Preliminary Business Case
Property Security

ERGON. ENERGY NETWORK

Executive Summary

Critical energy infrastructure faces a range of threats and growing challenges. Ergon Energy, as an owner and operator of Queensland's critical electricity distribution infrastructure has a responsibility to invest in property security consistent with the risk exposure and in alignment with industry practice. This business case focuses on investment to improve security controls and monitoring across a range of operational sites.

The specific drivers for this investment include:

- Mitigation of risks relating to unauthorised access to Ergon Energy sites with a specific focus on ensuring community and workforce safety and network reliability.
- Requirement to invest consistent with security management best practices, in alignment with legislation and standards. There is a strong customer and community expectation that appropriate measures are taken to secure property assets, ensuring that risks relating to unauthorised property access are adequately mitigated.
- Opportunity to reduce costs of loss through break-in and theft incidents which result in both financial loss and disruptions in delivery of services to customers and the community. [redacted]

This business case considers four options:

- **Base Case**: Maintain the existing Ergon Energy property security facilities and practices.
- **Option A:** [redacted] **(Preferred)**
- **Option B:** [redacted]
- **Option C:** [redacted]

Each option (A to C) also includes a sensitivity analysis which assesses the merits of each option with alternative parameter values. The business case recommends that the optimal proposal is Option A, with the capital investment to begin in 2020/21. [redacted]

The proposed investment will mitigate risks including:

- Community and workforce safety risks resulting from trespass
- Disruption to network operations and the resultant impact on electricity supply
- Disruption to the site operations

The proposed investment will enable benefits including:

- Improved community and workforce safety
- Reduced costs of theft including both asset replacement and costs of remediation
- [redacted]

This investment will support the customer and community by improving the safety of Ergon Energy's property and co-located high-voltage electricity assets.

Contents

1. Introduction

This business case proposes investment in Ergon Energy's property security.

Critical energy infrastructure faces a range of threats and growing challenges. Ergon Energy, as owners and operators of Queensland's critical electricity distribution infrastructure have a responsibility to invest in property security consistent with the risk exposure and in alignment with industry practice.

1.1 Purpose of document

This is a preliminary business case describing the need for investment in Ergon Energy's property security and the options to address that need. As a preliminary business case, the document has been developed for the purposes of forecasting the required investment in coordination with the revised revenue proposals to the Australian Energy Regulator (AER). Prior to investment, a Gate 3 business case will be prepared with further detail to be assessed in accordance with the established Energy Queensland investment governance processes.

1.2 Scope of document

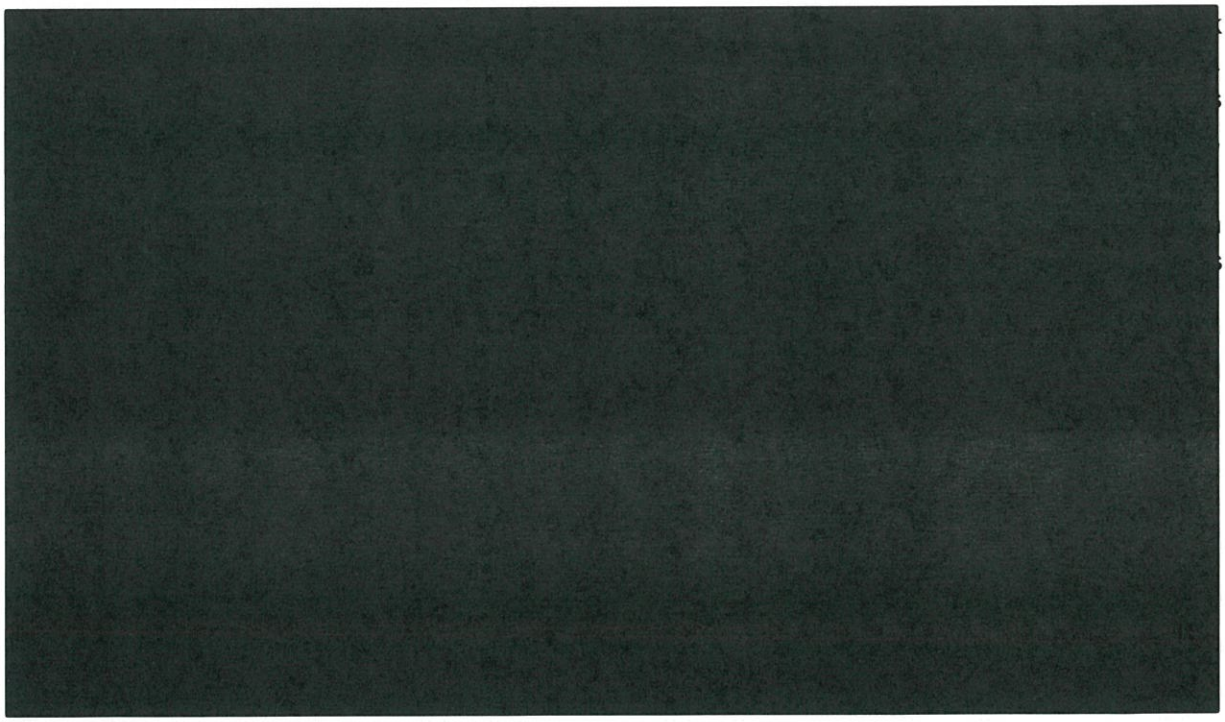
This document describes the scope and options for investment in property security to meet the investment needs below.

1.3 Identified need

This investment is primarily driven by the need to ensure an appropriate level of physical property security and monitoring, to address community and staff safety risks, to secure the operations of the network against targeted attack and to align with current and future legislation and industry standards. The Ergon Energy property portfolio considered in this business case consists of 77 facilities (regional offices and depots) distributed across Queensland.

The specific drivers for this investment include:

- **Requirement to mitigate risk of unauthorised site access**



[redacted]

- **Requirement to invest consistent with security management best practices, in alignment with legislation and standards**

  As an owner and operator of critical energy infrastructure Ergon Energy has a responsibility to invest consistent with security management best practices. There is also a strong customer and community expectation that appropriate measures are taken to secure property assets, ensuring that risks relating to unauthorised property access are adequately mitigated.

  Ergon Energy's strategy for property security is aligned with industry best practice and the PSPF. The Queensland Government has also drafted the Queensland Government Protective Security Framework (QGPSPF) which is heavily based on the PSPF. It is expected that Ergon Energy will be mandated to comply with the QGPSPF in the coming RCP.

- **Opportunity to reduce costs of loss through break-in and theft incidents**

  [redacted]

  Incidents relating to break-in and theft each require a level of remediation (e.g. repair to perimeter fencing and the property facility), and where theft is involved, assets need to be replaced. [redacted]

  Investment in improved physical security measures and site monitoring will result in a reduced number of security incidents and will provide a degree of benefit through each of the proposed investment options.

1.4 Energy Queensland Strategic Alignment

Table 1 below details how the proposed property security investment contributes to Energy Queensland's corporate and asset management objectives.

Strategic Objectives	Relationship of Initiative to Objectives
1. Community and customer focused Maintain and deepen our communities' trust by delivering on our promises, keeping the lights on and delivering an exceptional customer experience every time.	This investment will harden the physical security and monitoring across a range of Ergon Energy operational sites. This will result in a reduced number of security incidents, improving the delivery of operational services and contributing to the enablement of a reliable network for our customers and the community. The investment is aligned with customer and community expectations that appropriate measures are taken to secure property assets, ensuring that risks relating to unauthorised property access are adequately mitigated.
2. Operate safely as an efficient and effective organisation Continue to build a strong safety culture across the business and empower and develop our people while delivering safe, reliable and efficient operations.	Investing in property security promotes Ergon Energy's safety culture, reducing risks to the workforce and the community. The investment will implement appropriate mitigation strategies to reduce the likelihood of safety risks occurring.
3. Strengthen and grow from our core Leverage our portfolio business, strive for continuous improvement and work together to shape energy use and improve the utilisation of our assets.	[redacted]
4. Create value through innovation Be bold and creative, willing to try new ways of working and deliver new energy services that fulfil the unique needs of our communities and customers.	The property security program presents an opportunity to leverage innovative technologies to deliver appropriate and efficient security services at scale throughout Ergon Energy's geographically dispersed operational footprint.

Table 1: Strategic Alignment

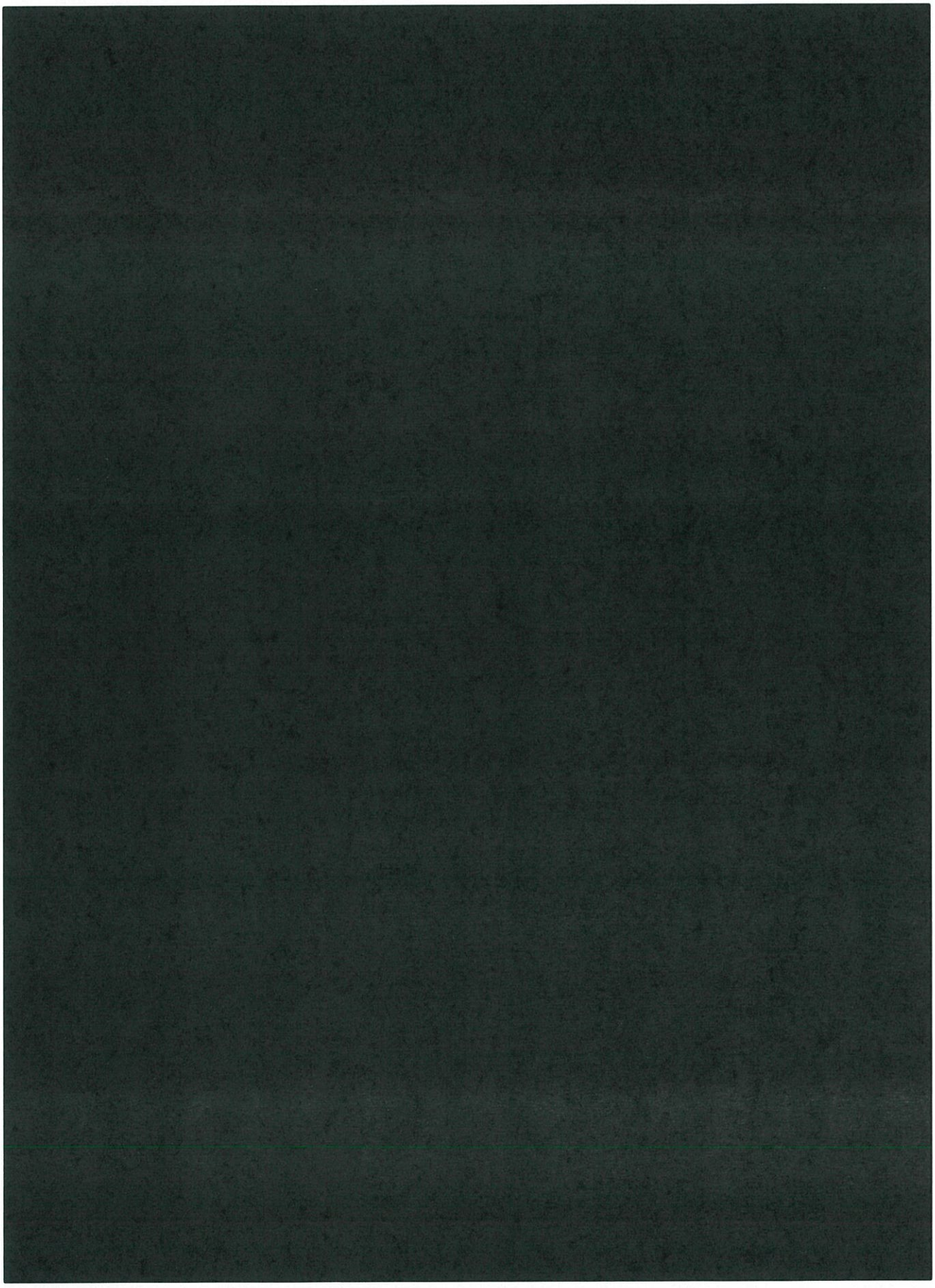
1.5 Legislative compliance obligations

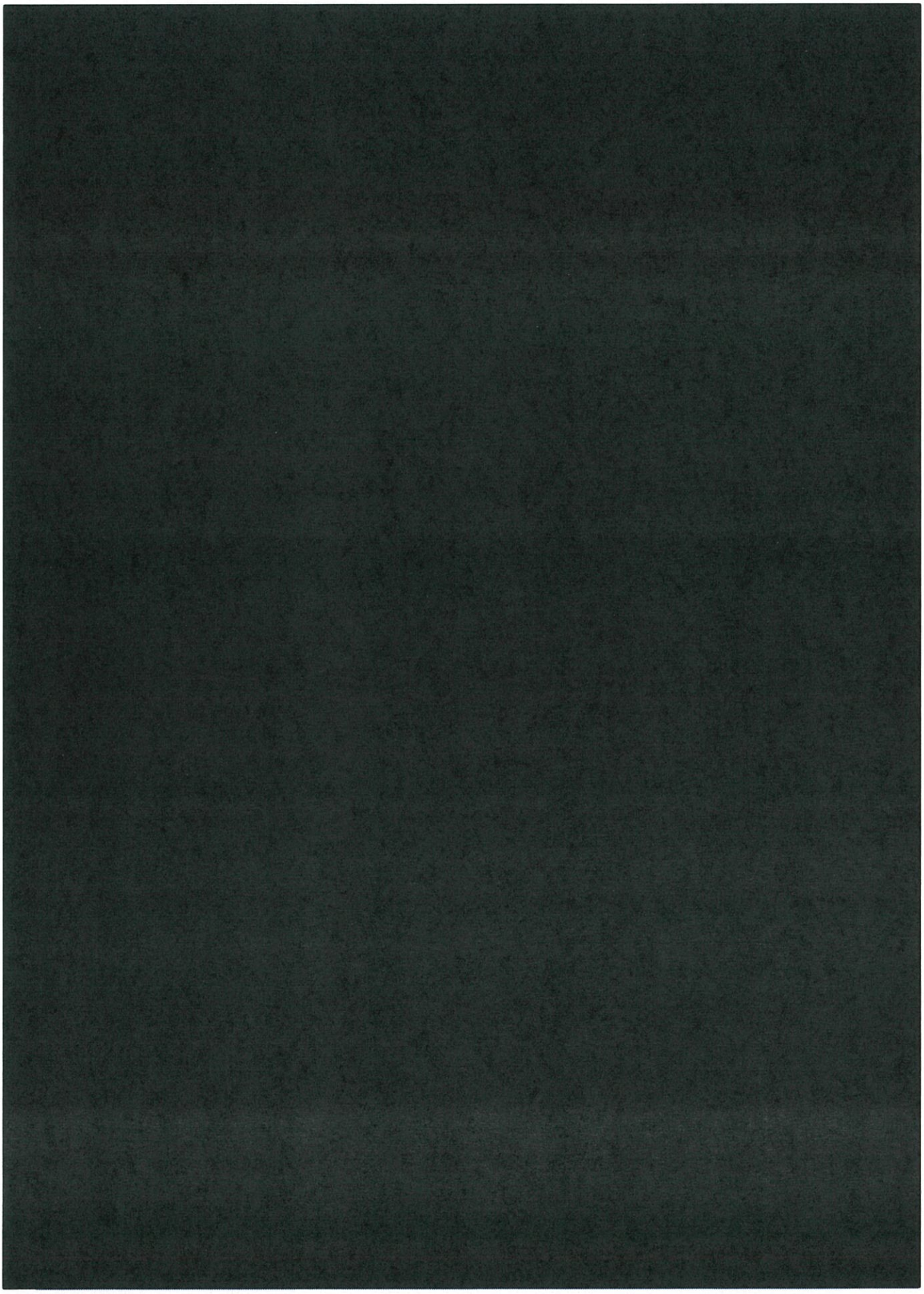
The property security investment must comply with a range of legislation, standards and codes of practice as indicated in Table 2 below.

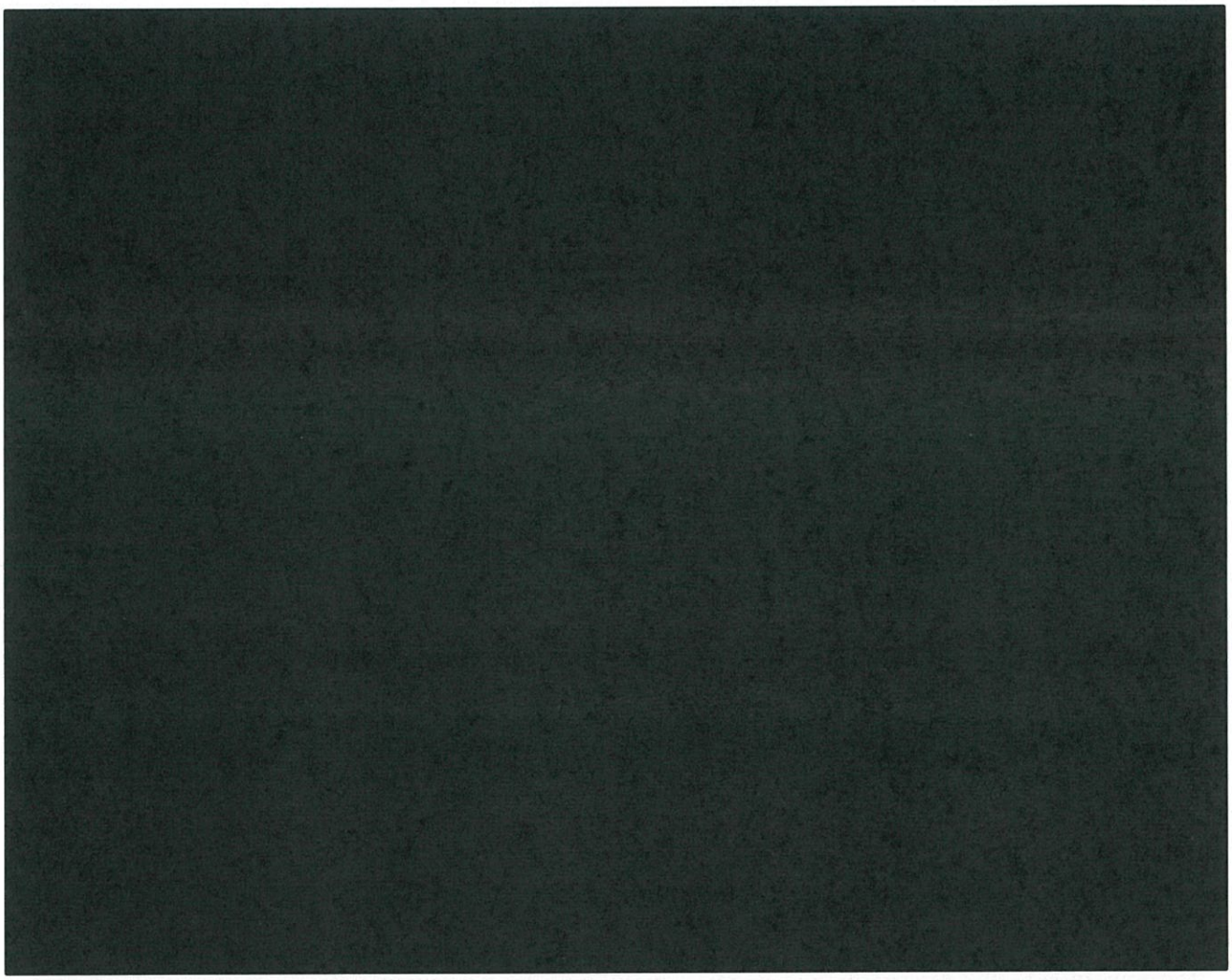
Legislation, Regulation or Code	Obligations	Relevance to this investment
Protective security policies, frameworks and guidelines	There are a range of frameworks and guidelines, either in place or to be enacted, which guide Ergon Energy's approach to property security. These include: • Australian Government Protective Security Policy Framework (PSPF) • Queensland Government Guidelines and Governance Procedures for the security of places of mass gatherings, infrastructure/assets and resource location • Draft Queensland Government Protective Security Framework Policy (QGPSPF) (expected to be mandated in the coming RCP) • ISO31000 (Risk Management) and SA/SNZ HB167-2006 (Security Risk Management) • ISO27001 (Information Security Management System)	Energy Queensland's security strategy ensures security controls are developed and implemented in alignment with these frameworks and guidelines.
Information Security Policies, Standards and Guidelines	All assets, including information assets must be properly secured. Ergon Energy must implement security controls that are consistent with and underpinned by the following statutory requirements: • Security of Critical Infrastructure Act 2018 • The Public Records Act 2002 (QLD) • The Privacy Act 1988 (Cwth) and The Information Privacy Act 2009 (QLD) • IS18 - Queensland Government Information Security Standard • Queensland Government, Network Transmission Security Assurance Framework • Trusted Information Sharing Network for Critical Infrastructure Protection; Ergon Energy must implement recommendations provided by: • AS/NZS ISO/IEC 27002:2006 Information technology - Security techniques - Code of practice for information security management; • US National Institute of Standards and Technology (NIST) Cyber Security Framework (CSF) and NIST Computer Security Controls: NIST.SP.800-53 • Australian Government - Information Security Manual (ISM) 2014 • Australian Energy Market Cyber Security Framework (AESCSF) which is based on the US Department of Energy's Cybersecurity Capability Maturity Model (ES-C2M2) • Australian Signals Directorate (ASD) Top 37 Strategies to Mitigate Cybersecurity Incidents	Physical security measures are key enablers of information security, as identified through the listed policies, standard and guidelines. Implementation of the physical security controls proposed in this business case will therefore support Ergon Energy in meeting its statutory requirements regarding information security.

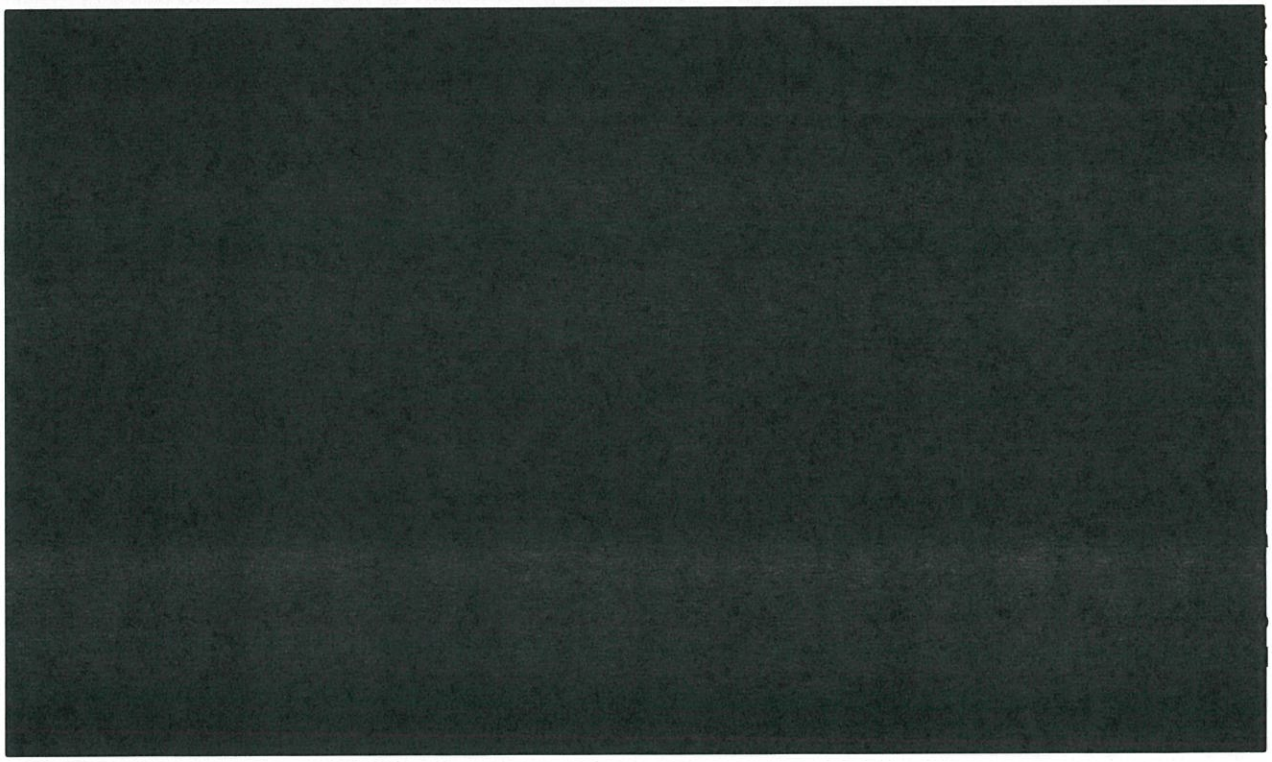
Table 2: Relevant Legislation, Regulations and Codes

1.6 Limitation of existing assets









2 Counterfactual Analysis (Base Case)

The counterfactual analysis describes the base case scenario if the proposed investment were not to proceed.

2.1 Summary

In the base case, Ergon Energy would continue with existing site security practices across the 2020-25 RCP. The level of investment is based on the historical actual capital investment over the 5 year period from 2014/15 to 2018/19. [redacted]

2.2 Assumptions

[redacted]

2.3 Benefits

As the base case, no financial or non-financial benefits are attributable to the counterfactual analysis.

2.4 Risks

The risks described in Figure 2 (over page) represent the inherent risk exposure by the end of the 2020-25 RCP if the base case "counterfactual" were favoured over the preferred investment option.

The subsequent options analysis (section 3) describes the mitigations associated with each option and the resultant residual risk exposure.

2.5 Retirement decision

No assets are due to be retired as a result of this business case.

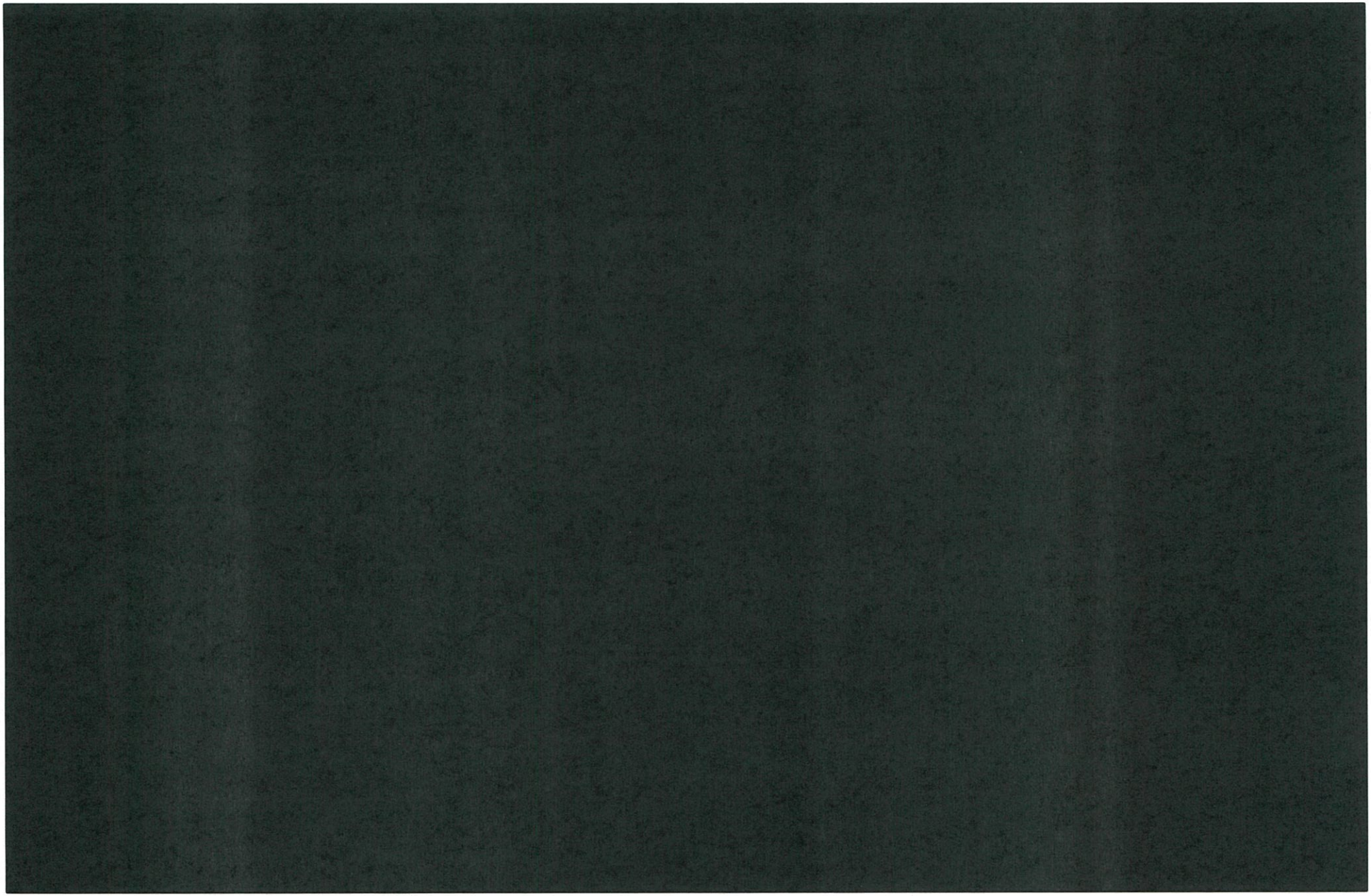


Figure 2: Risk Assessment - Base Case

3 Options Analysis

This section considers the following options, in comparison against the counterfactual (base case) as described above:

- **Option A:** [redacted] **(Preferred)**
  [redacted]
- **Option B:** [redacted]
- **Option C:** [redacted]

3.1 Option A: [redacted] (preferred)

[redacted]

3.1.1 Summary

[redacted]

Table 6: Option A Investment Summary

Ergon Energy has assumed the selection of this preferred option, with the identified financial benefits contributing to Ergon Energy's forecast opex reductions for the 2020-25 period.

3.1.2 Assumptions

[redacted]

[redacted]

3.1.3 Benefits

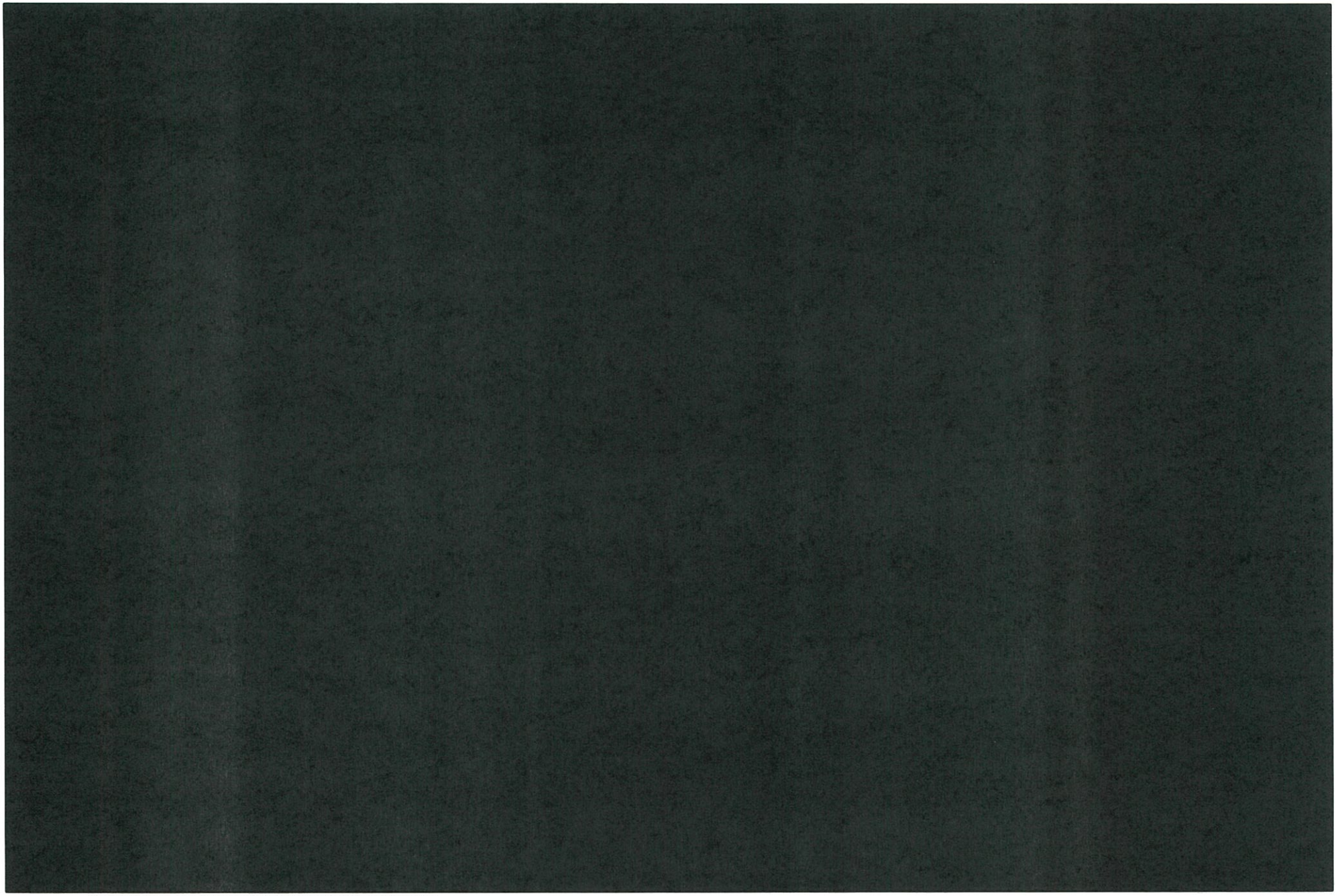
Table 9 below summarises the benefits to be enabled through implementation of this option.

Area	Benefits Identified	Value
[redacted]		
Operational costs	Avoided cost of theft incidents including internal labour costs associated with remediation. See Appendix 5 for theft reduction benefit calculation.	[redacted]
Safety	Improved community and staff safety [redacted]	See risk valuation in section 3.1.4.

Table 9: Option A benefits

3.1.4 Risks

Figure 3 (over page) summarise the mitigations of 2024/25 inherent risks identified in the base case (section 2.4). The risk analysis has been performed based on the Energy Queensland Network Risk Framework (Appendix 1).



(p) The post-mitigation Energy Queensland Network Risk Framework resultant risk level

Figure 3: Risk Assessment - Option A

3.2 Option B: [redacted]

3.2.1 Summary

[redacted]

Table 10: Option B investment summary

3.2.2 Assumptions

[redacted]

3.2.3 Benefits

Table 11 summarises the benefits to be enabled through implementation of this option.

Area	Benefits Identified	Value
[redacted]		
Operational costs	Avoided cost of theft incidents including internal labour costs associated with remediation. See Appendix 5 for theft reduction benefit calculation.	[redacted]
Safety	Improved community and staff safety [redacted]	See risk valuation in section 3.2.4

Table 11: Option B Benefits

3.2.4 Risks

Figure 4 (over page) summarise the mitigations of 2024/25 inherent risks identified in the base case (section 2.4). The risk analysis has been performed based on the Energy Queensland Network Risk Framework (Appendix 1).

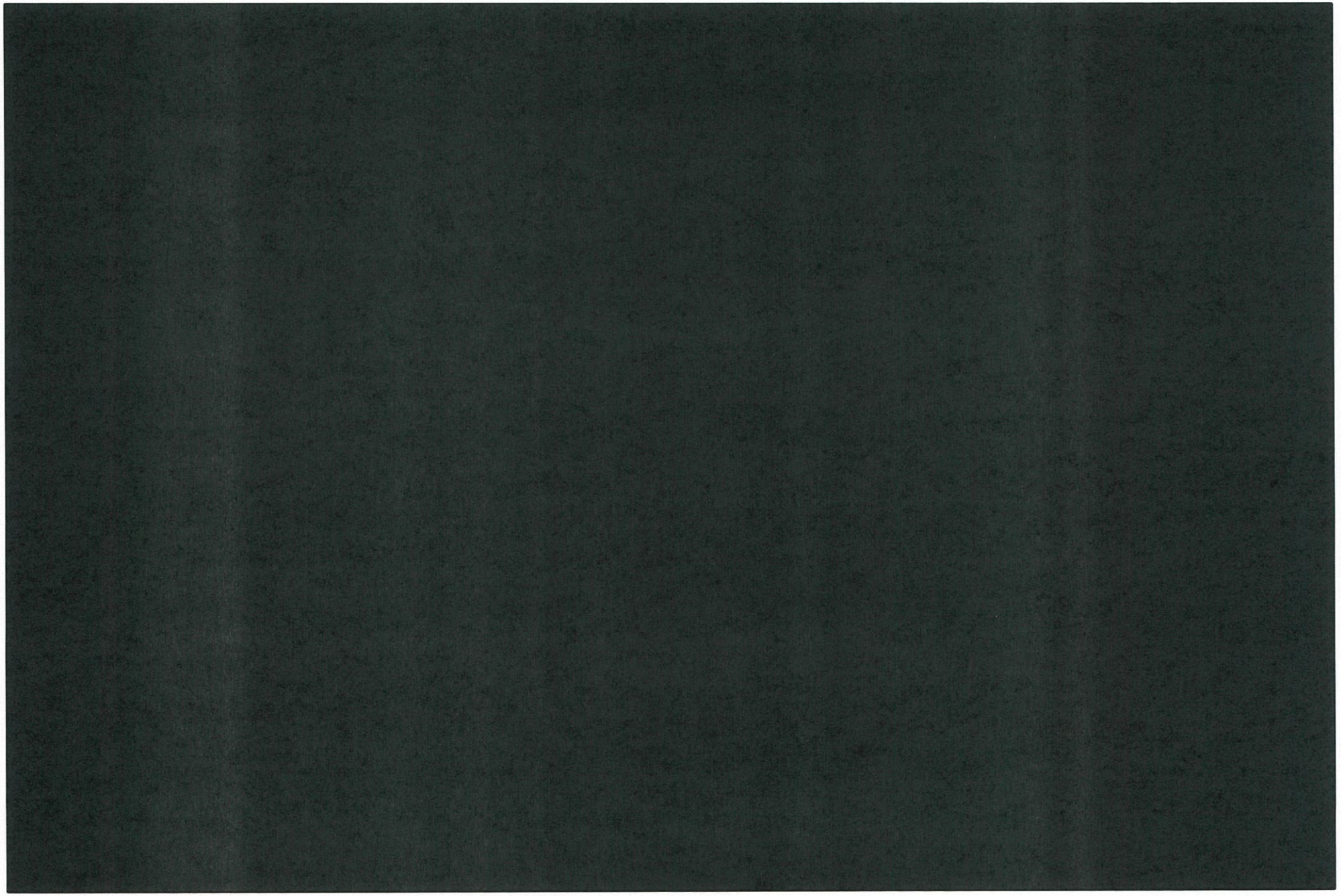


Figure 4: Risk Assessment - Option B

3.3 Option C: [redacted]

3.3.1 Summary

[redacted]

Table 12: Option C Investment summary (Ergon Energy)

3.3.2 Assumptions

[redacted]

3.3.3 Benefits

Table 13 below summarises the benefits to be enabled through implementation of this option.

Area	Benefits Identified	Value
[redacted]		
Operational costs	Avoided cost of theft incidents including internal labour costs associated with remediation. See Appendix 5 for theft reduction benefit calculation.	[redacted]
Safety	Improved community and staff safety [redacted]	See risk valuation in section 3.3.4

Table 13: Option C Benefits

3.3.4 Risks

Figure 5 (over page) summarise the mitigations of 2024/25 inherent risks identified in the base case (section 2.4). The risk analysis has been performed based on the Energy Queensland Network Risk Framework (Appendix 1).

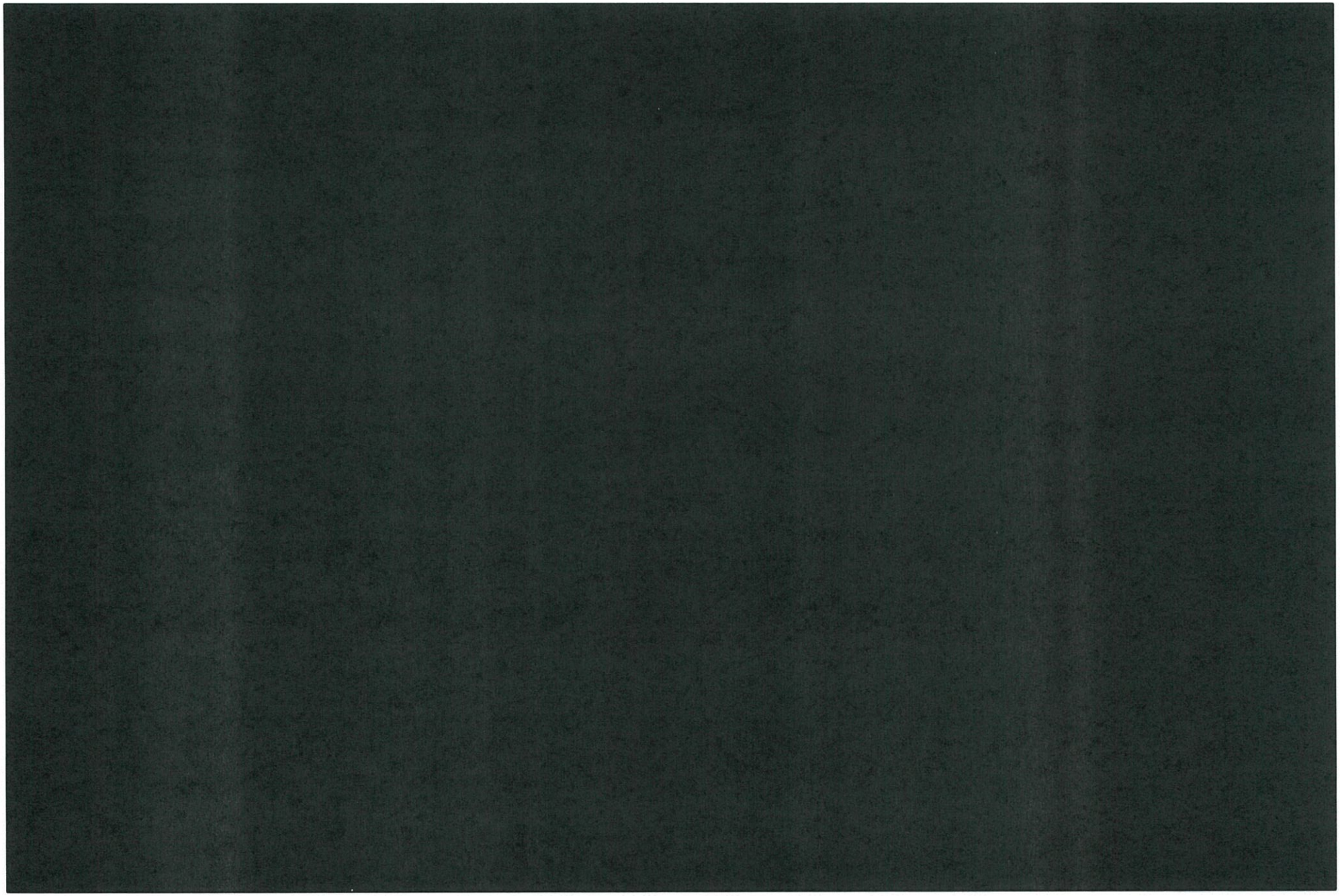


Figure 5: Risk Assessment - Option C

3.4 Economic analysis of identified options

3.4.1 Cost versus benefit assessment of each option

Table 14 below summarises the Net Present Value (NPV) of the costs and benefits of each option.

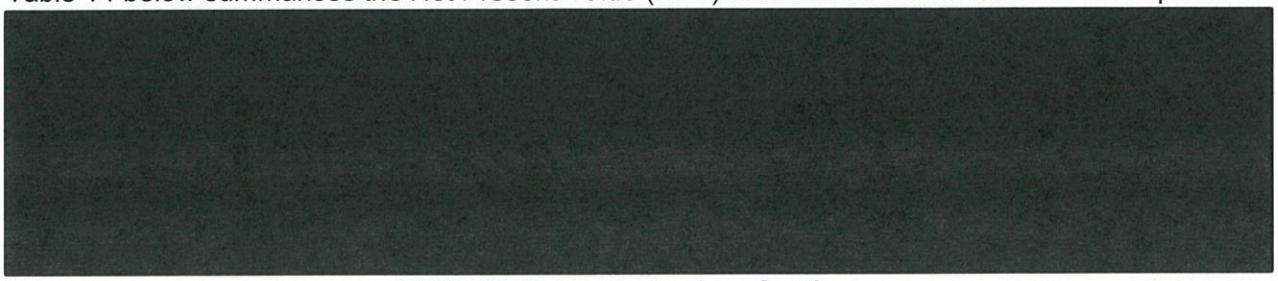


Table 14: Net present value of options

As indicated in the above table, Option A represents the best overall NPV

3.4.2 Cash flow forecast

Table 15 below summarises the forecast cashflow of capex and opex costs for respective preferred option.

Table 15: Cash flow forecast

3.4.3 NPV Calculation Parameters

In addition to the assumptions specific to each option (listed in sections 2 and 3 above), the following parameters apply to the economic analysis as a whole:

- The NPV has been calculated based on a 20-year financial analysis period using the Energy Queensland Non-Network NPV calculation model.
- 2.42% Consumer Price Index (CPI) is used for annual cost escalation.
- 5.13% Regulated Rate of Return/WACC (Pre-tax Nominal) is applied with present values discounted to 2018/19.

3.5 Scenario Analysis

3.5.1 Cost Benefit Sensitivity Parameters

In order to validate the sensitivity of the above NPV analysis to potential variability of key parameters, a scenario analysis has been performed. Through this analysis, a "best" scenario and "worst" scenario for each option has been assessed, for comparison against the primary ("most likely") scenario as reflected in the primary NPV analysis.

Table 16 (below) summarises the cost benefit sensitivity parameters used in the scenario analysis for this business case.

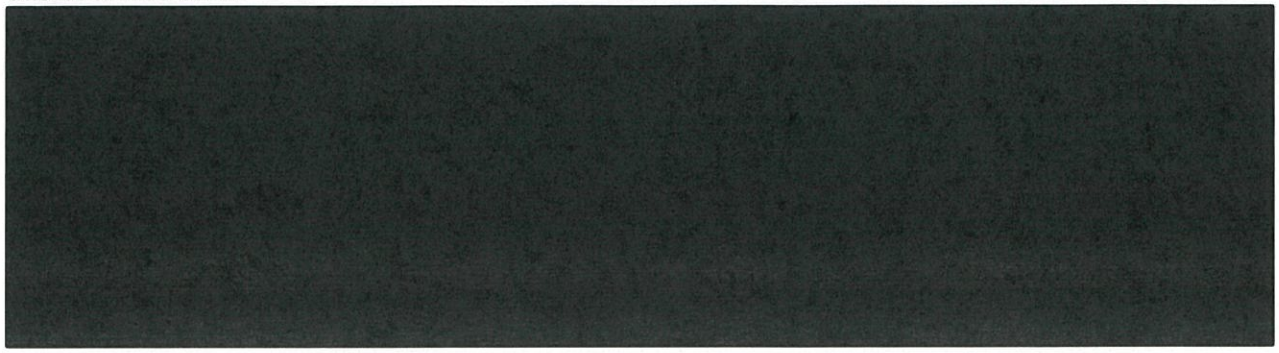


Table 16: Cost Benefit Sensitivity Parameters

3.5.2 Scenario Analysis

Table 17 below summarises the NPV sensitivity to the above listed parameters for each of the options. This business case recommends the "most likely" scenario associated with the "preferred" Option A.

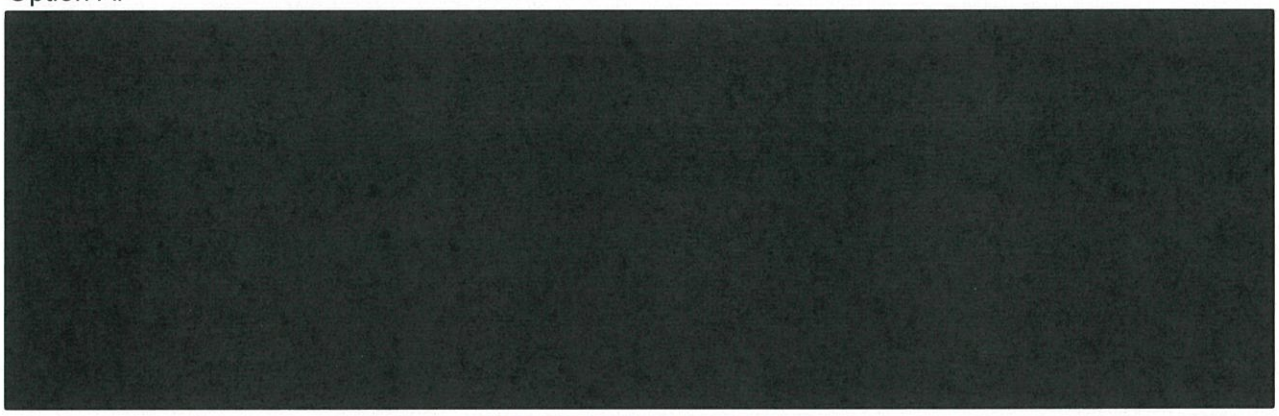
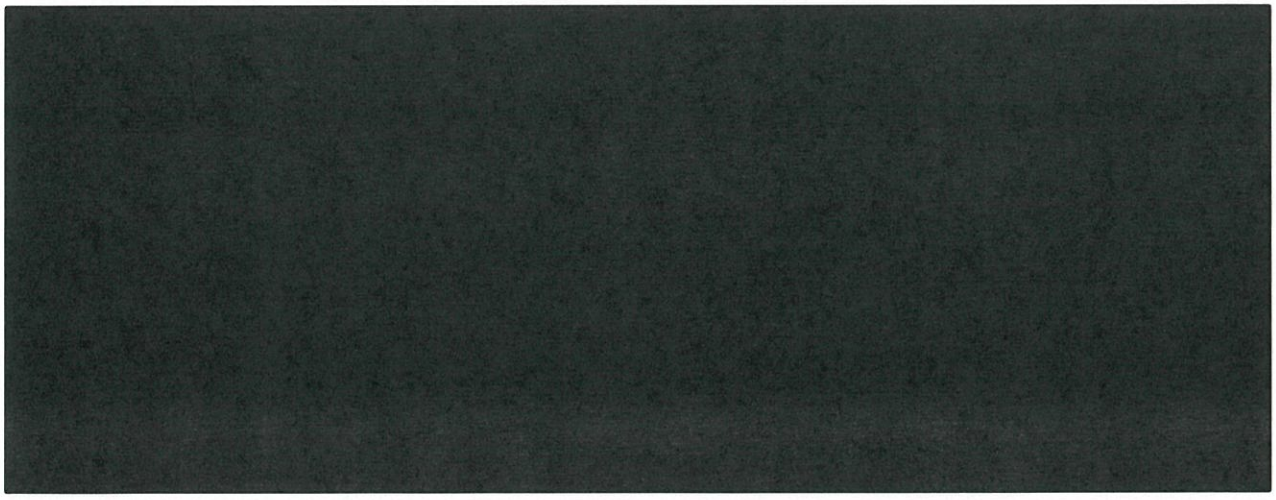


Table 17: Scenario Analysis

3.6 Qualitative comparison of identified options



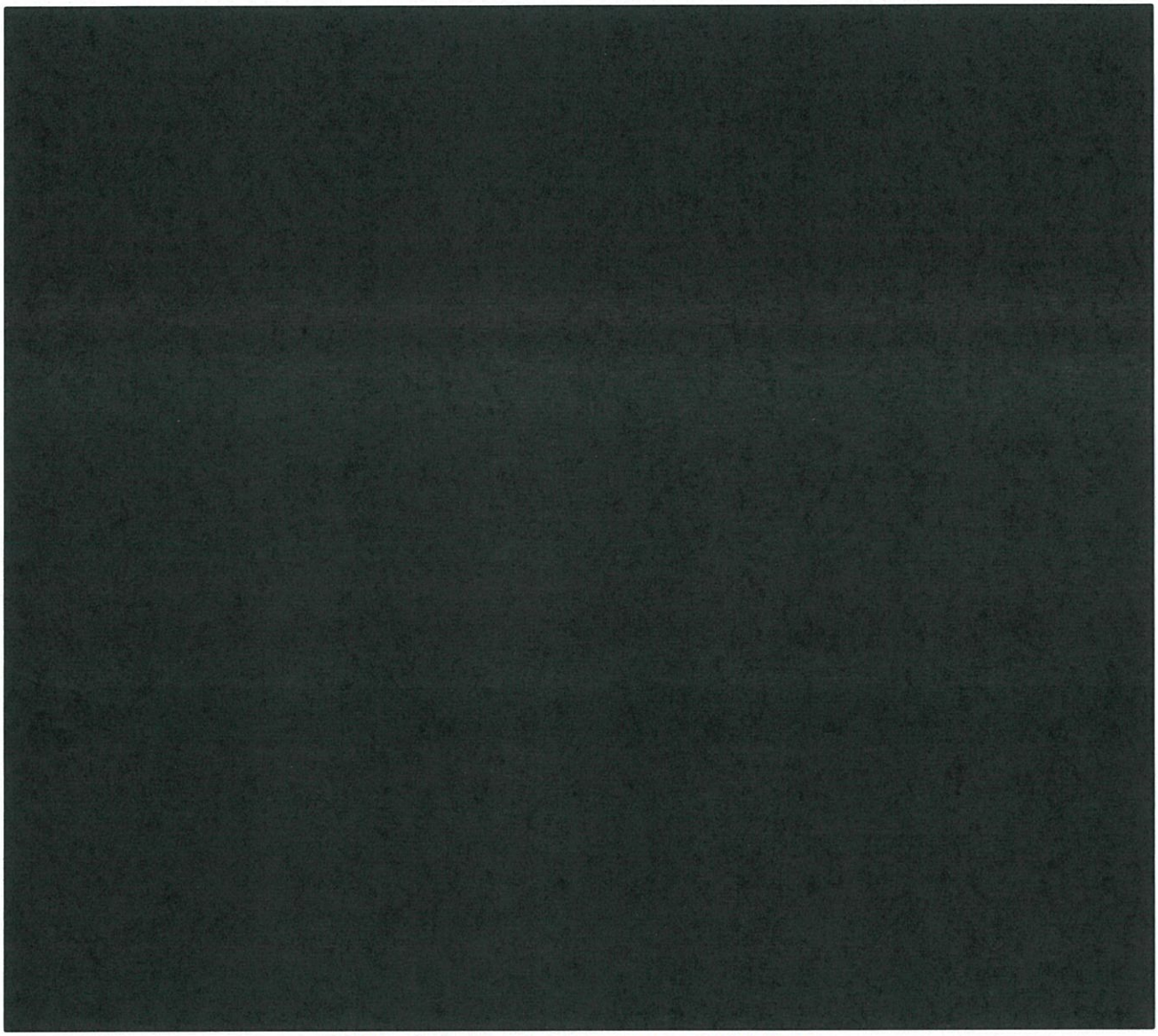


Table 18: Qualitative Comparison of Options

3.7 Change Impacts

This section details the potential impacts across Ergon Energy during and after implementation of the respective preferred options.

Unit / Team	Impact	Rating Low / Med / High

Unit / Team	Impact	Rating Low / Med / High

Table 19: Change Impact Summary

3.8 Investment Alignment with the National Electricity Rules (NER)

The table below details the alignment of the proposed solution with the NER capital expenditure requirements as regulated by the AER.

NER Capital Expenditure Requirements	Rationale
6.5.7 (a) (2) The forecast capital expenditure complies with all applicable regulatory obligations or requirements associated with the provision of standard control services	Through this initiative, Ergon Energy can maintain the required safe and efficient operation of their networks (standard control services), compliant with all regulated, legislative and policy obligations.
6.5.7 (a) (3) The forecast capital expenditure maintains the quality, reliability and security of supply of standard control services	Through the provision of cost effective and fit for purpose security services, Ergon Energy can maintain the quality, reliability and security of standard control services.
6.5.7 (c) (1) (i) The forecast capital expenditure reasonably reflects the efficient costs of achieving the capital expenditure objectives	
6.5.7 (c) (1) (ii) The forecast capital expenditure reasonably reflects the costs that a prudent operator would require to achieve the capital expenditure objectives	Currently this investment has been analysed to a "Preliminary Gate 2" level. Prior to investment, a Gate 3 business case will be prepared with further detail to be assessed in accordance with the established investment governance processes.
6.5.7 (c) (1) (iii) The forecast capital expenditure reasonably reflects a realistic expectation of the demand forecast and cost inputs required to achieve the capital expenditure objective	Currently this investment has been analysed to a "Preliminary Gate 2" level. Prior to investment, a Gate 3 business case will be prepared with further detail to be assessed in accordance with the established investment governance processes.

Table 20: NER Alignment

4 Recommendation

"Option A: Security infrastructure upgrade: [redacted] is recommended as:

- It has the best overall NPV of all options. [redacted]
- It is aligned with Energy Queensland's strategic objectives;
- Meets the identified investment needs including:
  - Requirement to mitigate staff and community safety risks;
  - Requirement to align with current and future legislation and industry best practices;
  - Opportunity to achieve efficiency through reduced direct and indirect cost of trespass and theft of materials and tools;
- It is consistent with Ergon Energy's capital expenditure requirements under the National Electricity Rules; and
- The identified efficiency benefits contribute to Ergon Energy's forecast opex reductions for the 2020-25 period. [redacted]

Total forecast capex in the 2020-25 RCP is [redacted] (2018/19 real terms).

Prior to investment, a Gate 3 business case will be prepared with further detail to be assessed in accordance with established investment governance processes.

This is an Ergon Energy DNSP investment. The Energy Queensland Cost Allocation Model (CAM) allocates the total forecast asset cost between Standard Control Services, Alternative Control Services and Other/Unregulated, reflecting usage of the asset across the DNSP services.

Appendix 1. Network Risk Framework

The Energy Queensland Network Risk Framework assesses individual risks in dimensions of Likelihood and Consequence according to a six by six risk matrix (Figure 6).

Risk Analysis 6x6 multiplication R=C x L	Consequence → 1	2	3	4	5	6
Likelihood ↑ 6	6	12	18	24	30	36
5	5	10	15	20	25	30
4	4	8	12	16	20	24
3	3	6	9	12	15	18
2	2	4	6	8	10	12
1	1	2	3	4	5	6

Network Risks - *Risk Tolerability Criteria and Action Requirements*				
Risk Score	**Risk Descriptor**	**Risk Tolerability Criteria and Action Requirements**		
30 – 36	***Intolerable*** *(stop exposure immediately)*			
24 – 29	*Very High Risk*	*ALARP Risk in this range managed to As Low As Reasonably Practicable	**Executive Approval** (required for continued risk exposure at this level)	May require a full Quantitative Risk Assessment (QRA) Introduce new or changed risk treatments to reduce level of risk Periodic review of the risk and effectiveness of the existing risk treatments
18 – 23	*High Risk*		**Divisional Manager Approval** (required for continued risk exposure at this level)	Introduce new or changed risk treatments to reduce level of risk Periodic review of the risk and effectiveness of the existing risk treatments
11 – 17	*Moderate Risk*		**Group Manager / Process Owner Approval** (required for continued risk exposure at this level)	Introduce new or changed risk controls or risk treatments as justified to further reduce risk Periodic review of the risk and effectiveness of the existing risk treatments
6 – 10	Low Risk			
1 to 5	*Very Low Risk*		No direct approval required but evidence of ongoing monitoring and management is required	*Periodic review of the risk and effectiveness of the existing risk treatments*

**Note: SOFAIRP to be used for Safety Risks and ALARP for Network Risks*

Figure 6: Network Risk Framework

This business case also includes financial valuation of safety risks. For the purposes of the analysis, the risk consequence values as shown in Table 21 have been assumed:

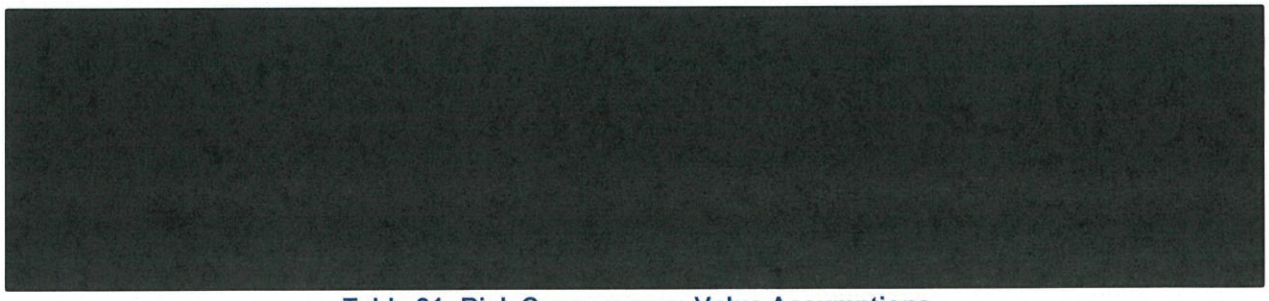
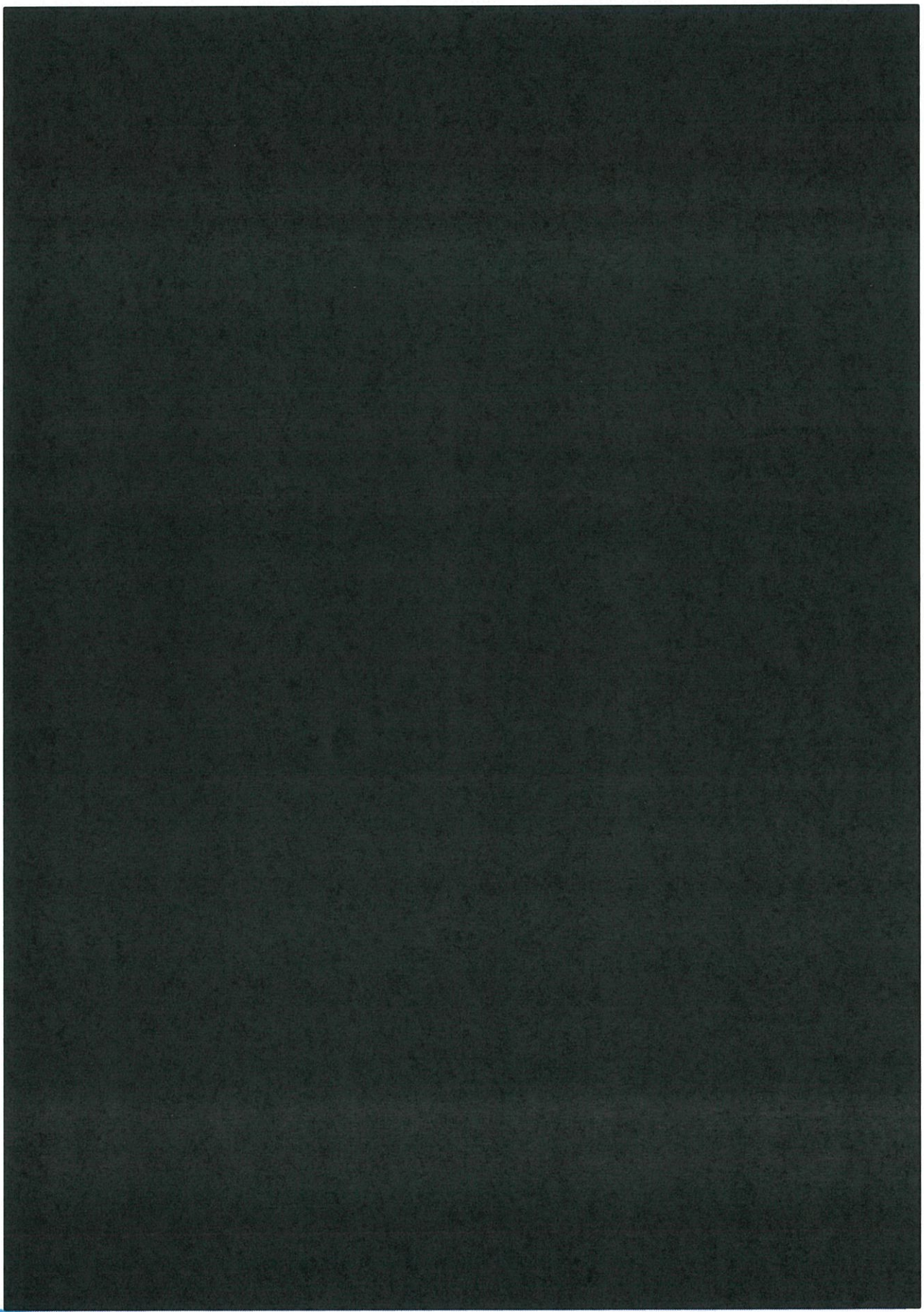


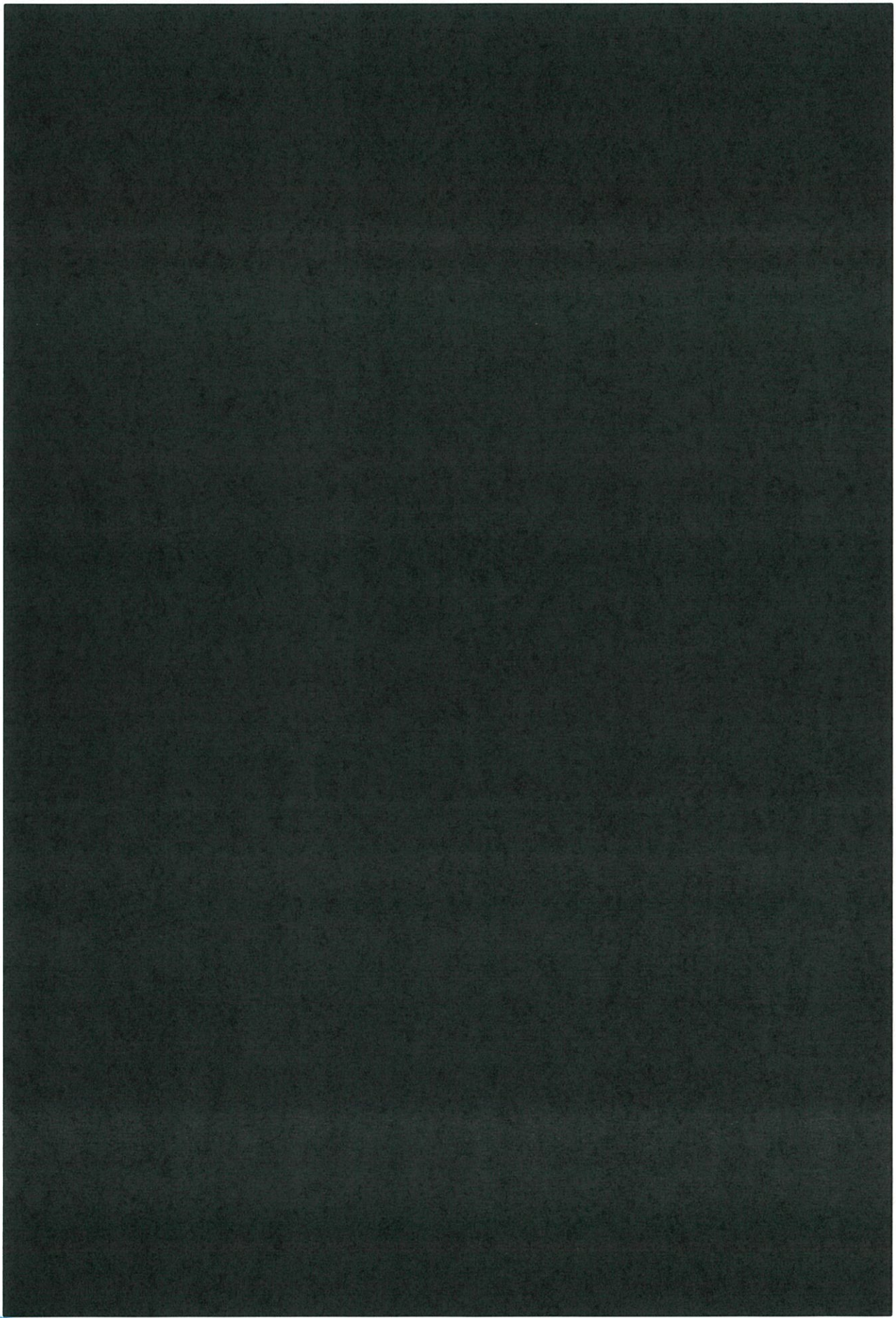
Table 21: Risk Consequence Value Assumptions

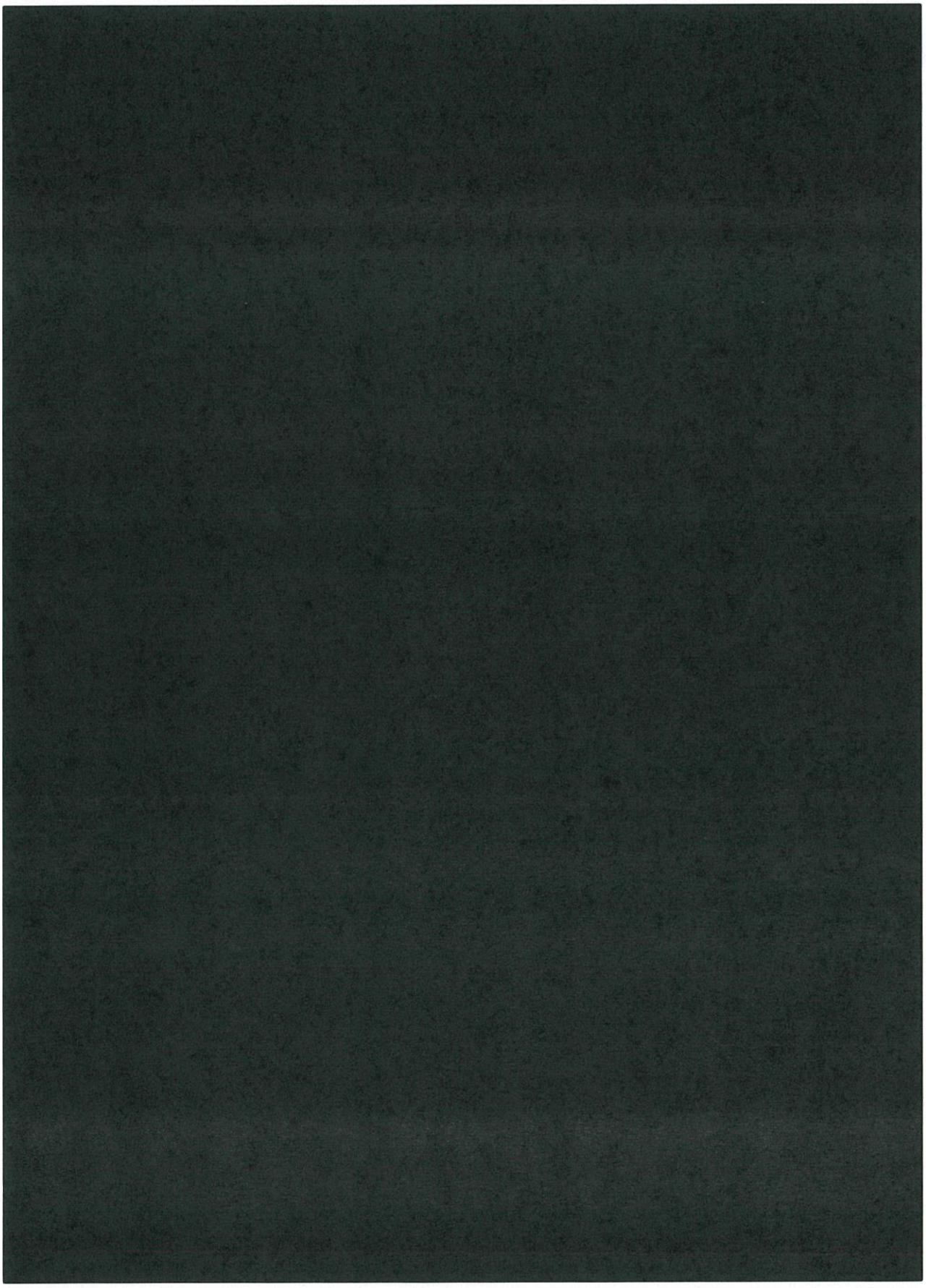
Appendix 2. Definitions

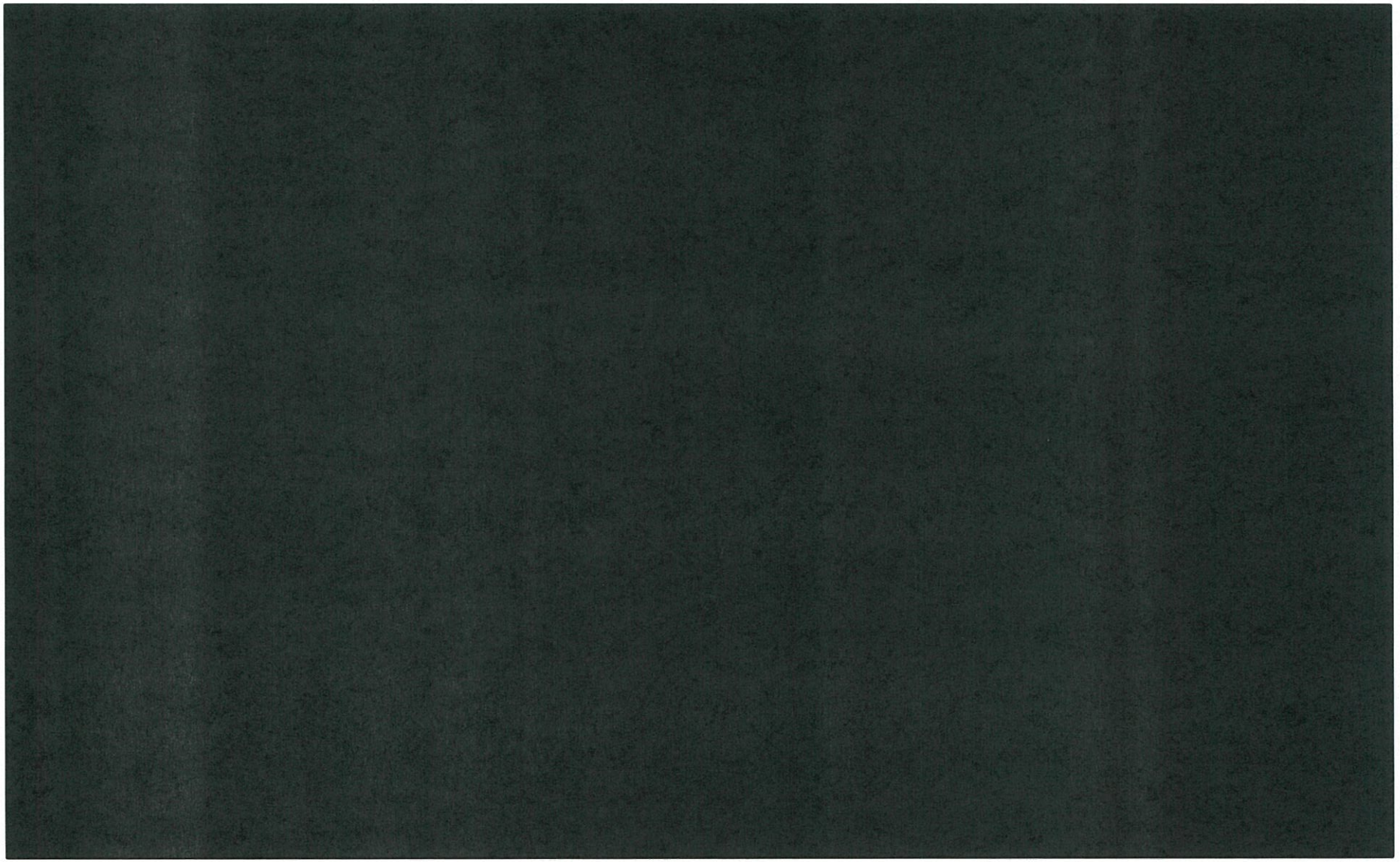
Term	Definition
ACM	Asbestos Containing Material
ACS	Alternative Control Services
AER	Australian Energy Regulator
BCA	Building Code of Australia
Capex	Capital Expenditure
CPI	Consumer Price Index
DNSP	Distribution Network Service Provider
FY	Financial Year (e.g. FY21 refers to financial year 2020/21)
GFA	Gross Floor Area
NCC	National Construction Code
NER	National Electricity Rules
NPV	Net Present Value
OCC	Operational Control Centre
Opex	Operating Expenditure
PPE	Personal Protective Equipment
QBA	Queensland Building Act
QDC	Queensland Development Code
RCP	Regulatory Control Period
SCS	Standard Control Services
SEQ	South East Queensland
SQM	Square Metres
WACC	Weighted Average Cost of Capital

Table 22: Definitions

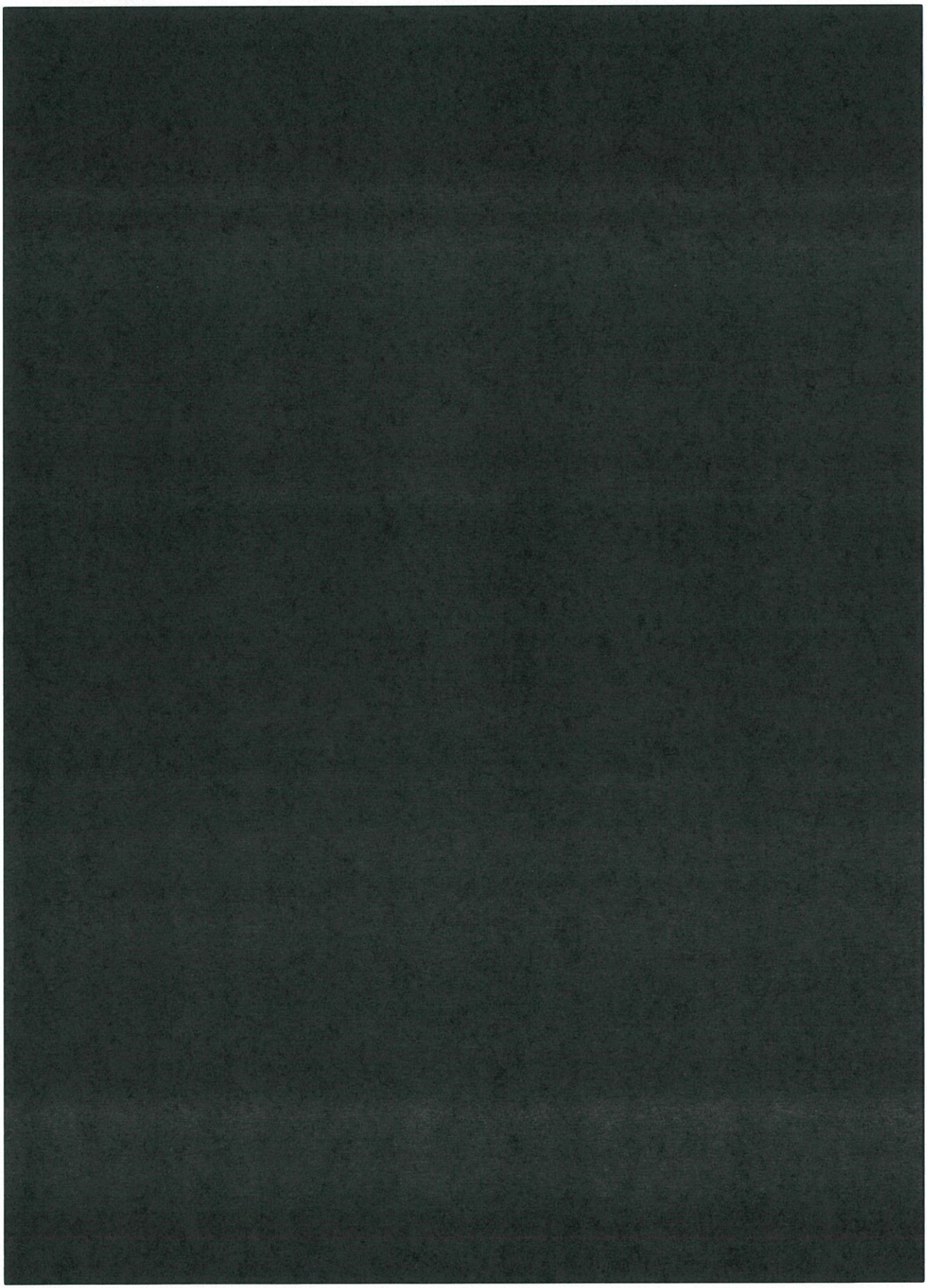








Appendix 5. Theft reduction benefit calculation



Appendix 6. Implementation Costing Summary