge Management systems.
- **Option 3: Full multi-channel customer facing capabilities** – build on Option 2 with advanced interactive communication channels, personalised self-service tools and enhanced social media.

SAPN's recommendation is **Option 2** to improve customer service via multi-communication channels. The anticipated business risks of this option are assessed as low to medium, which include:

- increased integration and workflow complexity which may increase implementation cost.
- new capabilities may not be adopted by the business due to change-resistance.
- poor data quality and exposure of this to customers through improved customer channels.

[10] A prerequisite for the Customer Specific Content initiatives is the improved Customer Relationship Management solution

In Nous opinion, this is the most appropriate option, delivering the minimum level of capability to meet future expectations. The cost is not significantly greater than Do Nothing option ($7.7m compared with $5.7m) and this is partially offset by opex reductions ($1.9m compared with $2.6m).

2.1.3.4 Scope

Nous agrees with limiting the scope to demand-driven capabilities.

2.1.3.5 Cost

Total delivery costs are $13.82m with total recurrent costs of $5.53m. This comprises capital investment of $7.68m in the regulatory period and all operating expenditure, as shown in Table 10.

Table 10: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capex	0.09	1.3	1.3	1.3	3.69	7.68
Opex						5.53
Total						**13.82**

2.1.3.6 Timing

The project is scheduled to be conducted over several regulatory periods, from January 2014 to its conclusion in July 2024. The progressive implementation is appropriate.

2.1.3.7 Conclusion

Based on our above review, Nous considers that the proposed investment is accepted as prudent, given that standards for quality of customer service will continue to evolve and the cost to deliver is not significantly greater than a do-nothing option. Our conclusion is summarised in Table 11.

Table 11: Nous conclusion – Customer Facing Technology forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	0.09	1.3	1.3	1.3	3.69	7.68
Nous recommendation	**0.09**	**1.3**	**1.3**	**1.3**	**3.69**	**7.68**
Difference	0	0	0	0	0	0

2.1.4 Customer Call Management Replacement (BC02)

Key findings:

- Nous considers that the proposed investment is justified as it involves interfaces to other systems involved in this investment theme and should be delivered to be consistent with the other projects.
- This project has interdependency with the Customer Information System (CIS) and Customer Relationship Management (CRM) project, Customer Facing Technologies, Unified Communications, Business Intelligence Enablement projects as they involve use of information in other systems and interactions with other systems from the call centre interface.

Recommendation:

- Accept the investment.

2.1.4.1 Project summary

This project consists of the implementation of a flexible customer call (or contact) management system (CCMS) that will cater for all inbound and outbound communications with analytical capability. It will enable SAPN to deliver on their Customer Service Strategy.

2.1.4.2 Need

SAPN customers expect to communicate through a variety of channels in a consistent experience, with accurate, accessible information. The vision of their Customer Service Strategy means SAPN must offer customer facing capabilities and customer information to meet expectations and deliver on the strategy.

In state-of –the-art call centres, customer channels are managed by a customer call (or contact) management system (CCMS) which can transfer calls to appropriate parts of the business for resolution, with an interactive voice response (IVR) system for customer interaction via keypad or speech and where customers can "self-serve" their enquiries by following dialogue. They can also provide voice announcements to direct users to the right area. SAPN's existing system (Solidus eCare) will require significant upgrade or replacement to provide this desirable customer experience. The current system also has limitations in its analytics, integration with other business applications, complexity and cost of modifications and reporting capability.

2.1.4.3 Options

SAPN identified the following three options:

- **Option 0 – Do Nothing** - maintain the existing CCMS.
- **Option 1 – On Premise** - replace the existing CCMS with an onsite solution, call recording and reporting.
- **Option 2 – Hosted** - Replace the existing CCMS with a cloud/hosted solution, call recording and reporting

Both Option 1 and Option 2 were considered appropriate solutions and further work is required to consider the use of a hosted solution and the implications on privacy, security and operating cost implications. Therefore until a strategic direction is agreed, **Option 1** is recommended by SAPN as most viable.

Nous has recommended the adoption of a cloud option as the most efficient for the CIS/CRM implementation in Section 2.1.1. The logical counterpart to that recommendation would be **Option 2** – Hosted solution, for this project. However, we note that the total cost profile for the two options in the business case are almost identical (although the mix of capex and opex is different). For simplicity, Nous

is satisfied that maintaining Option 1 as the preferred approach will provide an appropriate cost outcome.

2.1.4.4 Scope

Nous has reviewed the information provided and considers that the proposal to upgrade the CCMS is justified to support interaction with the Customer Information System (CIS) and Customer Relationship Management (CRM) project, Customer Facing Technologies, Unified Communications and Business Intelligence Enablement projects.

2.1.4.5 Cost

The project will require total capital and operating costs of $1.86m over the 7 year investment period 2014/15 to 2020/21 with $1.7m during the 2015-2020 regulatory period. This is comprised of $0.78m in capital and cumulative operating costs of $0.9m (this includes $0.42m in non-IT operating costs). The ongoing operating cost (IT and Non-IT) following completion of the capital project will be an additional $0.136m per year, as shown in Table 12.

Table 12: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	0	0.39	0.39	0	0	0.78
Opex						0.48
Opex (Non-IT)	0	0.13	0.20	0.08	0.02	0.42
Total						**1.70**

2.1.4.6 Timing

The project will be conducted over the 7 year investment period 2014/15 to 2020/21.

2.1.4.7 Conclusion

Based on our above review, Nous considers that the proposed investment is justified. It involves interfaces to the other systems involved in this investment theme and should be delivered to be consistent with the other projects. This is summarised in Table 13.

Table 13: Nous conclusion – Customer Call Management Replacement forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	0	0.39	0.39	0	0	0.78
Nous recommendation	**0**	**0.39**	**0.39**	**0**	**0**	**0.78**
Difference	0	0	0	0	0	0

2.1.5 Summary of Theme 1 recommendations

The program of work to deliver the *"Energised and Responsive Customer Service"* theme features the four projects listed below. After our review, Nous recommends that the proposed total investment of $79.81m be reduced to $47.59m. The reductions are in the CIS & CRM project and the Tariff & Metering projects as follows.

- CIS & CRM project
  - Investigate the "cloud supported" option as the most efficient with best NPV
  - significantly reduce the project contingencies
- Tariff & Metering
  - reduce investment to reflect the basic capability and contestable metering only.

This results in the reduced investment as shown in Table 14 below.

Table 14: Summary of Theme 1 project review

Reference	Project name	Investment $m	
		SAPN	Nous proposed
BC01	CIS and CRM	50.2	30.95
BC20	Tariff and Metering	21.1	8.2
BC02a	Customer Facing Technology	7.7	7.7
BC02	Customer Call Management Replacement	0.8	0.8
	Total	**79.81**	**47.59**

2.2 Theme 2: Excellence in asset management and delivery of services

SAPN's dynamic operational environment is going through significant change, particularly in regulatory requirements and consumer expectations. It wishes to ensure its electricity service delivery is as efficient as possible and that it can meet its compliance obligations. SAPN manages geographically dispersed ageing network infrastructure and they now experience more frequent extreme weather conditions. In the coming period, they plan to expand the distribution network and predict an increase in demand and complexity for management of their network designs and documentation. They want to ensure that the Future Operating Model[11] can be supported.

In this program of work, SAPN plans to:

- improve enterprise asset management to align with ISO 55000 and address asset life extension, risk maintenance, workforce productivity, network flexibility and compliance with safe conditions for staff and customers.
- replace current CAD (computer aided design) systems with new technology integrated with core network design and operations applications to manage designs, drawings and documentation.
- enhance field workforce mobility to enable real time data and timely response to asset maintenance tasks.
- improve supply chain functions with a customer centric, safe, cost effective and productive operating environment.
- improve management of projects, programs and portfolio functions to support the growing program of work with strategic planning, resourcing, finance and project management functions.

Five projects are proposed to deliver these capabilities as outlined in Table 15 below.

Table 15: Summary of Theme 2 projects

Reference	Project name	Investment $m
BC03	Enterprise Asset Management	13.1
BC10	Intelligent Design Management System	7.4
BC16	Field Force Mobility	6.3
BC05a	Supply Chain	3.1
BC05b	Project, Program and Portfolio mgt	2.9
	Total	**32.9**

These projects are reviewed in the remainder of this section,

[11] Dated 2013

2.2.1 Enterprise Asset Management (BC03)

Key findings:

- Nous considers the proposed investment as discretionary and not required to maintain service levels
- The project is not driven by changes in obligations or compliance.
- Although SAPN claim the existing systems, process and practices are inefficient, they are usable.
- Business case benefits are not tangible.

Recommendation:

- Remove the proposed investment as discretionary, subject to the variations described in Section 3.

2.2.1.1 Project summary

This project is proposed to deliver an improved Enterprise Asset Management capability that will align its asset management process to ISO 55000 and address asset life extension, risk maintenance, workforce productivity, network flexibility and compliance with safe conditions for staff and customers.

2.2.1.2 Need

As SAPN's dynamic operational environment goes through significant change in regulatory requirements and consumer expectations, it wishes to ensure its electricity service delivery is as efficient as possible and to meet its compliance obligations. SAPN plans to adopt an Enterprise Asset Management model with a holistic "whole of life" approach to asset management to meet both the National Electricity objective to maintain network reliability and regulatory compliance requirements at the lowest sustainable cost to customers.

SAPN recognises that its current asset management practices are siloed and manual with multiple versions of data, weak in process maturity and not transparent or repeatable. This must significantly change and it has identified two key strategies to improve the value proposition to customers. It plans to adopt an asset management process aligned to ISO 55000 and develop an Enterprise Asset Management Roadmap to improve its systems, processes, skills and availability of data.

Anticipated benefits

SAPN anticipates the following benefits from the investment and implementation:

- Extended asset life.
- Improved planning and cost prediction.
- Improved customer response times.
- Enhanced, integrated vegetation management and bushfire management capability with better management of warranty claims.
- Improved maintenance strategies.
- Improved workforce, vehicle and equipment productivity.

2.2.1.3 Options

SAPN identified the following four options:

- **Option 0: Do Nothing** - maintain the current environment and existing processes, people, systems and data without further improvement.
- **Option 1: Business As Usual** – utilise and extend existing processes and systems and move towards Enterprise Asset Management and ISO 55000 standards.

- **Option 2: Balanced Approach to Enterprise Asset Management** – enhance and upgrade process, people, systems and data capabilities to leverage the capability of the existing SAP ERP system. This can be used for network and non-network assets.
- **Option 3: Optimistic Approach to Enterprise Asset Management** – extend Option 2 with a more aggressive implementation balanced by an assessment of business' capacity to change.

SAPN's recommendation is **Option 2** to achieve excellence in asset management, demonstrate the National Electricity Objective and meet the challenges of the dynamic operating environment.

In Nous opinion, the business case is biased towards the preferred Option 2, without a clear demonstration of benefits. Furthermore, the additional opex requirements of Options 0 and 1 disappear in Option 2, even though the transformation is staged over later periods. This is not tenable and the underlying NPV of Option 2 is likely to remain negative if these costs are taken into account.

2.2.1.4 Scope

The scope of this project has a range of options from do-nothing approach to a comprehensive program. Nous is not convinced that the benefits of action are proven

2.2.1.5 Cost

The proposed option requires an investment of $25.74 million over eight years commencing 2014. This comprises capital investment of $13.14m during the regulatory period, with non-IT capital of $7.46m and $3.75m in operational expenditure, as shown in Table 16 below.

Table 16: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capex	1.53	3.78	2.98	2.76	2.09	13.14
Capital (Non-IT)	1.12	1.85	2.23	1.27	0.99	7.46
Opex						3.75
Total						**24.35**

2.2.1.6 Timing

The project is scheduled to commence in late 2014 with completion in by the end of 2020.

2.2.1.7 Conclusion

Based on our review, Nous considers the proposed investment discretionary and not required to maintain service levels. We acknowledge that processes for asset management could be more efficient, but the business case is not convincing in demonstrating the case for action. To the extent that investment is justified, it could be internally delivered by savings in labour.

Our recommendation is in Table 17.

Table 17: Nous conclusion – Enterprise Asset Management forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.53	3.78	2.98	2.76	2.09	13.14
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-1.53	-3.78	-2.98	-2.76	-2.09	-13.14

2.2.2 Intelligent Design Management (BC10)

Key findings:

- Nous considers the proposed investment is justified for delivery of future network capacity at the required levels of quality and safety.

Recommendation:

- Accept the investment.

2.2.2.1 Project summary

This work will replace several current drawing systems with a consolidated technology platform to manage designs, drawings and documentation for network constructions, refurbishments and augmentations. It is designed to meet expected flow-on demand in design functions from the planned SAPN distribution network asset growth, renewal and augmentation programs. The program will improve SAPN design capabilities and integrate to the core SAPN network assets design and operations applications over the current and the next regulatory periods.

2.2.2.2 Need

In SAPN's construction, refurbishment and augmentation projects, CAD (computer aided design) drawings and specifications are used extensively and are vital to successful business operation. However, management of project drawings and designs must be improved to ensure SAPN provides reliability and safety on the network for customers. A more strategic approach to CAD and design management must be taken to rationalise and consolidate CAD tools and improve storage and access to designs. During 2010-2015, SAPN introduced an industry standard CAD product and a drawing management system to manage network designs. Several other improvements were made but practices remain predominantly manual which limits SAPN's ability to meet current and future business needs.

An Intelligent Design Management System (IDMS) Vision[12] paper and IDMS Technology Plan[13] outline the strategy for a strong foundation that builds on progress made to establish an enterprise wide design platform to overcome current problems. Without a strong design platform SAPN foresees it will not be able to support its customers and will fail to realise:

- Safety in design and lower risk in the environment;
- Benefits associated with control, tracking and consolidation of designs;
- Cost and efficiency benefits from retirement and consolidation of CAD tools and systems, associated with integration of the IDMS with other systems (i.e. SAP, GIS and ADMS);

[12] Dated December 2013
[13] Dated December 2013

- Reliable network management data for ADMS, GIS and SAP.

SAPN predicts a significant increase in demand and complexity for design teams as a result of network growth, WH&S (work, health and safety) and compliance obligations, design standardisation, smart grid, feeder automation, new technology and a dynamic operational environment network. They must also ensure that the Future Operating Model[14] can be supported.

2.2.2.3 Options

SAPN identified the following three options:

- **Option 0: 'Do nothing'** - maintain current design environment.
- **Option 1: Partial IDMS** - partially establish the IDMS with 'Foundation', 'Consolidation' stages.
- **Option 2: Full IDMS** - establish entire IDMS, build on Option 1 with "Advanced" stage.

The SAPN recommendation is **Option 2**, to provide a full design platform that will enable more effective control of the entire design process to support delivery of capital projects and maintain reliability and safety on the network.

Nous considers that the proposed investment is justified for delivery of future capacity at the required levels of quality and safety. The project has a positive NPV with opex returns beginning in 2020.

2.2.2.4 Scope

The scope of this project is organisation-wide across SAPN. Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.2.2.5 Cost

The total investment required is $12.86m, with investment during the regulatory period being capital investment of $7.4 m, non-IT capital of $1.24m and operating costs of $0.84m, as shown in Table 18.

Table 18: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	1.25	2.64	1.09	1.3	1.08	7.36
Capital (Non-IT)	0.16	0.31	0.34	0.27	0.15	1.24
Opex						0.86
Total						**9.46**

2.2.2.6 Timing

The project is scheduled to start with System Design in 2014 and conclude its full delivery in 2022.

2.2.2.7 Conclusion

Based on our above review, Nous considers that the proposed investment is justified for delivery of future capacity at the required levels of quality and safety. Our recommendation is summarised in Table 19.

[14] Dated 2013

Table 19: Nous conclusion – Intelligent Design Management forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.25	2.64	1.09	1.3	1.08	7.36
Nous recommendation	**1.25**	**2.64**	**1.09**	**1.3**	**1.08**	**7.36**
Difference	0	0	0	0	0	0

2.2.3 Field Force Mobility (BC16)

Key findings:

- Nous considers that the proposed investment is justified to enable delivery of future field operations at the required levels of quality and safety and in alignment with good industry practice.

Recommendation:

- Accept the investment.

2.2.3.1 Project summary

This project will implement a program of work to enhance the current mobility solution - an important step towards a completely mobile, efficient and effective field workforce. It focuses on the field force mobility component of the Enterprise Mobility Strategy. Upgrade of field force mobility will increase overall field crew efficiency and enable SAPN to respond to planned and unplanned asset maintenance tasks. Real time job status will be available and safety will improve through improved communication reporting and spatial technology. Field crews will be dispatched more efficiently to restore supply and crews will access asset information from mobile devices for timely decision making.

2.2.3.2 Need

Over the last five years, SAPN field resources have experienced escalating challenges to build and maintain network assets. Current field work practices must adapt and focus on management of ageing network infrastructure, increasing customer expectations for accurate information, geographic dispersion of infrastructure, extreme weather conditions and new technologies. Today, this is done without real time information using manual processes and problematic devices. The SAPN Enterprise Mobility Strategy[15] has the vision to *"improve efficiency in our business processes and empower our people, customers and partners to capture, view and share accurate information when they need it, wherever they may be"* and this implementation will support that vision.

Without investment in new mobility functionality, SAPN will be unable to deliver on its corporate goals to improve asset maintenance and improve customer service.

Anticipated benefits

SAPN foresees the following benefits from this implementation:

- better customer value with field workforce focus on network risk reduction
- increased customer satisfaction

[15] "2015-2020 Enterprise Mobility Strategy" dated 2014

- efficient and improved regulatory and legislative compliance
- a safer working environment.

2.2.3.3 Options

SAPN identified the following three options:

- **Option 0: Do nothing** - maintain current state of field mobility operations.
- **Option 1: Enhance with partial roll-out** - significantly enhance field mobility capabilities with implementation of new mobility solutions to identified field force staff.
- **Option 2: Enhance with full roll-out** – build on Option 1 by rolling out to all field force staff.

The SAPN recommendation is **Option 1**, to partially roll-out field force mobility. The option has the highest NPV with least risk and lower upfront investment.

Nous considers that the proposed investment is justified to enable delivery of future field operations at the required levels of quality and safety and in alignment with good industry practice. The project has a positive NPV with opex returns beginning in 2017.

2.2.3.4 Scope

The scope of this project is organisation-wide across SAPN. Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.2.3.5 Cost

The business case outlines project costs of $12.05m in total for the 2014/15 to 2024/25 period. Of this, $9.61m falls within the regulatory period. This comprises $6.35m IT capital and $1.8m in non-IT capital with operating costs of $1.46m, as shown in Table 20.

Table 20: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	2.9	1.14	0.16	0.72	1.43	6.35
Capital (Non-IT)	0.72	0.40	0.04	0.29	0.36	1.80
Opex						1.46
Total						**9.61**

2.2.3.6 Timing

This implementation is proposed to be conducted over the ten year period from 2014/15 to 2024/25.

2.2.3.7 Conclusion

Based on our above review, Nous considers that the proposed investment is justified to enable delivery of future field operations at the required levels of quality and safety and in alignment with good industry practice. Our recommendation is summarised in Table 21.

Table 21: Nous conclusion – Field Force Mobility forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	2.9	1.14	0.16	0.72	1.43	6.35
Nous recommendation	**2.9**	**1.14**	**0.16**	**0.72**	**1.43**	**6.35**
Difference	0	0	0	0	0	0

2.2.4 Supply Chain (BC05a)

Key findings:

- Nous considers that the proposed investment is discretionary.
- The investment is to improve supply chain service levels and support the expanded capex and opex work programs over the 2015-20 RCP.

Recommendation:

- Remove the investment as discretionary.

2.2.4.1 Project summary

This project is proposed to deliver data analytics, improved information management and automated inventory management. Most support will be provided by new technology that features B2B transactions with suppliers, radio frequency, barcode scanning, mobility solutions and a SAP Warehouse Management module.

2.2.4.2 Need

The Supply Chain Strategy 2020 outlines SAPN's vision to become a value creation hub and business enabler with stronger supplier collaboration, consolidated organisational purchasing, better supply chain performance and closer business alignment. As the network becomes more complex, materials management will increase in sophistication and RIN reporting needs quality materials information.

While there is an apparent need, Nous does not consider the case for action to be proven for the reasons outlined in the following sub-section.

2.2.4.3 Options

SAPN identified the following three options:

- **Option 1: "Do Nothing"** - manually manage future impacts on the logistics network.
- **Option 2: "Slightly Strengthened Capability"** - implement Supplier Management and Supply Chain performance analytics.
- **Option 3: "Strengthened Capability"** - invest in SAP and related technology, process and governance to fulfil the Supply Chain Strategy through 2020.

SAPN's recommendation is **Option 3**, to significantly reduce organisational risks and improve supply chain capabilities.

In Nous opinion, the business case appears flawed in the same way as the Asset Management case, considered in Section 2.2.1. Use of increased staff in the do-nothing option provides a false impression

of a negative NPV reference. Incremental reductions over time are taken into account in the other options, but the base costs are ignored. Therefore the NPV of the other options should be viewed as stand-alone, and hence negative.

2.2.4.4 Scope

The scope of this project is organisation wide across SAPN.

2.2.4.5 Cost

The total investment required for this project is $4.0m which is all programmed within the regulatory period. The project investment comprises $3.1m IT capital, non-IT costs of $0.86m and operating expenses of $0.14m , as shown in Table 22.

Table 22: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	1.37	1.39	0.17	0.17	0	3.10
Capital (Non-IT)	0.40	0.40	0.03	0.03	0.00	0.86
Opex	0	0	0	0	0	0.14
Total						**4.00**

2.2.4.6 Timing

The project is scheduled to run within the regulatory period. The first stage of deployment is planned for financial year 2015/16 and the final deliverables will be deployed during financial year 2017/18.

2.2.4.7 Conclusion

Based on our above review, Nous considers that the proposed investment is discretionary and should be removed from the capital profile. This is summarised in Table 23.

Table 23: Nous conclusion – Supply Chain forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.37	1.39	0.17	0.17	0	3.1
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-1.37	-1.39	-0.17	-0.17	0	-3.1

2.2.5 Project, Program and Portfolio management (BC05b)

Key findings:

- Nous considers that the proposed investment is discretionary and not efficient.
- The investment is to improve the portfolio project management capability within SAPN and support the expanded capex and opex works programs over the 2015-20 RCP.

Recommendation:

- Remove the proposed investment as discretionary.

2.2.5.1 Project summary

This project is proposed to implement an enhanced project management system, project portfolio management system and a project scheduling and resource capacity system. This is planned to improve management of a growing program of work with efficient electronic data collection to support Australian Energy Regulator (AER) RIN requirements. The outcome will be an integrated system that brings together strategic planning, resourcing, finance and project management functions.

2.2.5.2 Need

To operate successfully in the changing environment of increased customer demand, technology changes and network dynamics, SAPN wishes to improve on its capability to provide effective management of its programs of work. Initiatives to integrate systems to provide a solid organisation-wide capability in management of project portfolio processes and resource planning are underway. SAPN wishes to create a cost-effective, business-wide integrated approach to work management. It would significantly improve capability in Program Management, Work Planning, Corporate Portfolio Management and IT functions so that SAPN can meet its business challenges without undue increase in resources.

2.2.5.3 Options

SAPN identified the following three options:

- **Option 1. Do Nothing** - maintain current systems and processes and increase internal resources to meet the management of the Capital Expenditure program of work.
- **Option 2. Functionality Upgrade to Existing Processes and Systems** – leverage existing SAP ERP to provide integration of project portfolio management across the organisation.
- **Option 3. Implement a Multi-platform, Integrated Solution** – provide same as Option 2 with point solutions (eg Microsoft and Primavera) and integrate with existing SAP ERP.

The SAPN recommendation is **Option 2**, to enhance the existing corporate ERP system. This option has the lowest risk profile of the options considered, with the lowest ongoing recurrent spending profile and it most closely aligns with the Corporate, Business Unit and IT Strategic plans.

In Nous opinion, the analysis in the business case shares the characteristic with Asset Management and Supply Chain projects in that it assumes labour increases in Do-Nothing and then uses incremental changes only in the other cases. However in this business case only this is recognised in the final NPV analysis and a "Comparative NPV" is used with the Do-Nothing zeroed out. This confirms the significant negative NPV of other cases. (Note that many benefits do not appear to be quantified and a better result may be possible. This could be delivered internally if this is the case.).

On this basis, Nous considers that the investment would not be efficient and would lead to overall cost increases without any direct impacts on network services.

2.2.5.4 Scope

Nous considers the defined scope as discretionary.

2.2.5.5 Cost

This project would require total capital and operating costs of $10.m over the investment period 2014/15 to 2021/22. This comprises of capital investment during the regulatory period of $6.57m, being $2.95m IT capital, with non-IT capital of $0.85m and operating expenses of $2.77m. as in Table 24.

Table 24: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	2.04	0.55	0.28	0.04	0.04	2.95
Non-IT capital	0.60	0.18	0.07	0.00	0.00	0.85
Opex						2.77
Total						**6.57**

2.2.5.6 Timing

The project is planned for implementation from 2015/16 to 2021/22.

2.2.5.7 Conclusion

Based on our review, Nous considers that the proposed investment is discretionary and should be removed. Our recommendation is shown in Table 25.

Table 25: Nous conclusion – Project, Program and Portfolio management forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	2.04	0.55	0.28	0.04	0.04	2.95
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-2.04	-0.55	-0.28	-0.04	-0.04	-2.95

2.2.6 Summary of Theme 2 recommendations

To deliver the "*Excellence in Asset Management and Delivery of Services"* theme, SAPN proposes a program of work that requires an investment of $33m. However, Nous recommends that the Enterprise Asset Management, Supply Chain and Project, Program & Portfolio Management projects are discretionary and should be removed. This results in reduced investment to $13.71m, as shown in Table 26 below.

Table 26: Summary of Theme 2 project review

Reference	Project name	Investment $m	
		SAPN	**Nous proposed**
BC03	Enterprise Asset Management	13.1	0
BC10	Intelligent Design Management System	7.4	7.4
BC16	Field Force Mobility	6.3	6.3
BC05a	Supply Chain	3.1	0
BC05b	Project, Program and Portfolio mgt	2.9	0
	Total	**32.9**	**13.71**

2.3 Theme 3: Investing in our people, assets and systems

Like most organisations, information security is a core enterprise capability for SAPN and it wants to effectively detect and prevent security breaches to ensure confidentiality, integrity and availability of their information assets and the business network. SAPN has addressed security risk at the operational level and must wishes to adopt a consistent strategic approach.

To deliver on this initiative, SAPN plans to:

- introduce a foundation information security capability
- improve IT service delivery with a management system, clear processes and robust governance
- introduce core technology to support the field mobility initiative.

The program of work involves three projects as outlined in Table 27 below.

Table 27: Summary of Theme 3 projects

Reference	Project name	Investment $m
BC26	Enterprise Information Security	6.7
BC29	IT Management and Operations	6.1
BC14	Enterprise Mobility	2.2
	Total	**15.04**

The projects are reviewed in the remainder of this section.

2.3.1 Enterprise Information Security (BC26)

Key findings:

- Nous considers the proposed investment is justified as it will deliver foundation level security requirements for contemporary IT operations.
- The project has potential interdependencies with the projects to provide Mobility and Intelligent Network initiatives.

Recommendation:

- Accept the investment.

2.3.1.1 Project summary

This project delivers initiatives to provide a foundational information security capability with adequate agreed risk reduction/mitigation in security monitoring, threat management, vulnerability management, security awareness, identity management and information security management system (ISMS).

2.3.1.2 Need

Information Security is a core enterprise capability where an organisation must effectively detect and prevent security breaches to ensure confidentiality, integrity and availability of its information assets and the business network. SAPN sought third party advice and recommendations on strategies to improve its information security. Some security practices were subsequently introduced, but a strong

information security function has not yet been established. Investment in security technologies has been minimal.

A 2014 Symantec report[16] found that *"The energy sector has become a major focus for targeted attacks and is now among the top five most targeted sectors worldwide."* At this point, SAPN would be unable to reliably identify a security incident and respond effectively. Significant investment is required to achieve a core capability and acceptable level of maturity in information security and SAPN has deemed an effective dedicated information security capability as essential. Further, legislative changes will require Australian organisations with revenue over $3 million to comply with the amended Privacy Act by March 2014.

Anticipated benefits

SAPN foresees the following benefits after implementation of the project:

- Increased technical personnel productivity with improved capability to consider and respond to security
- Increased capability to prevent, detect and respond proactively to security related issues.
- Enhanced capability to define and enforce security standards and processes
- More informed workforce with respect to information security.

2.3.1.3 Options

SAPN identified the following three options:

- **Option 0: Do Nothing** - maintain investment in security related areas as they are today
- **Option 1: Foundational** - implement initiatives to provide a foundational information security capability with "adequate" agreed risk reduction/mitigation in security monitoring, threat management, vulnerability management, security awareness, identity management and information security management system (ISMS)
- **Option 2: Additional** - Add to Option 1 to further reduce risk (e.g. controls employed by financial services or defence organisations) with "Best Practice" risk reduction/mitigation

The SAPN recommendation is **Option 1**, to deliver core functions, avoid business risk and impacts and align with other organisations such as Powercor. It provides highest benefits relative to cost; capability to respond to increasing risks; optimal NPV and a foundation to enable Information Security to achieve the high level expected benefits.

Nous considers that the proposed investment under Option 1 is justified and should be accepted as necessary to deliver foundation level security requirements for contemporary IT operations

2.3.1.4 Scope

The scope of this project is organisation-wide across SAPN. Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.3.1.5 Cost

This project will require total capital and operating costs of $21.8m over the investment period 2014/15 to 2021/22. This comprises of capital investment of $6.7m and operating expenses of $9.85m, totalling $16.52m during the regulatory period, as shown in Table 28. The non-IT investment is not stipulated.

[16] *'Targeted Attacks Against the Energy Sector'* dated January 2014

Table 28: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	2.45	1.29	1.45	0.61	0.87	6.67
Opex						9.85
Total						**16.52**

2.3.1.6 Timing

The project is due to be conducted over the period 2014/15 to 2021/22.

2.3.1.7 Conclusion

Based on our above review, Nous considers that the proposed investment is justified and should be accepted as necessary to deliver foundation level security requirements for contemporary IT operations. This is summarised in Table 29.

Table 29: Nous conclusion – Enterprise Information Security forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	2.45	1.29	1.45	0.61	0.87	6.67
Nous recommendation	**2.45**	**1.29**	**1.45**	**0.61**	**0.87**	**6.67**
Difference	0	0	0	0	0	0

2.3.2 IT Management and Operations (BC29)

Key findings:

- Nous considers the proposed investment is discretionary.
- SAPN propose to maintain business as usual and continue to implement this project in 2018 in parallel with delivery of several other capital projects. Therefore, Nous considers that deliverability of the proposed capex portfolio is questionable.

Recommendation:

- Remove the investment.

2.3.2.1 Project summary

This project is proposed to deliver a contemporary, fit for purpose ITSM toolset (to replace the current IT service management system, VMS) and adoption of ITSM principles across the IT function. The tools would simplify the applications landscape, reduce license expenditure and minimize costs through improved IT asset management and tracking. A core component is the replacement in 2017 of the IT management system, VMWare Service Manager (VSM), which is stated to be at 'end of life' .

2.3.2.2 Need

SAPN foresees the following benefits after this work is completed:

- Reduced expenditure on software licences and risk of non-compliance
- Reduced effort spent on software and hardware asset incidents and service requests
- Automated measurement and reporting of performance metrics
- Improved responsiveness and management of critical incidents that impact IT services

While on face value, these are useful benefits, Nous understands that there have been changes to VMWare's plans that will affect the core assumptions. We understand that support for VMWare Service Manager will be continued by Alemba past 2017[17] which negates the need to provide these new toolsets internally to support the IT Service Management (ITSM) capability.

We also note that SAPN propose to continue to fully implement this ITSM by June 2018 while their group also scales up to deliver a significant portfolio of capital projects. Nous would question the deliverability of this approach.

2.3.2.3 Options

SAPN identified the following four options:

- **Option 0: Do Nothing** - maintain manual processes with incremental improvement supported by the existing, internally maintained VSM. No formal applications rationalisation programme.
- **Option 1: Comply** - Replace retiring VSM with similar product with incremental and opportunistic process improvements. No formal applications rationalisation programme.
- **Option 2: Adopt and Adapt** - Adopt an ITSM operating model with associated Capability Improvement Programme, replace VSM with a contemporary ITSM toolset and implement a formally managed applications rationalisation programme.
- **Option 3: Integrate and Evolve** - Adopt an ITSM operating model with associated Capability Improvement Programme, replace VSM with an integrated SAP and ITSM toolset and implement a formally managed applications rationalisation programme.

The SAPN recommendation is **Option 2,** which includes a combination of business capability improvements in Asset Management, Application Lifecycle Management, Works Management, Configuration Management, IT Service Catalogue, Service Level Agreements and a self-service portal. These would be supported by business process re-engineering and organisational change management activities.

With the apparent requirement for VMWare replacement being removed, the core investment requirement of this option is removed. Many of the process changes that surround this can be delivered as part of other program delivery processes.

2.3.2.4 Scope

We do not consider that the scope that is centred on replacement of VMWare Service Manager is justified, given the change in support arrangements.

2.3.2.5 Cost

This project would require total capital and operating costs of $10.26m over the investment period 2014/15 to 2021/22. The total investment during the regulatory period is $9.18, which comprises $6.1m IT capital, non-IT capital of $0.08m and operating expenses of $2.97m, as shown in Table 30.

[17] Source: http://alemba.com/news/news-article/vsm-press-release

Table 30: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	1.91	1.54	1.74	0.63	0.31	6.13
Capital (Non-IT)	0.00	0.05	0.03	0.00	0.00	0.08
Opex						2.97
Total						**9.18**

2.3.2.6 Timing

The project may need to be reconsidered in the next regulatory period, depending on Alemba's plans for VMWare support over the longer term.

2.3.2.7 Conclusion

Based on our above review, Nous considers that the proposed investment is not required and it should be removed. Our recommendation is summarised in Table 31.

Table 31: Nous conclusion – IT Management and Operations forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.91	1.54	1.74	0.63	0.31	6.13
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-1.91	-1.54	-1.74	-0.63	-0.31	-6.13

2.3.3 Enterprise Mobility (BC14)

Key findings:

- Nous considers the proposed investment is discretionary, subject to the variations developed in Section 3.

Recommendation:

- Remove the investment.

2.3.3.1 Project summary

This project is to deliver core mobility technology, a cohesive, standardised IT infrastructure and applications foundation so that enable employees, customers and business partners can leverage mobile devices to access data and systems.

2.3.3.2 Need

The Enterprise Mobility Strategy and the IT Mobility Strategy[18] recommend core technology systems and processes to ensure business programs such as Field Force Mobility, Enterprise Asset Management and Customer Services Strategy to fully realise business benefits.

2.3.3.3 Options

SAPN identified the following two options:

- **Option 0: Do Nothing** - Maintain current mobility infrastructure and applications landscape.
- **Option 1: Enable Mobility** - Implement five mobility technology components, being a Mobile Device Management platform, a Mobile Application Platform, Security Management to align with ISO 27001, Network Management and Integration Management.

SAPN's recommendation is **Option 1,** to provide SAPN with ability to access data through a secure channel from any device, reduce business risk and improve compliance with regulatory and corporate policies.

However the NPV of Option 1 is negative and Nous is not satisfied that the investment is required to deliver core network services. As a stand-alone business case the benefits described do not support an efficient investment. Section 3 considers its relationship with the Field Force Mobility project.

2.3.3.4 Scope

The scope of this project is organisation-wide across SAPN.

2.3.3.5 Cost

The total investment required is $13.18 and investment during the regulatory period of $7.96m, being $2.24m capital investment and operating costs of $5.72m as shown in Table 32.

Table 32: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	1.34	0.22	0.24	0.18	0.26	2.24
Opex						5.72
Total						**7.96**

2.3.3.6 Timing

The project is proposed to be conducted from July 2014 to December 2015.

2.3.3.7 Conclusion

Based on our above review, Nous considers that the proposed investment is discretionary and should only be considered in conjunction with the Field Force Mobility project. The project will deliver a negative NPV and is not considered necessary to deliver core service.

Our recommendation is summarised in Table 33.

[18] *"2015-2020 IT Mobility Strategy"* developed by SAPN

Table 33: Nous conclusion – Enterprise Mobility forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.34	0.22	0.24	0.18	0.26	2.24
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-1.34	-0.22	-0.24	-0.18	-0.26	-2.24

2.3.4 Summary of Theme 3 recommendations

To deliver the *"Invest in our People, Assets and Systems"* theme, SAPN proposes a work program of $15.04m. After review, Nous proposes that the IT Management & Operations and Enterprise Mobility projects be removed, which results in a reduced investment of $6.7m as shown in Table 34 below.

Table 34: Summary of Theme 3 project review

Reference	Project name	Investment $m	
		SAPN	**Nous proposed**
BC26	Enterprise Information Security	6.7	6.7
BC29	IT Management and Operations	6.1	0
BC14	Enterprise Mobility	2.2	0
	Total	**15.04**	**6.7**

2.4 Theme 4: Business foundations

SAPN plans to:

- implement a new finance capability with improved corporate governance and risk management functions
- introduce functionality to enable data capture and collation for RIN reporting.
- upgrade systems to manage legal and compliance functions.
- upgrade the HR system so that key HR information is available for multiple purposes across the business.

SAPN has planned four projects in this theme to deliver improvements to support Regulatory Reporting requirements, Financial Management, business processes and related systems as shown in Table 35.

Table 35: Summary of Theme 4 projects

Reference	Project name	Investment $m
BC04	Financial Management	4.7
BC32	RIN Reporting	3.7
BC31	Governance, Risk, Regulation and Compliance	1.5
BC11	People and Culture Improvements (HR Systems)	1.4
	Total	**11.33**

These projects are reviewed in the remainder of this section.

2.4.1 Financial Management (BC04)

Key findings:

- Nous considers the proposed is justified as it has a non-discretionary component to support future RIN reporting.
- The project has interdependencies with the SAP Upgrade and SAP Foundation projects.

Recommendation:

- Accept the investment.

2.4.1.1 Project summary

This project consists of an implementation of new technology to deliver sound financial management, greater corporate governance and improved risk management across SAPN.

2.4.1.2 Need

SAPN is committed to sound financial management and governance to strengthen its position to manage organisational risk. It is therefore critical that the right processes and associated supporting systems are in place. SAPN's current financial and cost management systems and processes were implemented with

the SAP system in 1997. The system design supported the business needs at that time and several process and system changes have been made to support the needs of the business since that then.

SAPN wants to now undergo a step change to its financial systems and processes. The Finance Department has identified initiatives to deliver the step change to ensure SAPN achieves sound financial management, greater corporate governance and improved risk management.

Anticipated benefits

SAPN foresees the following benefits from the implementation:

- significant reduction in labour costs through improved processes.
- alignment with SAPN Corporate and IT strategic objectives.
- delivery on the National Electricity Rules Expenditure criteria for being the most efficient cost option for achieving the objectives, and reflects the costs of a prudent operator.
- strengthened Finance Department capability in financial management and governance, business support in asset management, risk management and compliance with corporate, taxation and regulatory requirements.

2.4.1.3 Options

SAPN identified the following three options:

- **Option 1. Do Nothing** – continue with current systems and processes.
- **Option 2. Upgrade the Existing Core System** – leverage existing SAP ERP system with General Ledger, Fixed Assets, Treasury, Cash Management and Business Planning functionality.
- **Option 3: Upgrade using Non-Core System Enhancements** - Provide Option 2 functionality, but with an alternative more productive, workable, cost-efficient solution to integrate with SAP ERP.

The SAPN recommendation is **Option 2**, to implement existing core system solutions and change processes to ensure the organisation's continuing sound financial management and governance.

Nous considers that the proposed investment is justified as it has a non-discretionary component to support future RIN reporting. The remaining components will deliver efficiency in financial management. A reduction in assumed FTEs (from 5.5 to 2.0) almost provides a break-even with Do-Nothing. (There is $3m negative residual NPV) and this could be seen to support the RIN component.

2.4.1.4 Scope

The scope of this project is organisation wide across SAPN. Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.4.1.5 Cost

The project will require total capital and operating costs of $11.5m over the 9 year investment period 2014/15 to 2022/23. This comprises or $9.06m over the regulatory period, being capital of $7.4m (including IT related capital of $4.74m and non-IT capital of $2.64m) and a cumulative opex uplift of $1.7m (which comprises of $0.54 IT related and $1.16m non-IT related costs), as shown in Table 36.

Table 36: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	1.22	1.32	1.02	0.69	0.49	4.74
Capital (Non-IT)	0.48	0.75	0.68	0.39	0.33	2.64
Opex						0.54
Opex (Non-IT)	0.06	0.23	0.31	0.27	0.28	1.16
Total						**9.06**

2.4.1.6 Timing

The project is scheduled for implementation over the investment period 2014/15 to 2022/23.

2.4.1.7 Conclusion

Based on our above review, Nous considers that the proposed investment is reasonable as it has a non-discretionary component to support future RIN reporting. The remaining components will deliver efficiency in financial management. Our recommendation is summarised in Table 37

Table 37: Nous conclusion – Financial Management forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.22	1.32	1.02	0.69	0.49	4.74
Nous recommendation	**1.22**	**1.32**	**1.02**	**0.69**	**0.49**	**4.74**
Difference	0	0	0	0	0	0

2.4.2 RIN Reporting (BC32)

Key findings:

- Nous considers the proposed investment is justified as it is required to satisfy RIN requirements.
- The proposed cost for business change ($10.4m) seems overstated and its basis is not clear.

Recommendation:

- Accept the IT related investment.
- Significantly reduce the investment in non-IT costs.

2.4.2.1 Project summary

SAPN has prepared several business cases[19] to deliver a suite of functionality that will enable data capture and collation for RIN reporting. This implementation provides the technology that is not already covered.

2.4.2.2 Need

The AER has significantly increased reporting requirements for the RIN. Although not all details are known, SAPN anticipates that RIN reporting for Category Analysis and Economic Benchmarking will require information from across the business that is more detailed and not yet captured by its systems and processes. SAPN expects this to have significant and unsustainable impact on resources. At present, SAPN assesses its systems, processes and data stores as labour intensive and inadequate to support the new requirements, so an unplanned step change in reporting processes is needed.

In the previous regulatory period, SAPN responded to unforeseen changes in business demand which delayed strategic IT investment[20] and redirected funding to customer facing initiatives, works management and asset management. As a result, a key focus during the proposed 2015-20 regulatory period is to develop a robust technology platform and foundational capabilities to meet business needs. If an improvement is not made, SAPN faces high risk that they will suffer financial penalties from AER and fail to meet NER expenditure objective 67.5.7(a)(2).

2.4.2.3 Options

SAPN identified the following three options:

- **Option 0: Do Nothing** –maintain existing systems and processes with increased labour resources to process data and prepare reports.
- **Option 1: Extend SAP** - extend the existing SAP ERP to enable business process review and redesign for long term efficiency capture of data for preparation of RIN notices.
- **Option 2: Implement standalone RIN reporting solution** – introduce a standalone solution integrated with SAP and other SAPN systems.

The SAPN recommendation is **Option 1** to leverage and extend the current SAP and redesign processes to comply with RIN reporting.

Nous considers that the proposed investment is justified in principle as it is required to satisfy RIN requirements. However the costs of Option 1 are further examined below.

2.4.2.4 Scope

Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.4.2.5 Cost

The project is planned to have a total investment of $25.06m for the period 2014/15 to 2019/20. This comprises of $23.0m for the 2015-20 regulatory period, being $3.7m IT related capital, $10.4m non-IT related capital and operational expenses of $8.9m, as shown in Table 38.

[19] Relevant business cases are for Enterprise Asset Management (EAM), Financial Management, Business Intelligence, Integration, Data Management, Field Force Mobility, Project, Program and Portfolio Management, Supply Chain, IT Network Foundations, SAP Foundations, Enterprise Architecture and Integrated Design Management System.

[20] Planned $30 m investment to replace the billing system

Table 38: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	1.44	1.45	0.77	0.04	0	3.7
Non-IT capital	2.38	2.88	3.36	1.81	0.00	10.43
Opex						8.9
Total						**23.0**

The non-IT capital cost of $10.4m is to resource a team to deliver the project. The team comprises 93 FTE of both IT and non-IT staff with roles in project implementation (Program Manager, Project Co-ordinator), business engagement and consultation (Non-IT Business Analyst, Economist, Business-specific Subject Matter Experts [SME's]) and data quality (Data Quality Monitors and Data Governors). Using details included in the business case, Nous estimates the relative investment for the team of resources as shown in Table 39 below.

Table 39: Resourcing estimates for RIN Reporting Project[21]

Role	2015/16	2016/17	2017/18	2018/19	2019/20	TOTAL	$k	
NON IT								
Non IT Project Program Manager	1	1	1	0.5		3.5	385	
Non IT Project Co-ordinator	1	1	1			3	330	
Non IT Business Analyst	2	2	1			5	550	
Economist	1	1	1	0.5		3.5	385	
SME RIN	1	1	1	1		4	440	
SME Finance	2	2	2	2		8	880	
SME Network Mgt	1	1	1			3	330	
SME Customer Relations	0.5	0.5	0.5			1.5	165	
SME People & Culture	0.5	0.5	0.5			1.5	165	
SME Field Services	1	1	1			3	330	
Data Quality Monitors	0	7	14	14		35	3,850	
Data Governors	0	1	1	1		3	330	8,140
IT								
IT Architect	1	1	1			3	429	
SAP Functional Analyst/Developer	1	1	1			3	429	
Solution Architect	1	1	1			3	429	
Developer other	1	1	1	0.4		3.4	486	
Systems Analyst (BI Analyst/reporting/data)	1	1	1	0.4		3.4	486	
Test Analyst	1	1	1			3	429	2,688
								10,828

As Table 39 shows, the highest proportion of cost is to provide 38 FTE staff to manage data quality from 2016/17 to 2018/19. Nous has assumed that these staff will work closely with the relevant SME staff to ensure the quality of the data for RIN reporting. Alongside these data focussed staff, SAPN plans to dedicate 21 FTE subject matter experts from the relevant business areas (RIN, Finance, Network Management, Customer Relations People & Culture, and Field Services).

[21] Source: FTE data is sourced from *"Attachment 20.39 SA Power Networks: RIN Reporting Business Case"* page 33.

Nous has not been able to confirm the relevant volumes of data involved in the implementation over the regulatory period. However, given that future RIN reporting will require collection of new and more detailed information from across the business and that SAPN state their existing processes and systems are labour intensive and inadequate, Nous would expect that the newly designed systems[22] would collect the new data required and perform the required data checks, so that a dedicated support team would only be required for peripheral (or exception) data quality checks. Whilst these would initially be intensive, they would diminish as implementation progresses and data quality improves.

Without further detail to demonstrate the need for such a resource intensive team, Nous is of the view that the resourcing estimate of 93 FTE resources for this project is significantly overstated and that a more realistic estimate for the support team would be based on intensive activity in the first year and reduced in subsequent years. This would decrease the project resourcing requirement to that shown in Table 40. This has a required investment of $4.3m, being a decrease of $5.68m or 57% of the original proposal. This revised resource level would still provide a support team of 38.5 FTE over the project years.

Table 40: Revised resourcing estimates for RIN Reporting Project

Role	2015/16	2016/17	2017/18	2018/19	2019/20	TOTAL	$k	
NON IT								
Non IT Project Program Manager	1	1	0.5	0.25		2.75	275	
Non IT Project Co-ordinator	1	1	0.5	0		2.5	250	
Non IT Business Analyst	2	1	0.5	0		3.5	350	
Economist	1	1	0.5	0.25		2.75	275	
SME RIN	0.5	0.5	0.25	0.25		1.5	150	
SME Finance	0.5	0.5	0.25	0.5		1.75	175	
SME Network Mgt	0.5	0.5	0.25	0		1.25	125	
SME Customer Relations	0.25	0.25	0.125	0		0.625	63	
SME People & Culture	0.25	0.25	0.125	0		0.625	63	
SME Field Services	0.5	0.5	0.25	0		1.25	125	
Data Quality Monitors	0	3.5	1.25	1.25		6	600	
Data Governors	0	0.5	0.5	0.5		1.5	150	2,600
IT								
IT Architect	1	0.5	0.5	0		2	280	
SAP Functional Analyst/Developer	1	0.5	0.5	0		2	280	
Solution Architect	1	0.5	0.5	0		2	280	
Developer other	1	0.5	0.5	0.25		2.25	315	
Systems Analyst (BI Analyst/reporting/data)	1	0.5	0.5	0.25		2.25	315	
Test Analyst	1	0.5	0.5	0		2	280	1,750
								4,350

2.4.2.6 Timing

The project is scheduled to be conducted from July 2014 to June 2019.

2.4.2.7 Conclusion

Based on our above review, Nous considers that the proposed investment is reasonable in principle as it is required to satisfy RIN requirements. The business change costs of $10.4m appear high in the business case and the basis for this is not clear, so a reduction in these costs to $4.35m is recommended. The IT component is shown in Table 41.

[22] The new systems will be delivered by other projects outlined in the business cases that relate to Enterprise Asset Management, Financial Management, Business Intelligence, Integration, Data Management, Field Force Mobility, Project, Program and Portfolio Management, Supply Chain, IT Network Foundations, SAP Foundations, Enterprise Architecture and Integrated Design Management.

Table 41: Nous conclusion – RIN Reporting forecast IT capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.44	1.45	0.77	0.04	0	3.7
Nous recommendation	**1.44**	**1.45**	**0.77**	**0.04**	**0**	**3.7**
Difference	0	0	0	0	0	0

2.4.3 Governance, Risk, Regulation and Compliance (BC31)

Key findings:

- The requested expenditure does not match and is considerably lower than the preferred option in the business case.
- Nous accepts the some action must be taken to move beyond current unsupported tools and meet compliance obligations.
- In view of the low cost required, we consider the investment is warranted.

Recommendation:

- Accept the investment as stated.

2.4.3.1 Project summary

This project will upgrade two SAPN systems to manage SAPN legal and compliance functions.

2.4.3.2 Need

SAPN operations feature increasingly complex legal and regulatory requirements so governance, risk and compliance management must be robust. Two applications currently support these functions.

- *Cura* - to manage risk, safety, environment, regulatory, audit and legal issues. It operates on an outdated version.
- *Figtree* - for management of claims, documentation and estimated payments. It is no longer supported, nor is it integrated with SAP.

Figtree users have little training and find it cumbersome which results in a disjointed and inefficient approach to legal and regulatory compliance. If SAPN maintains these systems the risk of data loss, downtime and reporting failures will heighten.

2.4.3.3 Options

SAPN identified the following three options:

- **Option 0: Do Nothing** – retain 'business as usual' with biennial upgrades.
- **Option 1: Enhance** – enhance *Cura* and *Figtree* to address functionality and usability issues
- **Option 2: Replace** – replace *Cura* and *Figtree* with a Tier 1 solution.

The SAPN recommendation is **Option 2**, to replace the systems. Although the option has the highest total cost of ownership, as SAPN considers that it must act to meet its compliance obligations.

However, the expenditure for Option 2 is higher than the requested amount. In view of the low costs involved, we have not attempted to resolve these differences.

2.4.3.4 Scope

Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.4.3.5 Cost

Option 2 as listed requires total investment of $4.7m over 2014/15 to 2022/23. This comprises of $2.8m during the 2015-2020 regulatory period, being $1.8m in capital and cumulative opex costs of $1.0m, as shown in Table 42.

Table 42: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	0	0	0.02	0.42	1.09	1.53
Non-IT capital	0.00	0.00	0.01	0.04	0.04	0.08
Opex						1.00
Total						**3.37**

This is at odds with the requested amount of $1.53M.

2.4.3.6 Timing

This project is scheduled to commence in 2018.

2.4.3.7 Conclusion

Based on our above review, Nous considers that some action must be taken to move beyond current unsupported tools and meet compliance obligations. The capital profile here does not match any option in business case, but Nous recommends accepting the lower amount as requested. The outcome is shown in Table 43.

Table 43: Nous conclusion - Governance, Risk, Regulation and Compliance forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	0	0	0.02	0.42	1.09	1.53
Nous recommendation	**0**	**0**	**0.02**	**0.42**	**1.09**	**1.53**
Difference	0	0	0	0	0	0

2.4.4 People and Culture Improvements [HR Systems] (BC11)

Key findings:

- Nous considers the proposed investment is discretionary and not efficient.
- This project may have interdependency with the SAP Upgrade project.

Recommendation:

- Remove the investment.

2.4.4.1 Project summary

This project is planned to deliver a fully integrated HR and SAP ERP system so that key HR information is available for multiple purposes across the business.

2.4.4.2 Need

SAPN states that it must ensure their people are safe, skilled and committed. The Future Operating Model outlines key drivers that will shape SAPN's future operating environment and robust People and Culture capabilities will be needed to support the workforce as the drivers influence the business. SAPN wants to improve its HR systems and policies so that HR staff can provide valuable services. They also plan a significant increase in capital works and the workforce must have the right skills and knowledge to deliver it. SAPN's HR systems have evolved to meet business needs but ideally the HR system should be fully integrated with the core SAP ERP system so key HR information is available across the business. This would enable a single view of the employee and organisation structure for work management, delegation of duties and procurement authorisations. Functionality would feature capabilities in core HR processes.

Anticipated benefits

SAPN foresees the following benefits from the implementation:

- a single view of an employee with confidence in HR data that is available across the organisation.
- stronger management of work and resources, analysis and decision-making.
- improved business support from the HR function.

2.4.4.3 Options

SAPN identified the following three options:

- **Option 1: Do Nothing** – continue with current systems and processes.
- **Option 2: Full Functionality Upgrade** – consolidate ERP with a suite of cloud based HR tools.
- **Option 3: Full Functionality Upgrade using best-of-breed systems** – provide the same functionality as Option 2 with 'best of breed' solutions from the core ERP provider.

The SAPN recommendation is **Option 2** to provide a fully integrated HR solution.

The analysis has similar characteristics to the Supply Chain and Enterprise Asset Management projects. Substantial labour costs in the Do-nothing case are not included in Option 2 even though the systems are phased in over time. Option 2 also includes explicit savings through staff reduction, so the reference base for NPV is not clear. This could be double-counting which favours Option 2.

In Nous view, the case is not proven as an efficient investment.

2.4.4.4 Scope

The scope of this project has full or partial system upgrades.

2.4.4.5 Cost

The total capital and operating cost for the preferred option is $5.5m over the 9 year investment period 2014/15 to 2022/23. During the 2015-2020 regulatory period the total investment is $3.53m comprised of $2.0m in capital delivery and change management costs (including non-IT capital of $0.68m) and a cumulative net $1.6m uplift in operational costs, as shown in Table 44.

Table 44: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	0.6	0.16	0.24	0.27	0.09	1.36
Non-IT capital	0.23	0.08	0.19	0.13	0.06	0.68
Opex						1.60
Total						3.53

2.4.4.6 Timing

The project is planned to be conducted over the 9 year investment period from 2014/15 to 2022/23.

2.4.4.7 Conclusion

Based on our review, Nous considers that the proposed investment is discretionary and should be removed on the basis of unproven benefits and incorrect calculation of relative NPV. Our recommendation is shown in Table 45.

Table 45: Nous conclusion – People and Culture Improvements forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	0.6	0.16	0.24	0.27	0.09	1.36
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-0.6	-0.16	-0.24	-0.27	-0.09	-1.36

2.4.5 Summary of Theme 4 recommendations

To deliver the *"Business Foundations"* theme, SAPN proposes a work program that requires investment of $11.33m. After our review, Nous proposes that the investments are primarily reasonable because they will delivery non-discretionary functions and enable SAPN to meet its compliance obligations. However, Nous considers the People & Culture Improvements project to upgrade the HR system as not critical and should be rejected. This results in a reduced investment of $9.9m, as shown in Table 46 below.

Table 46: Summary of Theme 4 project review

Reference	Project name	Investment $m	
		SAPN	**Nous proposed**
BC04	Financial Management	4.7	4.7
BC32	RIN Reporting	3.7	3.7
BC31	Governance, Risk, Regulation and Compliance	1.5	1.5
BC11	People and Culture Improvements (HR Systems)	1.4	0.0
	Total	**11.33**	**9.9**

2.5 Theme 5: Enterprise enabling technologies

By 2020, SAPN sees that it will face significant compliance, information and mobility demands to improve business efficiency and outcomes for South Australian electricity customers. Enterprise-wide integrated systems are needed so that SAPN can benefit from collaboration and effective management of their information. The business continues to demand better access to data, analytics and business intelligence and an effective reporting on customer, asset and works information.

To deliver on this, SAPN plans to:

- provide a holistic, cohesive and integrated picture of assets, work and customers.
- refresh the corporate system to deliver reliable Finance, HR and Asset Maintenance functions.
- improve data centre and disaster recovery capability to support demand for more IT applications, storage and increased system uptime.
- improve data management to manage risk, protect business value, ensure workforce efficiency. sound data management and stronger corporate governance.
- introduce a reporting and analytics capability.
- implement a long term digital unified communication (UC) capability.
- establish an integrated toolset to support rapid informed decision making, strengthened business practices and agility, save time and cost for testing new technologies and optimisation of resources.

Eight (8) projects are planned to deliver this, as outlined in Table 47 below.

Table 47: Summary of Theme 5 projects

Reference	Project name	Investment $m
BC24	Enterprise Information Management	6.9
BC18	Enterprise Integration	6.3
BC09	SAP Foundation Upgrade	5.8
BC17	Data Centre Consolidation	4.1
BC22	Data Management	2.4
BC21	Business Intelligence Enablement	2.4
BC12a	Unified Communications	1.7
BC07	Enterprise Architecture	0.8
	Total	**30.61**

These projects are reviewed in the remainder of this section.

2.5.1 Enterprise Information Management (BC24)

Key findings:

- Nous considers that although the case is well made and many benefits are quoted, the negative NPV is significant and does not support a conclusion of efficient investment.

Recommendation:

- Remove the investment.

2.5.1.1 Project summary

This project is planned to deliver an Enterprise Content Management (or Enterprise Information Management) capability to improve collaboration and management of documents, records and web content.

2.5.1.2 Need

SAPN currently assesses its ECM capability as inadequate to meet its forecast need in the coming regulatory period. It foresees a clear requirement for more robust classification, documentation and system flexibility to successfully deliver the key strategic projects.

2.5.1.3 Options

To address the risks and to provide an environment as a foundation for other strategies, SAPN identified the following three options:

1. **Option O - Maintain current approach:** Continue to use and sustain the DM and RM capabilities delivered through a Network Shared Drive with Microsoft SharePoint. Then use the existing technology (Team Sites) for collaboration and the intranet for WCM.
2. **Option 1 - Implement new ECM environment:** Implement a mix of technologies to fully deliver the capability required and supplement existing ECM technology in place.
3. **Option 2 - Migrate to ECM through Software as a Service (SaaS):** Access a new ECM environment through an externally provided SaaS. This requires minimal on-site technology and would supplement or replace existing ECM technologies (as in Option 1).

The SAPN recommendation is **Option 1**. This was selected after SAPN took into account their policy preference to "buy" rather than "build" new capabilities and the trend towards "Software-as-a-Service" to minimise ongoing organisational support/maintenance costs and delivery of geography/device agnostic solutions over the internet. This is seen as the most feasible option because it:

- provides most flexibility with vendor and solution options along with complete control of all aspects of solution design and performance.
- enables parallel use of the existing environment with implementation of the new system, so that control over content migration can align with business needs.
- is the most conventional solution deployment and delivery model with least complexity and risk.

Anticipated benefits

SAPN foresees the benefits of the successful implementation as:

- organisation-wide sharing and discovery of digital assets through improved categorisation; storage structure and standardised naming.
- reduced risk of regulatory non-compliance with strong content framework and audit capability.

- mitigation against the need for ongoing software development
- improved communication organisation-wide, through supply chain and with end-customers.
- reduced costs in physical storage space through digitisation, with less time spent in e-search.

Although Options 0 and 2 also deliver similar benefits, the outcomes from Option 1 are seen by SAPN to be at of greater significance and at a more desirable cost. In their view, if the current approach was maintained, functionality and capability gaps would either weaken the outcome or require systems to be extensively customised. If SAPN was an early adopter of SaaS ECM, unforeseen risks or costs in events such as information security or privacy breaches may result.

Nous considers that the proposed case for enterprise level document and content management capability is well made in a qualitative sense and many benefits are quoted. However the negative NPV of the preferred option is significant, which may reflect that the benefits have not been well assessed. On this basis, we are not convinced that the proposed investment is efficient.

2.5.1.4 Scope

The scope of this project will encompass SAPN organisation-wide.

2.5.1.5 Cost

Total investment planned is $10.5m over the period from 2015/16 to 2021/22. This is comprised of $7.1m capital investment and cumulative operational expense step change of $3.4m. During the regulatory period, the project will require investment of $8.5 m, being $6.96m capital investment and cumulative operational expense uplift of $1.6m as shown in Table 48. The non-IT related costs are not stipulated.

Table 48: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	3.04	1.35	0.95	0.86	0.76	6.96
Opex						1.6
Total						**8.514**

2.5.1.6 Timing

The project is scheduled to be conducted over the period 2015/16 to 2021/22.

2.5.1.7 Conclusion

Based on our above review, Nous considers that the proposed case for enterprise level document and content management capability is well made in a qualitative sense and many benefits are quoted. However the negative NPV is significant, which may reflect that the benefits have not been well assessed.

Nous recommends that the investment be removed, as summarised in Table 49.

Table 49: Nous conclusion – Enterprise Information Management forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	3.04	1.35	0.95	0.86	0.76	6.96
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-3.04	-1.35	-0.95	-0.86	-0.76	-6.96

2.5.2 Enterprise Integration (BC18)

Key findings:

- Nous considers that although the case is well made with clear qualitative benefits, the benefits have not been converted into a positive NPV.

Recommendation:

- Remove the investment in its own right, subject to variations examined in Section 3.

2.5.2.1 Project summary

This project is planned to deliver a new integrated platform to replace the existing Point to Point (P2P) environment. This would provide a holistic, cohesive and integrated picture of assets, work and customers with minimised costs with efficient and effective services.

2.5.2.2 Need

By 2020, SAPN will face significant compliance, information and mobility demands to improve business efficiency and improve outcomes for South Australian electricity customers. To deliver this, an enterprise-wide integrated systems environment on a cost effective, flexible and supportable platform is proposed. It would replace the existing environment that is deemed inflexible, costly and high risk. Service efficiency and effectiveness will be achieved through optimisation of business processes through integration.

SAPN foresees that adding to their current environment to address increasing business demand for better functionality and more applications (in preference to an upgrade) will lead to a more error-prone and inflexible system, with changes becoming more expensive and time-consuming. Moreover, the environment would become fragile and prone to failure, with increase recovery time in the event of an IT failure. It is also unlikely that SAPN would achieve the Future Operating Model without a change in approach or significant investment in the current technology.

Anticipated benefits

Enterprise integration could deliver the following benefits for SAPN:

- cost avoidance ($1m after 5 years) from less maintenance and development of P2P integration.
- easier compliance , improved business capabilities and insights
- improved IT capability in:
  - integration with internal systems and external parties' systems
  - agility and responsiveness
  - cost efficiency
  - leverage of IT infrastructure

- security
- governance and control

- improved ability to mitigate risks and recover from failures;
- capability to adopt emerging trends in the electricity industry (e.g. work force mobility intelligent networks, and single views of customer/asset/work);

2.5.2.3 Options

SAPN identified the following three options:

- **Option 0: Do Nothing** - maintain current state operations using P2P integration;
- **Option 1: Partial Integration** – implement a foundation integration middleware layer during the 2015-2020 period, with Option 2 implemented later as required. This provides necessary capabilities to support integration of planned strategic initiatives over the 2015-2020 RCP
- **Option 2: Full Integration**– implement a full enterprise integration middleware layer over the 2015-2020 period. This will deliver all of Option 1 with enhanced governance, a fully embedded support model and business wide coordination to provide added support for strategic business initiatives and further mitigate risks.

The recommended solution is **Option 1**. It is seen as a practical first step to mitigate key risks with provision of foundation technology that can be extended as required.

Nous considers that the proposed case for enterprise integration is well made with clear qualitative benefits. However SAPN have not been able to convert the benefits into a positive NPV. This may reflect that the benefits have not been well assessed. On this basis, Nous recommends that the investment is removed as a discretionary project in its own right, with unproven benefits.

Its relationship with other projects in the work program is examined further in Section 3.

2.5.2.4 Scope

The scope has partial or full integration options, but neither are proven as efficient investments.

2.5.2.5 Cost

The proposed total project investment is $15.9m which comprises $8.13m capital delivery costs and $7.8m operating expenditure over the 7 year investment period from 2014/15 to 2020/21. During the regulatory period, investment required is $12.25m, being $6.28m in capital investment and $5,97m in operating costs, as shown in Table 50. The non-IT expenditure is not stipulated.

Table 50: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	2.88	2.41	0.83	0.04	0.12	6.28
Opex						5.97
Total						12.25

2.5.2.6 Timing

The project is scheduled to be conducted over the 7 year period from 2014/15 to 2020/21.

2.5.2.7 Conclusion

Based on our above review, Nous considers that the proposed case for enterprise integration is well made with clear qualitative benefits. However SAPN have not been able to convert the benefits into a positive NPV. This may reflect that the benefits have not been well assessed.

On this basis, Nous recommends the investment be rejected as discretionary in its own right, subject to further consideration of dependencies in Section 3. Our recommendation is shown in Table 51.

Table 51: Nous conclusion – Enterprise Integration forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	2.88	2.41	0.83	0.04	0.12	6.28
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-2.88	-2.41	-0.83	-0.04	-0.12	-6.28

2.5.3 SAP Foundation Upgrade (BC09)

Key findings:

- Nous considers the proposed expenditure is warranted and is (mostly) non-discretionary.
- The investment is to replace IT hardware that has reached the end of its vendor supported life and to upgrade the SAP system.

Recommendation:

- Accept the investment.

2.5.3.1 Project summary

This project will refresh the SAP ERP corporate system and deliver reliable capability in Finance, HR and Asset Maintenance functions. In two staged upgrades the strategic SAP hardware platform (including Oracle database systems) will be upgraded, then the User Interface for the corporate ERP system.

2.5.3.2 Need

SAPN's current SAP Enterprise Resource Planning (ERP) and Oracle database systems are coming to end of their service life (in 2016 and 2014 respectively) and must be replaced. A refresh is required because:

- current systems have reached capacity limits and cannot reliably function, with significant risk of system failure and associated costs.
- although an upgrade is planned for 2016, as the systems have already reached capacity, the need for a larger platform is immediate.
- existing hardware cannot expand to meet the growing demand for more functionality.
- the current user interface is at end of life and future modules will not operate with it. Further, a new improved user interface will encourage more staff to use of the corporate ERP system.

Anticipated benefits

The benefits of this implementation are:

- continuation of the current hosting model with successful system upgrades will minimise operational risk until it becomes fully outsourced.
- co-located hosting aligns with the Data Centre Strategy and moves towards outsourced service.
- benefits are maximised at acceptable cost and manageable operational risk.
- new IT infrastructure will support essential operational business systems and maintain quality, reliability and security of customer services.
- business units will maintain existing services and have a platform to improve processes and systems to manage service to customers, suppliers and regulatory bodies.
- National Electricity Rules Expenditure criteria will be met cost-efficiently, objectives will be achieved with prudent operating costs.

2.5.3.3 Options

SAPN identified the following four options:

- **Option 1 Do Nothing** - continue with current EPR hardware, database and user interface.
- **Option 2 - Do the Minimum** (Infrastructure Upgrade 2015-16) – retain existing infrastructure for 2014, plan in 2015 and implement hardware, software and user interface upgrades in 2016.
- **Option 3 Co-Location Hosted** - upgrade infrastructure in 2015 to provide the platform, transition to a co-location data centre and upgrade user interface.
- **Option 4 Outsourcing** - Transition infrastructure in 2015 to a fully managed and hosted service, that provides the platform. Pass operational and maintenance responsibilities to an external provider. Upgrade user interface.

The SAPN recommendation is **Option 3.**

Nous considers the project justified on the basis that access to a core supported ERP capability is non-discretionary for a contemporary organisation. The co-location option is a significant step towards use of outsourced or cloud services and will be consistent with conclusions for the CIS program in Section 2.1.1.

2.5.3.4 Scope

The scope of this project is organisation-wide across SAPN. Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.5.3.5 Cost

The project will require total investment of $13.4m over a 7 year investment period from 2014/15 to 2020/21, which represents $5.8m capital and a cumulative operational expense uplift of $2.3m. During the regulatory period, the investment required is $8.12m, being $5.82m in capital (of which $0.008m is non-IT related) and operational expenses of $2.3m, as show in in Table 52.

Table 52: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	3.27	0	0.29	0.6	1.65	5.810
Capital (Non IT)	0.008	0	0	0	0	0.008
Opex						2.300
Total						**8.118**

2.5.3.6 Timing

The project is to be planned in 2014 and scheduled for commencement in 2015.

2.5.3.7 Conclusion

Based on our review, Nous considers that the proposed expenditure is warranted and accepted as non-discretionary. The SAP version is approaching end of life and an upgrade is necessary to maintain service to customers.

Our recommendation is summarised in Table 53.

Table 53: Nous conclusion – SAP Foundation Upgrade forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	3.27	0	0.29	0.6	1.65	5.81
Nous recommendation	**3.27**	**0**	**0.29**	**0.6**	**1.65**	**5.81**
Difference	0	0	0	0	0	0

2.5.4 Data Centre Consolidation (BC17)

Key findings:

- Nous considers the proposed project is justified as it is mostly non-discretionary to preserve operating integrity and DR facilities.
- Investment is to rationalise the current data centre arrangements. Rapid growth in data and critical business systems claimed by SAPN has required unanticipated demand on the data centres.
- SAPN anticipates ongoing increases in data and system demands will be required.

Recommendation:

- Accept the investment.

2.5.4.1 Project summary

This project will provide cost effective Disaster Recovery, server and data storage solutions for the short term while the best approach for a longer term solution is determined.

2.5.4.2 Need

Over the regulatory period 2010-15, SAPN anticipated a stable environment with incremental growth in server and data storage. The data centres at Keswick, Angle Park and Hostworks were scoped as adequate. However, business demand for more IT applications, support servers and storage was significant which impacted data centre capability effectively support functions other than network. System uptime also became more critical with the increase in critical business applications from six to 26 over that period.

SAPN introduced short term measures in Disaster Recovery, servers and storage but compromised topology and storage to achieve it. Now, critical and non-critical systems share support services with DR

and it has been estimated that Keswick and Angle Park data centres will reach capacity by December 2014. A Data Centre Strategy[23] sets out a roadmap for a cost effective solution short term actions are being taken where SAPN will operate out of Hostworks (SAP) and Adam (ADMS) Data Centres while a longer term approach is determined.

2.5.4.3 Options

SAPN identified the following five options:

- **Option 0: Do nothing** - maintain current state with Adam Data Centre for tactical provisioning.
- **Option 1: Build** - construct a purpose built Data Centre for primary services whilst secondary services remain at Angle Park
- **Option 2: Expand** – expand both the current primary and secondary facilities to sustain expected growth in operations over the next ten years
- **Option 3: Co-Location Hosted** – host both primary and secondary services two mutually exclusive co-location facilities

Options to migrate to a Co-Location Outsourced and Cloud models were assessed at a high level but deemed unsuitable because the core systems had relatively immature service offerings, which would substantially increase risk. Financial analysis indicated these would not be effective options. Outsourcing and/or cloud solutions will be considered when the offerings are mature with costs and benefits better understood.

The SAPN recommended option is **Option 3**, to provide identified benefits, highest NPV and mitigation of risks.

In Nous view, the conclusion is sound under current operating arrangements. However, as outlined in Section 2.1.1, Nous considers that a progressive move towards outsourced and cloud services will be achievable over the 2015 - 20 period. As the proposed investment is required early in the period, we do not propose any changes to this component. However we would encourage further consideration of options for the next cycle.

2.5.4.4 Scope

Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.5.4.5 Cost

This project will require a total investment of $10.8m over the 7 year investment period from 2014/15 to 2020/21. During the regulatory period, total investment is $9.0m, which comprises $4.1m capital and cumulative opex costs of $4.88m. The net operating cost at the end of the seven year period presented will be an additional $0.94m per year, as shown in Table 54. Non-IT related costs are not stipulated.

[23] Dated 2013 by Ernst and Young

Table 54: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	3.33	0.79	0	0	0	4.12
Opex						4.88
Total						**9.00**

2.5.4.6 Timing

The project is scheduled to be conducted over the 7 year period from 2014/15 to 2020/21.

2.5.4.7 Conclusion

Based on our above review, Nous considers that the proposed project is non-discretionary to preserve operating integrity and DR facilities. The NPV of the preferred option is close to Do-Nothing, at a much lower risk. The extent and timing of the project will depend to some degree on the timing of other major programs. Note that the "Co-Location Hosted" option will appear more as Opex than Capex once the initial establishment is achieved. Our recommendation is summarised in Table 55.

Table 55: Nous conclusion – Data Centre Consolidation forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	3.33	0.79	0	0	0	4.12
Nous recommendation	**3.33**	**0.79**	**0**	**0**	**0**	**4.12**
Difference	0	0	0	0	0	0

2.5.5 Data Management (BC22)

Key findings:

- Nous considers the proposed investment is discretionary but justified.
- Investment provides additional IT capability to manage data volume growth from Enterprise Asset Management and Tariffs & Metering initiatives.
- The project has a dependency on the growth in data from these discretionary IT projects.

Recommendation:

- Accept the investment, dependent on Enterprise Asset Management and Tariffs & Metering projects.

2.5.5.1 Project summary

This project will provide SAPN with a solution to address current and future business data management requirements over the next five years.

2.5.5.2 Need

To manage risks and maximize data use across the organisation, SAPN must have robust data management and governance, supported by effective processes and support systems. Since 2013, the

organisation has experienced a 25-30% year on year growth in data requirements and whilst organisational systems and processes have been progressively updated, the coming regulatory period involves a dramatic increase in customer, operational and regulatory data volumes for reporting and decision making. SAPN has developed a governance framework and roadmap to improve asset information management. The regulatory environment is more complex and RIN compliance creates the need to collect more detailed information from all areas of the business.

If SAPN fails to improve it will face unmet business needs and risks to service continuity. There will be risk of non-compliance through data loss, reduced system performance/responsiveness and untimely distribution or failure to distribute key information. Moreover, to maintain manual data processing would be inefficient and may not eliminate the risk.

Anticipated benefits

SAPN foresees the benefits to be achieved from successful implementation of this initiative are:

1. Systems, capability and processes take an Enterprise Data Management approach to risks
2. Alignment with SA Power Network's corporate and IT strategic objectives.
3. Alignment with NER Expenditure criteria to cost-efficiently meet objectives with prudent costs
4. Compliance with RIN requirements;
5. Improved productivity and operational efficiency;
6. Reduced risks inherent with improved data quality;
7. Improvements in customer satisfaction; and
8. Increased enterprise agility to rapidly convert insights into action before opportunities are lost.

2.5.5.3 Options

SAPN identified the following two options:

- **Option 0: Do Nothing** – continue with current systems and processes.
- **Option 1: Implement "in scope" tool sets with governance and business processes for Data Management**. (SAP Information Steward for metadata; SAP Data Services for data quality; toolsets for data lifecycle and enterprise data architecture yet to be selected).

The SAPN recommendation is **Option 1** due to its lower total cost of ownership and support of future needs. The solution will address needs and build capability to meet growth projections over the next five years.

Nous considers the proposed investment is discretionary, but appears to have lower net cost than the "do-nothing" option. The work is somewhat justified by the extra data requirements of field mobility and metering programs, so will depend to some degree on the final position.

2.5.5.4 Scope

Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice.

2.5.5.5 Cost

The total investment required is $5.83m, which comprises of $2.5m capital investment and $3.28m operational expenditure. During the regulatory period the total cost is $5.21m comprised of $2.5M in capital (including $0.1m non-IT investment) and an additional $2.7m in ongoing operational costs, as shown in Table 56.

Table 56: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	1.08	1.02	0.28	0.02	0.02	2.41
Capital (Non-IT)	0.02	0.04	0.04	0.01	0.01	0.11
Opex						2.7
Total						**5.21**

2.5.5.6 Timing

The project is scheduled to be conducted over a six year period from 2015/16 to 2020/21.

2.5.5.7 Conclusion

Based on our review, Nous considers the proposed investment is discretionary, but appears to have lower net cost than the "do-nothing" option. The work is somewhat justified by the extra data requirements of field mobility and metering programs, so will depend to some degree on the final position. The investment is accepted dependent on Enterprise Asset Management and Tariffs & Metering projects. Our recommendation is summarised in Table 57.

Table 57: Nous conclusion – Data Management forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	1.08	1.02	0.28	0.02	0.02	2.42
Nous recommendation	**1.08**	**1.02**	**0.28**	**0.02**	**0.02**	**2.42**
Difference	0	0	0	0	0	0

2.5.6 Business Intelligence Enablement (BC21)

Key findings

- Nous considers the proposed investment is discretionary with a negative NPV compared with continuation of current arrangements.

Recommendation:

- Remove the investment.

2.5.6.1 Project summary

This project is proposed to deliver technology to enable reporting and analytics in process, business, operational, performance reporting and strategic planning. It would support establishment of a Business Intelligence Competency Centre (BICC) to drive the BI governance framework, build a data driven culture and enable a continuous BI communication program to ensure capability awareness and adoption across SAPN.

2.5.6.2 Need

In the current regulatory period, SAPN has experienced growing business demand for access to data, analytics and business intelligence after changes to regulatory requirements and the need for better customer, asset and works management reporting. In response, SAPN IT developed point-in-time, ad-hoc reports and analytics but volume and complexity growth is forecast to accelerate to comply with regulatory and legislative reporting requirements.

After business consultations, SAPN developed a Business Intelligence Strategy and roadmap which recommends a broad initiative to deliver technology, data, processes and skills. Some aspects have been implemented but further investment is needed to achieve the foundation to meet future needs. SAPN wishes to develop a standalone enterprise performance management solution to provide organisation-wide, standardised data analytics and real-time information. It will also support the Data Management Strategy to *'enable access to complete, consistent, timely and trusted data across the data lifecycle'*.

2.5.6.3 Options

SAPN identified the following two options:

- **Option 1: 'Do Nothing'** - maintain current state Business Intelligence.
- **Option 2: 'Enable Business Intelligence'** – implement a program of work to enhance the organisation's Business Intelligence and Performance Management capability.

The SAPN recommendation is **Option 1,** to establish a foundation business intelligence capability to deliver data, analytics and information management for better decision making across the business. It is a pre-requisite for many other projects[24], all of which have had delivery of their business intelligence requirements estimated on the assumption that foundation capabilities will be delivered by this project.

Nous has examined the business case and concludes that the additional investment proposed is not efficient. There is a negative NPV in comparison with Option 1.

2.5.6.4 Scope

The scope of this project is to consider BAU arrangements or enhance with new solutions.

2.5.6.5 Cost

The total investment proposed for this project is $10.48m, which comprises capital investment of $2.07m and operating expenses of $8.4m. During the regulatory period, total investment required is $8.51m, being capital of $2.42m with operational expenses of $6.09m, as shown in Table 58. Non-IT expenditure has not been stipulated.

[24] Relevant project business cases are for Enterprise Asset Management, Financial Management, Supply Chain, Field Force Mobility, RIN Reporting and Demand Side Participation

Table 58: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	0.69	1.05	0.55	0.08	0.05	2.42
Opex						6.09
Total						8.51

2.5.6.6 Timing

The project is scheduled to be conducted over the period from 2014/15 to 2020/21.

2.5.6.7 Conclusion

Based on our above review, Nous considers the proposed investment is discretionary and it is recommended that this project be removed. Our recommendation is summarised in Table 59.

Table 59: Nous conclusion – Business Intelligence Enablement forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	0.69	1.05	0.55	0.08	0.05	2.42
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-0.69	-1.05	-0.55	-0.08	-0.05	-2.42

2.5.7 Unified Communications (BC12a)

Key findings:

- Nous considers the proposed investment is justified. Although it is partly discretionary, the NPV is positive relative to the Do-Nothing option
- The project has interdependencies with the Call Centre Management, Enterprise Mobility and Data Centre Consolidation projects.

Recommendation:

- Accept the investment.

2.5.7.1 Project summary

This project will implement a long term telephony and business communications solution.

2.5.7.2 Need

SAPN's current analogue telephony system has been in place for over 20 years and the technology now approaches "end of life". Current digital technology delivers integrated voice, email, instant messaging and video conferencing functions in a unified communication (UC) service on the existing technology network. If SAPN upgrades to a digital telephony solution, they will:

- Maintain existing customer service levels with reduced operational risk

- Integrate existing communication channels for ease of use and management with increased efficiency for staff across locations and in the field
- Maximise available technologies and support Mobility and Customer Service strategies
- Consolidate and simplify technology management with lower total cost of ownership
- Operate a system that can adopt emerging trends.

2.5.7.3 Options

SAPN identified the following four options:

- **Option 0: Do nothing** - maintain existing telephony, video and messaging infrastructure.
- **Option 1: Evolve to full Astra solution** - Continue with current evolution to VoIP on Aastra technology, consolidate telephony then integrate with a unified messaging and video solution.
- **Option 2: Other onsite solution** - Replacing Aastra VoIP with new voice servers and handsets
- **Option 3: Hosted** - Replace Aastra VoIP with new voice servers as a hosted service and handsets

The recommendation is **Option 1**, to provide a platform that can be further evolved into a hosted service as technologies evolve and hosting options mature.

Nous considers the proposed investment is justified. It is partly non-discretionary as SAPN claim the current analogue system is at "end-of-life". Overall, the NPV is positive relative to the Do-Nothing option. The project also supports action to continue in the current direction of transferring to Unified Communications.

2.5.7.4 Scope

Nous has reviewed the information provided and considers that the proposal to upgrade the above applications reflects good industry practice and is efficient.

2.5.7.5 Cost

This project will require a total investment of $4.5m, being capital of $1.77m and operating costs of $2.8m over the 7 year investment period from 2014/15 to 2020/21. During the regulatory period, investment required is $1.77m capital and $2.5m operational expenses, being a total investment of $4.27m, as shown in Table 60. Non-IT costs have not been stipulated.

Table 60: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	0.58	0.85	0.3	0.04	0	1.77
Opex						2.50
Total						**4.27**

2.5.7.6 Timing

The project will over 7 years from 2014/15 to 2020/21.

2.5.7.7 Conclusion

Nous considers the proposed investment is justified. It is partly discretionary but the NPV is positive relative to the Do-Nothing option. The project also supports action to continue in the current direction of transferring to Unified Communications. Our recommendation is summarised in Table 61.

Table 61: Nous conclusion – Unified Communications forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	0.58	0.85	0.3	0.04	0	1.77
Nous recommendation	**0.58**	**0.85**	**0.3**	**0.04**	**0**	**1.77**
Difference	0	0	0	0	0	0

2.5.8 Enterprise Architecture (BC07)

Key findings:

- This project is to provide a new enterprise architecture toolset.
- Nous considers the proposed project as discretionary and showing a negative NPV.

Recommendation:

- Remove the investment.

2.5.8.1 Project summary

This project is planned to deliver an integrated repository based toolset to support rapid informed decision making, strengthened business practices, agility , reduced time and cost for testing new technologies and optimisation of resources.

2.5.8.2 Need

SAPN plans several transformation initiatives to support its strategic goals. Smart Grid applications will blur the boundaries between technology and telecommunications. With this new technology, SAPN wants a holistic approach to enterprise architecture to deliver business responsiveness. The initiative would encompass organisational business processes, data flow and systems. A newly established Enterprise Architecture Group will enact strategies, facilitate information sharing, align skills and processes with technologies and sustain governance. SAPN's current capability is supported manually or by disparate toolsets which has resulted in fragmented and non-standard corporate knowledge "pockets". Integration of this content for organisation-wide value takes significant time and effort and the opportunity to achieve best value is missed.

Anticipated benefits

SAPN foresees the following benefits from successful implementation of this project:

- Rapid informed decision making through timely and better quality impact assessment
- Improved business management practices through visibility and modelling capabilities
- Improved business agility to support change and continuous business/system improvements

- Reduced time and cost in testing new technologies and systems through the ability to convert architecture content into test plans
- Resource optimisation through leverage of existing resources, investment in resources that target performance gaps and minimises duplication.

2.5.8.3 Options

SAPN identified the following two options:

- **Option 0: Do Nothing** – continue with current non-integrated toolsets
- **Option 1: Integrated Enterprise Architecture toolset** – implement a scalable and comprehensive Enterprise Architecture toolset to provide an overarching view of strategy, business architecture, information systems and technology domains.

The SAPN recommendation is **Option 1**, to implement an Enterprise Architecture toolset for an overarching view of strategy, business architecture, information systems and technology.

Nous considers Option 1 to be discretionary and not efficient. The business case shows a negative NPV in comparison with Option 0.

2.5.8.4 Scope

The scope of this project is organisation-wide across SAPN.

2.5.8.5 Cost

Total investment for this project is $2.6m, being a capital investment of $0.82m and operating expenditure of $1.8m over the 2015 to 2020 regulatory period, as shown in Table 62.

Table 62: Investment required for 2015-20 regulatory period

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Capital	0.54	0.1	0.18	0	0	0.82
Opex						1.78
Total						**2.60**

2.5.8.6 Timing

This project will be conducted over the 2015 to 2020 regulatory period.

2.5.8.7 Conclusion

Based on our above review, Nous considers that as the proposed project is discretionary and showing a negative NPV, it should be removed in favour or higher priority investments. Our recommendation is summarised in Table 63.

Table 63: Nous conclusion – Enterprise Architecture forecast capex

$m (real 2013-14)	2015-16	2016-17	2017-18	2018-19	2019-20	Total
SAPN proposal	0.54	0.1	0.18	0	0	0.82
Nous recommendation	**0**	**0**	**0**	**0**	**0**	**0**
Difference	-0.54	-0.1	-0.18	0	0	-0.82

2.5.9 Summary of Theme 5 recommendations

To deliver on its *"Enterprise Enabling Technologies"* theme, a program of eight (8) projects is proposed to provide robust supporting systems and infrastructure and address SAPN's need to handle more complex information at higher volumes that will flow through corporate data and voice networks. The investment required for this program of work is $30.6m.

After our review, Nous proposes that the projects that relate to Enterprise Information Management, Enterprise Integration, Business Intelligence Enablement and Enterprise Architecture be removed. Although in several instances the business case is well made, Nous considers that the benefits are not sufficiently converted into positive NPV, which renders the overall activity inefficient. The outcome of this is a reduced investment of $14.12m as shown in Table 64 below.

Table 64: Summary of Theme 5 project review

Reference	Project name	Investment $m	
		SAPN	**Nous proposed**
BC24	Enterprise Information Management	6.9	0.00
BC18	Enterprise Integration	6.3	0.00
BC09	SAP Foundation Upgrade	5.8	5.81
BC17	Data Centre Consolidation	4.1	4.12
BC22	Data Management	2.4	2.42
BC21	Business Intelligence Enablement	2.4	0.00
BC12a	Unified Communications	1.7	1.77
BC07	Enterprise Architecture	0.8	0.00
	Total	**30.61**	**14.12**

2.6 Theme 6: Applications and infrastructure refresh

The three programs in this theme will deliver ongoing and efficient maintenance of core IT capabilities through orderly refreshes of infrastructure, operating systems and business applications, as shown in Table 65.

Table 65: Summary of Theme 6 projects

Reference	Project name	Investment $m
BC27	Technical Operations	41.6
BC28	IT Applications	59.9
	Non business case recurrent expenditure – primarily jointly owned CHED system upgrades and refreshes	15.7
	Total	**117.2**

2.6.1 Technical Operations (BC27)

This project was not included in the review.

2.6.2 IT Applications (BC28)

This project was not included in the review.

3 Deliverability

Nous has considered the deliverability of the total SAPN IT work program and taken into account two factors:

1. **The overall scale of the program**. The original program proposed by SAPN plans to replace or significantly upgrade almost every area of IT, especially in the first two years of the regulatory period. As their Roadmap[25] shows, the program has a large and complex set of interdependent deliverables. In our view, it would be optimistic to plan to deliver this large program in such rapid succession, particularly when the organisation must significantly scale up to tackle the challenge.
2. **Interdependencies within the program.** The project by project evaluation covered in the previous section potentially reduces the scale of the task by 27%, but this introduces some logical inconsistencies due to dependencies that would be broken if the program were implemented as a literal translation of Table 2.

To tackle both issues, we evaluated the timing of the sub-programs and actions required to restore logical consistency to the reduced program of work. We also considered the potential staging of some program elements to provide more breathing space for a logical flow-through of related components. This results in a further refinement of the proposed IT work program to one that is both logically consistent and more deliverable than the original.

Based on a starting point as the profile in Table 2, changes made to the program of delivery are:

- Reinstate part of the **Enterprise Asset Management** project. This is an upstream dependency to enable RIN Reporting (accepted in its own right) and core EAM capability as an enabler of services in other areas. Only core components to load asset data and enable processes to manage the data have been reinstated. Higher order options such as analytics enablement are left as discretionary.
- Restore **Enterprise Mobility** as an enabler of **Field-Force Mobility**, but stage the program in a more achievable sequence. Defer Enterprise Mobility by a year to allow completion of EAM Stage 1 and then follow with Field-Force Mobility two years later.
- Defer the accepted cloud-based **CIS and CRM** project by a year to allow a proper assessment of the cloud option. This moves the very large investment component into the next regulatory period which will allow better analysis of the activity listed as a CIS (Billing) initiative.
- Restore a component of **Enterprise Integration** to support a downstream dependency for the EAM and CIS and CRM initiatives. The amount and timing have been adjusted to account for the staging of those initiatives outlined above.

The net effect of these changes is a further small reduction in overall expenditure to a total of $206,958 million, which represents a 28% reduction on the original program. More importantly, however, Nous believes the underlying program profile is logically consistent and more achievable in its own right.

Table 66 on the following page provides the adjusted capital expenditure profile.

[25] See Appendix F of the SAPN IT Investment Plan 2015-2020

Table 66: Revised SAPN work program with dependencies restored

$000 real 2013-14	2015-16	2016-17	2017-18	2018-19	2019-20	Total	Changes from Table 2
						28,906	
BC01- CIS and CRM	0	5,262	923	1,195	4,881	12,261	Project deferred by one year
BC20 – Tariff and Metering	672	1,551	3,440	1,894	628	8,185	
BC02a – Customer Facing Technology	90	1,300	1,300	1,300	3,690	7,680	
BC02 – Customer Call Management Replacement	0	390	390	0	0	780	
	762	8,503	6,053	4,389	9,199		
						23,302	
BC03 – Enterprise Asset Management	1,530	3,423	2,623	2,433	1,733	11,742	Core components reinstated
BC10 – Intelligent Design Management System	1,250	2,640	1,090	1,300	1,080	7,360	
BC16 – Field Force Mobility	0	0	2,900	1,140	160	4,200	Deferred by two years
BC05a – Supply Chain	0	0	0	0	0	0	
BC05b – Project, Program and Portfolio management	0	0	0	0	0	0	
	2,780	6,063	6,613	4,873	2,973		
						8,650	
BC26 – Enterprise Information Security	2,450	1,290	1,450	610	870	6,670	
BC29 – IT Management and Operations	0	0	0	0	0	0	
BC14 – Enterprise Mobility	0	1,340	220	240	180	1,980	Reinstated with one year deferral
	2,450	2,630	1,670	850	1,050		
						9,970	
BC04 – Financial Management	1,220	1,320	1,020	690	490	4,740	
BC32 – RIN Reporting	1,440	1,450	770	40	0	3,700	
BC31 – Governance, Risk, Regulation and Compliance	0	0	20	420	1,090	1,530	
BC11 – People and Culture Improvements (HR Systems)	0	0	0	0	0	0	
	2,660	2,770	1,810	1,150	1,580		
						18,880	
BC24 – Enterprise Information Management	0	0	0	0	0	0	
BC18 – Enterprise Integration	1,800	1,400	1,400	40	120	4,760	Core components reinstated
BC09 – SAP Foundation Upgrade	3,270	0	290	600	1,650	5,810	
BC17 – Data Centre Consolidation	3,330	790	0	0	0	4,120	
BC22 - Data Management	1,080	1,020	280	20	20	2,420	
BC21 – Business Intelligence Enablement	0	0	0	0	0	0	
BC12a – Unified Communications	580	850	300	40	0	1,770	
BC07 – Enterprise Architecture	0	0	0	0	0	0	
	10,060	4,060	2,270	700	1,790		
						117,250	
BC27 – Technical Operations	9,170	7,940	7,790	8,370	8,380	41,650	
BC28 – IT Applications	13,490	12,340	11,340	11,320	11,380	59,870	
Non business case recurrent expenditure – primarily jointly owned CHED system upgrades and refreshes	2,820	3,410	3,580	2,350	3,570	15,730	
	25,480	23,690	22,710	22,040	23,330		
	44,192	**47,716**	**41,126**	**34,002**	**39,922**	**206,958**	

4 Summary of findings

SAPN's Regulatory Proposal 2015-2020 outlines a range of outcomes to be delivered through a program of IT works with a capital investment of $286.92 million, non-IT capital expenditure of $43 million and operating expenditure of $188 million. The program features six investment themes designed to enable these initiatives, with 27 associated projects. The themes and projects are shown in Figure 5 below.

Figure 5: SAPN ICT Investment themes and proposed projects

Revised view of justified expenditure

After a systematic review of the program of work through a "bottom-up" evaluation of each project's justification against NEM requirements and an assessment of the practical deliverability of the program of work within the regulatory control period, Nous has developed a revised view of justified expenditure.

The revised view is based on the following key points:

- Some core applications will need replacement or updates as some are reaching "end of life" and others are out of support by the vendor.
- Projects that support core resilience or service requirements that aim for operational efficiency are included in the revised view, as long as they are supported by clear analysis with a positive return to reduce costs to customers.
- Projects that cannot be justified for either essential service delivery or demonstrable benefits are excluded from the revised view.

The total investment for the revised view is **$209,315 million,** being a 27% reduction of the original SAPN proposal.

Program deliverability

Nous considered the deliverability of the IT work program in terms of its overall scale and the interdependencies presented in the program. The revised program results in a further reduction in investment to **$206,958 million** with a logically consistent and more achievable work program.

Non-IT capital expenditure

Nous assessed the reasonableness of the proposed non-IT capital expenditure in the projects. The investment proposed is estimated at $43 million. After review, Nous found that this can be reduced for the following reasons:

- projects eliminated from the revised view – a reduction of $16.78m.
- the overstated project management, change management and contingency in the CIS & CRM project results in the elimination of the non-ICT costs – a reduction of $4m.
- the 61% reduction in investment for the Tariffs and Metering project to reflect basic capability and contestable metering only reduces the non-ICT business change costs by 61% to $1.68m – a reduction of $2.6m.
- the reduced scope of the Enterprise Asset Management project to reflect implementation of core components only, reduces the non-ICT business change costs to 89% of the original investment, being $6.6m – a reduction of $800k.
- the two year deferral of the Field Force Mobility project means the non-IT business change costs relevant to the regulatory period have been reduced to 39% of the original investment (being $1.18m) – a reduction of $600k.
- the RIN Reporting Project non-IT capital expenditure is overstated – a reduction of $6m.

The non-ICT capital investment can be reduced to **$22.9m** (a 46% reduction).