Re-opener submission

Non-operational IT Capex Reopener Application

January 2023

nationalgrid

Contents

EXECUTIVE SUMMARY

This document together with its appendices and attached supporting information comprises National Grid Gas Transmission's (NGGT) Non-operational Capex IT Re-opener application.

NGGT requests the award of [redacted](18/19 prices) Non-operational IT Capex Re-opener Allowances (licence term NOITOt) with associated PCDs for four IT [redacted] project initiatives to manage assets, asset performance and related data transmission and interrogation. This forms part of NGGT's business plan to deliver an efficient, flexible and reliable network, with the right capabilities to meet the needs of stakeholders and to deliver a future network that is Net Zero ready.

Robust asset management processes and capabilities are a foundational aspect of effective security management. [redacted]

The application consists of four IT investment projects, each with defined outputs, costed project plans and proposed price control deliverables (PCDs). Each of these projects relate to different aspects of Gas Transmission and seek to make necessary improvements to the operation of the network. The projects include enhancing infrastructure project planning, improving data capture and data transmission[redacted], and maximising the use of data to make better decisions and improve the asset health lifecycle. Each investment supports NGGT's business plan, Digitalisation Strategy and seeks to ensure compliance with Ofgem's Data Best Practice Principles and subsequent Energy Data Task Force (EDTF)[1] report requirements.

The four projects are:

1. **Enhance Asset Design:** Introduce building information modelling (BIM) capability and common data environment (CDE) to enable standardisation across construction projects providing a robust, scalable, and accurate asset data platform, thus maximising commonality and repeatability across construction projects, allowing more efficient ways of working.

   Investment in BIM will address existing systems which are end of life and establish new BIM capability, so that the construction assets are better understood, enabling better design and informed decision makings, thus improving security, safety, reliability. This will lead to more efficient delivery and reducing likelihood of asset failure. With enhanced asset design insight, it will support more environmentally conscious decision in the future, reduced environmental damage and enable the move to hydrogen and Net Zero**.**

2. **Asset Performance Management (APM)**: Enables holistic overview of asset condition data and provides a foundation to drive efficiencies and safety by predicting when maintenance is required and when faults will occur. It will enable predictive maintenance, help share a common clearer understanding of the performance of our assets and set up the essential functionality to understand asset performance in readiness for the move to hydrogen, and impact hydrogen has once on the network.

[redacted]

1 Catapult-Energy-Data-Taskforce-Report-A4-v4AW-Digital.pdf (esc-production-2021.s3.eu-west-2.amazonaws.com)

4. **Enterprise Asset Management Enhancements (EAM)**: Following the delivery of [redacted] there is further opportunity to transform asset management by adopting more of the features within the platform. These enhancements will allow NGGT to better manipulate and analyse data to understand the asset cost lifecycle, improve decision making and ensure continued efficient management of assets and operational resources.

   These enhancements will deliver cost savings through improvements to how our asset teams plan asset maintenance, by ensuring the correctly trained people, spares and information are in the right place at the right time. Annual cost saving will be realised particularly in how we deliver efficiencies when managing resources assigned to work orders. A fully digitalised spares management solution on [redacted] will remove the need for manual workarounds and drive a better understanding of what spares we have available.

Summary of requested re-opener allowances

NGGT as both Transmission Owner (TO) and System Operator (SO) is seeking a total investment allowance of [redacted] (18/19), as follows.

Table 1 Table of requested allowances

	£m	21/22	22/23	23/24	24/25	25/26	Total SO	Total TO	Total
Enhance Asset Design	SO	[redacted]							
	TO								
APM	SO								
	TO								
[redacted]	SO								
	TO								
EAM Enhancements	SO								
	TO								
	Total								

Delivery Plan

At the beginning of RIIO-2 NGGT widely adopted the Scaled Agile framework (SAFe)[2] approach to delivery. SAFe is a set of organisational and workflow patterns for implementing investments and products (both technological and otherwise). The approach emphasises deep collaboration across business functions with a focus on delivering value with pace and flexibility.
This approach will ensure delivery within our overall timeline, through ensuring risks are addressed to minimise delay to delivery. This includes securing internal resourcing and consideration of overarching change plans.

We seek Ofgem's decision for the four projects by July 2023, so that NGGT can proceed to resolve critical issues and realise the identified benefits by implementing the proposed improvements within the RIIO-2 price control period. This will also enable timely compliance with Ofgem's Data Best Practice Principles and subsequent Energy Data Task Force (EDTF) recommendations.

Enhance Asset Design has been prioritised to start procurement and delivery immediately due to the benefits of the project being maximised with prompt delivery. Postponing would erode these benefits as the costs of delivery would rise due to greater effort required to onboard construction projects that have past the scoping stage of the construction process. The outcomes of this investment will improve our knowledge of how assets are built and accompanying data, which will inform our Net Zero focused asset plan in the next regulatory period.

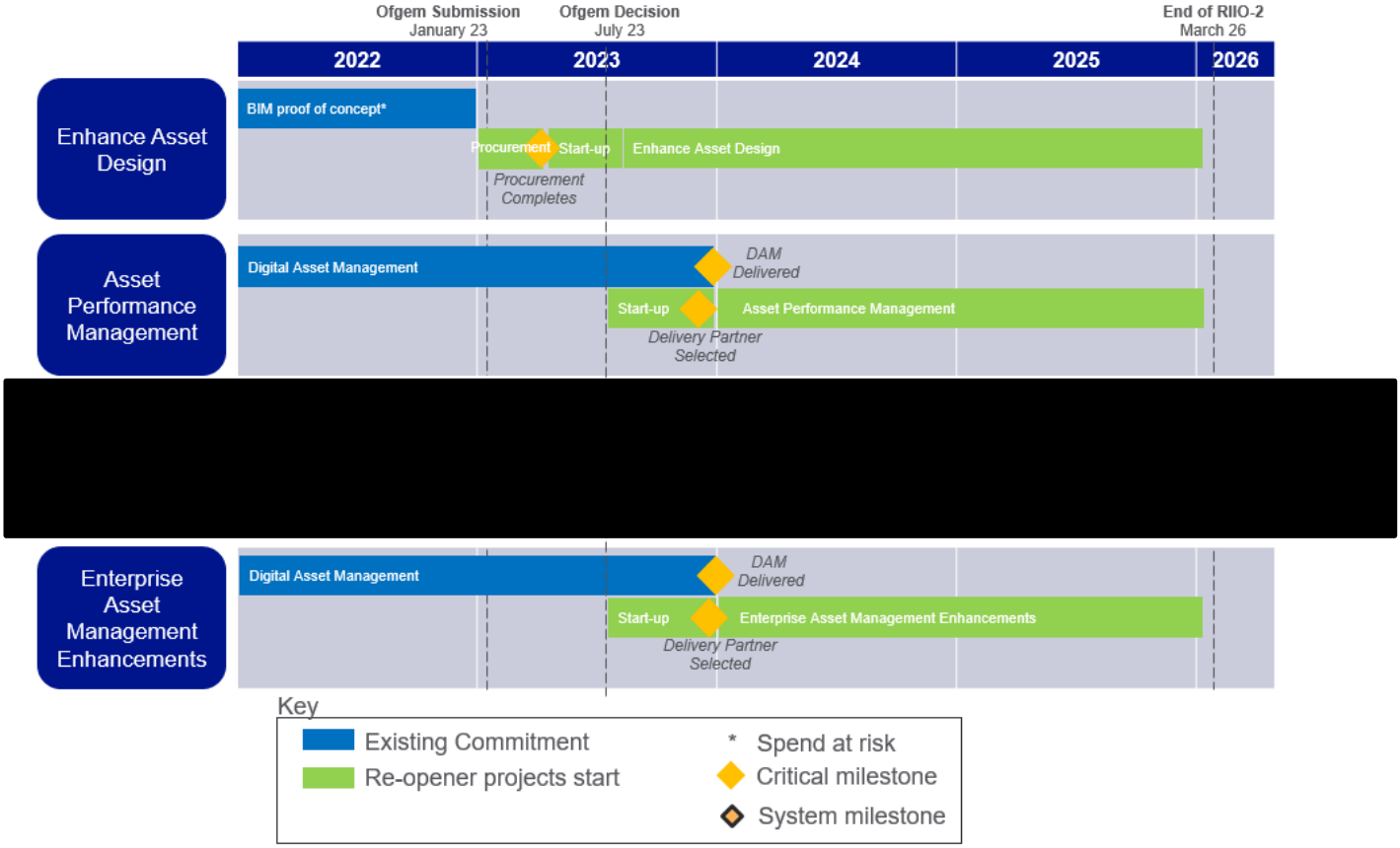
Enterprise Asset Management enhancements is a transformative project that follows on from the delivery of [redacted] through the Digital Asset Management (DAM) programme (an inflight programme funded via baseline allowances). There is an opportunity to flow from the go live of DAM on to delivery of EAM enhancements and utilise the same delivery team to deliver at a lower cost. This will save time and ensure domain experts are retained, rather than split up and potentially lost if the investment were to be delayed. It will also enable earlier delivery of the benefits identified and realise the efficiencies relating to improved asset management and spares management.

Similarly, Asset Performance Management will be able to utilise the same delivery team through central management of the projects and resources by the Release Train Engineer. Going out to market for a delivery partner will start immediately after the Ofgem decision to enable selection by the end of the year. The project will then start delivery in line with DAM finishing.

The critical milestones within each project and timelines for starting delivery are summarised in the below diagram.

2 What is Scaled Agile Framework (SAFe)? | A Guide to the SAFe (productplan.com) and About - Scaled Agile Framework

Figure 1 High level project delivery plan



Opex Escalator

There is a misalignment of treatment of direct and indirect costs between licence conditions (opex escalator) and Regulatory Instructions and Guidance (RIGs)[3] for IT cost reporting. We propose that this is resolved by the award of our requested allowances on the basis of gross indirect costs and that the licence be corrected to remove the NOIT term from the opex escalator mechanism.

3 https://www.ofgem.gov.uk/sites/default/files/2022-06/RIIO-GT2%20Regulatory%20Instructions%20and%20Guidance%20v1.14%20%28tracked%29.pdf

1 INTRODUCTION

1.1 BACKGROUND

NGGT submitted a five-year IT business plan in December 2019 as part of the RIIO-2 business plan submission. Having reviewed NGGT's submission (and following further supplementary questions and responses) Ofgem made a Final Determination on 8 December 2020.

Ofgem's assessment of RIIO-2 Non-operational IT [redacted]Capex was conducted on a cross-sector basis. In the period between draft and Final Determination there was considerable engagement with network companies regarding suitability for project inclusion in either baseline or through a re-opener uncertainty mechanism having regard to project maturity, cost certainty and level of confidence in the underlying IT[redacted]projects. At Final Determination the majority of NGGT proposed investments were assigned to baseline[4] comprising [redacted] for TO and [redacted]for SO related projects.

By agreement between Ofgem and NGGT, five candidate projects were assigned to the re-opener uncertainty mechanism with indicative value [redacted]TO and[redacted] SO. These projects were at an early stage in development and therefore deemed too immature for award of ex-ante allowances in Final Determination. NGGT has since developed the investment case underpinning the candidate projects. Four of the same projects are now the subject of this re-opener submission. In relation to the fifth project, [redacted] in light of our further assessment we have determined it would be more efficient and therefore better serve consumer interests to defer timing of this investment into the future.

In order to implement the RIIO-2 Final Determination, changes to the National Grid Gas plc Gas Transporter Licence (the Licence) were directed by Ofgem on 3 February 2021. The change of particular relevance to the subject matter of this submission application was the introduction of Special Condition 3.7 providing for the Non-operational IT Capex Reopener. Two re-opener opportunity windows were specified: 1-7 April 2021, and 25-31 January 2023. NGGT chose not to make any application in the first window because at that time (week one of the RIIO-2 period) we had yet to formulate mature proposals.

Further changes to the Licence were directed by Ofgem on 3 February 2022 addressing a number of issues including implementation of the Competition & Market Authority's Order on RIIO-2 Appeals. Of relevance to the subject matter of this application, Special Condition 3.7 was amended[5] at this time to provide the option for projects awarded under this re-opener to be made Price Control Deliverables (PCDs) dependent upon the specific nature of the investment proposed and the ability to measure the quantifiable outputs.

1.2 PURPOSE OF THIS DOCUMENT

This document together with its appendices and attached supporting information comprises NGGT's Non-operational Capex IT Re-opener application pursuant to Gas Transporter Licence Special Condition 3.7 Part C. We are requesting the award of Non-operational IT Capex Re-opener Allowances (licence term $NOITO_t$) with associated PCDs for four IT projects.

The application includes a level of detail in line with Ofgem's RIIO-2 Re-opener Guidance and Application Requirements Document: Version 2, dated 3 February 2022 (the Re-opener Guidance). Appendix 2 of that Guidance sets out specific Non-operational IT Capex re-opener application guidance.

4 Values quoted in this reopener submission are expressed net of frontier efficiency and capitalised Opex adjustments
5 See Ofgem Statutory Consultation on modifications to the RIIO-2 Transmission, Gas Distribution and Electricity System Operator licence conditions, 15 December 2021 – reasons and effects document, section 2.31.

Included in the submission are the necessary details contained in supporting information files for each of the projects (or an explanation as to why such information is not available).

1.3 APPLICATION CRITERIA

This application is compliant with licence special condition 3.7 as detailed in the table below.

Table 2 Application Criteria

Licence Special Condition 3.7	NGGT statement
3.7.6 The licensee may apply to the Authority for a direction amending Appendices 1 and 2 as a result of: (a) the licensee identifying further evidence in support of Non-operational IT Capex projects that were included in its Business Plan, but in relation to which no allowance has been provided to date; (b) the licensee identifying activities capable of improving the efficiency or performance of its Non-operational IT Capex; or any changes to statutory or regulatory requirements relating to Non-operational IT Capex.	• All four of the projects which are the subject of this application were included in the Business Plan process but by agreement no allowance was provided and the projects were assigned to the uncertainty mechanism. Hence all four projects fall within the remit of 3.7.6(a). • The three TO projects are key enablers for greater efficiency in business process which are reliant upon the IT systems. Hence these projects also fall within the remit of 3.7.6(b).
3.7.7 The licensee may only apply to the Authority for changes under this Re-opener: (a) Between 1 April 2021 and 8 April 2021; (b) Between 25 January 2023 and 31 January 2023; and (c) during such other periods as the Authority may direct.	• NGGT did not make an application in April 2021, and is now making this application during the period 25 January 2023 and 31 January 2023.
3.7.8 An application under paragraph 3.7.6 must be made in writing to the Authority and:	• This application is made in writing, submitted via email.
(a) give details of the circumstances referred to in paragraph 3.7.6 that the licensee considers exist;	• Statements are included in section 9 for each of the four projects giving evidence of the circumstances referred to in paragraph 3.7.6(a) and (b).
(b) explain how the adjustment requested would improve its Non-operational IT Capex;	• The three TO projects are key enablers for our business to achieve its Digitalisation Strategy, improving the value of data collected, stored and used within our underlying Non-operational IT estate. [redacted] • See further explanation of these benefits in sections 3 and 4.
(c) explain the basis of the calculations for the adjustment requested to allowances;	• Statements are included in sections 6 regarding the basis of calculation of allowances for the projects.

Licence Special Condition 3.7	NGGT statement
	• Further details are included in supporting spreadsheet: NG-GT-Non op Capex IT - Reopener Cost Breakdown
(d) give details of anticipated business benefits derived from any risk reduction as a result of the proposed activities; and	• See sections 3 and 4. [redacted] • The three TO projects improve the value of data collected, stored and used within our underlying Non-operational IT estate.
(e) provide such detailed supporting evidence as is reasonable in the circumstances, which must include: i. delivery plans; ii. a prioritisation programme; iii. a market and industry cost comparison; and iv. anticipated business benefits derived as a result of the proposed activities.	• A full list of the supporting evidence files that accompany this submission is given in Appendix 1. • Re I & ii – see section 7 and the relevant business case supporting documents for each of the four projects • Re iii – see section 6 and the supporting [redacted]benchmarking report • Re iv – see section 4 and the relevant business case supporting documents for each of the four projects
3.7.9 An application under paragraph 3.7.6: (a) take account of any allowed expenditure, which can be avoided as a result of the adjustment; and (b) be confined to costs incurred or expected to be incurred on or after 1 April 2021.	• Re a: As no allowed expenditure was provided at Final Determination, this requirement is met. • Re b: The application relates to costs incurred/expected to be incurred on or after 1 April 2021. See NG-GT-Non op Capex IT - Reopener Cost Breakdown document.

A separate supporting file (NG-GT Non-Operational Capex IT - Table Mapping Requirements) with a table maps out which sections of the application relate to individual requirements as set out in the relevant re-opener licence condition and chapter 3 and Appendix 2 of the Guidance.

1.4 NGGT APPROACH TO REOPENER EVENT

NGGT's objectives for the reopener event are to:

I. Request investment allowances for four IT projects set out in this application. These projects are submitted with defined outputs and costed project plans which have developed since the original RIIO-2 business plan submission.
II. Propose PCDs for each of the four projects.

The submission is based on our assessment of the regulatory information requirements specified in Ofgem's guidance and governance documents for RIIO-2 re-openers. It consists of this overall core document with a separate business case paper for each project which forms part of this submission, together with supporting information.

While the projects formed part of our RIIO-2 business plan, at that time only limited business case definition had been documented; typically, this consisted of brief papers of a couple of pages, each with a simplified costs approach and with no Costs Benefits Analysis (CBA) having yet been undertaken. Our re-opener business cases are now significantly more robust and detailed. Each includes a developed needs case, having added additional definition arising from our further work since Final Determination. The style of the business case papers & costing approach builds upon

the approach that underpinned the awarded baseline allowances while adding the significant additional detail and rigour called upon in the re-opener guidance.

The business case papers consist of the investment justification for the specific project and are intended to provide a clear explanation and justification for the proposed scope and funding requirement. Each business case has common elements which are applicable to all. The common elements are:

- ***Executive summary***
  Provides an overview of the request and key considerations.
- ***Needs case***
  Describes the alignment of this funding proposal to NGGT's overall business strategy and describes the key problems that the investment is aiming to address, including risks and opportunities.
- ***Options***
  Sets out the consideration of project options, and describes the preferred option in detail, including project delivery and monitoring.
- ***Costs***
  Provides a breakdown of costs, with evidence demonstrating they are justified and efficient.
- ***Stakeholder engagement and whole systems opportunities***
  Explains how stakeholder engagement contributed to the identification and design of the preferred option.
- ***Appendices***
  Appendices including glossary explaining terms and acronyms.

Opex escalator

As set out in Ofgem's Regulatory Instructions and Guidance document[6], Ofgem defines Non-operational capex costs as indirect. This means such costs are not associated with core physical transmission assets. Our cost plan for the re-opener submission has been prepared consistent with that definition. This means the cost contained within this submission do not include direct costs elements in line with Ofgem's definition of these.

However, the gas transporter licence Special Condition 3.18 defines that the Non-Operational IT Capex term $NOIT_t$ is included within the opex escalator term OEt. The intended regulatory construct, which arises from the cost assessment principles adopted by Ofgem in RIIO-2 Final Determination, is that only direct costs are included within the scope of the opex escalator. The purpose of the opex escalator instrument is to provide indirect costs funding based on uplift to direct capex.

The current situation outlined above therefore manifests as a conflict and incompatibility between the Final Determination and the algebra in the licence. This creates a challenge for treatment of costs under this submission. In our view it does not seem conceptually appropriate for the nature of the Non-Operational IT Capex spend contained in this submission to be included within the opex escalator. We raised this issue with Ofgem for discussion in the context of re-opener pre-application engagement. However as at the time of submission discussions with the relevant Ofgem and NGGT regulatory finance are taking place.

We propose that this submission is assessed on the basis that the cost included represent a gross indirect view and should be assessed and awarded as eligible reopener allowances on that basis. Furthermore, as part of the licence amendments associated with implementation of such re-opener award, we propose there should be an amendment of licence Special Condition 3.18 to

6 https://www.ofgem.gov.uk/sites/default/files/2022-06/RIIO-GT2%20Regulatory%20Instructions%20and%20Guidance%20v1.14%20%28tracked%29.pdf, page 53, table 6.1, definition of indirect costs

remove the NOIT term from within scope of the opex escalator. This will make the GT licence consistent with the Electricity Transmission counterpart in this regard which excludes the mechanism from the opex escalator. Consequential amendments will also be necessary to consistently flow this treatment through to Ofgem reporting templates (e.g. RRP table 8.10 re-opener pipeline log) and configuration of the Price Control Financial Model (PCFM).

2 ASSURANCE AND PUBLICATION REQUIREMENTS

2.1 ASSURANCE

NGGT's designated point of contact for this re-opener application is [redacted].

In accordance with section 2.2 of Ofgem's guidance, this application is accompanied by an assurance statement (file NG-GT- Non op Capex IT-Assurance Statement) to comply with Ofgem's requirement for written confirmation from a suitable senior person within the company that the re-opener application has been appropriately assured.

2.2 PUBLICATION

[redacted] Relevant sections of this application document will be redacted before publication where they relate to [redacted]

In line with section 2.4 and 2.5 of the Guidance, this application document and supporting business case documents for Enhance Asset Design, APM and EAM will be published in their entirety within five days of submission, with only necessary redactions where appropriate. Publication will include an explanation for any redactions.

3 ALIGNMENT WITH BUSINESS & IT/DIGITALISATION STRATEGY

NGGT is the operator and owner of the gas National Transmission System (NTS) in Great Britain. We are required to develop, maintain, and operate an economic and efficient gas network, to transport gas from supply points to exit offtake points, safely, efficiently, and reliably. We manage the day-to-day operation of the network. This includes maintaining system pressures within safe operating limits, ensuring gas quality standards are met and acting as the residual balancer for supply and demand when there is a market imbalance.

Our role as operator and owner is supported by our business plan and digitalisation of our processes and use of data to make the decisions, such as using data on our assets, to guide our asset management strategy and data to support the real time operation of the network. We are working with government, regulators and industry stakeholders on the key role the gas network plays in decarbonisation and the journey to Net Zero. Sharing of data about how we run and use our network will help others in understanding interactions enabling us to work more effectively together.

3.1 BUSINESS PLAN

As set out in our business plan[7] , we will during the RIIO-2 period deliver an efficient, flexible and reliable network, with the right capabilities to meet the needs of current and future customers, enabling Great Britain's energy transformation. To achieve these goals, our plans recognise we must invest in our IT to continue to drive efficiency, enable innovation and deliver the levels of reliability and safety our stakeholders expect. We have developed an IT strategy that underpins our stakeholder priorities and responds to the energy market, political and environmental trends. This strategy includes sustaining our core IT systems, delivering enhanced data, support market and regulatory change and deliver new capabilities.

The key drivers for RIIO-2 are maintaining and refreshing our systems and enhancing our capabilities to ensure we continue to meet the needs of our stakeholders. The projects forming part of this application align with our business plan drivers by ensuring NGGT.

- Continues to provide a safe, reliable and efficient service for our consumers by removing the risk associated with end of life/support technology solutions.
- Supports the transition to Net Zero by future proofing our technology solutions for future energy requirements. This is by continuing to build on the work to deliver new capabilities in data management and data sharing with stakeholders as part of preparations for moving to Net Zero**.**
- The projects align to the EDTF report, where digitalisation was highlighted as a vital enabler for Net Zero.

3.2 DIGITALISATION STRATEGY

Our Digitalisation Strategy[8] published in March 2022 sets out the plan we will follow to digitalise our core processes and enhance the value of data collected, stored and used within our core systems. The Digitalisation Strategy aligns to the EDTF recommendations.

Our strategy notes over the course of the last few years, digitalisation of the energy system has become a growing priority for our stakeholders and the increased focus on the value of energy data and digitalisation for society and future networks.

7 National Grid Gas Transmission's business plan 2021–26, December 2019,pg 176
https://www.nationalgridgas.com/document/129016/download
8 Digitalisation Strategy, March 2022, https://www.nationalgrid.com/gas-transmission/document/139181/download

Our Digitalisation Strategy includes four focus areas:

- ***Data Driven Asset Management***
  We will collate more data on our assets than ever before and use this to understand risk and make informed asset management decisions.
- ***Optimised System Operator (SO)***
  We will utilise smart tooling to help us understand the drivers and behaviours of our customers and the impact of our actions and decisions when fulfilling our role as SO of the gas network.
- ***Operations Enablement***
  Our Operations field force will be empowered to make the right decisions and have everything they need on their mobile devices.
- ***Market & Customer Insights***
  We will have clear processes and provide greater understanding of our interaction with customers and their needs.

Our proposed investments in Enhance Asset Design, EAM and APM align with our Data Driven Asset Management focus area. [redacted]

The four investment proposals submitted with this application are integral to how NGGT fulfils its obligation as operator and owner of the NTS. Each business case supports a need within the asset lifecycle to either keep gas flowing or to digitalise our processes and enable improvements to how we efficiently manage and keep the NTS safe.

The first step in the asset data journey is the foundation of the network. This starts with standardisation in asset data management amongst stakeholders and applications and establish modelling capabilities within the construction teams in the business. The Enhance Asset Design project will replace end of life systems and through Building Information Modelling (BIM) and Common Data Environment (CDE) implementation, the project will provide a robust, scalable, and accurate asset data platform into construction processes. This will enable full system integration across construction applications, absorbing accurate data from construction projects so that commonalities in built assets can be identified, allowing high volume, repeatable civil and mechanical project to be achieved. The project will provide the foundation for creating a Digital Twin in the future. Digital Twin is a key enabler for Net Zero. This provides a digital 3D representation of the network, processes and systems, allowing us to simulate the impact of hydrogen and delivery of hydrogen ready assets.

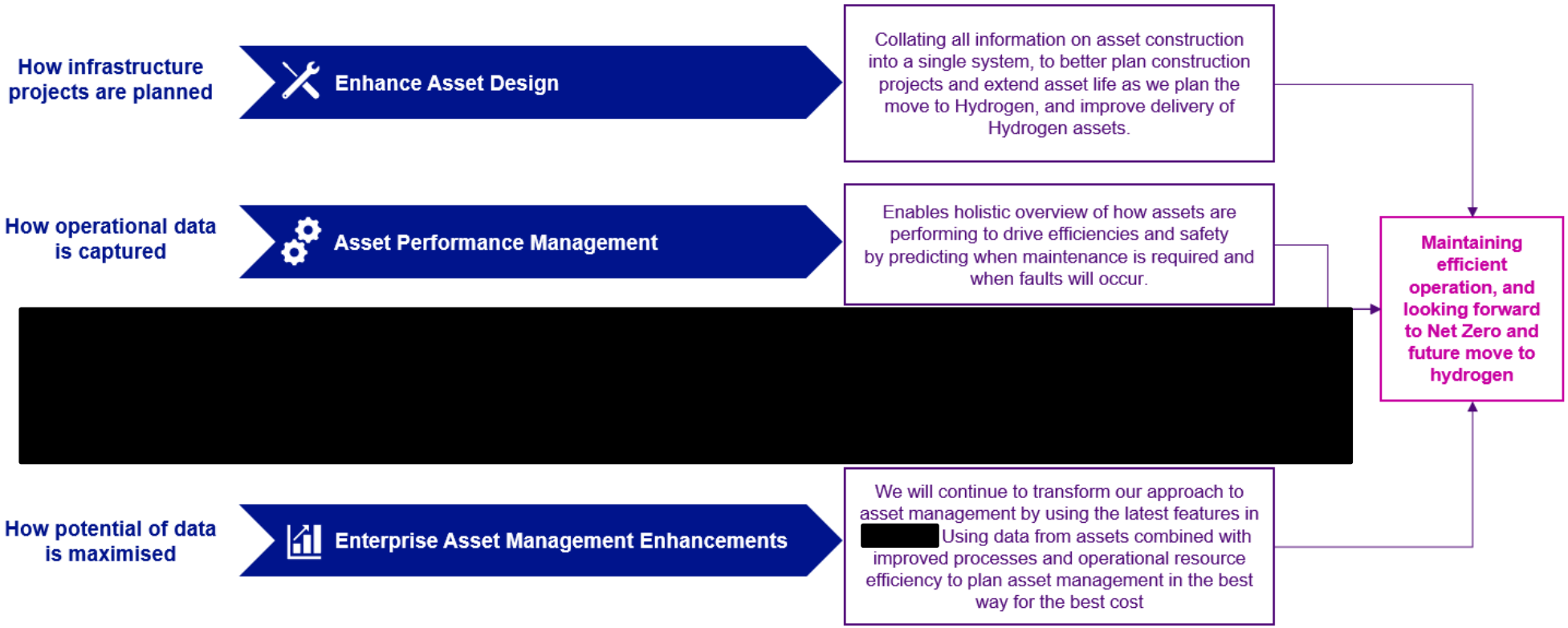
The next stage in the asset data journey is Asset Performance Management, or how we use data from operational sites to understand how assets are performing. This investment is vital to meet the EDTF recommendation to maximise the value of data; we currently have a huge amount of data collected from assets which sits on different systems and is used for reactive maintenance. We want to use this data to improve proactive asset management, using historic data and trends to predictively forecast when maintenance is required.

[redacted]

The final stage is using the data to better understand how the asset management teams are performing, planning maintenance activities and ensuring the maintenance supporting processes are digital and efficient. Enterprise Asset Management Enhancements will look at delivering these essential features on [redacted]

The following diagram demonstrates the stages of the asset data journey and how each of the proposed investments interrelate. Each of the stages are happening simultaneously, data is constantly being collected, transmitted and analysed in [redacted]

Figure 2 Diagram illustrating the four investment products and how they align to keeping Gas flowing safely and the strategy to enable Net Zero and future move to hydrogen.



4 NEEDS CASE

The investment proposals seek to digitalise processes and use of data to make the right decisions when managing assets and to support the operation of the network. In addition, the ability to share data about how the network is run and used will create a better understanding of the energy network and landscape, which is important particularly when looking to the future (for example a move to hydrogen) and enabling Net Zero. In addition, the investments seek to ensure meeting our Digitalisation Strategy and meet EDTF requirements.

The Needs Case specific to the individual projects is set out in the Needs Case section for each business case. In summary:

- ***Enhance Asset Design***
  There are a series of opportunities to achieve greater efficiencies and benefits within current construction processes. Although these benefits have already been assumed by OFGEM through the ongoing efficiency challenge imposed at RIIO-2 final determination for the delivery of investment and construction projects, they require this project to deliver those benefits. In addition, the systems with limited opportunity for data standardisation [redacted] Without intervention, it would lead to [redacted] decreased in asset performance and life expectancy.
- ***APM***
  The current systems and processes enable reactive maintenance. This investment will drive the ability to manage the performance of assets in a way that results in an effective preventative maintenance schedule to minimise risk of failure and promote early identification of defects... This aligns to the Digitalisation Strategy to complete the digitalisation of processes and enable exploitation of data to make the right decisions. It is a key enabler in the strategy to establishing a hydrogen network as part of a cleaner energy system and contributing towards Net Zero.

[redacted]

- ***EAM enhancements***
  Our asset management teams have many different processes and systems which are used to plan effective management of assets by the operational teams. Some of these processes are currently manual or [redacted] has been evaluated to provide an enhanced, similar capability. These transformative changes address identified and prioritised issues with manual processes, defects management, geospatial and financial information, and spares management.

4.1 KEY STAKEHOLDER PRIORITIES

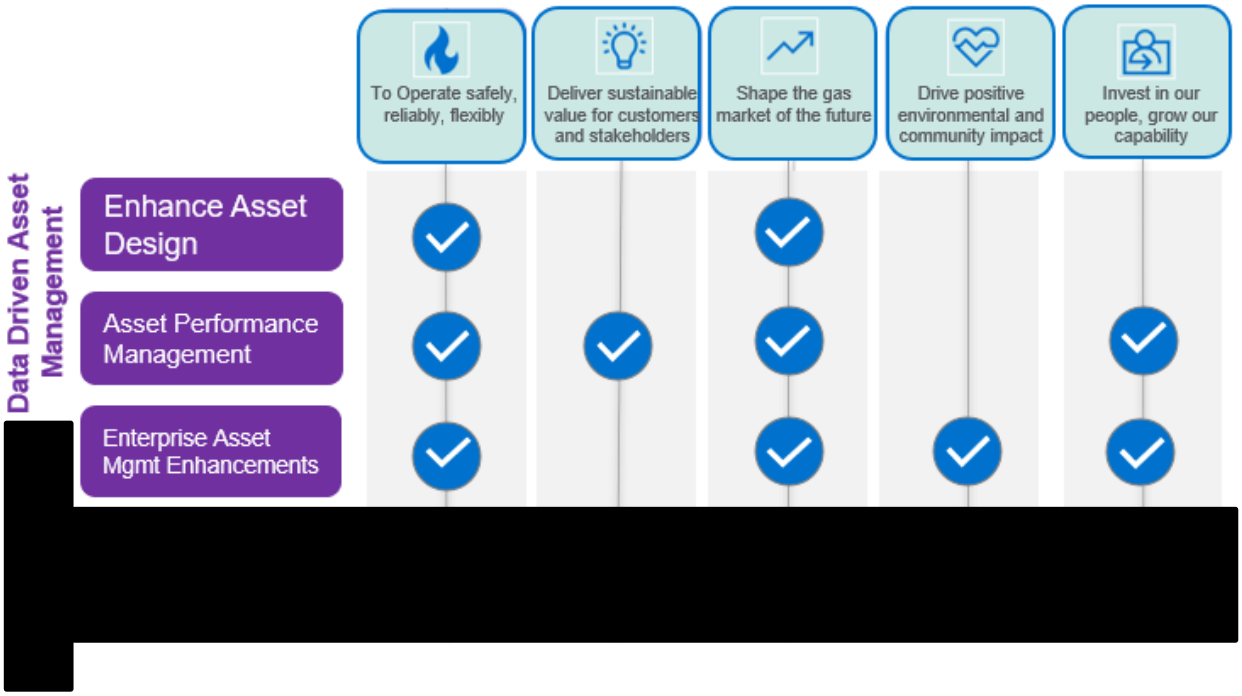
The original RIIO-2 submission was aligned to key stakeholder priorities (KSP) based on feedback from stakeholders and customers in the industry. These have continued to be refined with stakeholders in line with the developing market and energy strategy.

Table 3 Key Stakeholder Priority alignment

Key Stakeholder Priority	Description of how re-opener projects support key stakeholder priorities
To operate safely, reliably, and flexibly	Enhancing the data and systems that support assets will improve the safety of staff and the general public, through understanding assets before they fail.
To deliver sustainable value for customers and stakeholders	The proposed investments support the system operator providing necessary flexibility and ability to manage a network which is subject to increasing operational variability
To shape the gas market of the future	The investments will enable extending the life of existing assets, in preparation for the transition from Methane to Hydrogen in the future.
To drive positive environmental and community impact	Optimise the health of operational assets and thus reduce environmental impact through decreased need for full overhaul of assets
To invest in our people, grow our capability and value everyone's contribution	This enables us to equip staff with latest skills while growing the capabilities across areas such as data driven asset management.

The proposed investments have been assessed against meeting these KSPs within the individual business cases. Many align to more than one KSP due to being core platforms that underpin how we operate the Gas National Transmission System.

Figure 3 Mapping to Key Stakeholder Priorities



4.2 CONSUMER BENEFITS

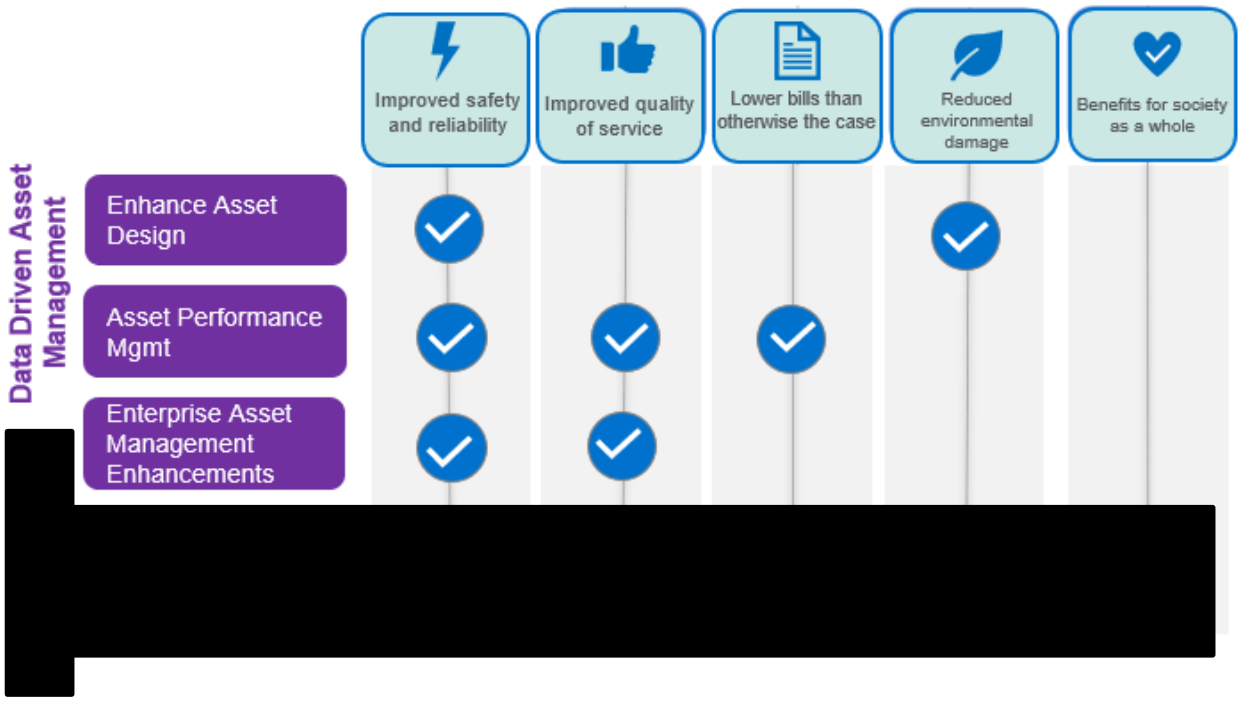
The original RIIO-2 submission was aligned to consumer benefits based on feedback from consumers, these have remained mostly the same and the re-openers are aligned to the following five benefits.

Table 4 Re-opener alignment to Consumer Benefits

Consumer Benefit	Description of how re-openers support Consumer Benefits
Improved safety and reliability	Standardise data across asset management systems and processes, leading to informed decisions and predictive maintenance. Refreshing the telemetry system will allow continued safe operation of the network.
Improved quality of service	Improving all the different ways to collect, manage and apply data will enable improvement in the quality of data provided to consumers.
Lower bills than otherwise the case	Optimised asset performance management supports improved operational efficiency ultimately delivering greater value to consumers
Reduced environmental damage	The Enhance Asset Design and APM enhancements re-opener will reduce environmental damage through improved construction processes and asset maintenance planning, leading to reduction in unnecessary asset replacement.
Benefits for society as a whole	The investments will enable extension of the life of existing assets, in preparation for the transition from Methane to Hydrogen in the future.

The proposed investments have been assessed against meeting these consumer benefits.

Figure 4 Project mapping to Consumer Benefits



5 OPTIONS AND SELECTION METHODOLOGY

When contemplating potential options to address identified business needs or problems, these four questions were considered:

1. ***Does something need to be done?***
   Why NGGT cannot continue with the current system: what is the impact on system reliability, resilience or consumers on a current and ongoing basis if an investment is not made.
2. ***Does something need to be done now?***
   Delay and do nothing have been evaluated as standalone options, including quantification of risks, costs and missed opportunities/benefits for consumers.
3. ***What should be done now?***
   What are the plans for the system in the short term and the future, impact this has on the Needs Case.
4. ***What is the least regret option, or is there a strong case to do more?***
   Where possible a more expensive solution with increased capabilities over the preferred option and also a least expensive solution (do minimum) have been evaluated to compare with the preferred option.

Completing this decision tree as part of the discovery phase helped understand a clear list of options for each project which could then be scored against objective criteria to select the preferred option. The options considered by each project are included in the options section of each investment business case.

The options were then scored using a broad range of parameters which can be grouped as follows:

- ***Criteria 1 - Alignment to strategy and customer priorities***
  How does the option align to the business strategy to keep the Gas flowing efficiently and safely, and to contribute towards Net Zero by enabling hydrogen on the network. Does it support the Digitalisation Strategy, key stakeholder priorities and consumer benefits.
- ***Criteria 2 – Cost***
  How does the chosen option perform against the other options in the Cost Benefit Analysis (CBA). The CBA includes the Do Nothing option as the baseline, the cost of delay, and the cost/benefits of the options in this business case. This also takes into account that some options will realise a larger benefit if delivered sooner.
- ***Criteria 3 – Timeline***
  The possible implementation timelines, when accounting for ongoing internal project dependencies, separation of GT&M from National Grid, and other external factors, such as government changes in priority and new policies.
- ***Criteria 4 - Other dependencies***
  Does the option depend on a specific vendor or external factors outside of our control.

The project scoring utilises the below table and is included in the options section of each individual business case.

Table 5 Scoring template

Criteria Grouping	Parameter	Description	Option 1	etc
			Option Name	
Criteria 1: Strategic and customer alignment	Keeping gas flowing safely and efficiently. (1 - Low, 5 – high)	Does it contribute directly to keeping gas flowing safely and efficiently in the immediate future. This will highlight investments which are essential for operation and safety.		
	Alignment to Digitalisation Strategy (1 - Low, 5 – high)	Does it support the digitalisation strategy and meet stakeholder and consumer benefits.		
	Does it support our stakeholder priorities. (1 – meets 1, 6 – meets all 6)	Does the investment meet all six of the stakeholder priorities?		
	Does it support the consumer benefits. (1 – meets 1, 5 – meets all 5)	Does the investment meet all five of the Consumer benefits?		
Criteria 2: Cost	Cost Benefits Analysis score. (1 – Low, 5 – High)	How did each option perform in the Cost Benefit Analysis? 1 – the cost is the same as/worse than the baseline, 5 – the project has significant benefit against the baseline		
Criteria 3: Timeline	Ease of implementation. (1 – Complex, 5 – Easier)	Is it a complex project, requiring interaction with multiple systems or coordinating a lot of people.		
	Dependency on other projects. (1 – High, 5 – Low)	Is there another project within GT&M which will need to be completed first, or be using the same resources.		
Criteria 4: Other Dependencies	Vendor partners. (1 – Not available, 5 – Many)	Is it a complex system with very few vendor partners who can support?		
	Does it have a dependency on separation from National Grid. (1 – High, 5 – Low)	What is the impact of separation on resources, systems, etc.		
	Total score			

The final step in option selection was completing a Cost Benefit Analysis against each shortlisted option to measure the benefits and ensure that the chosen option resulted in the best benefit.

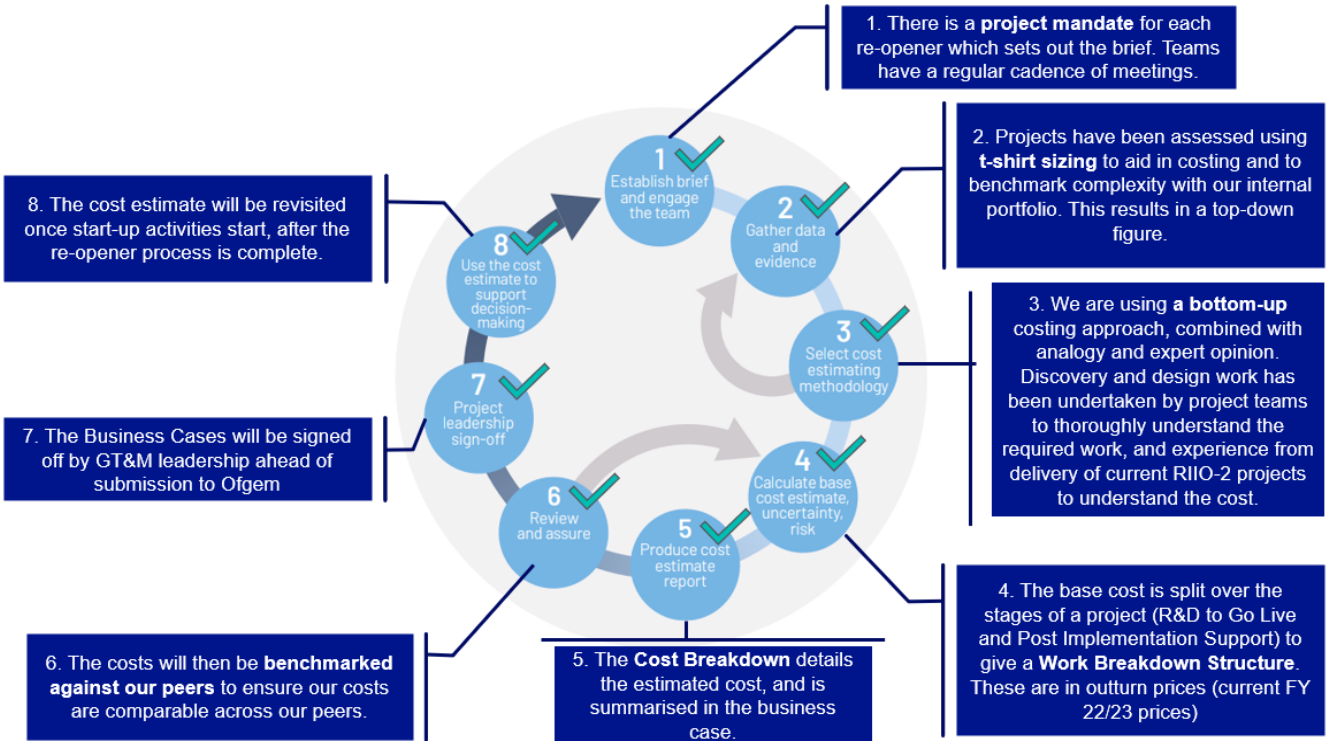
6 COSTING METHODOLOGY

The costs information specific to each project are summarised in the costs section of each investment proposal, the supporting detail is in the accompanying document NG GT Non-Operational Capex-Summary Cost Breakdown.

We have followed the best practice approach set out by the Infrastructure and Projects Authority (IPA)[9] to producing project cost estimates for the proposed re-opener investments. This was a suggested approach in the Ofgem submission guidance and roughly aligns with the usual approach to cost projects.

The IPA set out eight general steps that consist of a thorough cost estimating process.

Figure 5 NGGT alignment to IPA Guidance



NGGT Costing Approach

The approach is common across the four projects; however the exact application differs slightly depending on specific circumstances and information available for the project.

Step 1 & 2: Gather data and complete T-shirt Sizing

After identifying the scope and requirements of the business case, we completed a t-shirt sizing exercise. T-shirt sizing is a project estimation tool used in SAFe Agile project methodology to represent the expected effort of a project.

For the purposes of this re-opener application, we used it in the early stages of discovery to quantify expected effort for delivery of each of the four projects. Ascribing to each project "T-Shirt sizes" small, medium, large or extra-large depending on their scoring against a set of relevant criteria.

9 IPA_Cost_Estimating_Guidance.pdf (publishing.service.gov.uk)

The t-shirt size has an associated guidance on how long the project could take and the estimated cost based on this duration. This was used to give a rough top-down estimate on how much the project could cost.

Table 6 T-shirt sizes

T-Shirt Size	Timeline (Years)	Estimated Costing (GBP £)
Small	[redacted]	[redacted]
Medium	[redacted]	[redacted]
Large	[redacted]	[redacted]
Extra large	[redacted]	[redacted]

The criteria used for the final t-shirt score is in summary:

- ***Technology***
  Is the technology in the proposed option widely known as industry standard, or already in use at GT&M.
- ***People***
  Are the business, IT and Vendor resources available for delivery. Are the skills in place already?
- ***Governance/Risk***
  Evaluating the security of the preferred option, is it industry leading and has well proven security, or a niche vendor. Does it connect to our CNI network and so require further Security checks.
- ***Process/Complexity***
  Is this a new process or tool, and what is the impact of bringing a new tool in.
- ***Information***
  How does the solution store data, is it in a common format which will contribute towards digitalisation, and meeting EDTF commitments.

The scoring is shown in the Cost Breakdown document. The scores applied during sizing of the project range from 1 – 5 and the rating was decided through assessment of the complexity of the projects against existing IT projects being delivered within the RIIO-2 period (analogy), and our experience delivering complex IT systems (expert opinion from Solution Architects). Each project was scored collaboratively between the Product Manager, Solution Architect and dedicated Product Analyst.

Step 3: Bottom-up estimate of total cost

We then assessed the resources required to deliver the identified scope and completed the bottom-up cost estimate. Specifically looking at each of the cost types below and costing how much of each to deliver, these are made of four ‘cost buckets’ that form a general IT project:

- ***Internal resources required***
  Who will be delivering the project, and what type of resource are they. We utilise three approaches for delivery: Internal permanent resources (IT and business) which have a set internal rate card, contractors and partner resources through our ADAM Framework.
- ***External resources required***
  This covers costs that must be provided through a third party or vendor. Where possible we have used either estimates provided from external vendors, or costs based on a tender event.
- ***Software***
  The cost of software licences for delivery of the project.
- ***Risk***
  We have completed a sensitivity analysis to quantify the identified risks associated with each cost type and allocate a proportionate amount of risk.

Step 4 & 5: Produce Cost Breakdown, and Sensitivity Analysis

The bottom-up costing was completed in the accompanying Cost Breakdown excel document. This shows a summary of the project, all the resource costs and the other costs that make up the requested project amount.

Once we had the final bottom-up cost, we then completed a sensitivity analysis against each of the cost groups (internal, third party, etc). We followed the IPA guidance to assess our confidence in each of the costs, referring to the risk table for each project to assign a justified risk margin that is based on quantified monetary impact if the risk is realised. From understanding this monetary impact we were able to calculate the corresponding risk percentage, and then the overall risk required on the project.

Step 6: Review and assure

We completed two validation exercises on the final cost breakdown and sensitivity analysis, this was an internal validation by IT expert opinion and an external benchmark by

Internal validation

- By the team that has been working on the re-opener business case. We asked two questions when considering the costs:
    1. Does the cost fall within the guidance range of the original t-shirt sizing exercise, if not why?
    2. Is the cost comparable to other similar IT projects?
- By expert opinion through the Release Train Engineer and Solution Architect assigned to the business area. They have worked on previous projects on existing solutions or are assigned to the project to understand the technical complexity and have been involved in estimate the cost.
- A final check has been completed by our IT Finance Business Partner to review the costs are accurate from a finance perspective and to sense check how the costs are made up.

External Benchmark

We undertook a benchmarking exercise with as part of original RIIO-2 business plan submission. are an independent benchmarking organisation that review costs associated with projects across multiple sectors to ensure the costs are realistic, efficient and comparable to peers in similar or the same industry[10].

We have again engaged to review and provide assurance our cost estimates are credible and robust. A copy of their report is included in the supporting information – see NG-GT Non-op Capex IT - The below graphic summaries the outcome of the review.

10 See supporting Document National Grid RIIO-2 Reopener Assurance Annex

Figure 6 Summary of [redacted]

This benchmarking exercise, combined with our own intellectual property from comparable projects delivered during the first two years of RIIO-2 and cross-functional technology teams has led us to the proposed investment profile.

The [redacted] benchmark shows that our internal resource costs come on the low side of the benchmark, this is due to the proposed investments taking an approach to minimise costs and maximise efficiencies. We have acknowledged the outcome of the [redacted] benchmark but kept our internal costs as-is to reflect these expected efficiencies.

Step 7: Re-opener project leadership sign-off

The final step that is common across all the submission documents is a robust project leadership sign-off. This involves three tiers:

- 1st Level – review and approval by project team (Product Manager, Product Owner, Finance)
- 2nd Level – review and approval by senior IT and Business stakeholders
- 3rd Level – final review and approval by our internal Uncertainty Mechanism Steering Group.

7 DELIVERY OVERVIEW

At the beginning of RIIO-2 NGGT widely adopted the Scaled Agile framework (SAFe)[11] approach to delivery. SAFe is a set of organisational and workflow patterns for implementing investments and products (both technological and otherwise). The approach emphasises deep collaboration across business functions with a focus on delivering value with pace and flexibility.

SAFe has been used for some significant projects in RIIO-1, and the successful outcomes has led to a widespread adoption for the delivery of all IT projects in RIIO-2. RIIO-2 projects have seen the benefits in faster delivery times, focus on building the right products, early return on investment and early risk reduction. Since training all our teams in SAFe delivery we have also seen higher quality and predictability resulting from adopting SAFe principles.

This section details some of the core principles and governance structures we use when delivering projects.

7.1 PROJECT GOVERNANCE

Our projects all follow a robust internal sanctioning process to ensure that the project is the right thing to do when considering our wider systems, meeting our RIIO-2 obligation as described at Final Determination, and is the best approach.

The below diagram shows a high-level summary of the steps each IT project goes through before entering delivery.

Figure 7 NGGT high level sanction process

7.2 PROJECT PLANNING

We have adopted the SAFe approach to integrate product owners and subject matter experts in our core business with stakeholders in the delivery team to ensure continued flow of communication between IT and the users we deliver for.

Each project is planned at Programme Increment Planning (PI Planning), which includes people from across IT and the business. It is a 2.5 day workshop where all projects work with their Product Owners and delivery team to plan what will be delivered in the next 10 weeks. The workshop ends with a playback by each of the projects to summarise what will be delivered and highlight constraints or dependencies.

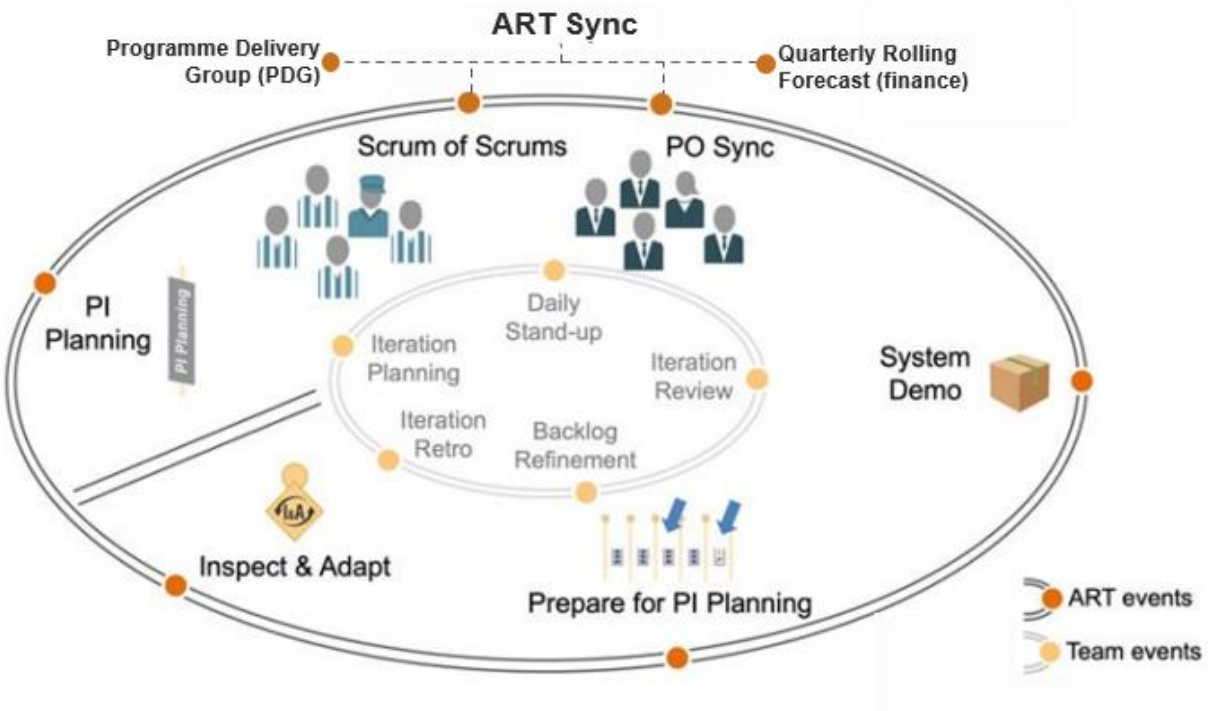
Once work is underway within the Programme Increment, these constraints are reviewed once a fortnight at the sprint planning session and at the end of each sprint in the sprint demo.

[11] What is Scaled Agile Framework (SAFe)? | A Guide to the SAFe (productplan.com) and About - Scaled Agile Framework

In addition, each Scrum Team (a small, self-organising team that is responsible for the delivery of a specific product increment or component) within SAFe Agile is facilitated by a Scrum Master whose role is to manage the flow of work and enable the team to deliver their plan. There is a Daily Stand Up where individual's constraints and blockers are shared. The Scrum Master seeks to resolve these, or escalate them to the Release Train Engineers, then ultimately to the Technology Delivery Manager and the Leadership team, if necessary.

The routine of meeting through each Programme Increment is shown in the diagram below.

Figure 8 SAFe Agile ways of working



A delivery plan for each project is included within the relevant project specific business case document. This shows delivering in an agile manner, where features are prioritised in each release. The prioritisation of work for each team is managed and prioritised by a group comprising of:

- Product Managers with specialist knowledge of the business, the technologies and the enterprise architecture.
- The Product Owner, who takes responsibility for determining business value within the project teams.
- The Release Train Engineer who is responsible for the flow of work across a Release Train comprising of many project teams.

This process of prioritisation considers the full picture of ambition, business value and the context of delivery. The prioritised workflow is then expanded by the team before being planned as part of the regular PI Planning events.

The delivery plans included in each business case are based on an award decision in July 2023 as detailed in the executive summary of this document. This is so that NGGT can proceed to implement the proposed improvements and realise the benefits during the RIIO-2 price control period and to comply with the Data Best Practice principles.

7.3 DEPENDENCIES

In delivery, dependencies are identified as part of PI Planning. They are captured at a project level, a Release Train (programme) level and at a portfolio level, including external dependencies to the core Technology Delivery team.

7.4 RISK LOG AND LESSONS LEARNT

We manage lessons learnt from the cadence of SAFe Agile. In each 10 week PI there are retrospectives at a project team level; an Inspect and Adapt event for each Release Train, and the delivery portfolio as a whole, that reviews both the value that has been delivered and the ways of working, with improvements immediately implemented in the following PI.

The risks are recorded and tracked within each project and where necessary communicated to other teams in the Release Train or programme through the Inspect and Adapt and retrospective events. Each project has identified risks as part this re-opener submission which will be tracked in the project delivery log when the project enters delivery, to ensure the identified mitigations are carried out.

8 STAKEHOLDER ENGAGEMENT AND WHOLE SYSTEM OPPORTUNITIES

NGGT hold regular engagement with external stakeholders to understand more about what data needs they have and how we can shape the energy network of the future. Our stakeholders are broadly categorised into four personas:

- Energy Industry Participants.
- Enquiring Minds.
- Network and Asset Decision Makers.
- Policy Influencers.

We have engaged with the Distribution Networks to understand their technology strategy and how the work we are looking to do fits in with their strategic plans, exploring whole system opportunities and potential collaboration. The table below summarises engagement completed by NGGT, relating to our wider business and specifically to the re-opener submission.

Table 7 Summary of NGGT engagement

Stakeholder	Engagement type	Summary of engagement
Internal Engagement	Internal *Persona: Network and Asset Decision Makers*	Regular meetings with regards to re-openers with Operational teams (users) to ensure we align to their needs, with senior management to ensure we align to business strategy and with other related teams to ensure knowledge sharing on what has been learnt.
Distribution Networks	Whole System Opportunities *Persona: Energy Industry Participants*	In support of our digitalisation strategy we continue to engage with other energy networks to drive the implementation of Ofgem's data best practice and to ensure alignment in standards for data and digitalisation. One to one webinars have been completed [redacted] Through webinars we have been working on data standards to support network interoperability and holding discussions on our re-opener to encourage collaboration and best practice sharing.
[redacted]	Whole System Opportunities *Persona: Energy Industry Participants*	We are also in discussions with [redacted] where we are looking to collaborate across our BIM projects to ensure that there is shared learning across transmission networks.
Multi-party external stakeholder Webinars	Whole System Opportunities *Persona:* *Energy Industry Participants.* *Enquiring Minds.* *Network and Asset Decision Makers.*	We have been having webinars with various persona groups on the use of data, our digitalisation strategy and our stakeholder priorities.
[redacted]	Re-opener Benchmarking	Similar to the original RIIO-2 submission, we have completed an external benchmarking exercise with [redacted] to ensure our costings are in line with the wider industry. This benchmark is included in our submission within the file: [redacted] Grid RIIO-2 Reopener Assurance Annex

Stakeholder	Engagement type	Summary of engagement
Ofgem	Re-opener pre-application regulatory engagement *Persona: Policy Influencers*	The RIIO-2 framework places an emphasis on the importance of good quality pre-application engagement for the smooth and efficient handling of re-opener events. We have kept Ofgem informed of our re-opener plans through the Re-opener pipeline log, regular quarterly portfolio-wide bilateral engagements and targeted project specific engagements. We commenced engagement in July 2022 outlining the re-opener approach and needs case, with further detail provided in September. We shared our draft business case papers in early 7 December 2022. Two further deep dive sessions to review the needs case and costs focusing on 2 business case papers at each session took place in December and January 2023.

9 PROJECTS

9.1 SUMMARY OF PROJECTS

The table below summarises the details of the projects, how each improves data management, the basis for calculations of the requested allowances and signposting the supporting information in line with the Guidance.

9.2 PROJECT 1 – ENHANCE ASSET DESIGN

Table 8 Summary of Enhance Asset Design

<table>
<tr><th colspan="9">Project Summary</th></tr>
<tr><td>Project Name</td><td colspan="8">Enhance Asset Design</td></tr>
<tr><td>Supporting Document</td><td colspan="8">• NG GT Non-Operational Capex-1- Enhance Asset Design
• NG GT Non-Operational Capex-Summary Cost Breakdown v2
• Enhance Asset Design - RIIO-GT_CBA_revised_v2</td></tr>
<tr><td>Project Description</td><td colspan="8">Implementation of Enhance Asset Design into our construction processes will ensure that the quality of construction data is improved and will support Ofgem's data best practice guidance, laying the foundations that enable data interoperability (better data integration & accessibility) and data sharing.</td></tr>
<tr><td>Business Alignment</td><td colspan="8">1. Maximising the value of data through common construction data standard.
2. Enhancing the visibility of data through metadata by configuration of asset and investment related data in the pre, during and post construction phases.
3. Coordination of asset registration by creating scalable data structure and enable swift closure.
4. Visibility of infrastructure and assets by establishing a foundation for a digital twin.</td></tr>
<tr><td rowspan="2">Deliverables (PCD) output

(18/19)</td><td>Output</td><td>Delivery Date</td><td>21/22</td><td>22/23</td><td>23/24</td><td>24/25</td><td>25/26</td><td>Total</td></tr>
<tr><td>[redacted]</td><td>[redacted]</td><td>[redacted]</td><td>[redacted]</td><td>[redacted]</td><td>[redacted]</td><td>[redacted]</td><td>[redacted]</td></tr>
<tr><td>PCD Description</td><td colspan="8">[redacted]</td></tr>
<tr><td>Risks</td><td colspan="8">1. Stakeholder readiness.
2. Business requirement detailed identification.
3. Resourcing for new roles.
4. Data Security during migration.</td></tr>
<tr><td rowspan="2">CBA Outcome</td><td>Option No</td><td>1</td><td colspan="2">2</td><td colspan="2">3*preferred</td><td colspan="2">4</td></tr>
<tr><td>Option Name</td><td>[redacted]</td><td colspan="2">[redacted]</td><td colspan="2">[redacted]</td><td colspan="2">[redacted]</td></tr>
</table>

Project Summary							
	10yr NPV	[redacted]					
	Description	• The preferred option gives us a balanced risk against benefit along with a high NPV and ability to provide a faster process resolution.					
Opportunities	1. Enhancing data management practices 2. Readiness for digital future and hydrogen transition 3. Improved safety & system reliability						
Sourcing Approach & Key Cost Drivers	Bottom-up approach has been used for calculation of costs. The resources used in the project include: • Internal project resources, and ADAM partner resources for specific roles on project team • External resources for implementation and support Costs for software, training, implementation, support are derived from sample vendor quotes						
Allowances Transmission Owner (18/19)	(£m)	21/22	22/23	23/24	24/25	25/26	Total
	Capex	[redacted]					
	Opex						
	Total						
Allowances System Operator (18/19)	Capex						
	Opex						
	Total	[redacted]					

9.3 PROJECT 2 – ASSET PERFORMANCE MANAGEMENT

Table 9 Summary of Asset Performance Management

Project Summary								
Project Name	Asset Performance Management							
Supporting Document	• NG GT Non-Operational Capex-2- Asset Performance Management • NG GT Non-Operational Capex-Summary Cost Breakdown v2 • Asset Performance Management - RIIO-GT_CBA_revised_v2							
Project Description	The purpose of implementing an APM system is to achieve our organisation goals of failure-free operation and optimised asset maintenance. It is about maximising value that we obtain from our assets by operating them as efficiently as possible which then delivers value to the consumer as a result. A data driven asset management strategy has APM at its core, allowing operations to carry out preventive & predictive maintenance to optimise asset use and continuity.							

Business Alignment	• The delivery of an effective APM solution directly supports GT&M digitalisation strategy in these areas:
	  • Data Driven Asset Management – effective integration and analysis of asset data will allow GT&M to optimise its asset management capability and the value assets can deliver throughout their lifecycle.
	  • Operations Enablement – high quality asset data and trusted insights will allow operations teams to focus their energy on maintaining assets before failures and defects arise, reducing operational overhead and the amount of time spent.							

PCD output (18/19)	Output	Delivery Date	21/22	22/23	23/24	24/25	25/26	Total
	[redacted]							
PCD Description	[redacted]							
Risks	• Delay to DAM impacts start date. • Business project fatigue following recent completion of [redacted] implementation and other ongoing IT Projects. • User acceptance of the new functionality, especially for Spares Management. Mapping of dependencies with other projects.							
Opportunities	We need an APM capability that is aligned to our Net Zero strategy and the transition to hydrogen blended gas, allowing us to better monitor our assets and understand how they are responding to blended gas as we progress through that transition.							
	Option No	1/Baseline	2	3	4*preferred			

Project Summary							
CBA Outcome	Option Name	[redacted]					
	10yr NPV	[redacted]					
	Description	[redacted]					
Sourcing Approach & Key Cost Drivers	Internal permanent IT and business resources, ADAM Framework resources. Bottom-up approach has been used for cost calculation.						
Allowances Transmission Owner (18/19)	(£m)	21/22	22/23	23/24	24/25	25/26	Total
	Capex	[redacted]					
	Opex	[redacted]					
	Total	[redacted]					
Allowances System Operator (18/19)	Capex	[redacted]					
	Opex	[redacted]					
	Total	[redacted]					

9.4 PROJECT 3 – [redacted]

[redacted]

9.5 PROJECT 4 – ENTERPRISE ASSET MANAGEMENT ENHANCEMENTS

Table 10 Summary of Enterprise Asset Management Enhancements

Project Summary								
Project Name	Enterprise Asset Management Enhancements							
Supporting Document	• NG GT Non-Operational Capex-4- Enterprise Asset Management Enhancements • NG GT Non-Operational Capex-Summary Cost Breakdown v2 • Enterprise Asset Management Enhancements - RIIO-GT_CBA_revised_v2							
Project Description	Deliver core feature enhancements within the [redacted] platform to make improvements to how the planning and operational teams manage assets. We will ensure assets can continue to be managed effectively within the RIIO-2 period and maximise the operational life of our ageing assets. In planning, it will provide a means to query any aspect of the whole asset lifecycle, and associated efficiency with having the data in a single place. In operations, it will provide a single spares management system and ensure that the engineers with the right skills are at the correct site and have the equipment they need.							
Business Alignment	GT&M digitalisation strategy sets out the path to digitalisation of systems and processes, to enable better use of data both for internal management of the network and sharing externally. The digitalisation strategy aligns to the Energy Data Task Force (EDTF) recommendations and our vision to help enable the shift to Net Zero.							
PCD output (18/19)	Output	Delivery Date	21/22	22/23	23/24	24/25	25/26	Total
	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
PCD Description	[redacted]							
Risks	• Delay to DAM impacts start date. • Business project fatigue following recent completion of [redacted] implementation and other ongoing IT Projects. • User acceptance of the new functionality.							

Project Summary							
Opportunities	The current controls in place will not be adequate as the current investment into delivering the DAM MVP will only deliver core functionality to enable decommissioning of Ellipse. It is essential to build up our EAM capability further on [redacted] to support the business strategy of enabling the use of Hydrogen on the network and the move to Net Zero. Without further enhancements to [redacted] we will not be able to comprehensively plan management of asset health and utilise collected asset data to improve our understanding of assets.						
CBA Outcome	Option No.	1	2	3*preferred			
	Option Name	[redacted]	[redacted]	[redacted]			
	10yr NPV	[redacted]	[redacted]	[redacted]			
	Description	[redacted]					
Sourcing Approach & Key Cost Drivers	Internal permanent IT and business resources, ADAM Framework resources. The key cost drivers for an IT project delivered through SAFe Agile are the resources required to deliver the project, the hardware required, and the software licences required.						
Allowances Transmission Owner (18/19)	(£m)	21/22	22/23	23/24	24/25	25/26	Total
	Capex	[redacted]					
	Opex	[redacted]					
	Total	[redacted]					
Allowances System Operator (18/19)	Capex	[redacted]					
	Opex	[redacted]					
	Total	[redacted]					

10 PROPOSED PCD TABLE

Table 11 Proposed PCDs

11 APPENDIX 1 – LIST OF SUPPORTING INFORMATION

Table 12 Supporting information

Supporting information	File Name
Assurance Statement	NG-GT Non-operational Capex IT – Assurance Statement
Table mapping application to re-opener requirements	NG-GT Non-operational Capex IT – Table mapping to requirements
Project 1 – Enhance Asset Design business case	NG GT Non-Operational Capex-1- Enhance Asset Design,
Project 1 - Enhance Asset Design CBA	Enhance Asset Design - RIIO-GT_CBA_revised_v2
Project 2 – APM business case	NG GT Non-Operational Capex-2- Asset Performance Management
Project 2 – APM CBA	Asset Performance Management - RIIO-GT_CBA_revised_v2
Project 3 - [redacted] business case	[redacted]
Project 3 – [redacted] CBA	[redacted]- RIIO-GT_CBA_revised_v2
Project 4 - EAM Enhancements business case	NG GT Non-Operational Capex-4- Enterprise Asset Management Enhancements,
Project 4 EAM Enhancements CBA	Enterprise Asset Management Enhancements - RIIO-GT_CBA_revised_v2
Costs spreadsheet	NG-GT Non-operational Capex IT – Re-opener Cost Breakdown
[redacted]Benchmarking report	[redacted]National Grid RIIO-2 Reopener [redacted]Annex v1 13 Jan 2023

12 APPENDIX 2 – GLOSSARY OF TERMS

Table 13 Glossary of terms

Term/Acronym	Meaning
ADAM framework	Application Development and Application Maintenance - a negotiated contractual cost framework for procuring services from 4 preferred vendors
APM	Asset Performance Management
BIM	Building Information Modelling
CMA	Competition and Markets Authority
EDTF	Energy Data Task Force
Enterprise architecture	Our internal group of solution architects and enterprise architects ensuring business strategy is met by IT
GT	Gas Transmission
IPA	Infrastructure and Projects Authority
IT	Information Technology
KSP	Key Stakeholder Priority
[redacted]	A proprietary enterprise application management suite from [redacted]
NGGT	National Grid Gas Transmission
NTS	National Transmission System
PCD	Price Control Deliverable
Product Owner	A person in the business responsible for maximising the value delivered by the team and ensuring that the Team Backlog is aligned with customer and stakeholder needs.
Product Manager	Person within IT who identifies the customer need and the larger business objectives that a product or feature will fulfil.
Safe	Scaled Agile Framework
SO / GSO	System Operator / Gas System Operator
Solution Architect	Creates and leads the process of integrating IT system, in order for it to meet the requirements of an organisation.
TO	Transmission Owner

13 APPENDIX 3 – LIST OF FIGURES

14 APPENDIX 4 – LIST OF TABLES