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# Appendix

## YKY37\_Cyber Security - ECAF Enhancement Case [Redacted]

YKY37\_Cyber Security - ECAF Enhancement Case



YorkshireWater

# Navigating this document



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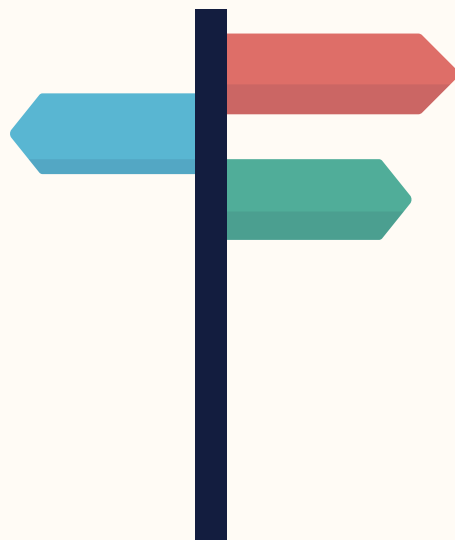
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### Business plan links

This icon can be clicked on to go to the main Yorkshire Water Business Plan document where more information can be found.



More detail on this subject can be found in [Chapter 8 Part 2: What our plan will deliver](#)



# Contents

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<b>1.</b>	<b>Cyber Security - ECAF Enhancement Case</b>	<b>4</b>
1.1	Driver:	4
1.1.1	Requested Investment:	4
1.1.2	Associated Reporting lines in Data Tables:	4
1.2	High Level Driver description	4
1.3	Need	5
1.3.1	The Need for the Proposed Investment	5
1.3.2	The Scale and Timing of the Investment	5
1.3.3	Interactions with Base Expenditure	6
1.3.4	Activities Funded in Previous Price Reviews	6
1.3.5	Long-term Delivery Strategy Alignment	6
1.3.6	Customer Support	6
1.3.7	Factors Outside of Management Control	7
1.4	Best Option for Customers	7
1.4.1	Cost-Benefit Appraisal	7
1.4.2	Best Value Analysis (Six Capitals)	8
1.4.3	Cost and Benefit Uncertainties	8
1.4.4	Third Party Funding	8
1.4.5	Customer Views	8
1.4.6	Direct Procurement for Customers (DPC)	8
1.5	Cost Efficiency	8
1.5.1	Cost estimate for our preferred option	8
1.5.2	Efficiency of our cost estimate	9
1.5.3	Need for enhancement model adjustment	9
1.6	External Assurance	9
1.7	Customer Protection	9
1.7.1	Third Party Funding or Delivery Arrangements	10

# 1. Cyber Security – ECAF Enhancement Case

## 1.1 Driver:

Cyber Security – Regulatory Compliance with the Enhanced Cyber Assessment Framework (ECAF) introduced by the DWI in June 2023

### 1.1.1 Requested Investment:

**Table 1.1: ECAF Proposed Expenditure**

	£m	Table Line Ref.
Enhancement Expenditure Capex	10.370	CW3.132
Enhancement Expenditure Opex	0.000	CW3.133
Base Expenditure Capex	0.000	
DPC value	0.000	
<b>Total</b>	<b>10.370</b>	

### 1.1.2 Associated Reporting lines in Data Tables:

**Table 1.2: CW3 Reporting Lines**

Line Number	Line Description
<b>CW3.132</b>	Security – Cyber ECAF; enhancement water capex
<b>CW3.133</b>	Security – Cyber ECAF; enhancement water opex

## 1.2 High Level Driver description

Cyber security threat poses risks to both physical and digital water and sewerage company assets, with the potential for substantial societal impact if cyber-attacks lead to clean water network failures.

The investment stream detailed in this enhancement case was developed in response to a rapidly evolving cyber threat and changing regulatory environment. On 23 June 2023, the quality regulator, the Drinking Water Inspectorate (DWI) issued the ECAF which specifies new obligations for water companies to enhance protection for communications assets from onsite or offsite intrusion within AMP8, over and above the obligations of the current Cyber Assessment Framework (CAF). These additional obligations are in the form of stricter criteria by which cyber security affecting the delivery of wholesome water is measured by the DWI. This raises the minimum level of security as measured annually by the CAF from the current Sector Specific Profile (SSP) set by the DWI to a new level by increasing the threshold set against six of the 39 Contributing Outcomes (COs) that make up the CAF.

Yorkshire Water has prepared a submission for review and approval by the DWI, which sets out how the company proposes to meet the new ECAF obligations. The following sections set out

the company's latest thinking and options necessary to achieve compliance with the ECAF by the AMP8 regulatory deadline.

Yorkshire Water notes that this case requests enhancement funding for incremental activities beyond its work programme to be compliant with the Network and Information Systems (NIS) Regulations 2018 and existing CAF. Moreover, the two cannot be viewed in isolation as it is necessary to do all of this work to meet the ECAF. Therefore, the programme of work detailed in our Cyber Security Enhancement Case continues to be necessary for all other activities that are required to meet new statutory obligations aside from ECAF.



Read more about this at [Cyber Security Enhancement Case](#)

### 1.3 Need

#### 1.3.1 The Need for the Proposed Investment

Given the increasing threat posed by Nation State threat actors (notably Russia, China, North Korea and Iran) the government, through the Cabinet Office, has become increasingly concerned over the risk this poses to UK society via an attack against Critical National Infrastructure. This has resulted in the DWI bringing forward a regulatory change in the form of the ECAF based on analysis by the Government Communications Headquarters (GCHQ) and the National Cyber Security Centre (NCSC),

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#### 1.3.2 The Scale and Timing of the Investment

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### 1.3.3 Interactions with Base Expenditure

Before the company developed this enhancement case for ECAF, it reviewed whether it could meet these new obligations through other work programmes for compliance with SEMD and the NIS. The company found some elements could be achieved without further funding. Therefore, it built a programme specifically to address the remaining gaps in its compliance with the ECAF and CAF.

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Yorkshire Water also ensured that consideration was given to any potential interaction between NIS (ECAF and CAF), SEMD and Water Quality DWI Enhancement cases through a process which included weekly workshops to build the three enhancements cases holistically for review by the DWI. Through this process no overlap of enhancement totex was identified.

### 1.3.4 Activities Funded in Previous Price Reviews

For reasons explained in section 1.2 of the [Cyber Security Enhancement Case](#) (the timing of the introduction of NIS in 2018 relative to the PR19 submission) there has been no investment in NIS (and by extension ECAF) regulatory compliance prior to AMP7 and only limited investment during AMP7. Hence there is no opportunity for overlap or duplication with past schemes.

### 1.3.5 Long-term Delivery Strategy Alignment

This enhancement requirement has no direct linkage with the LTDS as it is a one-off regulatory compliance issue and should be viewed in isolation – i.e., separate from the LTDS for the workstreams in the company's separate cyber security enhancement case.

### 1.3.6 Customer Support

Yorkshire Water has not carried out specific customer engagement on this enhancement case given that it is a statutory requirement. However, as part of the [affordability and acceptability testing following Ofwat guidelines](#) we tested the investment case for 'Ensuring our key treatment works are protected from terrorist or cyber attacks'. Results from this customer research indicated that 78% of customers found the company's proposed plan, including these optional enhanced investment areas, as acceptable. Please visit [Chapter 6](#) of our main business plan for details of our extensive customer engagement research.

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More detail on this subject can be found in [Chapter 6: Customer and Stakeholder Engagement](#)

### 1.3.7 Factors Outside of Management Control

The ECAF and associated need for regulatory compliance by the AMP8 deadline is outside of Yorkshire Water's management control.

## 1.4 Best Option for Customers

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Therefore, it was not necessary to consider alternatives to what would otherwise be additional 'add-on' solutions (essential to meet the requirements of the ECAF), since the approach taken eliminated both the need for this and for additional costs of design, procurement, installation and maintenance.

### 1.4.1 Cost-Benefit Appraisal

In contrast to some other enhancement cases, for cyber it is difficult to directly calculate the benefit to customers using tools (e.g., discounted cash flow techniques, etc.) that quantify benefits in terms of improved service, water quality, supply resilience, or cost reductions (based on improved efficiency). This is because benefits only accrue to the organisation and society by the prevention of a negative impact which is difficult to quantify and would only materialise should the Investment not have been made.

Furthermore, in this case, Yorkshire Water is reacting to a regulatory change based on the UK government's assessment of societal risk and not its own risk assessment methodology.

Yorkshire Water did, however, ensure the accuracy of its cost estimates related to this enhancement case through historical estimates, analysis of alternative options, and consideration of the interrelationship with other projects being carried out in the wider business.

The company's optioneering sought the optimum solution that met the requirements at least cost, and it was able to achieve significantly lower initial procurement and installation costs and reduced operating and maintenance costs through extended engagement with potential vendors. These reductions include both the significant reduction detailed in this enhancement case for installation and the absorption of ongoing maintenance and operation costs into base in future AMPs (i.e., no additional spending is required outside of business as usual to support this solution in the future).

Synergies with other projects were also considered,

ensuring that this solution was compatible with that decision again reduces both complexity and cost.

#### 1.4.2 Best Value Analysis (Six Capitals)

Given the nature of cyber security, Yorkshire Water can only have an indirect impact on a subset of the six capitals in this enhancement case, namely: manufactured capital (if that is interpreted as the production and distribution of clean water); natural capital (in the form of preventing water supply incidents as a result of cyber security incidents); intellectual capital (preventing the theft of commercially sensitive information); and financial capital (protecting against the financial losses associated with cyber incidents).

Refer to [section 6](#) of Introduction to Enhancement Cases for our approach to the six capitals.



Read more about this at [Introduction to Enhancement Cases](#)

#### 1.4.3 Cost and Benefit Uncertainties

Given that this is a regulatory requirement (the benefits of which are defined by the DWI and the Cabinet Office) it is difficult for Yorkshire Water to assess the benefit uncertainties other than to confirm that the proposed scheme is necessary to realise the benefits that the government and the regulator is seeking.

However, the costs are based on a detailed understanding of per unit variable costs and fixed costs – with sensitivity analysis being applied to assess delivery risk and calculate the contingency commensurate with that risk.

#### 1.4.4 Third Party Funding

There is no third-party funding for this case.

#### 1.4.5 Customer Views

See 1.3.6 for relatable evidence.

#### 1.4.6 Direct Procurement for Customers (DPC)

Yorkshire Water does not propose to address this driver via a DPC approach. For more information on the process followed and the cases that were ultimately judged as suitable for DPC please see [section 6.3](#) in Introduction to Enhancement Cases.

### 1.5 Cost Efficiency

#### 1.5.1 Cost estimate for our preferred option

This section outlines the company's overall approach to cost estimation and cost efficiency, as outlined in [section 7.3](#) in Introduction to Enhancement Cases, has been applied to this

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enhancement case. Table 1.1 at the beginning of this document summarises the costs associated with this enhancement case.

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**Table 1.3: Proposed Costs**

Cost description	Capex (£m)
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**1.5.2 Efficiency of our cost estimate**

[Section 7.3](#) in the introduction to the company’s enhancement cases outlines its approach to cost efficiency in enhancement cases, and how its internal process and delivery decisions are designed with efficiency in mind. In putting together these costs the organisation has been proactive on challenging itself to ensure that its costs are efficient. Yorkshire Water has worked with its framework partners, supply chain, and market information to develop and challenge the costs that it has put forward in its plan. For each of these solutions the company has gone-to-market and gathered information to discover what options were available and identified the range of quality and costs.

Yorkshire Water made a strategic decision to prioritise an innovative

that minimise re-engineering costs while also providing the security functionality needed to address most of the ECAF gaps.

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**1.5.3 Need for enhancement model adjustment**

Without a view of the Ofwat approach to setting cost allowances to each driver, anticipating any model adjustment requirements is challenging.

Due to the nature of this enhancement expenditure being a Yorkshire Water specific cyber security case, it is unlikely that a comparable industry-wide data set will be available. Yorkshire Water therefore anticipates that Ofwat would assess these costs through a deep dive approach based on an understanding of the regulatory drivers imposed on the industry.

**1.6 External Assurance**

For information on Assurance please see [section 7.4](#) in Introduction to Enhancement Cases.

**1.7 Customer Protection**

For information on the methodology used by Yorkshire Water and the central assumptions applied to the Price Control Deliverables (PCDs) please see [section 8.2](#) in [Introduction to Enhancement Cases](#).

Yorkshire Water's enhancement totex for this case does not meet the materiality threshold for requiring a PCD. There is sufficient regulatory oversight for these activities by the DWI and Defra, therefore Yorkshire Water does not propose any customer protection mechanisms for this case.

#### **1.7.1 Third Party Funding or Delivery Arrangements**

This is not applicable for this case.