MSIP Re-opener Application: B6 Constraint Management Pathfinder 2024/25 - Operational Tripping Scheme Modifications		
Ofgem Scheme Reference/ Name of Scheme	SPT200693 / B6 Constraint Management Pathfinder 2024/25 - Operational Tripping Scheme Modifications	
Investment Category	Wider Works	
Primary Investment Driver	Constraint Management Pathfinder	
Licence Mechanism/ Activity	Special Condition 3.14 Medium Sized Investment Projects Re-opener and Price Control Deliverable/ Clause 3.14.6 (f) & (i)	
Materiality Threshold exceeded (£3.5m)	No	
PCD primary Output	Protection & Control Equipment	
Total Project Cost (Price Control, Direct) (£m)	£1.027m	
Funding Allowance (£m)	To be confirmed	Requested
Delivery Year	2024/2025	
Reporting Table	Annual RRP – PCD Table	
PCD Modification Process	Special Condition 3.14, Appendix 1	

Issue Date	Issue No	Amendment Details
31st January 2024	1	First issue of document.

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1. Abbreviations / Terminology

Table 1: Table of Abbreviations

Abbreviation	Term
ACM	Asbestos Containing Material
AIS	Air Insulated Switchgear
ASACS	Anglo-Scottish Auto Close Scheme
BEIS	Department for Business, Energy & Industrial Strategy
CDM	Construction Design and Management
CEC	Connection Entry Capacity
CION	Connection and Infrastructure Options Note
CT	Current Transformer
FRS	Fast Ramping Scheme
GSP	Grid Supply Point
GOOSE	Generic Object Oriented System Event
ICS	Interconnector Control Schemes
IED	Intelligent Electronic Device
ITT	Invitation to Tender
km	Kilometre
kV	Kilovolt
LC	Licence Condition
LSpC	Licence Special Condition
MSIP	Medium Sized Investment Project
MW	Megawatt
NETS SQSS	National Electricity Transmission System Security and Quality of Supply Standard
NGESO	National Grid Electricity System Operator
NGET	National Grid Electricity Transmission
NOA	Network Options Assessment
OHL	Overhead Line
OTS	Operational Tripping Scheme
PCD	Price Control Deliverable
RIIO	Revenue = Incentives + Innovation + Outputs
SCADA	Supervisory Control and Data Acquisition
SCMS	Series Compensation Management Scheme
SGT	Supergrid Transformer
SIPS	System Integrity Protection Scheme
SPT	SP Transmission
SPEN	SP Energy Networks
SSEN-T	Scottish Hydro Electric Transmission
STC	System Operator – Transmission Owner Code
TSR	Torsional Stress Relays
VDUM	Volume Driver Uncertainty Mechanism
VT	Voltage Transformer
WETSS	Wishaw-Eccles-Torness-Smeaton Operational Intertrip Scheme
WRBS	Western HVDC Line Run-Back Scheme

2. Reference Documents

Table 2: Table of Reference Documents

Document Reference	Title
SPEN-RIIO-T2_Business_Plan	SP Energy Networks RIIO T2 Business Plan 2021 - 2026
16-1 App C - LEO revised	Planning Request NGET 20**/00**
16-1 Intertrip connection_Final	Planning Request SPT & SSEN 20**/00**
NGESO Letter to Industry	Results of B6 Constraint Management Pathfinder (2024/25)

3. Introduction

This MSIP Re-opener application defines SP Transmission's (SPT) plans to extend the Anglo-Scottish Operational Intertrip Scheme (OTS), which is part of the SPT-NGET Interconnector Control Schemes (ICS) System Integrity Protect Scheme (SIPS), in response to an STCP 16-1 Planning Request received from NGESO in respect of the B6 Constraint Management Pathfinder (CMP) 2024/25 initiative.

SPT received the Planning Request relating to the B6 CMP 2024/25 initiative on 1st November 2022. The request relates to the extension of the OTS to new parties that were successful in NGESO's B6 CMP tender process for 2024/25. Under the terms of the SO-TO Code (the STC), SPT is obliged to respond to the Planning Request, notify NGESO how it intends to accommodate the Planning Request and update its Transmission Investment Plan accordingly.

From 2008, SPT has developed an innovative multi-layered set of SIPS (collectively known as the ICS) to provide the ESO with enhanced capability of the B6 boundary in operational timescales. The backbone of the ICS is the Line End Open (LEO) scheme which collects plant and protection status information from 43[1] circuit ends along the routes crossing boundary B6 and the east-west 400kV circuits between Strathaven and Torness. These line status points are then transmitted to a central location at [redacted] and made available to the individual schemes within the ICS which use them in their scheme logic.

The OTS allows the B6 boundary to operate in excess of its planned transient stability limit by rapidly disconnecting generation in the event of programmable, pre-determined faults. The OTS scheme is therefore designed to operate at high speed with a typical operating time of 120-150ms from fault inception to generator tripping. Further, because of the importance of the scheme in maintaining transient stability, dependability is ensured by the use of duplicated systems and operating duplicate circuit-breaker trip coils.

The first B6 CMP tender (for 2023/24) was awarded by NGESO in November 2021. Four generators already had an operational intertrip in place and these four contracts were able to commence earlier than the wider B6 CMP 2023/24 contract start date. These contracts went live in April 2022 and resulted in a reduction of £30m in constraint costs over the first four months alone[2]. As part of the B6 CMP 2024/25 initiative, NGESO has contracted with a number of parties who are not currently connected to the OTS and who will not be connected via the B6 CMP 2023/24 initiative. It is therefore necessary for SPT to add signalling equipment to serve these additional generator sites.

This MSIP Re-opener application is submitted in accordance with Licence Special Condition (LSpC) 3.14.6 and relates specifically to LSpC 3.14.6 activities (f) and (i) iii. This is the second of several expected submissions related to these activities, and which together will exceed the Materiality Threshold in due course.

The needs case for the OTS Extension and the factors that have an impact on the timing and scope of works are discussed in the following sections. Full justification for the preferred investment option is presented, together with a detailed description of the proposed solution. The costs presented in Section 7 are market-tested and have a high degree of cost maturity. The project delivery plan is detailed in Section 8.

[1] Prior to the planned extension of the LEO scheme towards the B7a boundary in NGET's licence area, which will add a further 22 circuit ends when complete.

[2] Results of B6 Constraint Management Pathfinder (2024/25)

3.1 Structure of Document

This MSIP Re-opener application is structured as follows:

Section 4 – Background and Needs Case

This section outlines the background to the proposed works and details the key project drivers.

Section 5 – Assessment of Options

This section sets out the approach taken to considering the distinct options available to address the need identified in Section 4. The results of an evaluation of the alternative options are presented and the reasoning behind the selection of the preferred investment option is summarised.

Section 6 – Proposed Works

This section provides a description of the proposed solution. It sets out the project scope and other key supporting information.

Section 7 – Project Cost Estimate

This section summarises the estimated cost of the selected option.

Section 8 – Project Delivery

This section outlines the approach which will be taken to deliver the project.

Section 9 – Conclusions and Recommendations

This section summarises the conclusions and includes recommendations to be taken.

3.2 Requirements Mapping Table

Table 3 maps the requirements set out within Chapter 3 of the Re-opener Guidance and Application Requirements Document[3] against specific sections within this document.

Table 3: Requirements Mapping Table

Section	Description	Relevant Section(s) in Re-opener Guidance and Application Requirements Document
3	Introduction	3.3, 3.4
4	Background and Needs Case	3.8, 3.9, 3.10, 3.11
5	Assessment of Options	3.13, 3.14, 3.21, 3.22
6	Proposed Works	3.14
7	Project Cost Estimate	3.12, 3.19, 3.20
8	Project Delivery	3.15, 3.16, 3.17

[3] Re-opener Guidance and Application Requirements Document: Version 3

4. Background and Needs Case

4.1 Statutory and Licence Obligations on SP Transmission plc

SP Transmission plc (SPT) is licenced under section 6(1)(b) of the Electricity Act 1989 ("the 1989 Act") to transmit electricity. The licence is granted subject to certain standard and special conditions. Under section 9(2) of the 1989 Act, SPT is required to fulfil the following duty: -

- *To develop and maintain an efficient, co-ordinated and economical system of electricity transmission; and*
- *To facilitate competition in the supply and generation of electricity.*

This statutory duty is reflected in SPT's transmission licence. In addition, SPT has the following obligations pursuant to its licence conditions (LCs): -

- To at all times have in force a System Operator-Transmission Owner Code (STC) which, amongst other things, provides for the co-ordination of the planning of the transmission system (LC B12);
- To at all times plan and develop its transmission system in accordance with the National Electricity Transmission System Security and Quality of Supply Standard (NETS SQSS) and in so doing take account of National Grid Electricity System Operator's (NGESO's) obligations to co-ordinate and direct the flow of electricity on, to and over the GB transmission system (LC D3);
- To make available those parts of its transmission system which are intended for the purposes of conveying, or affecting the flow of, electricity so that such parts are capable of doing so and are fit for those purposes (LC D2); and
- To offer to enter into an agreement with the system operator on notification of receipt of an application for connection, or for modification to an existing connection (LC D4A).

Section 38 and Schedule 9 of the 1989 Act also impose duties on SPT when formulating any relevant proposals. In response to statutory and licence obligations upon it, SPT therefore requires to ensure that the transmission system is developed and maintained in an economic, co-ordinated and efficient manner, in the interests of existing and future electricity consumers, balancing technical, economic and environmental factors.

Section 2.4 of Part D of the STC makes provision for the ESO or transmission licensees to submit a Planning Request to change the recipient party's Transmission Investment Plans. SPT have an obligation under section 2.4.3 of Part D of the STC to notify the requester how it intends to accommodate the Planning Request and to update its Transmission Investment Plans accordingly.

4.2 Key Project Drivers

NGESO published the results of its B6 Constraint Management Pathfinder (2024/25)[4] in November 2022, detailing the successful parties that will provide services between October 2024 through September 2025. NGESO has advised that the consumer savings during the service term are anticipated to be in the region of £70m (depending upon the generation background driving the constraint and system conditions).

SPT received a Planning Request from NGESO on 1st November 2022 in respect of the extension of the existing OTS to add new parties that were successful in the tender process for the B6 CMP 2024/25.

[4] Results of B6 Constraint Management Pathfinder (2024/25)

Works are required to add the necessary hardware at [redacted] and the associated generation sites, and to modify the OTS scheme to integrate the new generation sites. Full details of the need case for each scheme can be found in the associated Planning Request in Section 10.

4.3 Existing LEO and OTS Schemes - Background

4.3.1 Scheme Architecture

The NGET-SPT Interconnection Control Scheme consists of the following six sub-schemes which are based on the LEO sub-scheme:

- Operational Tripping Scheme (OTS)
- Anglo-Scottish Auto Close Scheme (ASACS)
- Series Compensation Management Scheme (SCMS)
- Fast Ramping Scheme (FRS)
- Western HVDC Line Run-Back Scheme (WRBS)
- Wishaw-Eccles-Torness-Smeaton Operational Intertrip Scheme (WETSS)

At the remote sites, plant position and protection trip status are hard-wired to duplicate LEO IEDs whose scheme logic checks the integrity of the inputs and transmits their status via SPT's operational telecoms networks to partner 'receive' IEDs at [redacted] using standard IEEE C37.94 intertripping channels. Each channel has multiple status messages which allows the status of individual circuit ends to be transmitted.

At [redacted], each LEO receive IED publishes the received circuit-end status values as IEC61850 GOOSE messages. Because GOOSE messages are multi-cast, they are available to any IED which is configured to subscribe to them, and they provide the controller IEDs performing the OTS logic (and that of the other five ICS sub-schemes) with access to the necessary status points.

[redacted] respectively, and subscribe to the relevant GOOSE messages, executing the scheme logic based on their status (the scheme logic is shown in section 11.2). To enact the tripping of generators, selected by instruction from the ESO, the OTS controllers publish GOOSE messages to which OTS 'send' IEDs subscribe. This architecture is shown in Section 11.1.

If selected to operate, the send IEDs transmit a trip command to their associated generator sites using standard IEEE C37.94 channels over SPT's operational telecoms network (interfacing with NGET's and SSEN-T's telecoms networks). At the generator sites, the duplicate IEDs trip the selected generators by opening the designated TO-owned circuit-breakers.

[redacted]

4.3.2 OTS Tripping Arrangements

Prior to the CMP 2023/24 project, the OTS was connected to the following generation sites and associated circuit-breakers:

- Griffin 132kV:
- Crystal Rig 400kV
- Whitelee 275kV
- Whitelee Extension 275kV
- Wishaw 275/132kV (Blacklaw)

After the completion of the CMP 2023/24 project, the following generation sites and associated circuit-breakers were included in the OTS scheme:

- Crystal Rig 132kV
- Wishaw 33kV
- Elvanfoot 275kV
- Fallago 400kV

Arming and selection of tripping is carried out by SPT under instruction from the ESO.

4.3.3 OTS Operating Time

The scheme operating time is critical to maintain transient stability in the event of a system fault condition.

A typical timing table is shown in Table 4:

Tripping time to Whitelee 120ms

Table 4 - Typical Scheme Timing

	[redacted]		
	1st MP	2nd MP	3rd MP
Protection	35	20	20
TR	10	10	10
[redacted]	19		19
[redacted]	12		12
I/TRTR WLEE	10		10
CB @ WLEE	49		
	120		

The selection of the scheme IEDs, the use of IEC61850 GOOSE and the provision of duplicate systems is designed to achieve very high-speed operation and to maximise the security and dependability of the scheme.

4.4 Alignment with RIIO-T2 Strategic Goals

As described in our RIIO-T2 plan[8] for the five-years to the end of March 2026, to mitigate the impacts of climate change and achieve a low-carbon energy system requires a level of focused effort and

[8] SP Energy Networks RIIO-T2 Business Plan

commitment never seen before. The mass electrification of transport and heat has only started and there is a huge amount required to build on the timely progress already made in the electricity sector.

Energy networks are critical to achieving the wider Net Zero emissions targets and with continued engagement with consumers, network users and our wider stakeholders, we've set a progressive plan in place to facilitate a Net Zero future. Our RIIO-T2 plan sets out four strategic goals – informed by our stakeholder priorities – that will keep us moving towards this sustainable future. These goals and their alignment with the development of the OTS, are summarised in Figure 1.

Further detail regarding how this proposal aligns to our four Strategic Goals is outlined below:

Take a leading role in delivering a Net Zero future that is consistent with government objectives.

Providing operational enhancement of the B6 boundary increases the volumes of predominantly renewable energy which can access the GB transmission system, contributing towards a reduced reliance on fossil fuel electricity generation sources.

Deliver the benefits of increased cost-efficiency to network users and consumers by continually innovating and applying whole system solutions.

The ESO's estimates of the constraint savings as a result of these works are an order of magnitude greater than the capital cost which demonstrates value-for-money.

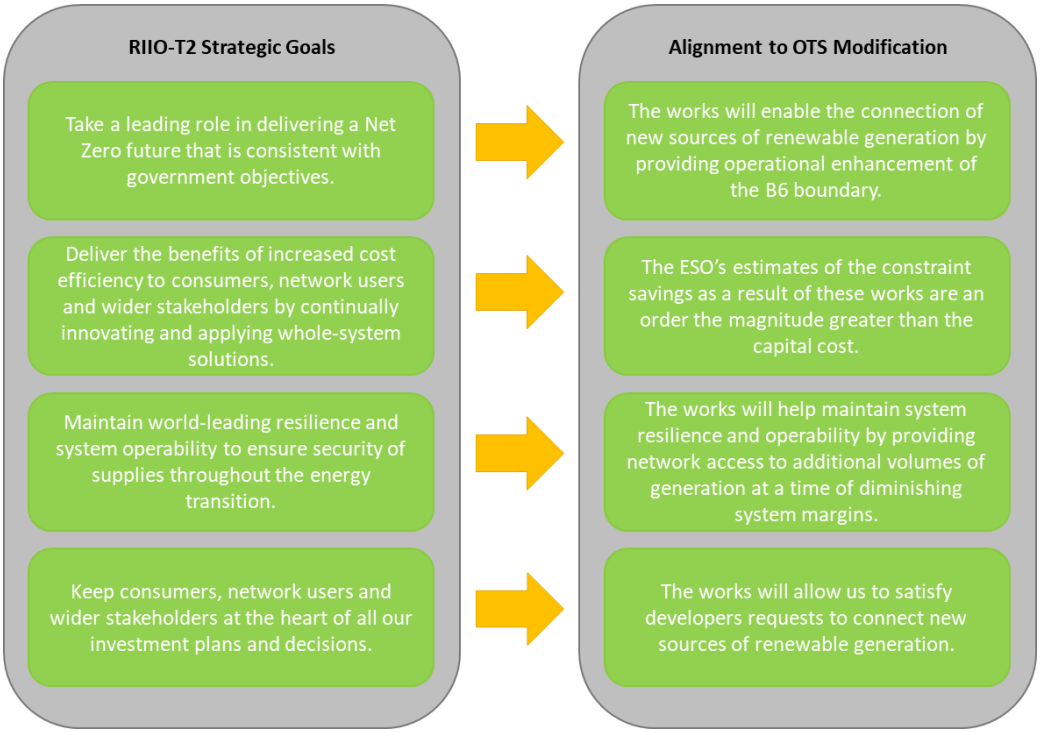


Figure 1: Alignment of OTS development with SPT RIIO-T2 Strategic Goals

Maintain world-leading resilience and system operability to ensure security of supplies throughout the energy transition.

The works will help maintain system resilience and operability by providing network access to additional volumes of generation at a time of diminishing system margins.

Keep network users and consumers at the heart of all our investment plans and decisions.

The development of the OTS scheme is consistent with SPT's obligations to maintain and operate an economic and efficient transmission system, and allow SPT to facilitate competition in generation, consistent with its statutory and licence responsibilities.

Key stakeholders have been consulted during the development of the proposed solution and we will continue to engage with stakeholders throughout the project development and delivery process. More detail on stakeholder engagement can be found in Section 8.4.

5. Assessment of Options

5.1 Overview of Options

The Planning Request from NGESO states that SPT is requested to extend the existing OTS scheme to include additional intertrip links to four parties who were successful in the B6 CMP tender for 2024/25. Therefore, there are two options available: the extension of the OTS scheme or to replace it in its entirety.

5.1.1 Option 1 – Extension of the OTS Scheme

The existing OTS scheme entered service in 2008 and has been augmented and modified as required in response to requests from NGESO. The scheme meets current and future performance requirements and is capable of being extended.

Extending the existing system is the lowest cost option and results in the shortest scheme outage requirements.

5.1.2 Option 2 – Full Replacement of the OTS scheme

As the complete replacement of the scheme would have a higher capital cost, incur longer scheme outages, and provide no additional benefit compared to Option 1, this option was not pursued further.

5.2 Option Assessment

The Planning Requests received from NGESO proposed the extension of the OTS scheme and SPT consider it to be feasible to implement this proposal. As the existing functionality is to be maintained and applied to the new elements, the only alternative option is a full like-for-like replacement. It is not necessary to replace the scheme in its entirety to achieve the functionality required by the Planning Requests and as this approach would result in higher capital costs and increased scheme outage durations for no additional benefit, the proposed option is Option 1 – extension of the OTS scheme.

6. Proposed Works

6.1 Project Summary

The Interconnection Control Schemes consist of the following sub-systems:

- Anglo-Scottish Operational Intertrip Scheme (OTS-EC, OTS-NE, OTS-WC)
- Anglo Scottish Auto Close Scheme (ASACS)
- Fast Ramping Scheme (FRS)
- Series Compensation Management Scheme (SCMS)
- Wishaw–Eccles–Torness–Smeaton Operational Intertrip Scheme (WETSS)
- Line End Opening (LEO) System – Common
- Operational Intertrip Schemes (OTS-EC, OTS-NE, OTS-WC) shall be modified.

Protection and control works are required to extend the existing OTS as detailed in the associated Planning Request.

The Operational Intertrip Scheme (OTS-WC, OTS-EC and OTS-NE) require to be modified. The extension of the OTS scheme requires SPT to undertake works at the following sites which are detailed in subsequent sections:

- [redacted]
- Middlemuir 132kV Substation
- Linnmill 132kV Substation
- Moffat 132kV Substation
- Arecleoch 132kV Substation

On operation, the OTS scheme controllers shall be capable of sending OTS command signals (via the OTS signalling equipment) to the remote substations at Arecleoch, Linnmill, Middlemuir and Moffat. Duplicated OTS signalling equipment for Arecleoch, Linnmill, Middlemuir and Moffat substations shall be installed for tripping the Glen App Windfarm, Blacklaw Windfarm Extension, Middlemuir Windfarm and Harestanes Windfarm respectively.

6.2 Works at [redacted]

Protection and control works are required to extend the OTS Scheme which forms part of the [redacted] located at the [redacted] Operational Intertrip Schemes (OTS-EC, OTS-NE, OTS-WC) shall be modified. New OTS signalling equipment for Arecleoch, Linnmill, Middlemuir and Moffat substations shall be installed.

6.2.1 Protection and Control Works – OTS

After the completion of the CMP (Constraint Management Pathfinder) –LEO (Line End Open) Modifications and OTS (Operational Tripping Scheme) Modifications, the existing logic (see section 11.2)[redacted]

New OTS signalling equipment will be installed to send commands to Arecleoch, Linnmill, Middlemuir, and Moffat substations.

[redacted]

6.2.3 SCADA and Telecoms

The [redacted] Substation Control and Information System (SCIS) will be modified to provide control, alarm, and indication facilities for the new equipment.

New telecommunication services are required between [redacted] and the remote substations. They are listed in Table 5 below.

Table 5 - New Telecommunication Service Requirements

[redacted]			

These services will use interfaces complying with IEEE C37.94.

6.2.4 Auxiliary Supplies Works

The supply for the new OTS equipment shall be fed from the 3rd and 4th 110V DC systems (Duplicated 110V DC systems comprising VRLA battery, dual charger, and distribution board) as appropriate.

6.2.5 Civil Works

Works are required to extend cable trays and trenches to accommodate optical fibre and DC supply cables.

6.3 Works at Middlemuir 132kV Substation

This work is associated with the operational intertripping for Middlemuir Windfarm, connected to Middlemuir 132kV Substation.

A new OTS signalling and control panel will be installed to provide the duplicate OTS signalling equipment. On receipt of the first or second OTS command signal from [redacted], the scheme shall initiate the following: Tripping [redacted] and via [redacted], tripping [redacted] and sending intertrip signals to the Middlemuir Windfarm. Works are required to incorporate indications from [redacted] in the OTS. The SCIS will be modified to provide new control, alarm and indication facilities.

6.4 Works at Linnmill 132kV Substation

This work is associated with the operational intertripping for the Blacklaw Windfarm (extension) connected to the Blacklaw Extension substation.

A new OTS signalling and control panel will be installed to provide the duplicate OTS signalling equipment. On receipt of the first or second OTS command signal from [redacted], the scheme shall initiate the following: Tripping [redacted] and sending intertrip signals to Blacklaw Extension substation. At Blacklaw Extension substation, the Linnmill feeder intertrip receive signals will trip [redacted] and send intertrip signals to the Blacklaw Windfarm. Works are required to incorporate indications from [redacted] in the OTS. The SCIS will be modified to provide new control, alarm and indication facilities. Additionally, a new second 110V DC system will be installed.

6.5 Works at Moffat 132kV Substation

This work is associated with the operational intertripping for the Harestanes Windfarm connected to Harestanes substation.

A new OTS signalling and control panel will be installed to provide the duplicate OTS signalling equipment. On receipt of the first or second OTS command signal from [redacted], the scheme shall initiate the following: Tripping [redacted] and sending intertrip signals to Harestanes substation. At Harestanes substation, the Moffat feeder intertrip receive signals will trip [redacted] and via [redacted] and [redacted], trip [redacted] and [redacted], and send intertrip signals to the Harestanes A & B Windfarms. Works are required to incorporate indications from [redacted] in the OTS. The SCIS will be modified to provide new control, alarm and indication facilities.

6.6 Works at Arecleoch 132kV Substation

This work is associated with the operational intertripping for Glen App Windfarm connected to Glen App substation.

A new OTS signalling and control panel will be installed to provide the duplicate OTS signalling equipment. On receipt of the first or second OTS command signal from [redacted], the scheme shall initiate the following: Tripping [redacted] and via [redacted], tripping [redacted] and sending intertrip signals to Glen App substation. At Glen App substation, the Arecleoch feeder intertrip receive signals will trip [redacted] (to disconnect the Glen App Windfarm). Works are required to incorporate indications from [redacted] in the OTS. The SCIS will be modified to provide new control, alarm and indication facilities. Additionally, a new second 110V DC system and new diversely routed communication links between Strathaven and Arecleoch substations will be installed.

6.7 Environmental and Consents Works

A refurbishment asbestos survey was undertaken at Linnmill in advance of the tendering process to establish certainty in cost. These surveys showed that while there is some asbestos, it is not in areas in which will be disturbed by the contractor. The areas will be marked up regardless to ensure each person safety.

As all the construction work is within SPT's existing substation infrastructure at existing sites, there are no environmental planning requirements for these works. Likewise, as SPT own or already lease all of the existing land within which the construction will be carried out, there are no consents requirements for these works.

7. Project Cost Estimate

The cost estimates below include all contracts required for completion of the project.

7.1 Estimated Total Project Cost

Aligned with the format of the Re-Opener Pipeline Log, Table 6 details expected energisation year and our current view of potential direct capital expenditure in RIIO-T2.

Table 6: Estimated Incidence of Expenditure

		Potential direct capex value per year, £m, 18/19 price base								
Energisation Year	Pre-RIIO-T2: direct capex	Yr. 21/22: direct capex	Yr. 22/23: direct capex	Yr. 23/24: direct capex	Yr. 24/25: direct capex	Yr. 25/26: direct capex	Yr. 26/27 (T3): direct capex	Yr. 27/28 (T3): direct capex	RIIO-T2 Total: direct capex	Total: direct capex
2024/25		0.000	0.000	0.246	0.781	0.000	0.000	0.000	**1.027**	**1.027**

7.2 Detailed costs

Table 7 below provides a cost breakdown representing the latest view of Direct costs for the proposed investment:

Table 7: Direct Costs

Contract Name	Cost	Start	Finish	Comments
Asbestos Survey	[redacted]	Sep-23	Sep-23	[redacted]
EPC Contractor including LVAC		Jan-24	Oct-24	
SCIS/HMI Updates		Jan-24	Oct-24	
Telecoms		Jan-24	Aug-24	
Relays		Nov-23	Oct-24	
Battery Systems		Jan-24	Oct-24	
Risk				
Total	**1.027**			

7.3 Procurement Strategy

SPT Procurement strategy follows a disaggregated model, within which contracts are disaggregated and tendered separately to maximise cost efficiencies. For this project, due to the nature of the work, an EPC contract was tendered for the main body of works. This contract was competitively tendered with multiple tendering rounds and a Best and Final Offer stage to maximise pricing competition. SPT also procured several items of equipment directly with manufacturers, utilising ongoing frameworks SPT have in place with various suppliers. These frameworks are tendered competitively to achieve the best market rates and are valid for a period of 2 years, giving cost certainty and best market rates.

Table 8 below provides a breakdown of the contracts and the strategy employed for each:

Table 8: Procurement Strategy

Contract	Units	Procurement Strategy
Surveys	1	[redacted]
Telecoms	1	
SCIS/HMI Updates	1	
EPC Contractor	1	
Relays	1	
Battery Systems	1	

7.4 Cost Maturity

Aligned with the classification outlined within the "OFGEM Class of Estimate" tab included in the "ET2 UM Submission Template" the table below includes the assessment of cost firmness:

Table 9: Cost Firmness Assessment

Contract	Status of Costs	Cost Firmness as per OFGEM classification	Total Direct Cost (£m)	Total Cost (%)
Surveys	[redacted]			
EPC Contractor				
SCIS/HMI Updates				
Telecoms				
Relays				
Battery Systems				
Risk				
TOTAL			**1.027**	**100%**

As it can be seen in Table 9, [redacted] of the total costs are either incurred already or have been contracted, giving high confidence in our cost submission.

7.5 Project Risk and Mitigation

Table 10 below provides a breakdown of the individual project risks followed by further detailed explanation regarding mitigation and likelihood.

Table 10: Risk Quantification

Risk	Description	Probability	Value (£m)
[redacted]			

[redacted]

Risks and value assigned to them are based on materialised risk incurred during the delivery of the Constraint Management Pathfinder (Phase 1): LEO and OTS Modifications.

7.6 Total Allowance Request

SPT requests that the following allowance is provided through the MSIP Re-opener mechanism to deliver the works described within Section 6. These allowances will be subject to the Opex escalator mechanism:

Table 11: Requested Direct Allowances

	Direct allowance requested per year, £m, 18/19 price base					
	Yr 21/22:	Yr 22/23:	Yr 23/24:	Yr 24/25:	Yr 25/26:	Total (£k)
Direct Allowances Requested	0.000	0.000	0.246	0.781	0.000	**1.027**

An aggregated view of the total cost is outlined in table 12 below:

Table 12: Total Project Cost Aggregated view

[redacted]

7.7 Regulatory Outputs

As the output of the project is the enablement of commercial services to be employed by the ESO, it is proposed that the associated Price Control Deliverable is defined as follows:

Table 13: Price Control Deliverable

OSR	Scheme Name	Output	Allowance* Oncosted)	Delivery Date
SPT200693	B6 CMP (Constraint Management Pathfinder) 2024/25 – OTS (Operational Tripping Scheme) Modifications	Completion of the extension of the OTS system	£1.165m	31st October 2024

*Include Indirect costs calculated using the Opex Escalator uplift (13.4%) on Direct costs.

8. Project Delivery

We have applied our project management approach to ensure that this project work is delivered safely, and in line with the agreed time, cost, and quality commitments. We have a proven track record of delivering essential transmission network upgrade projects and will draw upon this knowledge and experience to effectively manage this project. We have assigned a dedicated Project Manager to this project who will be responsible for overall delivery of the scope and is the primary point of contact for all stakeholders.

8.1 Delivery Schedule

A standard approach has been applied to the planning phase of this project and that will continue for the reporting and the application of processes and controls throughout the project lifecycle. Table 14 below summarises the key project milestones within the delivery schedule.

Table 14: Project Milestones

Milestone	Project Phase	Estimated Completion Date
1	Issue Main ITT	October 2023
2	Main Contract Awarded	January 2024
3	Commence Main Site works	August 2024
4	Complete Site works	October 2024

Regular meetings with the Project and Construction Management Teams shall be undertaken to assess the ongoing effectiveness of the Project Management interfaces.

8.2 Alignment with other projects

For these extensions there is no alignment with other projects and these projects do not impact any other works we are carrying out on the network at this time.

8.3 Quality Management

SPT adopts a “life cycle” approach to Quality Management in major project delivery. Our Management Systems are certified to ISO 9001, ISO 14001, and ISO 45001. Various areas applicable to these standards ensure a quality product is delivered. The significant areas detailed below:

8.3.1 Quality Requirements During Project Development

Any risk or opportunity that may affect the quality of the product are detailed in the Project Risk Register (that is noted in Section 6.5 above).

The suppliers of main equipment may also receive a Factory Acceptance Test Inspection when the asset is being built.

8.3.2 Quality Requirements in Tenders

Each contract that SPT issues has a standard format. Specifically in relation to quality, this will include a Contractors’ Quality Performance Requirement (CQPR). This CQPR represents a specification that details roles and responsibilities for all parties during the works, frequency and format of reporting. It will also specify the document management process to be adhered to during the delivery of the

project. In addition to the CQPR, each project has a contract specific Quality Management Plan, detailing the inspection and testing regime for works as well as the records to be maintained.

8.3.3 Monitoring and Measuring During Project Delivery

SPT Projects undertake regular inspections on projects and contractors to monitor and measure compliance with SPT Environmental, Quality and Health and Safety requirements, as detailed in the contract specifications for the work. All inspections are visual, with the person undertaking the inspection ensuring that evidence of the inspection and any actions raised are documented.

The following inspections are completed:

- Quality Inspections (monthly)
- Environmental Inspections (monthly, with weekly review by third party Environmental Clerk of Works)
- Safety Assessments & Contractor Safety Inspection (daily, with full time Site Manager)
- Project Management Tours (monthly)

The scope of audits and Inspections is to determine compliance with:

- Procedures & Guides
- Planned arrangements for ISO 9001, 14001 & 18001
- Legal and other requirements.

8.3.4 Post Energisation

SPT Projects and SPT Operations carry out a Defect Liability Period Inspection within the Contract Defect Liability Period with the aim of identifying any defects and rectifying them with the contractors.

8.4 Stakeholder Engagement

SPT is committed to delivering optimal solutions in all the projects we undertake. A key part of this is engaging with relevant stakeholders throughout the project development and delivery process. Stakeholders can include customers, regulatory bodies and other statutory consultees, national and local government, landowners, community groups, and local residents and their representatives (e.g., MPs, MSPs and councillors).

Community impacts associated with construction activities are considered at project initiation by completion of a Community Communications Plan, which details the stakeholders relevant to the project, the communication channels that will be used to engage with them, the information that will be provided to and sought from them, and the timescales over which this will happen. It considers any sensitivities that may require increased stakeholder consultation and details specific events that will be held with stakeholders during the development of the project.

As part of this project, SPT are already engaging regularly with NGESO to discuss progress and interfaces. It is envisaged this will progress into more detail design once contractors are appointed by all parties.

There will also be engagement with the connecting parties mentioned in Section 6.1 once design is complete and dates for works at specific sites are confirmed.

9. Conclusion and Recommendations

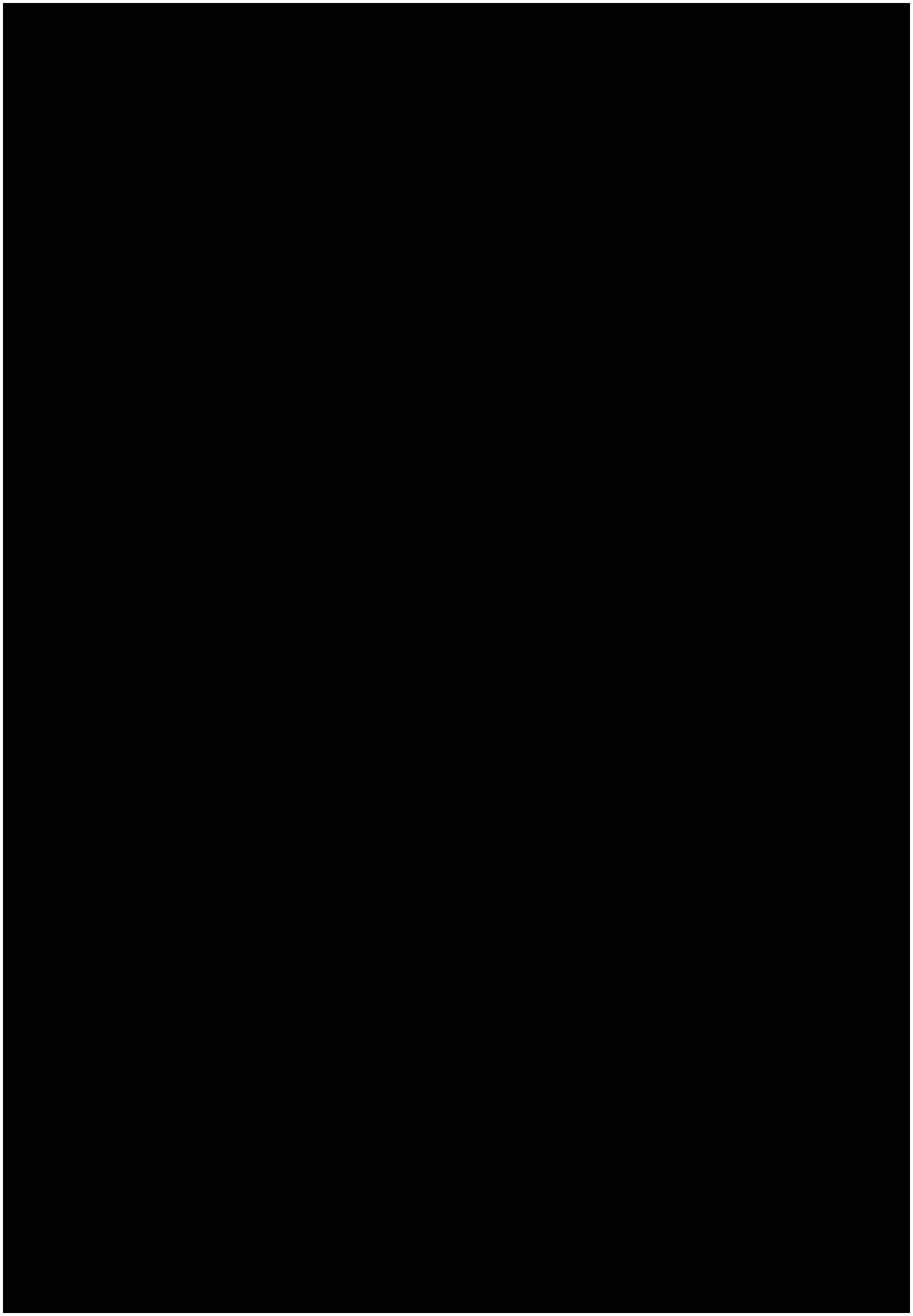
This MSIP re-opener application demonstrates the need to extend the OTS scheme to accommodate the ESO's B6 Constraint Management Pathfinder contracts and presents a robust cost submission founded on awarded contracts. The project to extend the OTS scheme has been initiated in response to the planning request received from the ESO in November 2022.

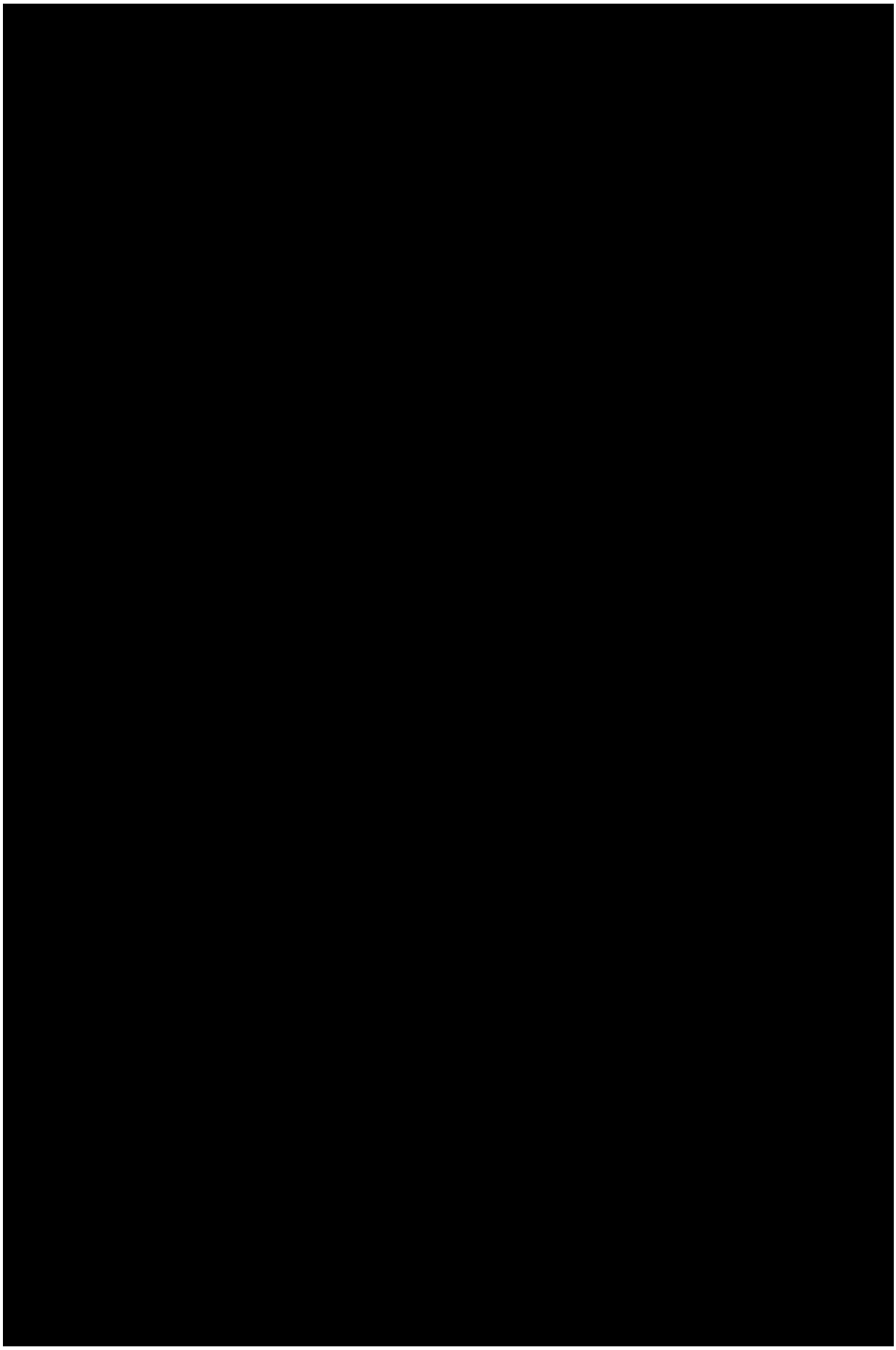
The ESO's estimate of avoided constraint costs is an order of magnitude greater than the cost of the works, demonstrating clear consumer benefit. For instance, the ESO has advised that the consumer savings during the service term (October 2024 to September 2025) are anticipated to be in the region of £70m (depending upon the generation background driving the constraint and system conditions).

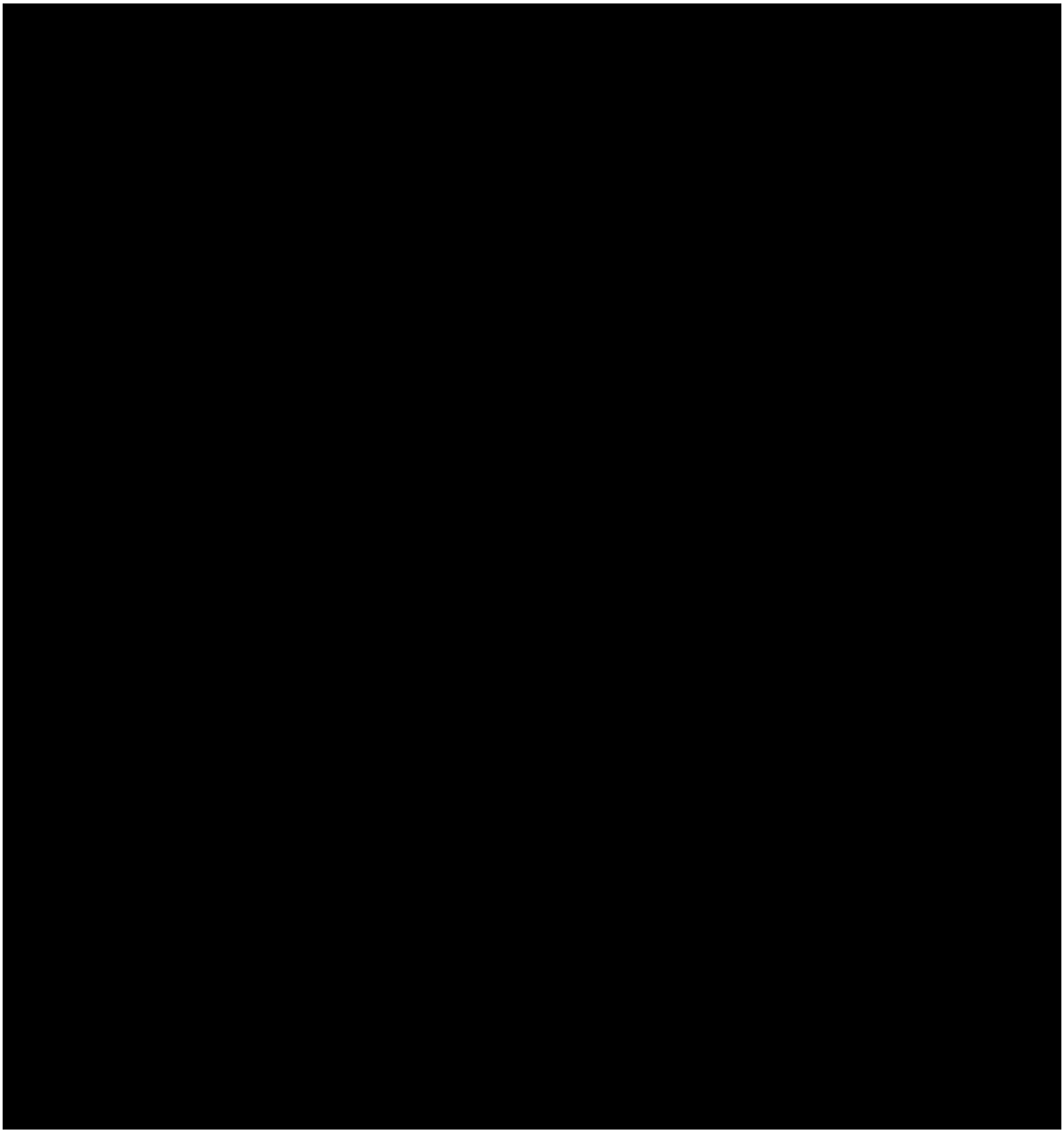
We respectfully request Ofgem's agreement to the following:

- The option being progressed addresses a clear customer need and represents value to GB consumers, therefore, the works should proceed based on the preferred solution (Option 1).
- By virtue of being founded on market-tested costs, the proposed allowance value represents the real efficient cost of the works and should be fully funded.
- [redacted]

10. Appendix 1 – OTS Scheme Modification Planning Request





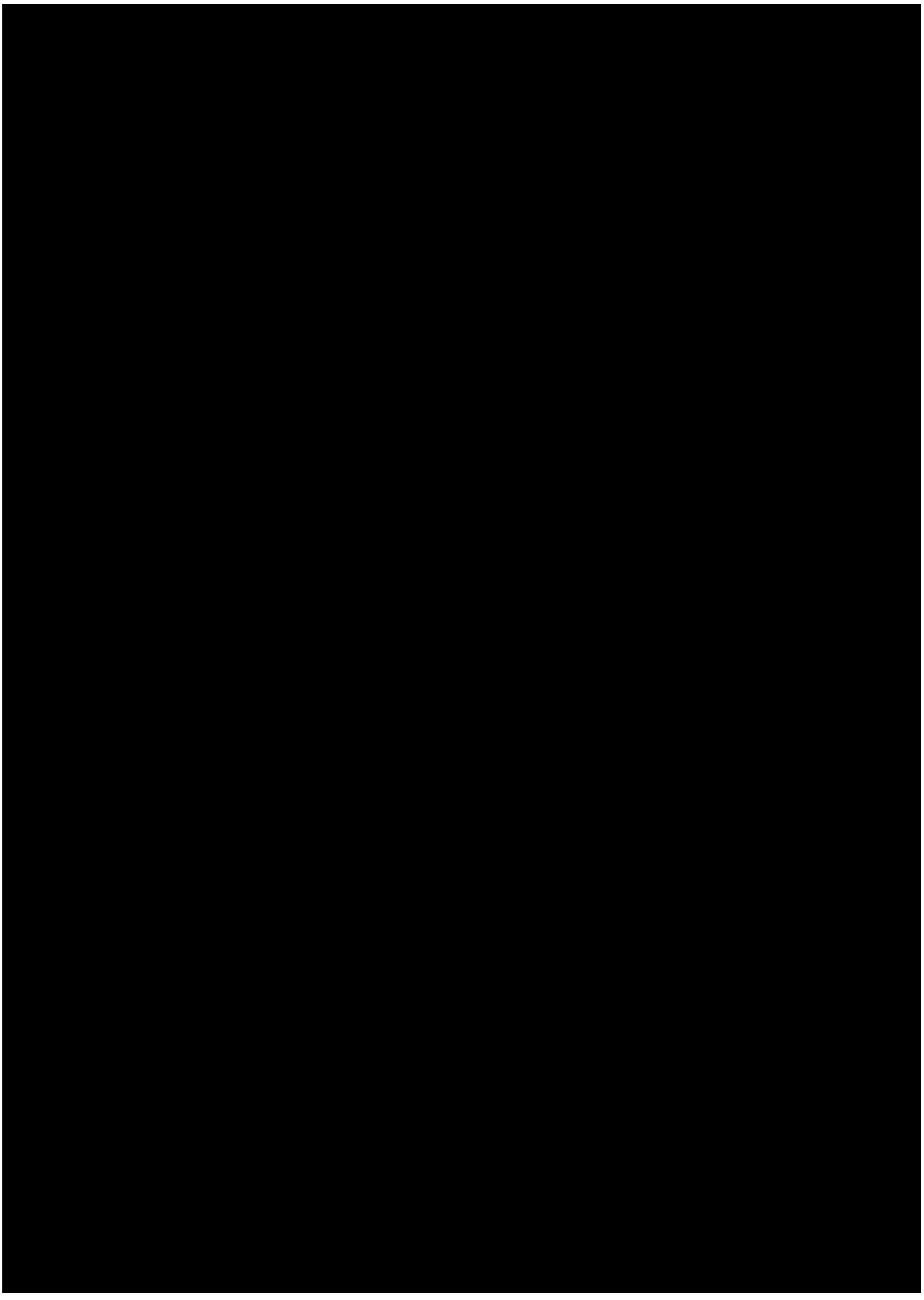


11. Appendix 2 – Diagrams

11.1 System Architecture

11.2 Existing OTS Scheme Logic

11.3 Proposed OTS Scheme Logic



11.4 Substation GSN Drawings